

Osteopathic Medical Education in the United States  
*Improving the Future of Medicine*

Howard S. Teitelbaum, DO, PhD, MPH

*Project funded jointly by the American Association of Colleges of Osteopathic Medicine  
and  
American Osteopathic Association*

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## **Part I. Introduction**



Osteopathic Medicine is a noble profession. Its beginnings can be well documented and its legacy of improving the health of the people of the United States is assured. It is also a living profession. By that I mean, it is evolving and adapting to the changes in its environment. A fundamental, enduring piece of the profession's mosaic is the education of its medical students. Osteopathic medicine has a medical school system separate from the allopathic system. There was, and to a lesser degree remains, a separate hospital system, accreditation body, and specialty colleges. Within that hospital system are internship, residency, and fellowship programs each designed to produce osteopathic physicians who will practice medicine consistent with the current understanding of the pathophysiology of disease, an appreciation for the social and behavioral constraints in which patients find themselves, a basic respect for human dignity, and a treatment and management plan that is understandable and feasible for the patient. Because osteopathic medicine is one of the only two fully licensed medical professions in the United States, the other being allopathic medicine, inevitably the two professions are compared. Allopathic medicine, relative to Osteopathic medicine, is an internationally recognized profession of extremely long standing. It has far more practicing physicians, many more national educational institutions and post graduate training opportunities and has garnered more political influence, has had a stronger influence over the direction of U.S. medical education than Osteopathic medicine. However, the independence of osteopathic educational systems gives the osteopathic profession a distinct pathway to maintain not merely a foothold but rather a continuing place in the framing of health care in the United States. Nevertheless, the influence of Osteopathic medicine is growing, and the graduates of Colleges of Osteopathic Medicine receive the D.O. (Doctor of Osteopathy or Doctor of Osteopathic Medicine) degree. This designation will always serve to identify the profession of Osteopathic Medicine and assist in assuring recognition of the profession.

### **Significant Shifts in Medical Education**

The Colleges of Osteopathic Medicine in the United States, not unlike Allopathic Colleges of Medicine, find themselves serving many functions. They are the determiners of who gets to

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enter medical school and hence who are potential future doctors. By controlling the curriculum, the medical schools, determine the foundational material future doctors will learn; they determine how they will be taught basic and clinical science; and what their undergraduate clinical education will look like. They will also determine who graduates and thus have a particular impact on the potential number of graduating physicians. Thus, the Osteopathic Medical College, determines in large measure what is to be taught and how it is to be taught. Over time, a dilemma has arisen among those responsible for medical education and the public, which is the ostensible recipient of service delivered by medical school graduates. The debate centers on the focus of medical schools. One position is that the function of medical school is to organize itself (and its curriculum) around the generation of and mastery of biological, behavioral, and clinical knowledge; the other position is that the medical school should organize itself (and its curriculum) around the practice of medicine as determined by those whom it serves. This formulation has been posited by Bloom (Journal of Health and Social Behavior 1988, Vol. 29 294-306) and by Ludmerer (1999, *Time to Heal*). This latter book establishes the grounds of a Social Contract (p.21) between medical school and society. The claim is that the public has historically supported medical education by investing not only dollars but also themselves (willing to participate in clinical trials, etc.) in an effort to improve an overall good (highly competent physicians and new medical knowledge). This investment also takes place by requiring public institutions, like councils, commissions, and formal government bodies to help regulate (e.g. state licensing boards) and finance medical education (e.g. Medicare, county hospitals, etc.). Thus, from an historical perspective, as well as current genre, medicine and medical education can expect, through its social contract, suggestions and criticism of what and how medicine is taught to potential caregivers. Such suggestions have indeed been posited by the Institute of Medicine. The Institute of Medicine (IOM), a nonprofit organization chartered in 1970 as a component of the National Academy of Sciences (NAS), provides a public service by working outside the framework of government to ensure independent guidance on matters of science and medicine. The IOM's mission is *to advance and disseminate scientific knowledge to improve human health. The Institute provides objective, timely, authoritative information and advice concerning health and science policy to government, the corporate sector, the professions, and the public* (Mission and Goals of the Institute of Medicine, [www. iom.org](http://www.iom.org),

*accessed 1/1/2004*). There are three reports that have garnered the attention of the public and have fostered much discussion. The first report was the 1999 To err is human: Building a safer health system. The major findings were that (1) between 44,000 and 98,000 patients die in hospitals each year because of preventable medical errors, (2) how to improve the health care system is already known, (3) a majority of medical errors do not result from individual recklessness or the actions of a particular group, (4) a majority of medical errors result from improper prescribing, dispensing, and administration of medications. The suggested improvements were to: (1) establish a national focus to create leadership, research, tools, and protocols to enhance the knowledge base about safety; (2) identify and learn from errors by developing a nationwide public mandatory reporting system and by encouraging health care organizations and practitioners to develop and participate in voluntary reporting systems; (3) raise performance standards and expectations for improvements in safety through the actions of oversight organizations, professional groups, and group purchasers of health care; and (4) implement safety systems in health care organizations to ensure safe practices at the delivery level. Much work has already been done nationally in response to this report. The Agency for Healthcare Research and Quality (AHRQ, *pronounced ARC*) received \$50 million in 2000 to address these concerns. The National Academy for State Health Policy (NAHSP) has convened panels to address the concerns raised. The Leapfrog Group, an association of private and public sector group purchasers, unveiled a market-based strategy to improve safety and quality, including encouraging the use of computerized physician-order entry, evidence-based hospital referrals, and the use of ICUs staffed by physicians credentialed in critical care medicine. The Council on Graduate Medical Education (COGME) and the National Advisory Council on Nurse Education and Practice (NACNEP) held a joint meeting on “Collaborative Education Models to Ensure Patient Safety.”

In the second report, Crossing the Quality Chasm: A New Health System For the 21st Century (known as the CHASM report), the IOM’s main point was that the health care delivery system has failed to translate the gains in medical knowledge into practice and to apply new technology safely and appropriately. This failure is based on two continuing problems. First, the knowledge explosion itself. This involves not only basic science knowledge but technological advances as well. Second, the attempt to translate knowledge and technology into practice is confounded by

the increasing complexity of medical care itself. Faced with the prospect of the increasing rate of medical and technological advances in the future and with the continuing complexity of disease diagnosis, treatment, and management, the prospects for better application under our current health care delivery system is not good. The report addresses how the health care system needs to change in order to meet these challenges, arising from the problems identified above. Another major conclusion of the IOM report was that merely making incremental improvements in current systems of care will not suffice. The report then focuses on how the health system can be reinvented to foster innovation and improve the delivery of care. Note that the focus is on the health care system of delivery, the intent of which is to improve the health care received by patients. Several “buzz words” have come out of this report. “Fragmented” health care denotes that many stops are needed to dispense comprehensive care to an individual. This is presumably compared to a one-stop shop, where care could be more efficiently delivered. “Silos” is another word that flows from the notion of fragmentation. This is to mean that individual health care providers are operating in a sense independent of one another because they often lack complete information or it is delivered late from one physician (or other health care provider) to another. Examples of such necessary components of information are a patient’s condition and medical history, services received in other settings, or medication from other clinicians.

The report lists Six Aims for Improvement. Any improvement should aim to be:

- *Safe*: avoiding injuries to patients from the care that is intended to help them.
- *Effective*: providing services based on scientific knowledge to all who could benefit, and refraining from providing services to those not likely to benefit.
- *Patient-centered*: providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions.
- *Timely*: reducing waits and sometimes-harmful delays for both those who receive and those who give care.
- *Efficient*: avoiding waste, including waste of equipment, supplies, ideas, and energy.

- *Equitable*: providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.

The report acknowledges that specific templates or blueprints to achieve these aims would be overly confining and stifle imagination. However, there are certain design principles that ought to be followed. In particular:

1. *Care is based on continuous healing relationships*. Patients should receive care whenever they need it and in many forms, not just face-to-face visits. This implies that the health care system must be responsive at all times, and access to care should be provided over the Internet, by telephone, and by other means in addition to in-person visits.
2. *Care is customized according to patient needs and values*. The system should be designed to meet the most common types of needs, but should have the capability to respond to individual patient choices and preferences.
3. *The patient is the source of control*. Patients should be given the necessary information and opportunity to exercise the degree of control they choose over health care decisions that affect them. The system should be able to accommodate differences in patient preferences and encourage shared decision-making.
4. *Knowledge is shared and information flows freely*. Patients should have unfettered access to their own medical information and to clinical knowledge. Clinicians and patients should communicate effectively and share information.
5. *Decision making is evidence-based*. Patients should receive care based on the best available scientific knowledge. Care should not vary illogically from clinician to clinician or from place to place.
6. *Safety is a system property*. Patients should be safe from injury caused by the care system. Reducing risk and ensuring safety require greater attention to systems that help prevent and mitigate errors.

7. *Transparency is necessary.* The system should make available to patients and their families information that enables them to make informed decisions when selecting a health plan, hospital, or clinical practice, or when choosing among alternative treatments. This should include information describing the system's performance on safety, evidence-based practice, and patient satisfaction.
8. *Needs are anticipated.* The system should anticipate patient needs, rather than simply react to events.
9. *Waste is continuously decreased.* The system should not waste re-sources or patient time.
10. *Cooperation among clinicians is a priority.* Clinicians and institutions should actively collaborate and communicate to ensure an appropriate exchange of information and coordination of care.

To change the environment, four main areas must be addressed.

1. *Applying evidence to health care delivery.* Available information should be compacted and reported in a "user-friendly form" (*phrasing mine*): analyze and synthesize the medical evidence, delineate specific practice guidelines, identify best practices in the design of care processes, disseminate the evidence and guidelines to the professional communities and the general public, develop support tools to help clinicians and patients apply evidence and make decisions, establish goals for improving care processes and outcomes, and develop measures for assessing quality of care.
2. *Using information technology.* This section presents alternatives to storage, retrieval, and dissemination of medical records in paper format; as well as alternatives to face-to-face visits. The claim is also made that appropriate application of technology would eliminate most handwritten clinical data by the end of the decade.
3. *Aligning payment policies with quality improvement.* This section comments on the barriers that impede quality improvement and the need to build in stronger incentives for strengthening quality. Rewarding best practices (which are left unidentified) would give financial incentive to change the health care that is delivered.

4. *Preparing the workforce.* The six aims cited above should be used to design training programs for health care personnel. Thus, evidence-based medicine should be stressed in curriculum design. Healthcare professionals and the places in which they train should be accredited in ways to foster and promote needed changes in care delivery. The claim is also made the better use of the liability system will help to support changes in care delivery while preserving its role in accountability.

The third report, Health Professions Education: A Bridge to Quality, issued in 2003, builds on the earlier two reports, in particular the Chasm report. The IOM has adopted the following vision for health professionals education:

*All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics.*

The IOM stated that this vision and its imbedded set of five core competencies ought to be part of every clinician's skill and practice, regardless of discipline, to meet the needs of the 21<sup>st</sup>-century health system. The report further delineates each competency. (Competencies are defined as the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice.) The five core competencies are:

- **Provide patient-centered care** - identify, respect, and care about patients' differences, values, preferences, and expressed needs; relieve pain and suffering; coordinate continuous care; listen to, clearly inform, communicate with, and educate patients; share decision making and management; and continuously advocate disease prevention, wellness and promotion of healthy lifestyles, including a focus on population health.
- **Work in interdisciplinary teams** - cooperate, collaborate, communicate, and integrate care in teams to ensure that care is continuous and reliable.

- **Employ evidence-based practice** - integrate best research with clinical expertise and patient values for optimum care, and participate in learning and research activities to the extent feasible.
- **Apply quality improvement** - identify errors and hazards in care; understand and implement basic safety design principles, such as standardization and simplification; continually understand and measure quality of care in terms of structure, process, and outcomes in relation to patient and community needs; and design and test interventions to change processes and systems of care, with the objective of improving quality.
- **Utilize informatics** - communicate, manage knowledge, mitigate error, and support decision making using information technology.

A point made in the executive summary after the listing of the competencies is, in my opinion, of major importance.

The five competencies are meant to be core, but should not be viewed as an exhaustive list. The committee recognizes that there are many other competencies that health professionals should possess, such as commitment to life-long learning, but believes those listed above are the most relevant across the clinical disciplines; advance the vision in the *Quality Chasm* report; and overlap with recent, existing efforts to define competencies (American Council for Graduate Medical Education [ACGME], 1999; Accreditation Council on Pharmaceutical Education, 2000). The committee also acknowledges that the core competencies will differ in application across the disciplines. (page 4)

This latter statement provides the bridge for accepting the Osteopathic Core Principles (OCP) and the cooperative effort to incorporate our competencies with the ACGME's work, and to form the basis for our specialty colleges to require their constituent groups to use the OCPs to redesign osteopathic graduate medical education (OGME).

Because the core competencies listed by the IOM are phrased in terms that have now become common terms and as such will be commented upon in the next few years, it is appropriate to consider the core competencies that have been adopted by the Osteopathic profession. The American Osteopathic Association (AOA) has held educational forums and has sponsored task forces that have explored the core competencies. The osteopathic profession has now adopted a set of seven core competencies, six of which are the same as the IOM's competencies. They are given below with the terms that are common between them and the IOM core principles shown in bold.

- Osteopathic Philosophy and Osteopathic Manipulative Medicine

Residents are expected to demonstrate and apply knowledge of accepted standards in Osteopathic Manipulative Treatment (OMT) appropriate to their specialty. The educational goal is to train a skilled and competent osteopathic practitioner who remains dedicated to life-long learning and to practice habits in osteopathic philosophy and manipulative medicine.

- Medical Knowledge

Residents are expected to demonstrate and apply knowledge of accepted standards of clinical medicine in their respective specialty area, remain current with new developments in medicine, and participate in life-long learning activities, including research.

- Patient Care

Residents must demonstrate the ability to effectively treat patients, provide medical care that incorporates the osteopathic philosophy, **patient empathy, awareness of behavioral issues, the incorporation of preventive medicine, and health promotion.**

*(Taken to mean population health considerations - HST)*

- Interpersonal and communication skills

Residents are expected to demonstrate interpersonal and communication skills that enable them to establish and maintain professional relationships with **patients, families, and other members of health care teams.** *(Taken to mean interdisciplinary health care teams - HST)*

- Professionalism

Residents are expected to uphold the Osteopathic Oath in the conduct of their professional activities that promote advocacy of patient welfare, adherence to ethical principles, collaboration with health professionals, life-long learning, and **sensitivity to a diverse patient population.** Residents should be cognizant of their own physical and mental health in order to care effectively for patients. *(Taken to mean respect for patients' differences, values, preferences, and expressed needs -HST)*

- Practice-Based learning and improvement

Residents must demonstrate the ability to critically evaluate their methods of clinical practice, integrate **evidence-based medicine** into patient care, show an understanding of research methods, and improve patient care practices.

- Systems-based practice

Residents are expected to demonstrate an understanding of health care delivery systems, provide **effective and qualitative patient**

**care within the system, and practice cost-effective medicine.**

*(Taken to mean quality improvement - HST)*

Another national organization has reported on major issues in medical education. The Association of American Medical Colleges has issued a series of documents containing conclusions from panels convened to study particular aspects of medical education. I find two relevant when discussing the future of (osteopathic) medicine. The first is “The Clinical Education of Medical Students—Report on Millennium Conferences 1 & 2,” Steven Weinberger, M.D., and Michael Whitcomb, M.D. The conferences were held April 28 to May 1, 2001, and April 26 to April 28, 2002, respectively. The conferences focused on three questions: (1) What should be taught in the clinical curriculum. (What to teach?), (2) How should the clinical curriculum be taught? (How to teach?), and (3) Who should teach the clinical curriculum? (Who teaches?). I have summarized the findings of these conferences below.

The conferences gave these answers to the three questions.

“What to teach?”

1. Develop and use a competency-based curriculum.
2. Assess at regular intervals their students’ performance in these competencies. Further, this evaluation should be structurally integrated and cross-disciplinary and be independent of assessment in specific clerkships.
3. Integrate “orphan topics.” This acknowledges that interdisciplinary topics of contemporary importance should be incorporated into the curriculum (e.g., ethics, cultural competency, bioinformatics as needed)
4. Integrate basic science and clinical medicine. This is a plea for continuing to stress the pathophysiology of medical problems to give a deeper understanding of disease.

“How to teach?”

1. Centralize oversight of the curriculum. Many times, medical school personnel do not directly supervise development and implementation of clinical clerkships. Moreover, the oversight when provided is the province of clinical departments, with no necessary coordination across disciplines. A centralized oversight group would provide greater accountability of training sites, teaching objectives, and assessment.
2. Integrate the curriculum: designing the clinical experience. There needs to be a better bridge between the first two years and the clinical two years. Clinical exposure should begin early in the medical school years and that exposure should capitalize on each student's experience and level of training. In addition, the continuing presentation of basic science material should continue to be presented to help students understand clinical problems.
3. Refocus the clinical experience. The current model of the clinical experience has the team as its central focus and the student as the member of the team. The team is usually considered the attending, the resident, the nursing personnel, and students. The focus should be put on the patient. This patient-centered model would help incorporate longitudinal care concepts, better integrate both inpatient and outpatient care, and focus on all disciplines that provide care for the patient. A student-centered experience would stress development of skills as a clinician. Such an experience would necessarily be more customized for each student because, for example, previous experiences, employment history, or previous clerkship experience might enable a student to perform or function at more advanced levels than an earlier medical student on the same service.
4. Optimize the fourth year. Define the objectives of the fourth year better. The purpose of the fourth year needs to be reviewed for medical school and student outcomes and for post-graduate study.
5. Teach appropriately at major transitions. A student's medical training has predictable junctions: pre-clinical to clinical; clinical to postgraduate years; timelines for choosing residencies. Timely education for those predictable points might be introduced in ways to make students receptive to it. Time management,

clinical techniques, common emergencies, teaching skills, and orientation to the clinical environment are a few.

6. Use multiple venues for clinical education. Alternatives to the teaching hospital and associated ambulatory clinic must be investigated, with attention to chronic care, urgent care, and emergency facilities. An alternate approach is to make the patient the focus of the training site. In doing so, four groups of patients are to be considered: the emergently ill (emergency room), acutely ill (inpatient), chronically ill (outpatient clinic or physician office), and healthy (primary care setting). Each type of patient and the associated venue would carry, I assume, its own objectives, assessment, and assignments of responsibilities.
7. Use of computer-based technology. More creative use of technological tools are needed to fill gaps. Particular areas of investigation are clinical presentations, scope of pathology, enhancing of clinical experiences, use of virtual patients, information retrieval. Student tracking of students' experience, with scope of patients and degree of difficulty (my term—"co-morbid states"), is also needed.. This will help equate experiences across the spectrum of care.

#### "Who Teaches?"

Addressing "Who teaches?" recognizes the changes and challenges of today's clinical faculty. How to balance the demand for service and the demand to teach raises underscores the financial changes made in milieu of medical education. Suggestions made were:

1. Match clinical teaching faculty and interests. Clinicians should be assigned clinical teaching duties based on their interests. The teaching format may well determine preferences (e.g., lecture, small group, tutorials). The venue is a factor (e.g., the classroom, the clinic, the laboratory), as is the scope of expertise needed to be addressed, such as generalist vs. specialist. The objectives for each of these aspects should be reflected in the objectives for each teaching encounter.
2. Prepare the house staff to be teachers. Residents will continue to be a major teacher group of medical students. Residents must therefore have protected time and be expected to become skilled and maintain their skills as teachers. That is to

say, residents who are expected to generate service and teach only incidentally do a potential disservice to both the patient and the student.

3. Set expectations of teaching faculty. The qualities and expectations of teachers should be matched to their experiences. The rationale is that the effect of clinical role-models cannot be underestimated. Therefore, a set of attributes required for the faculty who want to teach might be that they are knowledgeable and skilled clinicians. This means possessing not only intellectual curiosity (my term) but also a desire to learn. The person ought to have good communication skills, as well as an attitude toward patients that is consistent with that of the training program.
4. Create a “core faculty”. This approach is analogous to and contra-positioned to the notion of clinical researcher: If the institution can develop and maintain an elite set of clinical researchers, by the same reasoning it ought to develop and maintain a core of elite clinical teachers. The nettlesome part is that the institution must view these individuals’ primary role as teaching not as research or patient care. They, as teachers, must be dedicated to the objectives of the student’s institution, participate in curriculum planning, scholarship, mentoring, and assessment of students.
5. Assess and refine the quality of teaching. The quality needs to be improved by (1) using standardized forms for reporting student evaluations of teaching objectively; (2) using peer review more (e.g., course and clerkship directors, deans); (3) having a centralized evaluation board to evaluate teaching.
6. Promote scholarship in medical education. Promotion and other academic decisions must incorporate value for value teaching as a relevant and necessary component for the professional work of those dedicated to the teaching mission of the medical school or training program. Publication is not an unreasonable request or demand. Educational research must, however, be recognized by decision makers as a legitimate and valued area of inquiry.
7. Create mandatory faculty development. There should be a mandatory requirement for teaching faculty to participate in faculty development programs. This ought to, and is meant to, include the “core” faculty.

8. Reward high-quality teaching. Each institution to which the clinician belongs must recognize, preserve, and reward good teaching. Whether in the form of mission-based budgeting, faculty promotion, professional development, or special recognition categories, the rewards must stand behind the quality.

## Graduate Medical Education

There are also reports on graduate medical education. One major report that is particularly germane is “Integrating Education and Patient Care,” by Gewertz and Giraid, published by the AAMC in 2003. Its major focus is to help reorient residents’ programs to education rather than service. Such a reorientation effort should include at least:

1. Re-engineering service to incorporate new medical technologies, greater efficiencies, and other improvements in quality and cost-effectiveness.
2. Introducing new educational technologies such as “virtual” surgery.
3. Selectively shifting some residents’ tasks to nurses and other personnel, creating new patient care teams.
4. Adding content and implementing a GME core curriculum at the institutional level.
5. Changing resident supervision and resident responsibilities in response to Medicare requirements.
6. Expanding educational opportunities from inpatient to outpatient and other non-hospital settings.

The report concluded that addressing these problems should be guided by three fundamental goals:

1. Reduce the total number of hours residents devote to patient care of limited or no educational value, with patient care assignments made according to the residents’ curricular needs.

2. Enrich the educational content of residencies, paying attention to competency measures across the full spectrum of medical practice and the continuum of education.
3. Strengthen institutional oversight of GME programs

An additional report having a dramatic impact, one that will continue well into the future, is the Accreditation Council for Graduate Medical Education (ACGME) Outcome Project -- enhancing residency education through outcome assessment. This project is the driving force behind competency-based evaluation of residency programs and the associated trickle-down to the undergraduate program. The report cites the competencies listed above and provides the rationale and timelines. Because the osteopathic profession has already accepted the notion of competency-based education, I only wish to refer to the document, which may be discussed in the future. One important point to take away from this report, however, is the extensive work that has been done by the ACGME to provide samples of evaluation forms used in certain programs. Although the ACGME specifically denies any particular endorsement of any one form, presenting the samples is meant to suggest what might be looked for in future accreditation procedures. The major thrust is to change the process of accreditation from *potential* accomplishment to *actual* accomplishment. The notion is to use outcome data to facilitate continuous improvement of both residents' performance and residency programs' performance. Put another way, shift from structure and process of residency programs to outcomes as the *sine qua non* of the program. The notion of quality improvement is a significant idea to understand. It is in most university accreditation reports. It is predicated on (1) the *a priori* stipulation of educational program options; (2) specification of what data would be needed to choose between or among options; (3) the collection of such data; and (4) a demonstration of how that data was used in program decision making. The idea came from industry (Ford Motor Company was a major proponent of such management tools) and is now part of common parlance in educational institutions. This shift is significant since it will demand greater planning by most components of medical education and medical training. Other notions are suggested as well. Clinical Assessment for patient safety has appeared in the literature. An example is "A clinical assessment program to evaluate the safety of patient care". Agency for Health Care Quality. Volume 4. Advances in Patient Safety: From Research to Implementation. February 2005. P. 57-69.

## **Part II. Data and Analysis**

## **Section 1: Survey of Senior Medical Students**

Osteopathic medical colleges have long recognized the need to understand their students' motivations and experiences. Annual surveys of senior students have assisted local and national planning. To assess the overall status of medical education in terms of student characteristics, views, and behaviors, however, requires special studies.

### **Study Protocol**

The American Association of Colleges of Osteopathic Medicine (AACOM) administers a survey to all first-year osteopathic medical students in their first semester of medical school. The AACOM prepares the survey and distributes it to each medical school. The medical schools subsequently distribute the survey, usually during the orientation period for their respective school to each freshman medical student. Medical school personnel collect the completed survey and mail it back to the AACOM, whose personnel process the responses into a database. The data is subsequently analyzed and a report is written entitled, *Debts, Plans and Opinions of Osteopathic Medical Students in (the year of the report, 2001, 2002, 2003, etc.)*. Senior medical students also receive a survey, similar to the Year 1 questionnaire. Additional questions are added to the survey questionnaire to assess plans for the future and opinions about their medical school experiences, and questions about debt are updated. The survey is administered during the last part of the student's senior year. This link between the students' first and senior year provides an opportunity to track changes in the students' view of their education over time. The report, an annual AACOM publication, does not track the students at this time. Rather, it presents the senior data and the current freshman data side by side on common questions.

Discussions were held with the members of the AACOM Office of Research and the then Vice President for Research, Dr. Alan Singer, to secure permission to append questions unique to this study's objectives to the questionnaire. In a spirit of cooperation, permission was granted and questions appended. This allowed the current distribution and collection system, which has worked well in the past, to be used for the study.

In the 2003-04 academic year, a survey questionnaire was sent to all 2,345 fourth-year osteopathic medical students enrolled in the 19 osteopathic medical schools. A complete list of the schools is shown in Appendix A, Table A-1. The questionnaires and a cover letter explaining the nature of the national study was sent to the dean of each medical school. The deans were asked to assist in having the anonymous survey questionnaire completed and returned. Follow-up phone calls were made by members of the Office of Research at the AACOM, as was the standing protocol. Prepaid Federal Express envelopes were sent to each participating medical school; the questionnaires were to be returned to the AACOM. Two osteopathic medical schools, administratively related, refused to participate, giving no reason for the refusal.

The complete questionnaire can be found in Appendix D, entitled "Materials."

### Demographic Data

Surveys were returned by 1,882 students from 19 schools, with 1,353 of them at 13 private schools and 529 at 6 public schools. (See Table 1.1.) The questionnaire was 14 pages long and covered many aspects of the students' experiences, such as financial aspects of medical school, future career plans, opinions of their educational experience, and thoughts about osteopathic medicine.

Type	School Code	Number of Students	Percentage of Total Students Responses
Public	OUCOM	97	5
	MSUCOM	98	5
	UNTHSC	115	6
	OSUCOM	77	4
	WVSOM	71	4
	UMDNJ	71	4
	Total	529	28
Private	PCOM	66	4
	CCOM	146	8

UHSCOM	202	11
DMU	74	4
KCOM	126	7
NYCOM	68	4
WCOMP	37	2
NSUCOM	166	9
UNECOM	106	6
LECOM	167	9
AZCOM	114	6
TUCOM	33	2
PCSOM	48	3
Total	1,353	75
<b>Total</b>	<b>1,882</b>	<b>103*</b>
*Sums to greater than 100 due to rounding errors		

## Findings on Students

### *Backgrounds and personal characteristics*

The students' average age was 29.2 years, with a wide range of 23-61 years, but 80% were at or under the age of 31. Men outnumbered women, 59% to 41%. Although less than half of the group was married (45%), marriage was more common among the men than the women (60% versus 40%). The students were primarily white (76%), with Asians coming in a distant second at 12%; others made up 4% or less of the total. See Table 1.2 for more detail.

<b>Table 1.2</b>		
<b>Background characteristics of fourth-year osteopathic medical students, 2003-04 (N=1,882)</b>		
<b>Demographic data</b>	<b>No. of students responding</b>	<b>Percentage</b>
<b>Age</b>		
20-25	16	1
25-29	1209	67
30-34	398	22
35-39	96	5
40-44	49	3
50+	7	0
<b>Sex</b>		
Men	1104	59

Women	759	41
<b>Marital status</b>		
Married	808	45
Not married	1004	55
<b>Ethnic background</b>		
Black non-Hispanic	44	2
American/Indian Alaskan Native	10	1
White non-Hispanic	1442	77
Hispanic	50	3
Asian/Pacific	231	12
Other	74	4
<b>Population of hometown</b>		
>1,000,000	351	19
500,000 - 1,000,000	199	11
100,000-500,000	336	18
50,000 - 100,000	252	14
10,000 - 50,000	401	22
2,500 - 10,000	206	11
< 2,500	99	5

The students' parents had high education levels (Table 1.3). For two-thirds (66%) of the students, both parents had attained a college education, and for 85% of all the students, at least one parent had. Furthermore, 49% of their fathers and 36% of their mothers had attained graduate and professional degrees. Of special note, 24% of the students had at least one parent with some health professions degree. Only 3% reported one or both parents with less than a high school education.

**Table 1.3****Educational attainment of parents of senior osteopathic medical students responding to survey, 2003-04 (N = 1,882)**

<b>Highest level of father's education</b>	<b>No. of students</b>	<b>Percent. of students</b>
Medical (DO or MD)	198	11%
Nursing or other health profession	77	4%
Professional: Law, Business, Engineering, etc.	394	21%
Other graduate degree	191	10%
College graduate	309	17%
Some college	230	12%
Technical school	74	4%
High school graduate	226	12%
Some high school or less than high school	99	5%
<b>Highest level of mother's education</b>	<b>No. of students</b>	<b>Percent. of students</b>
Medical (DO or MD)	34	2%
Nursing or other health profession	234	12%
Professional: Law, Business, engineering, etc	119	6%
Other graduate degree	235	13%
College graduate	391	21%
Some college	292	16%
Technical school	72	4%
High school graduate	342	18%
Some high school or less	83	4%

Although 16% of the group reported their parent's annual family income as less than \$20,000, a majority of the students, in keeping with the high education level of most of their parents, reported above-average incomes. Over 58% of the students had parents whose family income exceeded the national median income of \$43,318 per year (U.S. Bureau of the Census, website, 2002-3 data), and 30% had annual incomes exceeding \$100,000. (See Table 1.4 for details.).

<b>Income</b>	<b>Number of students</b>	<b>Percent. of students</b>
Less than \$10,000	46	2%
10,000 - 19,999	41	2%
20,000 - 29,999	89	5%
30,000 - 39,999	106	6%
40,000 - 49,999	96	5%
50,000 - 59,999	166	9%
60,000 - 69,000	140	8%
70,000 - 79,000	103	6%
80,000 - 89,000	126	7%
90,000 - 99,999	116	6%
more than 100,000	552	30%
Deceased or Unknown	277	15%

Most of the students (82%) were financially independent of their parents, with low to moderate incomes. Almost half reported annual household incomes of less than \$10,000. Despite relatively high parental incomes, almost half had incurred debt *before* starting medical school, the median debt being approximately \$16,400. Only 3% had already paid back those loans, and the median amount still owed was \$16,000.

In addition to their loans for undergraduate education, almost 90% of the students obtained loans for medical school, the majority being a combination of unsubsidized and subsidized loans through the Stafford and Federal Family Education Loan Program (FFELP) (Table 1.5) Perkins Loans and other types of loans were obtained by about one quarter of the students. About 10% of the students did not answer this question, much higher than for most other questions, suggesting that some students may no longer accurately recall the funding sources they had pieced together to pay for schooling. Although there is a public perception that plenty of money for education is available for disadvantaged students, only 1% of the students reported receiving such money.

Their degree of debt varied widely, from as low as \$2,900 to over \$327,000. Their median debt for medical school debt was approximately \$150,000. One third of the students

reported receiving one or more scholarships or tuition waivers, and of those, about half were from their osteopathic medical college or its parent university. Scholarships paid from 1% to 100% of the students' medical education, but the median cost covered by scholarships was only 10%. The students reported that 91% of their medical school costs were being paid with loans. In addition to medical school expenses, 40% of the students incurred a median debt of \$33,000 for non-educational expenses (e.g., living expenses, etc.) while in medical school.

**Table 1.5**  
**Debt for medical school of senior osteopathic medical students, 2003-04 (N= 1,882)**

Types of Loans	Students			Loan Amount†			
	N*	No Loans	Had Loans	Mean	Median	Minimum	Maximum
		%	%	\$	\$	\$	\$
Unsubsidized Stafford or FFELP	1650	11%	89%	98,555	112,335	1,150	154,000
Subsidized Stafford or FFELP	1648	10%	90%	32,695	34,000	1,000	42,500
Perkins Loan	1673	70%	30%	7,069	5,500	500	24,000
Loans for Disadvantaged Students	1687	98%	2%	7,250	5,000	2,500	27,900
Primary Care Loan	1692	97%	3%	48,987	45,550	2,000	119,374
Other State Government Loans	1687	96%	4%	20,831	13,500	1,125	92000
Osteopathic Association Loans	1690	98%	2%	11,135	4,000	1,000	50,000
Alternative Loans	1690	78%	22%	21,189	15,000	920	160,000
Other Personal Loans	1689	86%	14%	21,922	13,000	515	200,000
<i>Total Loans</i>	<i>1737</i>	<i>13%</i>	<i>87%</i>	<i>140,882</i>	<i>152,341</i>	<i>2,900</i>	<i>327334</i>

\* N< 1882 because less than 100% responded to question.  
†Mean, standard deviation, median, minimum, and maximum were based only upon students receiving the loan.

Although 73% intended to take advantage of the low interest rates then current (which were usually one third lower than the original rate) through loan consolidation program, they nonetheless anticipated it would take 17 years on average to pay off their medical school debts.

According to the Medical Group Management Association, the overall median income in 2003 for primary care physicians was \$156,900, only 2.4% above the 2002 level.

([www.aishealth.com/Bnow/090104c.html](http://www.aishealth.com/Bnow/090104c.html)). The students reported that they anticipated a median annual income for their first year in practice of \$120,000, which is in keeping with the association's figure. They anticipated a rise of less than the 2.4 % rate (to \$200,000) over the coming the 10 years.

### ***Future plans***

At the end of medical school, these fourth-year students will have to decide what path to take in their medical education. Some planned an internship, others to go directly into a residency.

An osteopathic internship was the choice of 65% of the students. Of these 1,205 students, 35% opted for a traditional rotation, 40% for a special emphasis, and 25% for a specialty track. The preferred special emphasis internship was Family Practice, was preferred by more students (52%) among those who planned to choose a special emphasis internship; Emergency Medicine and General Surgery internships trailed far behind (19% and 13%, respectively). The preferred specialty track internship was Internal Medicine, selected by 57% who planned a specialty track, with Pediatrics and OB/GYN preferred by 8% and 16%. Of these 1,205 students who reported that they planned a traditional, special emphasis, or specialty track internship, 46% planned to pursue an osteopathic residency, 13% an AOA/ACGME-approved program, and 29% an ACGME residency.

Looking at the entire group of students, including both those planning to complete an internship and those going straight into a residency program, shows 47% percent planned to pursue an allopathic residency, 30% an osteopathic residency, and 9% an AOA/ACGME dual-approved program (Table 1.6). Thus, 56% of the students intended to acquire allopathic training. The remaining students (12% of the total) reported no plans for further medical education, with 10% planning to enter government service and 2% answering that they were undecided or elected for some sort of other employment.

<b>Type of residency/employment</b>	<b>Number of students</b>	<b>Percentage of students</b>
Pursue osteopathic residency	572	31%
Pursue allopathic residency	881	47%
Pursue AOA/ACGME residency dual approved program	168	9%
Enter governmental service	191	10%
Self-employed /group practice/ other professional activity	5	0%
Undecided or indefinite post-graduate/internship plans	41	2%

Overall, 66% planned to pursue an allopathic or government residency. The main responses chosen as the reason for this career path were (Table 1.7): better training is available in an allopathic program (about 40% of the students); an allopathic program opens more career opportunities (30%); and an osteopathic program was not available in their preferred geographic location (33%). Family considerations were given as a reason by 26% of the students, while 25% felt they could receive specialty training not available in osteopathic programs. Other reasons given for selecting an allopathic program were: shorter time of training, chosen by 13% of the students; better pay, chosen by 10%; and better chance of acceptance into an allopathic residency, by 8%. All of the students who planned to enter government service were doing so to fulfill military or government service obligations.

**Table 1.7**  
**Reasons for choosing other than an osteopathic residency reported by the 1,250 senior osteopathic medical students who reported electing ACGME-accredited, dually-accredited, or government service residency programs, 2003-04**

<i>Reason</i>	<b>Number of students*</b>	<b>Percentage of students *</b>
Believe better training available in allopathic program	491	39
Available in preferred geographic location	413	33
Opens more career opportunities	379	30
Family Considerations	320	26
Preferred specialty training offered	314	25
Military or Government service obligation	193	15
Shorter training period	159	13
Higher Pay	121	10
Better chance of being accepted in allopathic program	102	8

\*Numbers add to >763 and percents to >100 because students could select more than 1 reason.

When asked what their professional activity would be five years after their internship and residency training, 45% responded that they planned to be in group practice and 15% to be self-employed with a partner, while 20% were undecided. The remaining 20% of the students had plans spread over a number of other activities, including the less than 1% who intended to work for an HMO.

The students' interests in future specialties varied widely, as indicated in Table 1.8. Primary care attracted 31% of them (Family Practice, 22%; General Internal Medicine, 5%; and General Pediatrics, 4%). Altogether, 56% intended to go into some type of non-primary care specialty, ranging from 11% for both sub-specialty Internal Medicine and Emergency Medicine to 0.2% in Allergy and Immunology. Nine percent planned to enter some type of surgery while 4% are undecided. Four percent had not decided. Virtually all of the students expected to become Board-certified in their specialties.

<b>Table 1.8</b>		
<b>Specialty or area of interest that senior osteopathic medical students reported being most likely to work or seek training, 2003-04 (N=1,882)</b>		
<b>Specialty/area of interest</b>	<b>Frequency</b>	<b>Percentage</b>
Family Practice	412	22%
Internal Medical General	93	5%
Internal Medical Subspecialty	213	11%
Neuromuscular Medicine and Osteopathic Manual Therapy	11	1%
Pediatrics, General	76	4%
Pediatrics, Subspecialty	69	4%
Allergy and Immunology	3	0%
Anesthesiology	118	6%
Critical care	10	1%
Dermatology	28	2%
Emergency Medical	199	11%
Geriatrics	11	1%
Neurology including subspecialties	32	2%
Psychiatry including subspecialties	57	3%
OB/GYN Including subspecialties	105	6%
Ophthalmology	10	1%
Otolaryngology	20	1%
Pathology including subspecialties	21	1%
Physical Medical and Rehab Medical	63	3%
Radiology (diagnostic) including subspecialties	48	3%
Sports Medical	19	1%
Surgery, General	45	2%
Orthopedic Surgery	67	4%
Surgery subspecialties	22	1%
Colon and Rectal surgery	1	0%
Facial Plastic Surgery	2	0%
Plastic/Recon Surgery	9	0%
Neurological Surgery	10	1%
Thoracic Cardiovascular Surgery	2	0%
Vascular Surgery	5	0%
Urology/Urological Surgery	11	1%
Undecided or Indefinite	66	4%
<b>Total</b>	<b>1882</b>	<b>100%</b>

The students gave a variety of factors as major or strong influences affecting their choice of specialty. The percentages who found particular reasons to be major or strong influences differed among groups of specialty choices. (See Table 1.9.) The six factors that 50% or more of the students reported as major or strong influences were *Dealing with people* (88%), *Intellectual content of specialty* (77%), *Possess the skills now* (67%), *Role models* (59%), *Lifestyle* (58%), and *Independence* (55%). Interestingly, those who planned a non-primary care specialty showed the same pattern—more than 50% of them considered the same six factors to

be major or strong influences; they also included two others, *Academic environment* (50%), and *Technical skills* (61%). Among this group, the factor cited as the strongest influence was *Intellectual content*, chosen by 86%, a much larger percentage than the two cited as strongest by those choosing primary care (66% for *Dealing with people* and 77% for *Intellectual content*).

The Surgery group showed a very different pattern. The greatest influence was *Technical skills* (92% of the students reported it as a major or strong influence), followed by *Intellectual content of specialty* (86%), *Possess the skills now* (74%), *Role models* (57%), *Independence* (59%), and *Previous experience* (50%).

The influences cited by the undecided students highly resembled those of the Primary Care group with the exception that only 66% (rather than 88%) of the students reported that *Dealing with people* was a strong or major influence.

<b>Factors</b>	<b>Major influence</b>	<b>Strong Influence</b>	<b>Moderate Influence</b>	<b>Minor influence</b>	<b>No influence/NA</b>
	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>
Intellectual content of specialty	53%	29%	13%	3%	2%
Dealing with people	46%	25%	16%	8%	5%
Prestige and income	9%	17%	31%	27%	16%
Lifestyle	35%	26%	22%	11%	6%
Technical skills	28%	24%	23%	15%	9%
Role models	28%	29%	24%	11%	8%
Peer influence	12%	18%	27%	23%	20%
Possess the skills now	35%	38%	19%	6%	3%
Debt level	9%	13%	25%	24%	28%
Academic environment	21%	26%	29%	14%	11%
Research	12%	15%	21%	24%	28%
Independence	28%	28%	24%	13%	8%
Previous Experience	23%	22%	22%	12%	21%

The students generally reported that they planned to practice in cities or towns that were close to the size of their hometowns. There was, however, a subtle shift from the size of the city the students came from, to the size of the city they hoped to work in (Table 1.10). Some 65% of the students from schools in cities over 1,000,000 intended to practice in cities of that size, but there was a drift from the smallest cities and towns to larger ones. Sixty percent of the students (excluding the undecided) planned to work in cities of more than 100,000, only 48% came from cities that large.

<b>Locations</b>	<b>Number</b>	<b>Percentage</b>
Major Metropolitan Area (1,000,000 or more)	320	17%
Metropolitan Area (500,000 - 1,000,000)	320	17%
City (100,000 - 500,000)	352	19%
City (50,000 - 100,000)	259	14%
City or Town (10,000 - 50,000)	246	13%
City or Town (2,500 - 10,000)	97	5%
Area under 2500	29	2%
Other Specified	9	0%
Undecided or indefinite	226	12%

### ***Curriculum, Medical School, and Experience***

The students were asked about their instruction in 46 content areas. None of the areas was thought to be covered excessively by more than 15% of the students. The 10 areas of instruction that the students most often rated as inadequate are shown in Table 1.11.

<b>Area of instruction</b>	<b>Percentage who rated it as inadequate</b>
Research techniques	57%
Medical care cost control	56%
Cost-effective medical practice	51%
Biostatistics	49%
Literature analysis skills	49%
Care of HIV/AIDS	47%
Instruction in legal medicine	43%
Practice management	42%
Rehabilitation	40%
Medical socio-economics	39%

It is clear that, other than *Rehabilitation* and *Care of HIV/AIDS*, eight of the topics dealt with either research or the business aspects of medicine. Despite these inadequacies, 84% of the students reported that they were satisfied with the quality of their medical education.

The responding students rated their satisfaction with a variety of resources their schools had provided (see Table 1.12) ranging from *Academic counseling* to *Student health insurance* to *Library* to *Tutorial help*. Only for *Career counseling* did the dissatisfied (42%) come close to matching the satisfied (48%). Although fewer than half of the students reported being satisfied with their *Disability insurance* (46%), the bulk of the remaining students (40%) reported having “no opinion” rather than being dissatisfied. The rest of the items had between 50% and 60% of the students indicating that they were “very satisfied” or “satisfied” with them.

<b>Table 1.12</b>			
<b>Senior students' satisfaction with support services provided in their medical schools *</b>			
	<b>Very Satisfied or Satisfied</b>	<b>Dissatisfied or Very dissatisfied</b>	<b>Neither satisfied nor Dissatisfied</b>
<b>Supportive services</b>	<b>Percentage</b>	<b>Percentage</b>	<b>Percentage</b>
Academic counseling	63%	27%	11%
Accessibility to administration	77%	19%	4%
Awareness of student problems by administration	60%	35%	5%
Career counseling	48%	42%	10%
Computer resource center	87%	9%	4%
Disability insurance	48%	12%	41%
Electronic communication	89%	9%	3%
Faculty mentoring	61%	32%	7%
Financial aid administration services	83%	12%	5%
Library	89%	9%	2%
Participation of students on key medical school committees	77%	11%	12%
Personal counseling	55%	19%	27%
Student health insurance	48%	34%	18%
Student health service	63%	22%	15%
Student relaxation space	68%	21%	10%
Study space	76%	18%	5%
Tutorial help	64%	11%	25%

\*Percentages may add to less than 100% because of rounding.

The students were also asked to rate their satisfaction with a wide range of experiences as medical students. These included such aspects as *Working with people* and *Intellectual stimulation*. (See Table 1.13.) More than 75% of the students expressed satisfaction (“satisfied” or “very satisfied”) with 14 of the 15 experiences presented. However, only 48% reported being satisfied doing work involving science and research; another 40% reported they were neither satisfied nor dissatisfied, 12% that they were dissatisfied (“dissatisfied” or “very dissatisfied”).

**Table 1.13**  
**Senior students’ satisfaction with various medical school experiences \***

Category	Very satisfied/ Satisfied	Neither satisfied nor dissatisfied	Dissatisfied/ Very dissatisfied
	Percentage	Percentage	Percentage
Working with people	96%	3%	1%
Working in science and research	48%	40%	12%
Anticipated income	79%	18%	3%
Opportunity to help others	96%	3%	1%
Membership in respected profession	90%	8%	1%
Interesting and intelligent colleagues	90%	9%	2%
Working independently	85%	12%	3%
Attaining leadership and authority	79%	20%	2%
Intellectual stimulation	96%	3%	1%
Using medicine to changing society	78%	19%	3%
Controllable lifestyle	77%	17%	6%
Manageable workload	76%	19%	6%
Adequate personnel resources	81%	15%	4%
Role in organizational decisions	77%	18%	5%
Relationships with non-physician personnel	85%	13%	3%

\*Percentages may add to less than 100% because of rounding.

When asked about different aspects of the first two years of their medical education, such as whether their course objectives had been made clear to them, or whether there was adequate preparation for the COMLEX Level I examination et al., they overwhelmingly agreed with all of the statements (more than 70% agreed) but one. Even on that statement, as to whether they had

had adequate exposure to patient care during the first two years, 66% agreed. (More detail is given in Table 1.14.)

<b>Table 1.14</b>		
<b>Senior students' evaluation of first two years of medical school</b>		
<b>Evaluative statement</b>	<b>Agree</b>	<b>Disagree</b>
	<b>%</b>	<b>%</b>
Course objectives were clear	88%	10%
Basic science courses were integrated	83%	16%
Course objectives and examinations were matched	82%	16%
Course work prepared you for clerkships	82%	16%
First 2 years were well organized	75%	22%
Timely feedback on performance	83%	15%
Adequate exposure to patient care	66%	32%
Adequate preparation for COMLEX Level 1	73%	25%

The students did not think, however, that their medical school provided adequate support during their clerkships. Although slightly over three-fourths reported there had been E-mail contact with their school, less than a one third thought the school helped them prepare for COMLEX II. A little over one fourth of the students reported that their schools had some distance-learning venue, but fewer reported having newsletters and or faculty visits (Table 1.15). When the students were asked elsewhere to rate their schools' involvement in their clinical years, 6% ranked it as outstanding, 49% rated involvement as adequate, 3% rated its as inadequate and 8% rated their schools involvement as NOT involved.

<b>Table 1.15</b>		
<b>Senior students' ratings of their medical schools' involvement during clerkships</b>		
<b>Type of involvement</b>	<b>Involved</b>	<b>Not involved</b>
Medical COMLEX 2 preparation	29%	71%
Distance Learning	28%	72%
E-MAIL	77%	23%
Faculty Visits	16%	84%
Newsletter	19%	81%

Even though the students reported there had been little involvement by their medical school during their clerkships, their assessments of the clerkships' structure and organization was generally positive (Table 1.16). When asked about different aspects of their last two years, the students only ranked one item low: only 31% agreed with the statement that osteopathic principles and practice (OPP) were well integrated into each clerkship. About one third thought that residents played too large a role in teaching and evaluation, but three quarters (76%) felt the involvement of attending physicians was appropriate. Again, preparation for COMLEX II seemed to be a somewhat weak point in the program, with only 62% agreeing that their experiences adequately prepared them for the tests. On the other hand, about 90% indicated they had been exposed to an appropriate diversity of patients and health issues and had been given an appropriate role in patient care.

<b>Evaluative statement</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>No Opinion</b>
	%	%	%	%	%
Clear clerkship objectives	16%	64%	14%	4%	2%
Clear performance objectives	15%	62%	17%	4%	2%
Well-organized clerkships	12%	52%	25%	9%	3%
End of clerkship examinations	13%	50%	22%	10%	4%
Timely feedback on performance	13%	55%	22%	9%	2%
Involvement of attendings in teaching and evaluation	16%	60%	16%	7%	2%
Residents' role too large in teaching and evaluation	8%	26%	48%	11%	7%
Student given an appropriate role in patient care	21%	68%	8%	2%	2%
Diversity of patients and their health issues appropriate	26%	66%	6%	2%	1%
Number of in-patient experiences appropriate	24%	61%	9%	5%	1%
OPP * integration into each clerkship	6%	25%	36%	28%	4%
Adequate preparation for COMLEX 2	13%	49%	23%	11%	5%

\*Osteopathic Manipulative Treatment, Principles and Practice

When asked about their preferences for the structure clerkships for years 3 and 4, the students were more or less evenly divided between those who reported wanting the freedom to travel for their third- and four-year rotations (45%) and those who wanted to travel for fourth-year rotations only (40%). Only 15% preferred to have all rotations in the same location.

On average, the students reported that they worked 47 hours per week in medicine-related activities during their fourth year. More specifically, the breakdown of responses was: less than 40 hours per week (11%), 40 hours per week (30%), 41-50 hours per week (31%), and 51-60 hours (19%), while 9% reported they spent more than 60 hours per week on medicine-related activities. Overall, 80% of the students worked 40-60 hours per week in medicine-related activities.

When asked about which activities they devoted their time to in their third year of medical school, *Inpatient care* ranked first overall, averaging 52% of a student’s time, based on the whole group. *Outpatient care* ranked second (39% of their time on average), with *Extended Care* and *Medical Teaching* tied for a very distant third (3% each on average). The other two activities averaged less than 1% each. (See Table 1.17.) We found almost exactly the same results for their fourth year (data not shown).

<b>Aspects</b>	<b>Mean %</b>	<b>Median %</b>	<b>Std. Deviation</b>	<b>Minimum %</b>	<b>Maximum %</b>
Inpatient care	52	50	20	0	100
Outpatient care	39	40	19	0	100
Extended care	3	0	6	0	50
Research	1	0	3	0	30
Administration	1	0	3	0	30
Medical teaching	3	0	7	0	80
Other	0	0	3	0	60

The ethnic diversity of the patients for whom students provided care was greater than that of the students. The students overall reported their patient population as 24% Black, 49% White, 17% Hispanic, 1% Native American, 3% Asian, and 5% of unknown ethnicity.

In their last two years of school, 75% of the students requested a literature search from the library, 53% subscribed to a refereed journal, 48% spoke to a community group about a health issue, and 32% volunteered their expertise to a community group. Thirty percent (30%) of the students contributed or participated in a research study, 26% worked with a community group to address a local problem, 19% gathered data on a health problem in their community,

and 10% percent of the students published in a refereed journal and wrote or appeared in a health related story in the local media. Only 4% of the students provided non-paid expert testimony.

The students generally expressed confidence in their abilities to perform tasks in community health and specific types of physical examinations (Table 1.18). However, they considered themselves weaker in the area of community health than in patient care. In the public health areas, confidence levels ranged from 56% of students being confident in their abilities to use the tools of epidemiology to understand community health needs to 88% of them thinking they could understand the health beliefs of their patients. The work-up of common conditions such as abdominal pain, hypertension, sore throat, and nasal congestion posed no threat to the students, with 97-98 % expressing confidence that they could correctly work-up patients with these maladies. They apparently had less experience with skin rashes and, especially, vision dysfunction, since fewer than 70% were confident of their abilities with these conditions. The percentage of students expressing confidence interpreting laboratory or diagnostic tests ranged from a low of 56% for mammograms, 66% for cardiac stress tests, and 72% for fetal monitoring, to 99% for blood pressure and hematocrit/hemoglobin results. They were quite confident in their abilities to perform most examinations, though the percentages dropped to less than 80% for well-baby and routine pre-natal exams. Interestingly, they were more confident with general medical exams, breast exams, sports physicals, and gynecological exams than with an osteopathic structural examination.

<b>Table 1.18</b>		
<b>Senior students' confidence in their abilities to perform activities in community health and in clinical settings</b>		
<b>Activity</b>	<b>Confident</b>	<b>Apprehensive</b>
<b>Community health skills</b>	Percentage	Percentage
Use the tools of epidemiology to understand community needs	56%	44%
Understand the community perception of its health problems	79%	21%
Employ the full range of community health services for patients	75%	25%
Locate health resources for patients	79%	21%
Know important health issues for particular populations	87%	13%
Understand the health beliefs of your patients	88%	12%
<b>Perform examinations</b>		
General medical examination	98%	2%
Well-baby examination	79%	21%

Gynecological examination	84%	16%
Routine pre-natal examination	77%	23%
Breast examination	92%	8%
Sports P\participation physical	90%	10%
Osteopathic structural examination	81%	19%
<b>Work-up clinical presentations</b>		
Abdominal pain	97%	3%
Chest pain	97%	3%
Fever	93%	7%
Headache	94%	6%
Cough	98%	2%
Back symptoms	92%	8%
Shortness of breath	96%	4%
Workup of diabetes mellitus	95%	5%
Earache or ear infection	97%	3%
Hypertension	98%	2%
Depression	85%	15%
Nasal congestion	98%	2%
Sore throat	98%	2%
Skin rash	68%	32%
Vision dysfunction	59%	41%
Knee symptoms	88%	12%
Generalized pain	79%	21%
Dementia	76%	24%
Generalized muscle weakness	75%	25%
Integrate OPP in both Dx and Tx of the above presentations	69%	31%
<b>Interpret laboratory or diagnostic test</b>		
EKG	73%	27%
BP	99%	1%
Cardiac stress test	66%	34%
Exercise prescription	76%	24%
TB skin test	97%	3%
Fetal monitoring	72%	28%
Lipid profile	98%	2%
CBC	98%	2%
Urinalysis	98%	2%
PSA	92%	8%
Cervical/urethral swab	86%	14%
Hematocrit/Hemoglobin	99%	1%

Pap test	87%	13%
CXR	90%	10%
Mammogram	56%	44%
Cardiac profile	90%	10%
Hepatitis profile	88%	12%

Over 79% of the students thought their training prepared them well to diagnose structural problems, treat structural problems, and document findings in a structural examination. Ninety-three percent reported that they had had an opportunity to practice OPP in their first two years of medical school. Sixty-four percent reported they had had such an opportunity in a primary care rotation, but only 34% said they had had an opportunity in their in-hospital rotations or ambulatory non-primary care rotations. This difference may account for the lower confidence the students reported in integrating OPP into clinical presentations (69% in Table 1.18).

This downward trend through time was true for the presence of osteopathic role models as well. The number dropped from 91% reporting an osteopathic role model during their first two years of medical school, to 74% during their required ambulatory primary care rotations, to 60% or fewer for their required in-hospital rotations, required ambulatory non-primary care rotations, and in their selectives/electives.

The students were asked what percentage of their training had been delivered by allopathic physicians. An interesting aspect is to see where allopathic physicians delivered over half of the student's training. Looking at that, we see that only 9% of the students received more than half of their training in the first two years from allopathic physicians. The fraction rose to 30-38 % of the students in their ambulatory primary care and non-primary care rotations, 41% for in-hospital rotations, and 49% in selectives/electives. In addition, 11% of the students received over half of their training from allopathic physicians in all five of these categories.

When the students were asked about differences between the allopathic and osteopathic physicians who taught them, 62% perceived no distinction in the rapport with the physicians' had with patients. Over half (57%) said that the holistic approach distinguished osteopathic physicians from the allopathic physicians, but almost exactly the same percentage (56%) saw no apparent distinction in their treatment approaches. However, on three statements, only a minority of the students agreed: *Osteopathic physicians were better teachers than the allopathic physicians (29%), Osteopathic physicians held the students to higher standards of performance*

*than the allopathic physicians (24%), and Osteopathic physicians were more rigorous in their work-up of patients than allopathic physicians (23%).* Therefore, it appears that, with the exception of the holistic approach, a majority of the students saw no differences in the approaches or standards of allopathic and osteopathic physicians.

The students were given statements about patient-doctor interaction, asking them whether they agreed or disagreed that the behavior was appropriate. (See Table 1.19.) For 19 of the 26 items, more than 75% of the students agreed. On only one statement did less than 50% of the students agree, *It is appropriate to use your first name in the clinical encounter* (45%).

<b>Behavior</b>	<b>Agree Percent</b>	<b>Neutral Percent</b>	<b>Disagree Percent</b>
Discuss preventive measures	97%	2%	0%
Discuss general/unrelated health measures	81%	16%	3%
Discuss family/social issues unrelated to health	79%	18%	4%
Discuss health issues in relation to family life	92%	7%	1%
Discuss health issues related to work	94%	6%	1%
Discuss patient's emotional state	93%	6%	1%
Discuss your personal experiences, not professional experience with patients	52%	30%	18%
Discuss how patients can improve their own condition	95%	4%	1%
Discuss body's self healing potential	84%	13%	3%
Discuss musculoskeletal causes or consequences related to patient's condition	89%	10%	2%
Discuss literature or the scientific basis of therapy	83%	14%	3%
Discuss alternative modes of therapy the patient may or could use	87%	11%	1%
Discuss patient's opinion on cause of problem	91%	8%	1%
Discuss patient's opinion about treatment	93%	6%	1%
Examine organ systems unrelated to the chief complaint	83%	14%	3%
Delay prescribing medications including OTC * until trying non-pharmacological measures first	57%	26%	17%
Explain the causes of the problem or reasoning behind treatment	95%	4%	1%
Use the patient's first name in the clinical encounter	64%	26%	10%
Use your first name during the clinical encounter	45%	28%	28%
Appropriately touch patient during clinical encounter other than OPP	89%	10%	1%
Ask "Anything else I can do for you?"	92%	6%	1%
Ask, "Do you have questions?"	96%	3%	0%
Conduct a review of systems, including unrelated areas	86%	13%	2%
Always include a review of the musculoskeletal system	61%	28%	11%
Recommend herb/nutritional/physical or other non-pharmacological therapy including OMT **	57%	32%	11%

\* Over the counter, \*\* osteopathic manipulative treatment

The students were asked about their satisfaction with selecting osteopathic medicine as a career. Overall, 82% reported they were satisfied, 17% had mixed feelings, while only 1% were dissatisfied. If given the opportunity to redo their medical education, knowing what they now knew, 66% of the students said they would still have attended the same osteopathic medical school, 8% would have attended a different osteopathic medical school, 20% would have gone to an allopathic medical school, and 6% would not have gone to medical school at all.

### Board and Residency Program Choice, Professional Memberships

Most of the students (56%) planned to sit for both the osteopathic and allopathic board examinations (Table 1.20.) Of those electing to sit for only one, the AOA-recognized osteopathic boards led the ABMS-recognized boards almost two to one, 29% to 15%.

<b>Boards</b>	<b>Frequency</b>	<b>Percentage</b>
AOA Boards	522	29%
ABMS Boards	273	15%
Both Boards	1011	56%
Other	5	0%
Do not plan to sit for board certification	1	0%

These responses are similar to those in the AOA/ACGME Collaborative Task Force Survey, *Osteopathic Graduate Medical Education*, Obradovic, 2003, which also showed that more students (42%) planned to sit for both boards than for either single board. However, more of the students queried in the Task Force study planned to take the ABMS boards (30%) than the AOA boards (25%). The interns' and residents' responses in that survey were more evenly distributed, with 30% sitting for AOA boards, 33% for ABMS boards, and 35% for both. The main reason for choosing to sit for the allopathic boards—given by 52% of the students in the present study, 50% of the students and 46% of the interns and residents in the Task Force study—was that they considered the ABMS boards to be more widely recognized. About a quarter of the students in the present study thought that hospital privileges are more readily obtained with ABMS-recognized board certification. Other reasons given are shown in Table 1.21.

<b>Reason</b>	<b>Percentage</b>
ABMS boards more widely recognized	52
ABMS boards have more colleague acceptance	19
ABMS boards carry more prestige	7
Hospital privileges easier to obtain	24
Licenses more easily obtained	10
Other	19

\*Although the question asked for their main reason for choosing the allopathic boards, some students selected more than one item, hence the percentages add to more than 100%.

Although only 13% of the students reported that they planned to pursue an AOA/ACGME dually approved program, when asked whether a dually accredited residency was preferable to a program accredited by ACGME alone, 72% of the students said a dually accredited AOA/ACGME residency was preferable. This number was somewhat lower than the results obtained by the Collaboration Task Force Survey, in which 84% of the students and 76% of the interns and residents preferred a dually accredited program. Similarly, 73% of the students in the current study preferred a dually accredited program to an AOA program alone as compared to 89% of the students and 84% of the interns and residents in the Collaboration Task Force Survey. Sixty-five percent of the students selected the dually accredited program for both questions, indicating they preferred a dually accredited program to any other option. In the Task Force survey, however, over 80% of the students, interns, and residents indicated they preferred a dually accredited program over either an allopathic or osteopathic program.

The top reasons reported for preferring dual accreditation were: that it would allow ABMS board certification (43%), offer better educational opportunities (39%), and offer more specialties (34%). (See Table 1.22.) About 25% of the students based their selections on the options for larger institutions or more diverse locations available through the dually accredited programs. Only 14% of the students did not find the dual accreditation route appealing.

<b>Characteristics</b>	<b>Agree Percentage</b>	<b>Disagree Percentage</b>
They are not appealing to me	14%	86%
They would be located in larger institutions	26%	74%
They would be located in more diverse geographic location	25%	75%
They would offer more specialties	34%	66%
They would allow board certification by ABMS-recognized boards	43%	57%
The would offer better educational opportunities	39%	61%
Other	7%	93%

Even though many students preferred the option of sitting for allopathic board examinations, their interest in AOA membership, at 85%, was substantially higher than in the

other organizations. (See Table 1.23.) Interest in joining other osteopathic societies was high as well: 58% expected to obtain/maintain membership in state and local osteopathic societies, and 45% expressed interest in joining osteopathic specialty societies. Interest in allopathic societies was not as strong, with 52% expecting to join the AMA and 28% to join state and local allopathic societies. This difference suggests that students expect to maintain their holistic medicine approach.

<b>Membership</b>	<b>Percentage</b>
AOA	85
AMA	52
State and Local DO associations	58
State and local MD associations	28
Osteopathic specialty society	45
Allopathic specialty society	39
Other	2

Likewise, the Task Force survey found that more than 85% of both the students and the residents/interns planned to maintain AOA membership. Other memberships were represented in proportions similar to those shown above except for the allopathic specialty societies. A greater percentage of the students (55%) and the residents/interns (60%) in the Task Force study than the students in the present study (39%) intended to maintain membership in allopathic specialty societies.

### **Comparison to AACOM Survey Results**

Many of the questions asked of senior students in this survey had also been asked of residents in the AACOM survey, reported in 2004 Academic Year Survey of Indebtedness and Career Plans.” The residents came from osteopathic, allopathic, dually accredited, and military residencies. A full comparison of the responses to those of the present survey is beyond the scope of this paper, but we will point out most of those for which the disparity in responses is 10% or more. Additional comparison of these two surveys is presented in the survey to survey comparison portion of the residents section.

More of the residents than senior students were married (67% vs. 45%).

Students and residents also differed on questions about their participation in professional activities. The residents were much more likely than the students to have participated in a research study or subscribed to a refereed journal. See Table 1.24 for more evidence of growing professional maturity. In the same vein, while 45% of the senior students planned to join osteopathic specialty societies, 58% of the residents had done so.

<b>Table 1.24</b>		
<b>Professional activities engaged in by students and residents within the 2 previous years</b>		
<b>Activity</b>	<b>Seniors (present study)</b>	<b>Residents (AACOM survey)</b>
	Percentage	Percentage
Subscribed to a refereed journal	54	93
Requested a lit search from library	75	86
Participated in research study	30	72
Published in a refereed journal	10	24
Spoken to a community group	48	69
Gathered data on a health problem in your community	19	29
Volunteered your expertise to a community organization	32	43

Several miscellaneous differences showed in the responses of the two groups. The residents had had more opportunity to practice OPP in their in-hospital training during their clerkships than the students had (60% vs. 35%). They differed in their assessment of allopathic and osteopathic physicians. More of the students than the residents (59% compared to 48%) were unable to detect a distinction in the treatment approaches of allopathic and osteopathic physicians. Twice as many of the students as the residents (30% versus 16%) thought osteopathic physicians were better teachers.

When asked to evaluate instruction, the largest differences were in the categories shown in Table 1.25. With hindsight, at least 10% more of the residents than the students deemed instruction on these topics to have been inadequate. Literature analysis and research skills were definitely considered to be weak areas.

**Table 1.25**  
**Areas of instruction that showed the largest differences between ratings by senior students and by residents in evaluating amounts of instruction provided**

Area of instruction	Appropriate		Inadequate		Excessive	
	Seniors	Residents	Seniors	Residents	Seniors	Residents
	%	%	%	%	%	%
Biostatistics	47	38	49	59	3	3
Literature analysis skills	49	34	49	64	2	1
Practice management	56	41	42	56	2	2
Research techniques	41	31	57	67	2	2
Utilization review and quality management	67	56	32	42	1	2

One item was asked differently for the residents and the seniors. Although worded closely, the residents were asked how important each behavior was in a doctor-patient interaction, while the students were asked whether the behavior was appropriate. Although the choices of response were somewhat different, some comparisons may be attempted (Table 1.26). A higher percentage of the residents considered these behaviors to be important to the encounter than senior students thought them to be appropriate. Unfortunately, because of the difference in wording, it is hard to conclude that these responses reflect the greater clinical experience of the residents.

**Table 1.26**  
**Senior students' and residents' ratings of behaviors in doctor-patient interactions in clinical encounter**

Behavior	Seniors	Residents
	Agree Appropriate Percentage	Important Percentage
Discuss general/unrelated health measures	81	93
Discuss family/social issues unrelated to health	79	92
Discuss body's self healing potential	84	99
Delay prescribing medications including OTC until trying non-pharmacological measures first	57	70

These comparisons of the AACOM survey results and the results of the present study show differences between the students' plans and the residents circumstances and activities. The comparisons briefly touch on some of the differences reported between those who are now in residencies and those about to enter them. More subtle differences obviously arise from the experiences of the residents.

### **Possible Distinguishing Factors**

The following sections look at the same set of questions with a focus on specific pairs of characteristics: osteopathic versus all residency programs; men versus women; and primary care versus non-primary care specialty choice.

#### ***1. Are there distinguishing factors between students who pursue allopathic versus osteopathic residency programs after graduation?***

**Analysis protocol.** The survey produced five groups of students based upon the type of residency training they said they planned to pursue: (1) osteopathic residency, (2) allopathic residency, (3) allopathic program only because no osteopathic residency was available in their preferred location or specialty, (4) dual osteopathic/allopathic residency, and (5) government service. The purpose of this analysis was to examine the factors influencing the students' choices between allopathic and osteopathic. Therefore, the comparisons had to be between groups with open/free choices. Because government service (group 5) was obligatory, not a free choice, those students were dropped from further analysis. The students planning an allopathic residency only because of location or specialty (group 3) turned out to be much more like those of the students who said they only wanted an allopathic residency (group 2). Therefore, groups 2 and 3 were combined to form one set of students, those planning an allopathic residency. Last, the students who were specializing in surgery were also dropped from the sample because allopathic residencies are relatively much more difficult for DO students to obtain (80% of this group planned to complete an osteopathic residency) not necessarily by choice. To sum up, because government service students and surgeons had forced "choices," they were dropped from the groups being compared.

These adjustments left three groups—osteopathic, allopathic, and "dual" students. In many cases, responses from the students preferring a dual residency were intermediate between the two

other groups; hence, the emphasis of analysis has been between those planning osteopathic or allopathic residencies. Of the total 1,472 students who responded to the survey, 454 preferred an osteopathic residency (AOA), 856 an allopathic residency (ACGME) (550 only because of location or specialty), and 162 dual residencies (Dual).

Chi square analysis was used to determine significant differences between these three groups' responses. (Throughout this section, percentages are reported only for differences between the groups that are statistically significant at  $p < 0.001$  or smaller unless noted otherwise.)

**Gender, background, and debt.** There were no statistically significant differences between the groups in the proportion of men and women, in their personal backgrounds, and their level of indebtedness.

**Specialty choice.** There were no statistically significant differences between whether the students preferred a primary care specialty (PCS) or a non-primary care non-surgical specialty (NPCS).

**Perceptions of medical education.** Although the students' responses to a number of questions about education and activities revealed small but statistically significant differences between the students who planned allopathic and osteopathic residency programs, few would be helpful in predicting their residency choices. (More complete data are found in Appendix B.)

Most found the amount of time devoted to various academic topics appropriate, but the two groups viewed "adequacy" differently, as can be seen in Table 1.27.

<b>Table 1.27</b>			
<b>Differing views of the adequacy of instruction by senior students planning to pursue different types of residency programs</b>			
	<b>Residency Choice</b>		
	<b>AOA</b>	<b>ACGME</b>	<b>Dual</b>
<b>Area of instruction</b>	Appropriate %	Appropriate %	Appropriate %
Biostatistics	56	47	52
Genetics	65	59	72
Nutrition*	65	60	69
Rehabilitation*	62	54	61
Research Techniques*	45	37	40

P < .001 except where noted. \*p < 0.05

Satisfaction with their medical education was high among all groups, but among those electing the osteopathic routes, more students tended to be satisfied with their training to date. For example, a higher percentage of them cited adequate or outstanding involvement of the medical school during their clerkship; more agreed or strongly agreed that objectives were clear, faculty involvement was adequate. Responses for which only the statistically significant differences among groups were found are shown in Table 1.28.

Satisfaction with:	Residency Choice		
	AOA	ACGME	Dual
	% satisfaction	% satisfaction	% satisfaction
Medical education overall	88	81	83
Academic counseling	69	59	62
Career counseling	57	44	44
Faculty mentoring	67	56	62
Financial aid admin services	86	80	84
Adequacy of exposure to patient care†	71	61	65
Clear clerkship objectives	83	79	78
Clear performance objectives	80	76	81
Organization of Clerkships	72	59	64
Involvement of attending faculty	82	71	78
Number of in-patient experiences	88	82	92
OPP integration into clerkship	35	28	26
Adequacy of preparation for Complex Level 2	66	60	58
Enroll in same school	74	63	70
Enroll in allopathic school	12	26	13
Osteopathic medicine as a career choice	87	77	83

p<0.001 by  $\chi^2$  except where otherwise noted.  
† p<0.05 to p<.01

There were no significant differences between the groups in term of subscribing to refereed journals, participating in research, or use of literature searches, but on three of five activities related to community involvement, participation was significantly, though not dramatically, higher among those who preferred an osteopathic residency, as depicted in Table 1.29.

**Table 1.29**  
**Amount of involvement in local community, by senior students planning to enter different types of residency programs**

Activity	Residency Choice		
	AOA	ACGME	Dual
	% did	% did	% did
Spoken to a community group	54	43	49
Written/appeared in a health related story in local media	13	7	10
Gathered data on health problem in community	23	16	21

p<0.001 by  $\chi^2$

There were small statistically significant differences in the students' confidence in their abilities to perform three of the seven physical examination items, but only the responses about the osteopathic structural exam were noteworthy (p<0.009). (More detail is provided in Table 1.30.)

**Table 1.30**  
**Ratings of confidence in their abilities with physical examinations, by students planning to enter different types of residency programs**

Exam	Residency Choice		
	AOA	ACGME	Dual
	% confident	% confident	% confident
Routine pre-natal exam	80	75	69
Breast exam	94	91	96
Osteopathic structural exam	85	77	86

p<0.001 by  $\chi^2$

Small but statistically significant differences in perceptions of the characteristics of osteopathic and allopathic students were revealed between the two groups of students, as shown in Table 1.31.

**Table 1.31**  
**Ratings of characteristics of osteopathic and allopathic physicians, by seniors planning to enter different types of residency programs**

Characteristics	Residency Choice		
	AOA	ACGME	Dual
	% agreed	% agreed	% agreed
No distinction in rapport between DO/MD	57	69	59
No distinction in therapeutic approach between DO/MD	52	64	54
Distinction in holistic approach between DO/MD	70	53	64
DO provided better teaching than MD	43	25	31
DO held student to higher standards of performance	35	21	23
DO performed a more rigorous patient workup than MD	35	19	22

p<0.001 by  $\chi^2$

Not unexpectedly, gaining experience with activities specifically related to osteopathic medicine and positive osteopathic role models appeared to have some influence on students' choice of residency programs. The opportunity to treat structural problems, and to practice OPP in various rotations while students was reported by approximately 10% more of those seeking osteopathic residencies than those who planned allopathic residencies.

However, the role models to whom they were exposed seemed to have been an even more important factor. A higher percentage of students with DO role models during their clinical rotations planned to pursue osteopathic residencies. (See Table 1.32.) Similarly, the students who chose osteopathic residencies were more likely to have cited a DO as someone who had had a strongly positive influence on their medical education, as shown in Table 1.33.

	Residency Choice		
	AOA	ACGME	Dual
<b>DO Role models in:</b>			
required in-hospital rotations	67	52	59
required ambulatory non-primary care rotations	61	48	55
required ambulatory primary care rotations	81	69	78
selectives/electives	70	53	64
p<0.001 by $\chi^2$			

	Residency Choice		
	AOA	ACGME	Dual
<b>Had an individual with a very positive influence on my medical education</b>	% had + influence	% had + influence	% had + influence
DO was the positive influence	66	53	64
MD was the positive influence	34	56	47
* Multiple selections possible, hence may add to >100%. Only these choices were statistically significant. p<0.001 by $\chi^2$			

Furthermore, as Table 1.34 shows, about 50% of the students choosing allopathic programs had had 50% or more of their clinical rotations taught by allopathic physicians. In contrast, only 30% of students choosing osteopathic programs had had this high exposure to

allopathic physicians. Indeed, the fraction of students planning allopathic programs increased proportionally to the amount of training with allopathic physicians they had received. Meanwhile the relationship between choosing an osteopathic residency was inversely related to students' degree of training with allopathic physicians. Opportunities to work with DO role models varied significantly by school. Somewhat fewer students from private schools were planning osteopathic residencies. Private school graduates accounted for 62% of the students electing osteopathic programs, 75% of those electing the allopathic programs, and 79% of those electing dual programs. That fewer private schools provided 50% or more of students' third- and fourth-year training with osteopathic role models may partly explain these differences. However, regression analysis indicated that less than 10% of the variability in student residency choices could be attributed to working with allopathic or osteopathic role models or to the person having a strong positive influence on a student's medical education. In fact, the only variable, which accounted for more than 30% of the variance in residency choice, was their anticipated professional membership selection.

Training site	Residency Choice		
	AOA	ACGME	Dual
	%	%	%
<i>Required in-hospital rotations</i>			
<10%	20	11	7
10-25%	24	15	23
26-50%	27	24	27
51-75%	17	25	27
>75%	13	25	16
<i>ambulatory non-primary care rotations</i>			
<10%	25	12	13
10-25%	21	16	16
26-50%	28	25	28
51-75%	15	24	31
>75%	12	22	13
<i>ambulatory primary care rotations</i>			
<10%	35	20	22
10-25%	21	16	22
26-50%	24	25	22
51-75%	11	21	24
>75%	8	18	10
p<0.001 by $\chi^2$			

**Short- and long-term plans.** The students' preferences for accreditation boards and professional memberships were consistent with their preferences for residency programs. (See Tables 1.35 and 1.36.)

	Residency Choice		
	AOA	ACGME	Dual
	% wish to take	% wish to take	% wish to take
Examinations			
AOA Boards	57	14	32
ABMS Boards	2	25	5
Dual	41	60	63
Other	0	1	0
Do not plan to sit for any	0	0	0
p<0.001 by $\chi^2$			

Societies	Residency Choice		
	AOA	ACGME	Dual
	Percentage	Percentage	Percentage
AOA	94	78	96
ABMS	28	67	56
State and Local DO associations	66	53	67
State and local MD associations	13	38	28
Osteopathic specialty society	58	36	44
Allopathic specialty society	19	52	36
p<0.001 by $\chi^2$			

**Summary.** Few predictors of residency program choice were detected. Even those factors showing the widest spread between students selecting the differing programs, i.e. those related to exposure to role models and opportunities to practice OPP, still were not good predictors of an individual students' ultimate program choice.



**2. Are there distinguishing factors between men and women?**

The survey contained responses from 1,104 men (59%) and 759 women (41%). Data were analyzed by chi square, and only the differences between the men and women respondents that reached statistical significance of  $p < .001$  are reported in this section.

**Demographic data, indebtedness.** Women and men had married at different rates: 49% of the men were married, while 40% of the women were. The higher marriage rate is probably the reason that 22% of the men had more than two dependents compared with 8% of the women. (See Tables 1.37 and 1.38 for more detail.) These were the only statistically significant demographic variables. Neither were there significant differences between men and women in the number of scholarships or loans made nor in the amount of indebtedness incurred.

<b>Table 1.37 Marital status of senior medical students, by gender</b>				
<b>Marital status</b>	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Married	49	516	39	806
Not Married	51	544	61	452
% Total	100	1060	100	742
p<.000				

<b>Table 1.38 Number of dependents reported by senior medical students (Q1)</b>							
<b>Dependents</b>	<b>Men</b>		<b>Women</b>		<b>Dependents</b>	<b>Cumulative</b>	
	<b>Percent</b>	<b>Number</b>	<b>Percent</b>	<b>Number</b>		<b>Men</b>	<b>Women</b>
1	50	534	59	435	1	50	59
2	28	302	33	239	2	78	92
3	10	111	5	35	3	88	97
4	8	81	2	16	4	96	99
5	2	26	1	6	5	98	100
6	1	14	0	2	6	99	100
7	1	6	0	0	7	100	100
Total	100	1074	100	733			

**School influence.** The percentage of women responding to the survey was similar for those attending private or public osteopathic medical schools, although there

was a difference across schools, as shown in Table 1. Women comprised from 21% to 58% of the respondents in the schools, as shown in Table 1.39.

<b>Table 1.39</b>						
<b>Percentages of men and women respondents, by medical school</b>						
<b>School code</b>	<b>Men</b>		<b>Women</b>		<b>Total</b>	
	Percent.	Number	Percent.	Number	Percent.	Number
PCOM	60	39	40	26	100	65
CCOM	55	80	45	66	100	146
UHSCOM	62	126	38	76	100	202
OUCOM	67	65	33	32	100	97
DMU	61	42	39	27	100	69
KCOM	72	91	28	35	100	126
MSUCOM	58	57	42	41	100	98
UNTHSC	54	62	46	52	100	114
OSUCOM	61	47	39	30	100	77
WVSOM	59	42	41	29	100	71
UMDNJ	49	35	51	36	100	71
NYCOM	46	31	54	36	100	67
WCOMP	72	26	28	10	100	36
NSUCOM	60	96	40	64	100	160
UNECOM	42	45	58	61	100	106
LECOM	58	96	42	70	100	166
AZCOM	64	72	36	41	100	113
TUCOM	45	14	55	17	100	31
PCSOM	79	38	21	10	100	48
Total	59	1104	41	759	100	1863

**Factors influencing choice of PCS or NPCS.** Gender was not related to whether a student wanted to pursue an osteopathic or allopathic residency. However, there was a statistically significant relationship between gender and an interest in primary care medicine specialties (PCS) versus non-primary care non-surgical specialties (NPCS), as depicted in Table 1.40. A higher percentage of women (43%) than men (31%) were likely to practice primary care medicine.

<b>Table 1.40</b>			
<b>Influence of gender on specialty choice:</b>			
<b>Percentages of senior students who planned to enter primary care specialties (PCS) and non-primary specialties (NPCS), by gender *</b>			
	<b>PCS</b>	<b>NPCS</b>	<b>Total</b>

	Percentage	Number	Percentage	Number	Percentage	Number
Men	31	276	69	628	100	904
Women	43	300	57	402	100	702
Total	36	576	64	1030	100	1606

\*All the differences shown here were statistically significant at  $p < .0001$ .

Men and women rated factors having a major or strong influence upon their specialty choice differently (Table 1.41). A higher percentage of men were influenced by *Prestige*, *Technical skills*, *Debt level*, and *Independence*. The only item women cited as a major influence more often than men did was *Dealing with people more than techniques*.

<b>Table 1.41</b>		
<b>Influences on specialty choice:</b>		
<b>Senior students' ratings of factors with major or strong influences, by gender (Q23)*</b>		
<b>Factor</b>	<b>Men</b>	<b>Women</b>
	Percent	Percent
Dealing with people	66	78
Prestige and income	33	17
Technical skills	58	44
Debt level	25	19
Independence	58	53

\*The differences on all these factors were statistically significant at  $p < .0001$

**Long-term plans.** When looking into future earnings, the women did not see themselves earning as much as the men did on the average (Table 1.42). During the first year, they expected to be earning \$30,000 less than the men expected to earn. After five years, the difference had increased to \$46,000 and in ten years, \$63,000. This may partly reflect the different distribution of men and women in primary care versus specialization. A higher percentage of the men expected to be self-employed, with or without a partner, than the women. A higher percentage of the women planned to be employed in a group practice or was still undecided (Table 1.43). The men and women did not differ on the size of the communities in which they hoped to practice (data not shown).

<b>Table 1.42</b>			
<b>Annual expected income, after expenses but before taxes: Senior students' estimates, by gender (Q17)</b>			
<b>Time frame</b>	<b>Gender</b>	<b>No. of students</b>	<b>Estimated income</b>
First year after internship and residency	Men	1020	\$140,322
	Women	673	\$110,803
Fifth year after internship and residency	Men	991	\$203,137
	Women	636	\$157,109
Tenth year after internship and residency	Men	988	\$259,533
	Women	636	\$196,074

<b>Table 1.43</b>		
<b>Expected type of career after residency: Senior students' estimates, by gender (Q21)</b>		
	<b>Men</b>	<b>Women</b>
<b>Long range plans</b>	Percent.	Percent.
Enter government service	7	6
Practice in an HMO	1	1
Self-employed without partner	6	4
Self-employed with partner	18	11
Employed in group practice	42	47
Employed in other type of private practice (salary, commission, percentage)	4	3
Other professional activity (teaching, research, administration, fellow)	4	5
Undecided or indefinite	18	22
Total	100	100

**Perceptions of medical education.** The men and women tended to perceive the adequacy of their education similarly, although they differed in a few areas. The men tended to view the time spent on the business aspects of medicine as appropriate more than the women. In fact, the only topic a greater percentage of women than the men ranked as satisfied or appropriate was *Using medicine to change society*. (See Table 1.44.) There was a gender difference for only two responses about a person who had been an extremely positive influence on their medical education. In this case, more of the women than the men singled out such a person: 40% of the women said a family member had had a strong positive influence on their medical education, compared to 32% of the men; 25% of the women and 16% of the men said another medical student had filled this role.

<b>Table 1.44</b>			
<b>Senior students' assessments their medical education:</b>			
<b>Ratings of aspects of instruction and academic environment, by men and women (Q26, Q28a, and Q29)</b>			
<b>Aspect</b>	<b>Rating</b>	<b>Men</b>	<b>Woman</b>
		Percent.	Percent.
Instruction in cost-effective medical practice	Appropriate	52	42
Instruction in human sexuality	Appropriate	71	66
Instruction in legal medicine	Appropriate	55	51
Instruction in medical care cost control	Appropriate	48	36
Instruction in medical socio-economics	Appropriate	62	56
Instruction in practice management	Appropriate	59	52
Instruction in research techniques	Appropriate	44	37
Satisfaction with academic counseling	Appropriate	65	59
Satisfaction with disability insurance	Appropriate	51	42
Satisfaction with personal counseling	Appropriate	58	50
Doing work involving science and research	Appropriate	52	43
Using medicine to change society	Appropriate	75	82

When looking at the confidence the students had in their abilities to perform various examinations, workups, and interpretations, some gender differences emerged. A higher percentage of the women were more confident in interpreting Pap tests and cervical swabs as well as performing gynecological examinations, routine pre-natal examinations and breast examinations (Table 1.45). However, a higher percentage of the men felt more confident in performing well-baby examinations. The men also expressed more confidence in their abilities to do sports participation physicals and osteopathic structural examinations, as well as workups of several conditions, and interpretations of electrocardiogram, cardiac stress tests, exercise prescriptions, chest X-rays and cardiac profiles.

**Table 1.45**  
**Influence of gender on confidence in performing clinical examinations:**  
**Percentages of senior students who reported being very confident or confident**  
**(Q43, Q44 and Q45)**

Task	Men	Women
	Percentage	Percentage
Gynecological examination	78	93
Routine pre-natal examination	73	84
Breast examination	89	97
Interpretation of Pap smear	83	94
Interpretation of cervical/urethral swab	82	92
Well-baby examination	85	77
Sports participation physical	92	88
Osteopathic structural examination	84	77
Workup of back symptoms	94	89
Workup of vision dysfunction	62	54
Workup of knee symptoms	93	81
Workup of generalized pain	82	75
Workup of generalized muscle weakness	79	69
Integration of OPP in diagnosis and treatment	73	65
Interpretation of electrocardiogram	80	63
Interpretation of cardiac stress test	71	60
Interpretation of exercise prescription	79	72
Interpretation of chest X-ray	92	88
Interpretation of cardiac profile	92	88

The men and women generally used similar phrases to describe their best rotations. Even when there were statistically significant differences between the percentages of men and women selecting a particular phrase, the differences were usually less than 10%. However, 15% more of the men than the women selected *Food was provided* as an important rotation component. Women valued patient oriented experiences such as the ability to participate in the work-up and management of patients, working on a personal level with the patients, and the modeling of excellent patient skills by the attending physician. They were also more likely to prefer rotations in which they felt free to ask questions. On the other hand, the items that a higher percentage of the men used to describe their best clinical rotation were more personal, such as having other medical students on the same rotation, weekend coverage, having food and housing provided, and being able to meet with the attending to discuss areas of concern outside of the clinical center. More of the men than the women also ranked *Using technology* and

*Being asked to participate in ancillary activities* high. The details are provided in Table 1.46.

<b>Rotation component</b>	<b>Men</b>	<b>Women</b>
Able to participate in diagnostic workup of the patient	90	95
Able to participate in management of the patients	90	95
Able to work on a personal basis with patients	84	91
Was asked to participate in ancillary activities such as journal club	46	36
Other medical students on the same rotation	43	37
Attending was influential on hospital selection committees	36	28
No weekend coverage duties.	36	30
Expected to do weekend coverage during part or all of the rotation	31	20
Food was provided	52	37
Housing was provided	43	33
The use of technology was appropriate to the situation	69	64
Felt free to ask questions	89	93
Was able to meet with the attending to discuss areas of concern outside of the clinical setting	61	54
Attending modeled excellent patient relationship skills	80	88

In like manner, the differences in the percentages of men and women students ranking various modes of evaluation of their learning as *very accurate* or *accurate* tended to be small. However, where there were significant differences, the trend was clear. With the sole exception of using simulated patients, which was viewed as an accurate means to assess learning by 75% of the women and 74% of the men, fewer of the women thought the evaluation methods they had experienced were accurate measures of their knowledge and clinical competency. (The data are presented in Table 1.47).

**Table 1.47**  
**Senior students' perceptions of the accuracy of various methods of evaluation:**  
**Percentages giving rankings of very accurate or accurate, by gender (Q47)**

<i>Examination method</i>	<b>Men</b>	<b>Women</b>
<i>Used in First- and second-year</i>	Percentage	Percentage
Oral examinations	60	50
Student assigned lecture	65	58
Student selected component examinations	56	42
Case-based learning	85	81
Simulated (Standardized) Patients	74	75
Objective structured clinical exam	56	51
Portfolios	39	27
Log Books	39	31
Longitudinal Record of Achievement	43	34
Computer examinations	51	41
Essay Examinations	52	45
Short Answer Questions	60	56
National Board Shelf-examinations	58	44
National Boards Part I	73	66
National Boards Part II	60	55
Digitalization of Physical Examination	44	32
Post-rotation Examinations	47	36

	<b>Men</b>	<b>Women</b>
<i>Used in Third- and fourth-year</i>	Percentage	Percentage
Attending evaluation of student at end of rotation	62	56
Multiple choice examinations	59	54
Oral examinations	61	49
Student selected component examinations	54	41
Case Vignettes	81	79
Problem-based learning	75	73
Simulated (Standardized) Patients	61	55
Simulation models for clinical procedures	61	55
Objective structured clinical exam	51	44
Portfolios	40	26
Longitudinal Record of Achievement	43	36
Computer examinations	50	39
Essay Examinations	48	38
Short Answer Questions	54	45
National Board Shelf-examinations	58	46
Post-rotation examinations	56	46

There were 26 items in the survey describing various doctor-patient interactions. The students were asked to evaluate the behaviors and to rank whether the behavior was appropriate from *Strongly agree* to *Strongly disagree*. The men and women differed significantly on five interactions, shown in Table 12. In most cases, the women tended to favor a more formal relationship with their patients, deeming it less appropriate to use a patient's first name; use their own first name, or discuss personal experiences than the men did. They were more positive toward discussing health issues in relation to family life. The men viewed a trial of no pharmacological treatment options before prescribing medications more positively than the women did.

	Men	Women
<i>It is appropriate to:</i>	Percentage	Percentage
Discuss health issues in relation to family life	89	95
Discuss your personal experiences, not including professional experiences, with patients	60	41
Delay prescribing medications including OTC until trying non pharmacological measures	62	49
Use the patients first name in the clinical encounter	68	58
Use your first name during the clinical encounter	52	33

**Summary.** The men and women responded similarly on most questions in the survey. Even when statistically significant differences were found, usually the spread in the percentages of men and women's responses was modest. Nevertheless, some trends were found. Fewer of the women were married; fewer planned to pursue medical practice in a NPCS. Dealing with people more heavily influenced their choice of medical practice than it did the men, and patient interaction on clinical rotations was deemed a more important component of an excellent experience. The men were more impressed by the ability to use technical skills, by prestige, and by income when deciding their practice specialty, and they expected to make more money than the women expected to make. In general, the women were not quite as satisfied that various topics in their courses had been adequately covered or that their learning had been evaluated fairly. In a doctor-

patient relationship, the women tended to favor a more formal doctor-patient relationship than the men did. When considering treatments, more men than women were likely to pursue non-pharmacological treatment options for maladies before prescribing drugs.

***3. Are there factors that distinguish students who choose primary care specialties and non-primary care non-surgical specialties?***

Primary care medicine was defined as Family Practice, Pediatrics, and General Internal Medicine. About 30% of the students planned to enter one of these areas of practice, while a non-primary care non-surgical specialty was elected by 55% of the group. The responses of the 174 students going into surgery (9% of the total) were substantially different from those of the other students and were dropped from the analysis. Data from the 66 undecided students were also dropped from further analysis. The following analyses were based upon the responses of the 1642 remaining students.

Considering the multiplicity of responses obtained in the survey, relatively few factors distinguished those interested in primary care specialties (PCS) versus a non-primary care non-surgical specialty (for convenience, referred to as NPCS). Often, although statistically significant, the margins between the two groups tended to be 10% or less. Only the few factors for which chi square analysis ( $p < 0.001$ ) showed significant differences are presented below. (See Appendix C for more detail.)

**Demographic data.** As Table 1.49 shows, substantially fewer students were entering PCS than NPCS. That being said, primary care was of interest to a higher percentage of the women, married students, those with more than one dependent, coming from towns with populations less than 100,000, and financially independent of their parents.

<b>Table 1.49</b>		
<b>Demographic characteristics of students with differing areas of preferred practice</b>		
<b>Characteristic</b>	<b>Primary Care</b>	<b>NPCS</b>
	Percentage	Percentage
Men	31	69
Women	43	57
Married	55	39
More than 1 dependent	56	41
Hometown <100,000	58	49
Financially independent	91	83

All values significant by  $\chi^2$  analysis, p<0.001.

**School influence.** There was also a relationship between the school students attended and their career choice. Seven percent more of the students attending private medical schools had chosen primary medicine than did their peers from public institutions. (The data are presented in Tables 1.50 and 1.51.)

<b>Table 1.50</b>			
<b>Senior students' interest in a PCS or a NPCS, by type of medical schools</b>			
<b>Type of School</b>	<b>PCS</b>	<b>NPCS</b>	<b>Total</b>
	Percentage	Percentage	Percentage
Private	38	62	100
Public	31	69	100

All values significant by  $\chi^2$  analysis, p<0.001.

<b>Table 1.51</b>		
<b>Senior students' interest in a PCS or a NPCS, by medical school</b>		
	<b>PCS</b>	<b>NPCS</b>
<b>School</b>	Percentage	Percentage
PCOM	37	63
CCOM	44	56
UHSCOM	38	62
OUCOM	30	70
DMU	57	43
KCOM	39	61
MSUCOM	19	81
UNTHSC	31	69
OSUCOM	47	53
WVSOM	43	57
UMDNJ	17	83
NYCOM	18	82
WCOMP	50	50
NSUCOM	33	67
UNECOM	42	58
LECOM	26	74
AZCOM	36	64
TUCOM	61	39
PCSOM	58	43
<b>Average</b>	<b>36 %</b>	<b>64%</b>

All values significant by  $\chi^2$  analysis, p<0.001.

**Factors influencing PCS or NPCS choice.** The factors that influenced students' specialty choices are shown in Table 1.52. *Dealing with people more than techniques* was a major or strong influence for 88% percent of those going into PCS, followed by *Intellectual Content of specialty* (77%), and *Possess the skills now* (67%). *Prestige and Income* (10%) ranked very low. *Dealing with people more than techniques* was also deemed important by 66% of those planning a NPCS, but these students ranked *Intellectual content of specialty* (86%) and *Possess the skills now* (74%) as having a greater impact on their choice than *Dealing with people more than techniques* (66%). *Technical skills, Lifestyle, Academic environment, Research,* and even *Prestige and income* were cited as being highly influential more often by this group than by those interested in primary care.

<b>Factor</b>	<b>PCS</b>	<b>NPCS</b>
	<b>% reporting</b>	<b>% reporting</b>
Intellectual content of specialty	77	86
Dealing with people	88	66
Prestige and income	10	32
Lifestyle	58	67
Technical skills	25	61
Role models	59	55
Possess the skills now	67	74
Academic environment	39	50
Research	18	31

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

**Short-term plans.** There were few differences in short-term or long-range plans between students choosing PCS or NPCS. Significantly, fewer of those ultimately planning a primary care practice planned to do so via an allopathic residency (45 % versus 54%).

Although both groups preferred the option to sit for both the AOA and ABMS boards to either individual board, somewhat fewer of those pursuing careers in primary care medicine desired this option. They were fairly evenly divided between sitting for the AOA boards and sitting for both AOA and ABMS boards, with the ABMS boards alone a distant third option. In contrast, 60% of the students in the NPCS group wanted to take both boards, compared to 45% of the PCS group. Fewer of the NPCS group, only about one fifth, planned to sit for the AOA, compared to 44% of the primary care group. In addition, almost as many of these students wanted to sit for the ABMS boards as the AOA boards. (These data are shown in Table 1.53.)

Given the significant interest in ABMS board certification expressed by the NPCS group, a surprisingly large percentage, over 80%, of both groups planned to become AOA members. A slightly larger percentage of the PCS group planned to obtain and maintain their AOA membership than those entering a NPCS. As Table 1.54 shows, the gap between the two groups widened when it came to state and local DO membership. A

larger percentage of the NPCS group planned to maintain membership in the state and local MD association as well as both allopathic and osteopathic specialty societies.

<b>Table 1.53</b>				
<b>Preferred residency and board choices: senior students' plans for different residencies, boards, and certification, by intended specialty choice</b>				
<b>Residency</b>	<b>PCS</b>		<b>NPCS</b>	
	Percentage	Number	Percentage	Number
Pursue Osteopathic Residency	27	157	27	280
Pursue Allopathic Residency	45	260	54	564
Pursue AOA/ACGME Residency dual approved Program	14	82	7	74
<b>Opportunity to sit for board certification</b>	%	N	%	N
AOA Boards	44	250	21	212
ABMS Boards	11	60	19	191
Both Boards	45	257	60	610
Other	0	0	0	3
Do Not plan to sit for board certification	0	0	0	1
<b>Preference of Certification</b>				
Dual certification preferable to AOA only	68	383	76	773
All values significant by $\chi^2$ analysis, $p < 0.001$ .				

<b>Table 1.54</b>		
<b>Professional organizations in which senior students expected to become members, by students' intended specialty choice</b>		
	<b>PCS</b>	<b>NPCS</b>
	%	%
AOA	89	83
State and Local DO associations	64	55
State and local MD associations	25	31
Osteopathic specialty society	39	46
Allopathic specialty society	25	48
All values significant by $\chi^2$ analysis, $p < 0.001$ .		

**Long-term plans.** Consistent with their ranking income as having little influence upon their choice to pursue primary care, the students chose this career anticipating lower initial incomes with a smaller rate of increase than their NPCS colleagues enjoyed. By their tenth year of medical practice the PCS group projected making \$90,000 less than their counterparts expected to make at that time. Most students in both groups anticipated

joining a group practice. However, almost a quarter of those going into primary care planned to be self-employed with a partner, while only 10% of the NPCS planned to do so. The PCS group was also more likely to select a small city or town than those choosing a NPCS. About 50% of the PCS group planned to live in cities with populations of 100,000 or less as compared to 27% of the NPCS. (The data are presented in Table 1.55.)

<b>Expected annual income after</b>	<b>PCS</b>		<b>NPCS</b>			
	<b>Amount (\$)</b>	<b>No. of students</b>	<b>Amount (\$)</b>	<b>No. of students</b>		
<b>Residency</b>						
First year	99,188	539	138,859	951		
Fifth year	134,261	513	201,073	917		
Tenth year	164,802	511	251,980	912		
<b>Expected type of career 5 yrs after residency</b>	<b>Percent. of students</b>	<b>No.</b>	<b>Percent. of students</b>	<b>No.</b>		
Enter government service	9	53	5	50		
Practice in an HMO	1	7	1	8		
Self-employed without partner	7	40	4	44		
Self-Employed with partner	22	128	10	102		
Employed in group practice	37	213	51	527		
Other private practice-salary, commission	4	21	4	44		
Other professional activity –teaching, research	1	5	7	68		
Undecided or indefinite	20	114	19	194		
Expected Income						
<b>Size of City or Town for Practice</b>	<b>%</b>	<b>No.</b>	<b>Cumulative</b>	<b>%</b>	<b>No.</b>	<b>Cumulative</b>
Major Metropolitan Area (1,000,000 +)	11	65	87	20	212	89
Metropolitan Area (500,000 - 1,000,000)	12	70	76	21	222	69
City (100,000 - 500,000)	14	83	64	21	219	48
City (50,000 - 100,000)	13	74	50	15	155	27
City or Town (10,000 - 50,000)	21	122	37	10	100	12
City or Town (2,500 - 10,000)	12	72	16	1	15	2
Area under 2500	4	22	4	0	5	0
Other Specified	1	3	1	0	2	0

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

**Perceptions of medical education.** Small but statistically significant differences were revealed in the ways the students who preferred PCS and those who preferred a NPCS viewed their education (Table 1.56). In general, those going into PCS were more

likely to say that instruction in various topics had been appropriate. However, they appreciated journal club activities or the political influence of attending physicians less than their counterparts did. They reported spending more time in their third and fourth years of training in an outpatient setting than did the NPCS students and were less likely to have participated in research or published in a refereed journal.

<b>Table 1.56</b>		
<b>Assessment of medical training by students with differing career choices</b>		
<b>Area of Instruction</b>	<b>PCS</b>	<b>NPCS</b>
	Percentage ranking the amount of instruction as appropriate.	
<b>Features of Instruction</b>		
Behavioral science	78	70
Biostatistics	54	44
Care of ambulatory patients	90	83
OMM-NMSK	82	76
Primary care	88	78
	Percentage ranking these satisfactory or very satisfactory	
<b>Aspects of experience of a medical student</b>		
Science and research*	45	49
	Percentage ranking these essential or very important	
<b>Features of best clinical rotations</b>		
Osteopathic orientation	41	33
Participate in ancillary activities like journal club	35	43
Attending was influential on hospital selection committees	28	34
	Percentage of time	
<b>Time devoted to activities</b>		
Inpatient care, yr 3	49	54
Outpatient care, yr 3	43	37
Inpatient care, yr 4	49	53
Outpatient care, yr 4	47	38
	Percentage engaged in the activity	
<b>Additional activities</b>		
Participate in research study	22	34
Published in a refereed journal	6	12
All values significant by $\chi^2$ analysis, $p < 0.001$ .		
*The NPCS group had 4% more students satisfied with their involvement than the PCS group, but they also had 6% more expressing dissatisfaction than the PCS group. The PCS group had 10% more that did not care.		

Subtle differences in their confidence levels to perform various clinical tasks emerged between the PCS and NPCS groups. The PCS group was significantly more confident than the NPCS group in performing well-baby exams, work-up of general

muscle weakness, and interpretation of cervical swab and Pap tests, while the NPCS students were more confident in interpretation of electrocardiograms (EKG), cardiac stress tests, fetal monitoring, and mammograms than the PCS group was.

	PCS	NPCS
	%	%
Interpretation of EKG	68	75
Interpretation of cardiac stress test	60	68
Interpretation of fetal monitoring	68	74
Interpretation of cervical/urethral swab	89	85
Interpretation of Pap test	90	86
Interpretation of mammogram	52	56
Workup of generalized muscle weakness	70	76
Well-baby exam	85	77

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

Whereas we earlier noted that the students who preferred to enter allopathic residencies were more likely to have had more exposure to allopathic physicians during their training, this relationship was not a strong influence upon the students' orientation toward a PCS as opposed to a NPCS. There were no statistically significant differences between the two groups in the amount of training they had received by allopathic physicians during any of their required rotations. Students expressing interest in practicing primary care medicine reported somewhat less exposure to allopathic physicians during their selective/elective rotations. Over half of them had received 50% or less of their training from MDs, whereas over half of the NPCS group received more than 50% of their training from MDs. (The data are presented in Table 1.58). Since there are a wide range of electives in NPCS areas and more allopathic physicians in practice than osteopathic physicians, it becomes increasingly likely that those choosing a less common NPCS elective would encounter an allopathic teacher.

**Table 1.58**  
**Training performed by allopathic physician in selectives/electives rotations:**  
**Percentages of training reported by senior students, by specialty choice**

Percentages	PCS			NPCS		
	%	No.	Cumulative percentage	%	No.	Cumulative percentage
Less than 10%	10	54	10	10	100	10
10-25%	14	81	24	15	153	25
26-50%	29	162	53	20	201	45
51-75%	23	128	75	25	248	70
more than 75%	25	138	100	30	303	100
Total	100	563		100	1005	

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

**Career satisfaction.** Because the students had barely started their careers at the end of their fourth year of medical school, the question item *Career satisfaction* may be a proxy for satisfaction with medical school.

A higher percentage of the PCS group reported being satisfied with osteopathic medicine as a career than the NPCS group did. If they had it to do all over, 73% of the PCS group said they would stay with the same program, in contrast to 64% of the NPCS group, and about one half as many would have enrolled in an allopathic medical school as those pursuing NPCS. (See Table 1.59).

**Table 1.59**  
**Senior students' ratings of satisfaction with choice of osteopathic medical education and osteopathic medicine as a career, by specialty choice**

	PCS	NPCS
	Percentage	Percentage
<b>With opportunity to choose again:</b>		
Enroll in same COM	73	64
Another COM	9	7
Enroll in an allopathic medical school	12	24
Would not go into medicine	7	6
<b>Osteopathic medicine as a career</b>		
Very satisfied or satisfied	88	79

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

**Summary.** Few dramatic differences appeared between the responses of students planning careers in a PCS versus the larger fraction that planned to enter a NPCS.

However, there were some significant differences in their demographic characteristics, with a larger percentage of women, married students, and those from smaller cities and towns choosing PCS medical practice. They were twice as likely as their NPCCS colleagues to anticipate setting up practice in towns or cities with a population of 100,000 or less. The school the student attended was the factor producing the largest differences between the two groups: PCS was favored by as few as 17-19% of the students at some schools but as high as 58-61% at others. Those entering PCS did so because their interest in dealing with people superceded their interest in an academic environment, prestige, and income. They were fully aware that their incomes would probably be less than their NPCCS colleagues would make. They tended to be more satisfied with their medical education than the NPCCS group. This was true both in the specifics of assessing the amount of time spent on various topics as appropriate and in voicing their satisfaction with osteopathic medicine as a career choice and the medical school they had chosen.

## **Conclusion**

We recognize that students have the pre-eminent role in choosing their venues for medical education. Understanding what they choose and why they choose it are important factors in educational planning. This section of the report has looked at student responses from a number of perspectives. We have tried to identify distinguishing factors between those who choose allopathic rather than osteopathic residency programs. We have found no distinctions between men's and women's choices. We have tried to look at factors that distinguish choosing between a primary care and non-primary care specialty.

## **Section 2: Survey of Osteopathic Residents**

Osteopathic residents occupy a complex part of the medical education continuum. They are a product of osteopathic medical institutions, yet it is in their advanced training that their career and professional decisions come to fruition. A national study of their characteristics and views would add breadth and depth to an understanding of osteopathic medical education as a whole.

### **Study Protocol**

Over a two-month period in Spring 2003, the Office for Survey Research (OSR) at Michigan State University's Institute for Public Policy and Social Research (IPPSR) sent questionnaires to 2,554 second-year residents, who graduated from colleges of osteopathic medicine. The sampling frame was constructed from information supplied by the American Association of Colleges of Osteopathic Medicine (AACOM) or the American Medical Association (AMA).

The initial contact was a letter to 1,316 residency directors, of whom 304 were DOs and 1,012 were MDs. Each letter contained a packet of questionnaires to be distributed to named residents who were assumed to be in their program. The questionnaire had been developed and tested especially for this survey. Along with each questionnaire was a letter explaining the purpose of the survey and promising an incentive of \$20 for the return of a completed questionnaire. OSR established a database to track progress of returns, and two weeks after the first mailing, a reminder was sent to all respondents. After another week, a second questionnaire and follow-up letter was sent to all non-respondents, i.e., all who had neither returned a completed questionnaire nor been found to be ineligible.

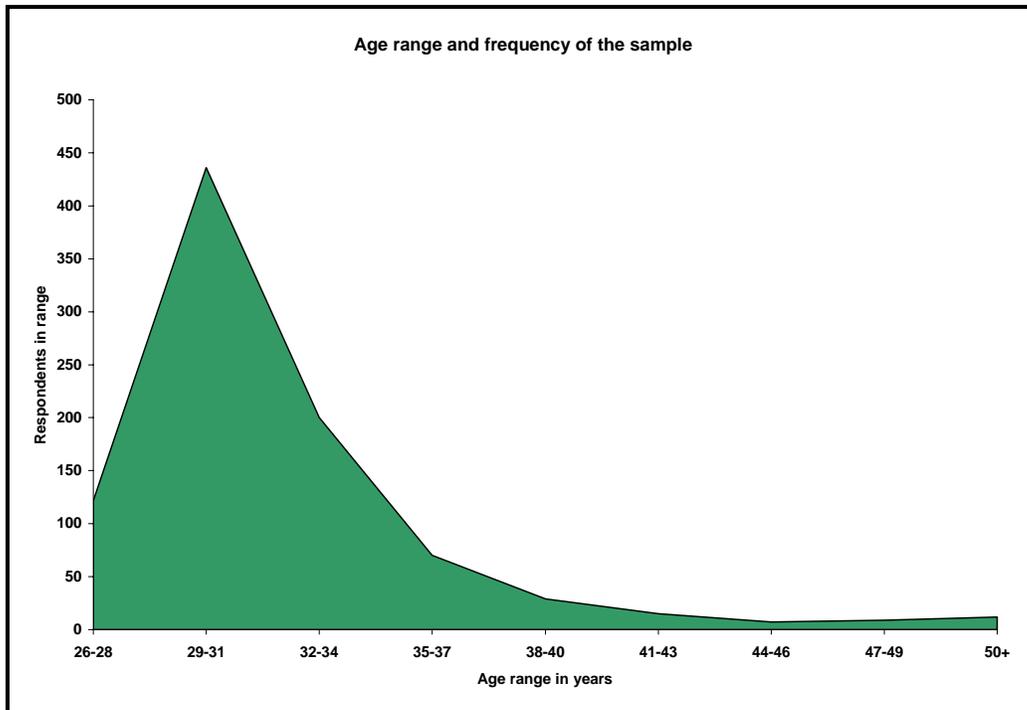
The complete questionnaire and all correspondence letters can be found in the Appendix E to this report entitled "Materials."

<b>Table 2.1 Survey statistics for survey of osteopathic residents, 2003</b>		
<b>Sample</b>	<b>Number</b>	<b>Percentage</b>
Total	2554	
Out of sample	34	
Final	2520	
Total	1148	100%
Returned	951	83%
Ineligible	158	14%
Refuse	2	<1%
Duplicate	2	<1%
Deceased	1	<1%
Unknown	1372	
Unknown assumed	189	
Eligible	1183	
Response rate = Total complete divided by (Final sample – known ineligible – 43.8%		
Cooperation rate = 1 – 99.8%		

The calculated response rate of 43.8% is based on the formula used by the American Association of Public Opinion Research (AAPOR). That formula applies the percentage of ineligible respondents in known cases.

### **Demographic Data**

**Age.** The average age of the 958 respondents was 32; the oldest was 59 (one resident), the youngest was 26 (one); the standard deviation was 4.4 years. The distribution was, however, skewed (as shown in Fig. 2.1, below): 62% of the sample fell below the mean age of 32.



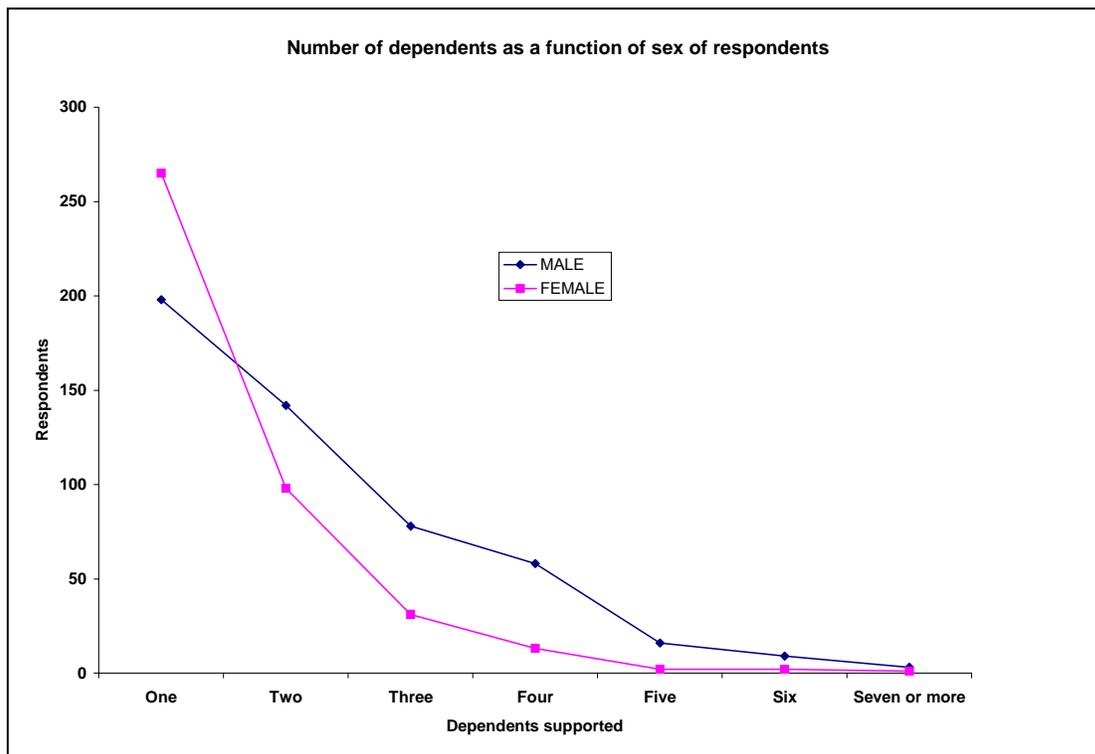
**Figure 2.1. Number of 2003 survey respondents, by age range**

**Sex, marital status, and dependents.** 45% of the sample were women, of whom 59% were married; 55% were men, of whom 70% were married. The respondents were asked how many people, including themselves, they supported financially.

**Table 2.2**  
**Residents' reports of their number of dependents**

Dependents	Number	Percentage
One	474	51%
Two	245	29%
Three	113	12%
Four	71	8%
Five	18	2%
Six	11	1%
Seven or more	4	0%

As shown in Table 2.2, more than half of the respondents said that they were responsible for themselves and no other person, although 67% of the total sample was married. The pattern for number of dependents was different when the responses were analyzed by sex, as Fig. 2.2 illustrates.



**Figure 2.2. Residents' number of dependents, by gender**

**End of Training.** The respondents were asked when they expected to complete their residency training. Table 2.3 shows the results.

<b>Expected Completion</b>	<b>Number</b>	<b>Percentage</b>
2004	27	6%
2005	319	66%
2006	89	18%
2007	43	9%
2008	6	1%

**Ethnic background:** The table below shows the stated ethnicity of residents in descending order of frequency. The “Middle Eastern” category was consisted of students who specified under “other” that they were countries in that region, such as Iran or Egypt.

<b>First-mentioned ethnicity</b>	<b>Number</b>	<b>Percentage</b>
White, Non-Hispanic	724	78.9%
Indian or Pakistani	72	7.8%
Black, Non-Hispanic	16	1.7%
Other Hispanic	15	1.6%
Chinese	15	1.6%
Korean	12	1.3%
Vietnamese	12	1.3%
Middle Eastern	11	1.2%
Filipino	10	1.1%
Multi-Ethnic	10	1.1%
Mexican-American or Chicano	5	0.5%
American Indian/Alaskan Native	3	0.3%
Puerto Rican (Mainland)	3	0.3%
Japanese	3	0.3%
Other Southeast Asian	3	0.3%
European	2	0.2%
Other Asian	1	0.1%
African	1	0.1%

Virtually all of the respondents (99.5%) identified themselves as citizens of the United States.

**Type of Program:** The respondents were asked whether they were in an AOA-accredited, ACGME-accredited, dual-accredited, or military program. Table 2.5 presents the results.

<b>Table 2.5 Residents' types of residency programs</b>		
<b>Type</b>	<b>Number</b>	<b>Percentage</b>
AOA-accredited	205	23%
ACGME-accredited	547	60%
Dual-accredited	120	13%
Military	38	4%
All reporting	910	100%

The distribution of men and women across programs was distinctly non-random.

<b>Table 2.6 Distribution of residents in types of residency programs, by gender</b>				
<b>Type</b>	<b>Men</b>		<b>Women</b>	
	<b>Number</b>	<b>Percentage</b>	<b>Number</b>	<b>Percentage</b>
AOA-accredited	117	57%	88	43%
ACGME-accredited	292	53%	255	47%
Dual-accredited	59	49%	61	51%
Military	29	76%	9	24%
All reporting	497	55%	413	45%

As might be expected, three of the four residents in military programs were men; and the women were a slight majority in dual accredited programs.

**Size of hometown or area:** The residents tended to come from the more populous areas. We determined this by setting a specific value (number) for the population range of each hometown/area and then analyzing the residents' responses. The midpoint was set for each size category each the smallest and largest; two million for "Major metropolitan area (1,000,000 or more)"; and 1,500 for the "under 2.5k" category. Using those values, the estimated mean for the residents' hometowns was approximately 625,000. The median value fell in the category "City (100,000-500,000)," indicating a statistical skew toward the less populous regions—that is, the residents tended to come from the more populous areas.

**Table 2.7**  
**Numbers and percentages of residents reporting the populations of their hometowns, by range of sizes**

Population of areas	Number	Percentage
Major metropolitan area (1,000,000 or more)	214	23%
Metropolitan area (500,000 – 1,000,000) MEAN	122	13%
City (100,000 – 500,000) MEDIAN	161	17%
City (50,000 – 100,000)	139	15%
City or town (10,000 – 50,000)	176	19%
City or town (2,500 – 10,000)	89	10%
Area under 2,500	34	4%

## Findings About Residents

### *Plans and Expectations*

We asked the residents what they thought the future held in store for them in a number of categories. First, we asked, "What annual income do you expect to earn during your first, fifth and tenth year of practice after your residency training?" The following set of tables

**Table 2.8**  
**Residents' estimates of income after residency, by gender and program**

All Residents	Expected Income After Residency		
	First Year	Fifth Year	Tenth Year
<b>Type of Program</b>			
AOA-accredited	\$ 161,775	\$ 219,389	\$ 267,747
ACGME-accredited	\$ 145,092	\$ 207,085	\$ 254,215
Dual-accredited	\$ 118,936	\$ 156,410	\$ 190,275
Military	\$ 99,649	\$ 153,194	\$ 236,833
<i>Overall average</i>	\$ 143,292	\$ 200,522	\$ 247,291
<b>Men</b>	<b>Expected Income after Residency</b>		
<b>Type of Program</b>	<b>First Year</b>	<b>Fifth Year</b>	<b>Tenth Year</b>
AOA-accredited	\$ 179,362	\$ 242,722	\$ 299,963
ACGME-accredited	\$ 160,296	\$ 239,152	\$ 298,322
Dual-accredited	\$ 126,186	\$ 169,825	\$ 212,105
Military	\$ 95,759	\$ 145,160	\$ 225,000
<i>Overall average</i>	\$ 155,942	\$ 224,669	\$ 282,298
<b>Women</b>	<b>Expected Income after Residency</b>		
<b>Type of Program</b>	<b>First Year</b>	<b>Fifth Year</b>	<b>Tenth Year</b>
AOA-Accredited	\$ 137,741	\$ 187,051	\$ 220,867
ACGME-accredited	\$ 127,846	\$ 167,909	\$ 199,319

Dual-accredited	\$ 111,686	\$ 142,250	\$ 167,231
Military	\$ 113,750	\$ 186,667	\$ 296,000
Overall average	\$ 127,575	\$ 168,778	\$ 200,587
<b>Gender Gap</b>			
AOA-accredited	\$ 41,621	\$ 55,671	\$ 79,096
ACGME-accredited	\$ 32,450	\$ 71,243	\$ 99,003
Dual-accredited	\$ 14,500	\$ 27,575	\$ 44,874
Military	\$ (17,991)	\$ (41,507)	\$ (71,000)
Overall average	\$ 28,367	\$ 55,891	\$ 81,710

show the residents' income expectations cross-tabulated against various demographic categories. The type of program in which the residents were enrolled was related to income expectations. For all three of the times targeted, the residents in osteopathic programs had the highest expectations, followed by those in allopathic and dual-accredited programs. The residents in military programs anticipated lower incomes in the first and fifth years after their residencies, but their expected incomes after 10 years jumped ahead of the residents in dual programs, presumably because they expected their military obligations to have ended by then.

Table 2.8 breaks down expectations of the men and women in the various program types. Note that for all programs the men's expectations exceed women's by 22% after one year, and cumulatively 33% after the fifth year, and 41% after the tenth year—even taking into account the reversal of income expectations in the military cohort, where the women expected higher pay than the men.

Table 2.9 presents the data, sorted from highest average expected income down, relating the ethnicity of the respondent to his/her expected income.

**Table 2.9**  
**Residents' estimates of income after residency, by ethnicity**

<b>Ethnic groups</b>	<b>Expected Income after Residency</b>		
	<b>First Year</b>	<b>Fifth Year</b>	<b>Tenth Year</b>
European	\$ 205,500	\$ 325,000	\$ 400,000
Puerto Rican (Mainland)	\$ 131,667	\$ 196,667	\$ 375,000
African	\$ 180,000	\$ 200,000	\$ 300,000
White, Non-Hispanic	\$ 145,872	\$ 205,683	\$ 251,810
Vietnamese	\$ 150,455	\$ 205,000	\$ 243,000
American Indian/Alaskan Native	\$ 142,500	\$ 200,000	\$ 255,000
Indian or Pakistani	\$ 139,071	\$ 191,061	\$ 245,469
Middle Eastern	\$ 144,091	\$ 186,500	\$ 237,500
Multi-Ethnic	\$ 151,667	\$ 192,778	\$ 204,375
Korean	\$ 133,500	\$ 182,900	\$ 222,889
Other Hispanic	\$ 121,333	\$ 156,786	\$ 199,643
Chinese	\$ 120,071	\$ 165,071	\$ 185,500
Filipino	\$ 117,000	\$ 153,571	\$ 197,143
Mexican-American or Chicano	\$ 101,000	\$ 133,000	\$ 226,000
Black, Non-Hispanic	\$ 120,000	\$ 140,357	\$ 195,714
Other Southeast Asian	\$ 113,333	\$ 145,000	\$ 175,000
Other Asian	\$ 120,000	\$ 130,000	\$ 140,000
Japanese	\$ 93,333	\$ 116,667	\$ 136,667
<i>Overall average</i>	<i>\$ 143,245</i>	<i>\$ 200,166</i>	<i>\$ 246,712</i>

There were clear differences as a function of ethnicity. Averaging across all three targeted time periods, the expectations of the three ethnic groups with the highest expectations are 74% higher than the three with the lowest. However, the differences are not statistically significant, because the number of residents in the highest three and lowest three groups combined is only 13.

The most populous group, with 725 residents, was *White, Non-Hispanic*, followed by the *Indian or Pakistani* with 70. No other ethnic group had more than 17 residents.

We cross-tabulated income expectations by level of satisfaction with the level of satisfaction the residents expressed about their choice of career. (See Table 2.10.)

<b>Table 2.10</b>			
<b>Residents' estimates of income after residency, by satisfaction with career choice</b>			
<b>Satisfaction ratings</b>	<b>Expected Post-Residency Income</b>		
	<b>First Year</b>	<b>Fifth Year</b>	<b>Tenth Year</b>
Very Satisfied	\$ 148,803	\$ 209,140	\$ 257,427
Satisfied	\$ 140,175	\$ 195,608	\$ 241,790
Dissatisfied	\$ 139,364	\$ 186,875	\$ 226,354
Very Dissatisfied	\$ 137,593	\$ 204,615	\$ 256,400
<i>Overall average</i>	<i>\$ 143,292</i>	<i>\$ 200,522</i>	<i>\$ 247,291</i>

There was a strong relationship [correlation of +.89] between satisfaction and expected post-residency income after one year, but the relationship declined to +.29 after the fifth year and +.16 for expectations after the tenth year. Only the first relationship is statistically significant.

Next, we sought the relationship between monetary expectation and marital status.

<b>Table 2.11</b>			
<b>Resident's estimates of income after residency, by marital status</b>			
<b>Marital status</b>	<b>Expected Post-Residency Income</b>		
	<b>First Year</b>	<b>Fifth Year</b>	<b>Tenth Year</b>
Married	\$ 145,971	\$ 204,582	\$ 251,951
Not married	\$ 136,760	\$ 192,145	\$ 240,278
<i>Overall average</i>	<i>\$ 143,292</i>	<i>\$ 200,522</i>	<i>\$ 247,291</i>

The married residents expected higher incomes than the single residents did for all targeted time periods (Table 2.11).

Table 2.12 presents the data on the residents' income expectations in relation to the size of their hometowns.

<b>Table 2.12</b>			
<b>Residents' estimates of income after residency, by size of hometown</b>			
<b>Population of hometown</b>	<b>Expected Post-Residency Income</b>		
	<b>First Year</b>	<b>Fifth Year</b>	<b>Tenth Year</b>
Major Metro (> 1 million)	\$ 145,448	\$ 210,281	\$ 268,223
Metro (500,000-1 million)	\$ 144,966	\$ 206,304	\$ 257,427
City (100-500,000)	\$ 146,824	\$ 206,527	\$ 249,276
City (50,000-100,000)	\$ 146,052	\$ 208,484	\$ 254,221
City/Town (10-50,000)	\$ 139,728	\$ 187,922	\$ 229,954
Town (2,500-10,000)	\$ 137,075	\$ 182,811	\$ 225,278
Area under 2,500	\$ 138,353	\$ 179,588	\$ 205,848
<i>Overall average</i>	<i>\$ 143,292</i>	<i>\$ 200,522</i>	<i>\$ 247,291</i>

Not only was there a positive correlation between size of hometown and expected income, but the correlation grows progressively with time (first year after residency,  $r = +.83$ ; fifth year,  $r = +.91$ ; tenth year  $r = +.96$ ).

Finally, we looked at whether the residents planned to practice in a medically underserved area. The data in Table 2.13 shows that the residents planning a career in an

<b>Table 2.13</b>			
<b>Residents' estimates of income after residency, by plans to practice in medically underserved areas</b>			
<b>Plans for underserved area</b>	<b>Expected Post-Residency Income</b>		
	<b>First Year</b>	<b>Fifth Year</b>	<b>Tenth Year</b>
Yes	\$ 127,853	\$ 169,202	\$ 203,096
No	\$ 152,068	\$ 216,484	\$ 271,615
<i>Overall average</i>	<i>\$ 143,292</i>	<i>\$ 200,522</i>	<i>\$ 247,291</i>

underserved area expected to earn approximately 19% less in their first year than the residents who planned to practice elsewhere, increasing cumulatively to 29% after the fifth year and 34% after the tenth year.

All in all, the residents' income expectations were very much influenced by demographic variables (sex, marital status, hometown size, ethnicity), their practice plans, and their type of residency program.

**Long-range plans.** The residents were asked to describe the activity they intended to pursue four years after their residency training. Table 2.15 shows the results.

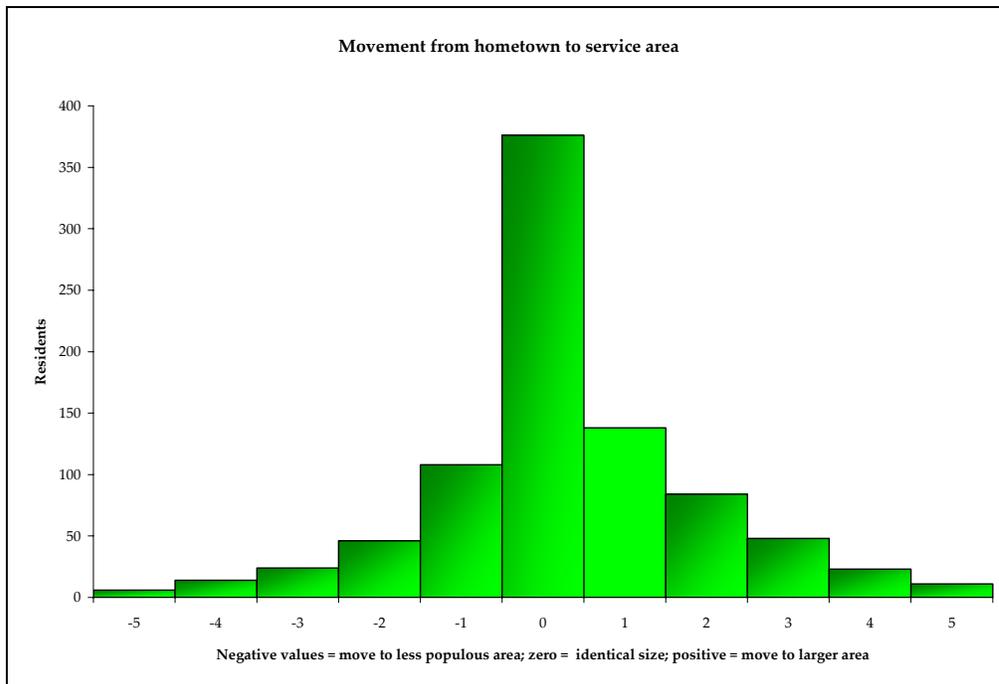
The table is sorted in descending order of preference for plan. Note that a significant proportion—13%—of the residents were undecided.

<b>Table 2.15</b>		
<b>Residents' intended practice or professional activity four years after residency</b>		
<b>Long range plans</b>	<b>Number</b>	<b>Percentage</b>
Employed in group practice	466	50.2%
Self employed with partner(s)	187	20.2%
Undecided or indefinite	123	13.3%
Enter government service	50	5.4%
Employed in other type of private practice	42	4.5%
Other professional activity	29	3.1%
Self-employed without partner	27	2.9%
Practice in an HMO	4	0.4%

The residents were then asked the size of the area where they expected to practice. Note that the mean and median size for the expected practice location are in the same categories as they were for the size of the residents' hometown.

<b>Table 2.16</b>		
<b>Size of residents' anticipated practice location</b>		
<b>Area of service</b>	<b>Number</b>	<b>Percentage</b>
Major metropolitan area (1,000,000 or more)	155	18%
Metropolitan (500,000 – 1,000,000) MEAN	182	21%
City (100,000 – 500,000) MEDIAN	207	24%
City (50,000 – 100,000)	136	16%
City or town (10,000 – 50,000)	135	15%
City or town (2,500 – 10,000)	50	6%
Area under 2,500	10	1%

Figure 2.3 illustrates that most residents intended to practice in areas identical in size to their hometowns.



**Figure 2.3 Movement of residents from hometown to service area (practice location)**

[negative values = move to less populous area; zero = identical size; positive = move to larger area ]

When we asked the respondents whether they planned to work in underserved areas, the most common response was “unsure,” given by 42%; 35% said “no” and 13% said “yes.” The residents who said they planned to work in underserved areas were 32% more likely to come from a hometown that was below the median size than were those who came from larger areas.

### *Career Update*

The residents were asked to name their specialties. In Table 2.17, the specialties of all the residents are listed in descending order of frequency for the total sample. Totals are also given for four types of residency programs (AOA, ACGME, dual-accredited, and military).

**Table 2.17**  
**Second-year residents’ specialties, by type of residency program accreditation, 2003**

Field of Specialization	Total		AOA-accred.		ACGME-accred.		Dual-accred.		Military	
	No.	%	No.	%	No.	%	No.	%	No.	%
Family medicine	264	28	62	30	121	22	62	52	11	30
Internal medicine	206	22	28	14	149	27	16	13	9	24
Emergency medicine	75	8	28	14	34	6	7	6	5	14
Pediatrics	74	8	5	2	51	9	17	14	0	0
Anesthesiology	53	6	6	3	44	8	1	1	1	3
OB-GYN	45	5	18	9	23	4	0	0	1	3
Psychiatry	34	4	0	0	29	5	4	3	0	0
Physical Med and Rehab	30	3	0	0	25	4	2	2	1	3
Surgery	25	3	9	4	12	2	2	2	2	5
Orthopedic Surgery	22	2	21	0	1	0	0	0	0	0
Neurology	21	2	4	2	16	3	0	0	1	3
Radiology	14	1	1	1	10	2	0	0	1	3
Pathology	13	1	1	0	11	2	1	1	0	0
NONE	13	1	2	1	6	1	3	3	0	0
Ophthalmology	8	1	5	2	3	1	0	0	0	0
ENT	8	1	7	3	0	0	0	0	1	3
Dermatology	6	1	3	1	2	0	0	0	1	3
Radiation Oncology	5	1	1	0	4	1	0	0	0	0
Preventive Medicine	5	1	0	0	1	0	2	2	2	5
Neurosurgery	4	0	3	1	1	0	0	0	0	0
Urology	3	0	1	0	2	0	0	0	0	0
Cardiology	3	0	0	0	2	0	1	1	0	0
Pulmonary	2	0	0	0	2	0	0	0	0	0
Physiatry	2	0	0	0	2	0	0	0	0	0
Occupational & Environmental	2	0	0	0	1	0	0	0	1	3
Critical Care	2	0	0	0	1	0	1	1	0	0

Sports/Family Medicine	1	0	0	0	0	0	1	1	0	0
Plastics	1	0	0	0	1	0	0	0	0	0
Osteopathic Manipulative Med	1	0	1	0	0	0	0	0	0	0
Nuclear Medicine	1	0	0	0	1	0	0	0	0	0
Infectious Disease	1	0	0	0	1	0	0	0	0	0
Geriatrics	1	0	0	0	1	0	0	0	0	0
Child psych	1	0	0	0	1	0	0	0	0	0
Total	946	100	207	100	558	100	120	100	37	100

It should be noted that the top two choices for specialization, Family Medicine and Internal Medicine, which comprise 50% of the total sample, are the top two choices in all four programs. Allopathic programs were the only ones with more students in Internal Medicine than in Family Medicine; there were twice as many FM students as IM in the osteopathic programs, and four times as many in the dual-accredited programs.

Each respondent was asked to estimate the percentage of time currently devoted to inpatient and outpatient care, extended care, research, administration, medical teaching and other activities. Table 2.18 shows the findings broken out by type of program.

<b>Activity</b>	<b>AOA- accredited</b>	<b>ACGME- accredited</b>	<b>Dual- accredited</b>	<b>Military</b>	<b>Overall</b>
Inpatient	52%	55%	50%	41%	53%
Outpatient	35%	32%	38%	36%	34%
Long Term	3%	2%	4%	1%	3%
Research	2%	4%	4%	5%	4%
Administration	2%	2%	4%	9%	3%
Teaching	6%	5%	7%	6%	6%
Other	1%	2%	1%	2%	1%

The AOA, ACGME, and dual-accredited programs were all more alike than any one was to the military programs. The military residents reported less time than the others being devoted to inpatient and long-term care, and more time to research and administration.

The size of the areas in which the residency programs were located is shown in Table 2.19, by type of program.

<b>Table 2.19</b>					
<b>Size of areas in which residency programs were located, by type of program</b>					
<b>Sizes</b>	<b>AOA- accredited</b>	<b>ACGME- accredited</b>	<b>Dual- accredited</b>	<b>Military</b>	<b>Overall</b>
Large City	32%	55%	35%	58%	47%
Suburb	27%	11%	12%	3%	14%
Moderate size	32%	31%	38%	26%	31%
Small town	9%	3%	14%	11%	6%
Rural	0%	0%	2%	3%	1%

The osteopathic and dual-accredited programs tended to be less often in large cities than those of the allopathic and military programs.

Another way in which osteopathic and dual-accredited programs resembled each other and were different from allopathic and military programs was the way the residents were allowed to act as primary care providers. The question was worded: “Given appropriate supervision, for what percentage of your patients do you act as the primary care provider?” The residents in osteopathic programs estimated 91% on average, and those in dual programs estimated 96%, as compared with 84% for allopathic programs and 69% for military programs.

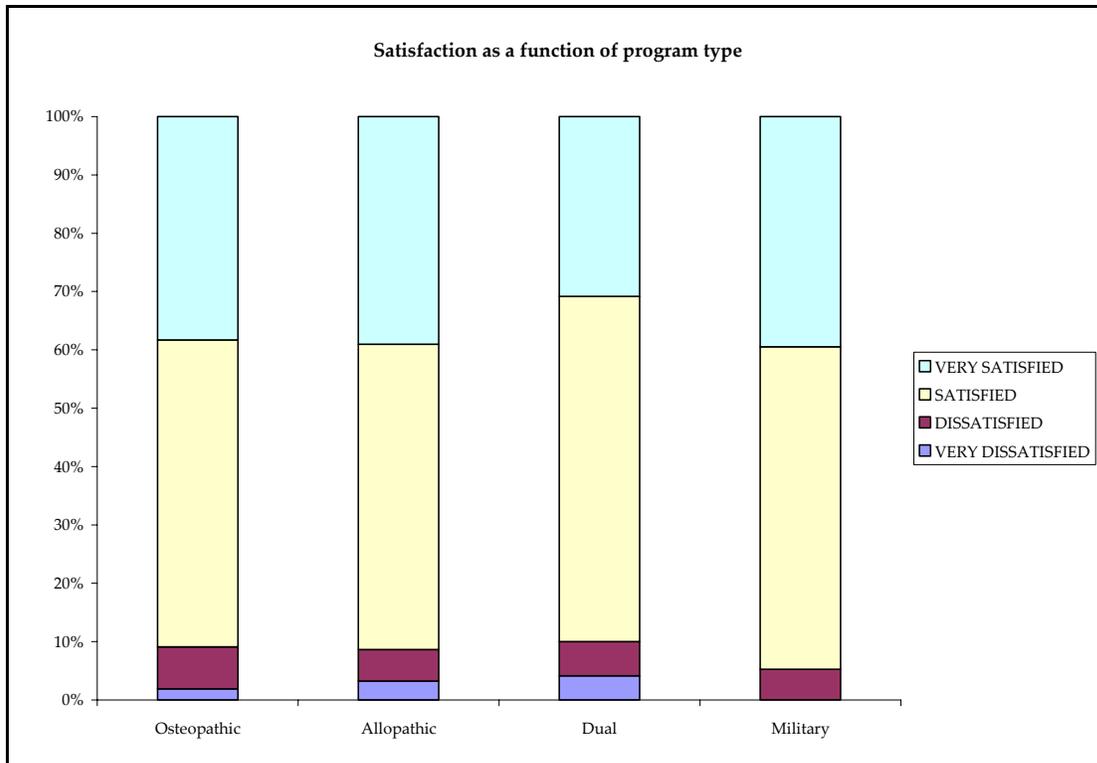
The residents were then queried as to whether they had engaged in any of a set of 10 professional activities at any time in the previous two years. In Table 2.20 the residents’ responses are shown for each type of program, in descending order of overall average. The residents in the osteopathic programs participated slightly less often than

<b>Professional activity</b>	<b>AOA- accredited</b>	<b>ACGME- accredited</b>	<b>Dual- accredited</b>	<b>Military</b>	<b>Overall</b>
Subscribed to a referred journal in your specialty?	81%	90%	93%	97%	89%
Requested a literature review from the library?	74%	78%	80%	92%	78%
Contributed to or participated in a research study?	42%	63%	58%	76%	58%
Spoken to a community group about a health issue?	57%	54%	63%	39%	55%
Volunteered your expertise to a community organization?	26%	30%	38%	18%	29%
Engaged in Health Policy related activities?	22%	20%	24%	24%	21%
Gathered data on a health problem in your community?	11%	19%	26%	18%	18%
Worked with a community group to address a local health problem?	18%	15%	23%	5%	16%
Published an article in a refereed journal?	5%	17%	13%	32%	14%
Written/appeared in a health-related story in the local media?	8%	8%	12%	8%	9%
Provided non-paid expert testimony?	0%	2%	2%	0%	2%
Average across activities	26%	31%	34%	31%	30%

the others, notably in research. Note that three areas were germane to research: contributing to or participating in a research study; gathering data on a health program in the community; and publishing an article in a refereed journal.

### ***Satisfaction with Medical Career***

Questions on this topic began with the general question, “At this time, how satisfied are you that you selected medicine as a career?” As shown in the accompanying chart (Fig. 2.4, below), the overall level of satisfaction was about 90% for all programs. The differences between program types were not statistically significant.



**Figure 2.4. Residents' rating of overall satisfaction with choice of medicine as career, by type of residency program**

Next, we asked the residents their level of satisfaction with each of 25 aspects of medicine. Table 2.21 displays the responses, with the 25 aspects sorted in descending order of overall satisfaction for the total group.

<b>Satisfaction with listed activity</b>	<b>AOA- accred.</b>	<b>ACGME- accred.</b>	<b>Dual- accred.</b>	<b>Military</b>	<b>Overall average</b>
Having an opportunity to help others	59%	58%	59%	52%	58%
Being able to work with people	53%	56%	58%	48%	55%
Doing work that is intellectually stimulating	49%	52%	55%	55%	52%
Having interesting and intelligent colleagues	40%	49%	53%	52%	48%
Having membership in a respected profession	43%	46%	53%	44%	45%
Potential for earning a comfortable income	38%	38%	31%	40%	37%
Being independent and relatively free of outside supervision	35%	35%	38%	36%	35%
Attaining a position of leadership and	30%	34%	38%	32%	33%

authority					
Associating with non-physician personnel	28%	27%	33%	22%	27%
Doing work involving science and math	20%	26%	25%	26%	25%
Using medicine to change society	19%	18%	22%	17%	19%
Having adequate personnel resources	19%	18%	22%	17%	19%
Demands for keeping up with current medical knowledge	17%	14%	12%	21%	15%
Having a role in organizational decisions	13%	13%	17%	1%	13%
Having a controllable lifestyle	17%	11%	11%	7%	13%
Having a workload which is manageable	17%	11%	10%	-3%	12%
Hours of work per week	17%	6%	8%	7%	9%
Frustration with patients	5%	8%	4%	10%	7%
Time “on-call”	10%	4%	9%	13%	6%
Potential for emotional burnout	3%	-2%	1%	9%	0%
Interference of professional life with personal life	-3%	-8%	-2%	-5%	-6%
Government intervention	-26%	-23%	-26%	-4%	-24%
Paperwork	-21%	-23%	-32%	-41%	-25%
Threat of malpractice lawsuits	-43%	-35%	-39%	-21%	-37%
Insurance issues	-42%	-37%	-41%	-13%	-37%
Average over all activities	16%	15%	16%	17%	16%

The residents’ responses were converted from a Likert-type scale to a percentage-based number in order to be readily compared to other tables. The percentage of satisfaction is presented as the number of percentage points above or below 50%. Thus, for example, the score of 59% for *Having an opportunity to help others*, returned by residents in orthopedic programs, was calculated as follows:

1. Mean score of 3.67 on a 4-point scale
2. Subtract 2.5 [the midpoint of a four-point scale] from 3.67, leaving +1.17
3. Divide 1.17 by 2, giving a positive value of 58.5% for the available satisfaction.

There are some interesting differences in the dissatisfaction scores, in red. Paperwork was most onerous to the military program residents, who were relatively unconcerned about the threat of malpractice lawsuits and insurance issues; just the opposite for the other three program types.

### ***Debt issues***

We asked the residents, “To the best of your knowledge, what was your total education-related debt (undergraduate and medical school debt) after completing your medical

school education?” and “How much of your education-related debt do you still owe?” Of those who answered these questions, 95% reported having debt, ranging from \$8,200 (one respondent) to \$400,000 (three respondents).

<b>Table 2.22 Residents’ average total medical education debt and amount of debt repaid, by type of residency program</b>								
	<b>Type of Program</b>							
	<b>AOA-accredited</b>		<b>ACGME-accredited</b>		<b>Dual-accredited</b>		<b>Military</b>	
	<b>Total</b>	<b>Residual</b>	<b>Total</b>	<b>Residual</b>	<b>Total</b>	<b>Residual</b>	<b>Total</b>	<b>Residual</b>
Debt	\$147,072	\$142,976	\$147,851	140,169	\$158,059	\$149,932	\$50,838	\$45,378
	Dollars	Paid	Dollars	Paid	Dollars	Paid	Dollars	Paid
Paid Down	\$ 4,097	3%	\$ 7,682	5%	\$ 8,127	5%	\$ 5,459	11%

As the averages in Table 2.22 show, all but the residents in military programs have on average at least 95% of their medical education debt left to repay (residual).

The residents were asked about the impact of the individual’s debt load. An analysis of responses showed that the larger the debt, the more impact it had on specialty choice. (The correlation was +0.15 [t = 4.41, p < .0001, two tailed, df = 924].

<b>Table 2.23 Impact of debt load on choice of specialty: Residents’ specialties and their reported medical education debt. 2003</b>				
	<b>Levels of Impact Reported</b>			
	<b>No Impact</b>	<b>Minor impact</b>	<b>Moderate impact</b>	<b>Major Impact</b>
Ratio of high-debt-load to low- debt-load ratios	0.78:1	1.25:1	1.96:1	2.51:1

To produce the data shown in Table 2.23, above, we split the residents at the mean for debt load, and then compared the percentage of high-debt load vs. low-debt load residents at each of the four levels of impact. The steady progression from *No impact* to *Major impact* makes clear that the greater the debt load, the greater the impact on choice of specialty.

A similarly strong correlation—but a negative one—existed between satisfaction with the choice of a career in medicine and the size of the total debt. [ $r = -0.16$ ,  $t = -4.61$ ,  $p < .0001$ , two tailed,  $df = 924$ ], i.e., those with less debt were more satisfied with their choice of career.

<b>Table 2.24</b>				
<b>Impact of debt load on satisfaction with medicine as a career:</b>				
<b>Residents' reported debt levels and satisfaction ratings</b>				
	<b>Satisfaction with medicine as a career</b>			
	<b>Very satisfied</b>	<b>Satisfied</b>	<b>Dissatisfied</b>	<b>Very dissatisfied</b>
Ratio of high-debt-load to low-debt- load residents	1.07:1	0.92:1	1.32:1	1.28:1

The data in Table 2.24 show that, although there is little relationship between positive rating of satisfaction and debt, dissatisfaction was related to high debt load.

There was no association between any of the variables and the residents' current gross annual income because 40% of the residents reported stipened earning \$30,000-\$40,000 and 57% earning more than \$40,000. The remaining 3% earned \$20,000-\$30,000. With a distribution that is so tightly packed, it would be very difficult to detect any effect of differential earnings.

## **Residents' Views**

### ***Medical Education***

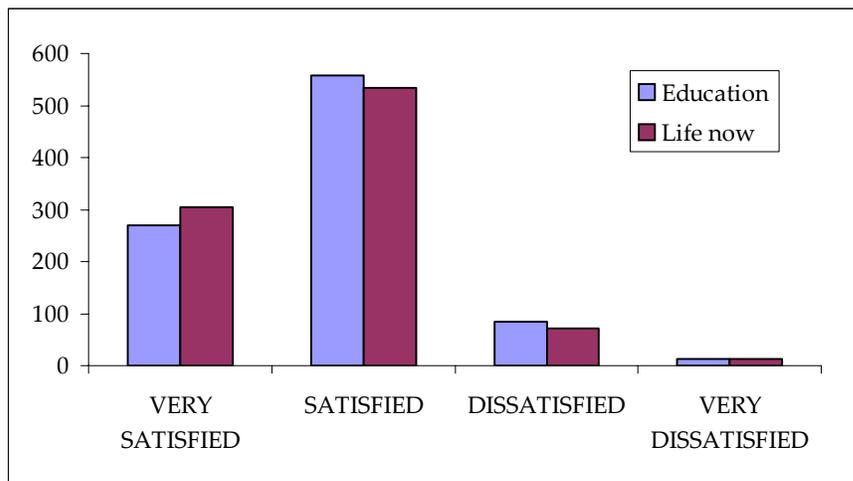
The residents were asked, "From your current perspective, how would you rate the amount of instruction provided in each of the areas listed below?" Table 2.25 presents the results.

**Table 2.25**  
**Second-year residents' assessment of amount of instruction on topics in medical curriculum, 2003**

<b>Course</b>	<b>Appropriate</b>	<b>Excessive-Inadequate</b>
Infectious Disease Process	91%	(0.02)
Basic Medical Science	89%	0.05
Screening for Diseases	88%	(0.04)
Clinical science	88%	(0.00)
Therapeutic Management	87%	(0.06)
Teamwork	87%	(0.04)
Infection Control/Health Care Setting	86%	(0.07)
Patient Follow-up	85%	(0.09)
Physician-patient Relationship-	85%	0.11
Patient interviewing skills	84%	0.10
Patient Education	84%	(0.08)
Health promotion and disease prevention	84%	(0.05)
Diagnostic skills	83%	(0.05)
Integrative Medicine	80%	(0.15)
Role Medicine Community	79%	(0.14)
Care of ambulatory patient	78%	0.00
Independent Learning Self-Evaluation	78%	(0.10)
Public Health/Community Medicine	78%	(0.09)
Clinical decision making	78%	(0.09)
Medical Ethics	77%	(0.07)
Clinical pharmacology	76%	(0.03)
Behavioral Science	76%	(0.13)
Care of hospitalized patient	75%	(0.12)
Drug and alcohol abuse	74%	(0.19)
Primary Care	74%	0.20
Human Sexuality	74%	(0.13)
Computers	72%	(0.20)
Care of elderly (geriatrics)	69%	(0.16)
Family/Domestic violence	66%	(0.28)
Nutrition	62%	(0.30)
Pain Management	60%	(0.35)
Genetics	59%	(0.33)
Medical Record-Keeping	58%	(0.36)
Utilization Review/Quality Assurance	56%	(0.40)
Rehabilitation	56%	(0.41)
Medical Socioeconomics	54%	(0.41)
Care of patients with HIV/AIDS	47%	(0.49)
Legal Medicine	46%	(0.49)
Practice Management	41%	(0.54)
Cost-effective medical practice	39%	(0.58)
Biostatistics	38%	(0.57)
Medical Care Cost Control	37%	(0.61)
Literature Analysis Skills	34%	(0.63)
Research Techniques	31%	(0.66)

In Table 2.25, the topics or areas of instructions are sorted in descending order by the percentage of residents who judged the amount of instruction provided to have been appropriate. The column labeled “Excessive—Inadequate” is the percentage of respondents who reported that the amount was *Excessive* minus the percentage judging it *Inadequate*. Thus, the negative [red] numbers indicate that the predominant view of the residents who had not rated the coverage as appropriate was that it was inadequate; the positive numbers indicate that, when they had not considered coverage to have been appropriate, the residents had considered the coverage to have been excessive. Only four areas—primary care, basic medical science, the physician-patient relationship, and patient interviewing skills—were cited as having had excessive coverage.

Continuing the assessment of medical education, we asked the residents how satisfied they were with the education received at their osteopathic medical school, and how satisfied they were with their lives.



**Figure 2.5. Residents’ ratings of their satisfaction with their osteopathic medical school and with their lives**

We wondered whether these two questions were, in fact, measuring the same thing. We tested that hypothesis by comparing the scores returned by individuals on the two scales. Subtracting the life satisfaction scores from the education satisfaction scores, we found that 58% of the differences are zero, 19% are -1, and 18% are +1, a finding that offers

strong support for the hypothesis that, to the residents, the questions were measuring the same thing.

We also asked how well the osteopathic medical school had provided a foundation for the positions as residents, and where the residents would choose to go for medical education if they had it to do over. The residents agreed in general that osteopathic medical school provided an excellent foundation (Table 2.26).

<b>Table 2.26</b>					
<b>Second-year residents' ratings of satisfaction with the foundation for residency provided by osteopathic medical school, by type of residency program, 2003</b>					
<b>Options if choosing</b>	<b>AOA- accred.</b>	<b>ACGME- accred.</b>	<b>Dual- accred.</b>	<b>Milit.</b>	<b>Overall average</b>
Provided foundation for your position as resident	93%	89%	95%	93%	91%
Would choose same osteopathic med school again...	67%	52%	63%	68%	58%
Would choose other osteopathic med school...	6%	7%	9%	0%	7%
Would choose allopathic med school	14%	29%	12%	16%	23%
Would not choose any med school	11%	9%	11%	13%	10%

By contrast, about 40% of the residents would choose a different path, either an allopathic medical school (23%) or a different osteopathic medical school (7%); and 10% would choose a different career.

Using a scale of confidence [Very apprehensive, Apprehensive, Confident, Very confident] we asked the residents about their ability to perform six functions.

<b>Table 2.27</b>					
<b>Second-year residents' ratings of confidence in performing clinical tasks in community health</b>					
<b>Confidence in your ability to do the tasks listed below</b>	<b>AOA- accred.</b>	<b>ACGME- accred.</b>	<b>Dual- accred.</b>	<b>Military</b>	<b>Overall average</b>
Use epidemiology to understand community health needs	19%	23%	26%	16%	22%
Understand the community's perception of its health problems	37%	39%	45%	26%	39%
Employ all community health services for your patients	36%	41%	52%	43%	42%
Locate community health resources when patients need	34%	42%	52%	43%	42%
Know about health issues important to particular patient populations	48%	51%	53%	42%	51%
Understand the health beliefs of your patients	49%	50%	54%	43%	50%

The confidence values in Table 2.27, above, were calculated in a fashion similar to the one used for satisfaction values in Table 2.26 (i.e., a scale ranging from Very Apprehensive, Apprehensive, Confident, Very Confident), because the first two points on the scale were distinctly negative. Thus, because all of the values were positive, there is no task for which the average showed apprehension. It should be noted that the residents in the dual-accredited programs reported the highest levels of confidence in performing each task.

We asked the residents to rate the importance of each of 26 tasks related to patients. Table 2.28 shows the average ratings by program type and overall. The tasks are listed in descending order for overall average for the total group.

<b>Table 2.28</b>					
<b>Second-year residents' ratings of the importance of various tasks in clinical encounters with patients, by residency program accreditation, 2003</b>					
<b>Tasks in clinical encounters</b>	<b>AOA- accred.</b>	<b>ACGME- accred.</b>	<b>Dual- accred.</b>	<b>Military</b>	<b>Overall average</b>
Discuss preventive measures specific to the complaint	94%	93%	99%	90%	93%
Ask, "Do you have any questions?" or its equivalent during the encounter	92%	93%	93%	89%	93%
Discuss how patients can improve their own condition	91%	92%	96%	92%	92%
Explain the causes of the problem or reasoning behind treatment	91%	90%	94%	91%	91%
Discuss the patient's opinion about treatment	84%	87%	87%	88%	86%
Ask, "Anything else I can do for you?" or its equivalent during the clinical encounter	83%	86%	88%	80%	85%
Discuss the patient's emotional state	81%	85%	88%	79%	83%
Discuss the patient's opinion on cause of problem	81%	84%	85%	83%	83%
Discuss the body's self-healing ability or reassurance that condition will improve on its own	82%	81%	86%	85%	82%
Appropriate touch patients during the clinical encounter (NOT including Osteopathic Manipulation)	81%	80%	85%	82%	81%
Discuss health issues in relation to work	80%	80%	82%	77%	80%
Discuss health issues in relation to family life	79%	80%	83%	76%	80%
Discuss alternative modes of therapy the patient may or could use	79%	78%	83%	73%	79%
Discuss the literature or scientific basis of treatment	76%	79%	79%	83%	78%
Discuss musculoskeletal causes or consequences related to patient's condition	80%	76%	81%	75%	77%
Conduct a review of systems unrelated areas	75%	78%	78%	73%	77%

Examine organ systems unrelated to chief complaint	76%	76%	77%	76%	76%
Discuss family/social issues unrelated to health	71%	77%	80%	71%	76%
Discuss general/unrelated health measures	73%	76%	77%	76%	76%
Use the patient's first name in the clinical encounter	66%	67%	66%	57%	66%
Delay prescribing medications (including over the counter medications) until trying non-pharmacological measures	64%	62%	67%	58%	63%
Use osteopathic manipulative techniques	69%	59%	68%	67%	63%
Always include a review of the musculoskeletal system	65%	62%	63%	52%	63%
Recommend herb/nutritional/physical or other non-drug medications, not including osteopathic manipulative treatment	59%	57%	62%	58%	58%
Discuss your personal experiences, not including professional experiences, with other patients	57%	57%	58%	61%	57%
Have the patient use your first name during the clinical encounter	42%	45%	44%	46%	44%

The response scale offered four alternatives: *No importance*, *Important*, *Very important*, *Don't know*. We excluded the *don't know* response and computed a score based on the average divided by the value for *Very important*. The ratings were remarkably uniform across the four types of residency programs (correlations with the overall averages ranged from +.95 to +.99), and only one item—*Having the patient use the physician's first name*—had averages overall or by program type that fell below 50%.

***Osteopathic Manipulative Treatment, Practice, and Principles***

Questions about osteopathic manipulative treatment, practice and principles (OMTP) began with the item, "Using the following scale, please indicate whether you agree or disagree with the following statements relative to manipulative treatment, practice and principles. (1) Strongly disagree, (2) Disagree, (3) Agree, (4) Strongly Agree." The first statement addressed the residents' opinion of their preparation to perform various OMPT tasks.

<b>Table 2.29</b>					
<b>Second-year residents' ratings of their preparation to perform OMTP tasks, by type of residency program accreditation</b>					
<b>I was well prepared in my training to ...</b>	<b>AOA- accred.</b>	<b>ACGME -accred.</b>	<b>Dual- accred.</b>	<b>Military</b>	<b>Overall average</b>
diagnose structural problems	29%	28%	22%	34%	28%
treat structural problems	26%	21%	17%	28%	22%
document findings in a structural examination	21%	21%	17%	25%	21%
integrate OPP into a practice setting	11%	6%	3%	21%	7%

The values represent the amount of positive agreement, calculated in the same fashion as satisfaction and confidence measures. Note that the ratings given by residents in dual-accredited programs showed the most disagreement, while the residents in military programs expressed the strongest agreement with the statements.

The next set of agreement items concerned when the residents had had opportunities to practice OPP during training.

<b>Table 2.30</b>					
<b>Residents' reports of when they had opportunities to practice OPP during medical training, by type of residency program</b>					
<b>I had the opportunity to practice OPP in ...</b>	<b>AOA- accred.</b>	<b>ACGME -accred.</b>	<b>Dual- accred.</b>	<b>Military</b>	<b>Overall average</b>
my first two years of medical school	56%	56%	58%	59%	56%
my in-hospital training during my clerkships	-12%	-20%	-19%	-9%	-17%
my ambulatory non-primary care rotations during my clerkships	-16%	-23%	-20%	-11%	-21%
my ambulatory primary care rotations during my clerkships	11%	6%	3%	21%	7%
my first year of post-graduate training	-6%	-31%	-4%	-17%	-21%
my current year of training	-7%	-38%	0%	-16%	-25%

These data lead to the finding that the residents generally judged there had been little opportunity to practice OPP after the first two years of medical school—only in ambulatory primary care rotations during clerkships. The residents in allopathic programs disagreed especially strongly with the statements. (See Table 2.30)

When we asked about their experience of osteopathic physicians’ practicing OMT at various times, the results paralleled the findings on the residents’ opportunities to practice OMT themselves.

<b>Table 2.31 Residents’ reports of osteopathic physicians’ having practiced OMT at various times during the resident’s medical training</b>					
<b>I experienced osteopathic physicians practicing OMT in ...</b>	<b>AOA- accredited</b>	<b>ACGME- accredited</b>	<b>Dual- accredited</b>	<b>Military</b>	<b>Overall average</b>
My first two years of medical school	53%	57%	54%	59%	56%
My required in-hospital rotations	-17%	-19%	-20%	-21%	-19%
My required ambulatory non- primary care rotations	-25%	-27%	-26%	-21%	-26%
My required ambulatory primary care rotations	14%	3%	10%	17%	7%
My electives	-15%	-29%	-19%	-17%	-24%
My first year of post-graduate training	-10%	-29%	-9%	-34%	-28%
My current year of training	-14%	-48%	-8%	-37%	-34%

### *The Profession*

The study asked several detailed questions to learn the residents' perceptions of the profession. The first item asked how much of their training at various stages had been done by allopathic physicians.

<b>Estimates of percentage of training delivered by allopathic physicians</b>	<b>AOA- accredited</b>	<b>ACGME- accredited</b>	<b>Dual- accredited</b>	<b>Military</b>	<b>Overall average</b>
During the first two years of medical school	18%	20%	22%	15%	19%
During required clerkship in-hospital rotations	33%	44%	52%	37%	42%
During required clerkship ambulatory non-primary care rotations	35%	45%	51%	37%	43%
During required clerkship ambulatory primary care rotations	24%	37%	41%	30%	34%
During clerkship electives	34%	55%	57%	51%	50%
During post-doctoral program to date	35%	77%	71%	72%	66%

As might be expected, the residents in osteopathic programs differed from the rest, especially in the latter stages of training. However, it is also noteworthy that the residents who chose allopathic programs and, to a greater extent, dual-accredited programs, reported more training by allopathic physicians during required clerkships than those who chose osteopathic programs (Table 2.32).

The data in Table 2.33 below show the residents' agreement or disagreement (red numbers) with statements comparing osteopathic and allopathic physicians on various aspects of medicine and medical education.

**Table 2.33**  
**Percentages of second-year residents who agreed with statements comparing osteopathic and allopathic physicians on aspects of medicine and medical conditions, 2003**

Statements	AOA- accredited	ACGME- accredited	Dual- accredited	Military	Overall average
No apparent difference in rapport with patients	25%	41%	33%	47%	36%
No distinction in treatment approach with the patient	22%	32%	27%	21%	28%
The holistic approach distinguishes the two types of physician	35%	23%	37%	29%	28%
Osteopathic physicians were better teachers	10%	-4%	6%	-1%	1%
Osteopathic physicians held me to a higher standard of performance	6%	-4%	5%	5%	0%
Osteopathic physicians were more rigorous in patient workup	5%	-5%	4%	4%	-1%

The overall impression presented by the answers to this pair of questions is that there is not a great deal of difference in the way the residents perceived allopathic and osteopathic physicians insofar as how they taught, dealt with patients, or supervised the residents' performance.

We next asked the residents to rate the importance of 24 factors that they thought had influenced the program that chose them for a residency. They were given a four-point scale (Not a factor, Little importance, Important, Essential). Table 2.34 displays the results. The 24 factors are listed in descending order of importance to the whole group. There was generally high agreement with the overall average across the programs, with the ratings of the military group

**Table 2.34****Second-year residents' ratings of the importance of factors that might have influenced their residency programs to choose them**

<b>Factors</b>	<b>AOA- accred.</b>	<b>ACGME -accred.</b>	<b>Dual- accred.</b>	<b>Military</b>	<b>Overall average</b>
Personality match between you and your prospective trainers	70%	68%	74%	54%	69%
Provided letters of recommendation	60%	69%	68%	58%	66%
You initiated contact with the program	60%	55%	54%	67%	56%
Provided COMLEX Board scores	54%	57%	53%	61%	56%
Followed up with personal letters to interviewers	25%	45%	43%	22%	39%
Rotated at the hospital in your chosen specialty	44%	23%	48%	55%	33%
Peer evaluations	37%	28%	44%	24%	32%
Clinical management of patients as a student (or PGY 1) in rotations in your specialty	44%	26%	33%	41%	32%
Visited prospective training site more than once	36%	24%	43%	-3%	28%
Class rank	19%	24%	15%	29%	22%
Rotated at the hospital, but not necessarily in your chosen specialty	37%	13%	36%	26%	22%
Expressed additional interest in activities outside of formal clinical training	32%	16%	23%	34%	21%
Clinical management of patients as a student (or PGY 1) in rotations not in your specialty	27%	13%	20%	15%	17%
Case presentation skills	19%	8%	13%	9%	11%
Program initiated contact with you	5%	-3%	8%	-13%	-0%
Osteopathic training	25%	-19%	-0%	-33%	-7%
Plan to stay in area after residency	-11%	-6%	-11%	-45%	-9%
Research skills or having participated in research activities without publication	-19%	-11%	-21%	0%	-14%
Had publications prior to application	-19%	-14%	-26%	1%	-16%
Provided UMSLE Board scores	-31%	-7%	26%	-32%	-16%
Computer skills	-18%	-18%	-21%	-18%	-18%
Marital status	-37%	-36%	-33%	-33%	-35%
Gender	-31%	-39%	-40%	-37%	-37%

being the most unlike the others; but even its ratings were highly correlated [+ .90] with the overall rating. On a majority of items, the pairing of osteopathic and dual-accredited programs remained in contrast to the other two types of programs.

The next issue concerned when the residents became convinced of their specialties. Table 2.35 shows the results. In this table, the modal score for each program is in **bold** type

**Table 2.35**  
**Second-year residents' reports of when they became convinced of their specialties, 2003**

<b>When convinced</b>	<b>AOA- accredited</b>	<b>ACGME- accredited</b>	<b>Dual- accredited</b>	<b>Military</b>	<b>Overall average</b>
Prior to medical school	18%	20%	25%	5%	19%
First year of medical school	6%	3%	0%	8%	4%
Second year of medical school	7%	5%	8%	5%	6%
Third year of medical school	24%	27%	<b>29%</b>	24%	26%
Fourth year of medical school	<b>25%</b>	<b>30%</b>	25%	<b>37%</b>	<b>29%</b>
Internship year	20%	16%	14%	21%	17%

and bordered. The fourth year of medical school is the group mode, and only residents in the dual-accredited programs were convinced in their third year. However, about one in five had already decided on a specialty before they entered medical school.

The residents were asked, "Using the following scale, please evaluate the following 21 factors in determining your choice of residency program. (Not a Factor / Somewhat of a Deterrent / Somewhat Important / Essential)" The responses are shown in Table 2.36, with the factors given in descending order of importance based on the overall average for the whole group.

**Table 2.36**  
**Second-year residents' ratings of importance of factors in their choice of residency program, by type of residency program**

<b>Factors</b>	<b>AOA- accred.</b>	<b>ACGME- accred.</b>	<b>Dual- accred.</b>	<b>Military</b>	<b>Overall average</b>
Perceived quality of training	75%	79%	80%	61%	77%
Case-Mix of patients (Spectrum of pathology)	29%	47%	34%	8%	40%
Geographic location	10%	37%	30%	-11%	28%
Reputation of the institution	12%	31%	26%	11%	25%
Career opportunities upon completion of residency program	17%	26%	16%	-16%	21%
Ability to perform medical or surgical procedures early in the program	20%	-5%	-7%	13%	1%
Know those who will be your trainers	12%	-8%	13%	5%	0%
Recognition of the program by other health care personnel	-17%	5%	-6%	-21%	-3%
Family considerations	-14%	-3%	6%	-5%	-4%
Familiarity with the training site	-2%	-25%	3%	-24%	-16%
Opportunities for sub-specialty training	-37%	-9%	-36%	-34%	-20%
Length of training period	-13%	-23%	-13%	-50%	-20%
Opportunity to teach medical students	-24%	-22%	-13%	-37%	-22%

Prestige of specialty	-31%	-23%	-44%	-26%	-27%
Amount of time spent in a non-hospital setting	-37%	-46%	-34%	-74%	-44%
Salary while resident	-47%	-48%	-37%	-26%	-45%
Practice opportunities within 50 miles of training site	-54%	50%	53%	-62%	53%
Active research program	-78%	-53%	-71%	-47%	-61%
Presence of Fellows	-80%	-55%	-70%	-74%	-63%
Military or government service obligation	-96%	-93%	-95%	71%	-87%
Fewer than six residents in the program	-87%	-91%	-93%	-74%	-90%

The data are sorted on overall average importance (positive numbers) or deterrence (negative numbers). The data reveal that the one pre-eminent factor was the perceived quality of training, and only four other factors were clearly positive: case mix, location, reputation of the institution (which could be considered a subset of the perceived quality of training), and career opportunities after completion of the residency. The only other significantly positive factor pertained only to residents in military programs—their military / government service obligation.

**Table 2.37**  
**Second-year residents’ ratings of the pressure felt when having to offer commitment to residency program, by type of residency program accreditation, 2003\***

<b>Matches</b>	<b>AOA- accredited</b>	<b>ACGME- accredited</b>	<b>Dual- accredited</b>	<b>Military</b>	<b>Overall average</b>
AOA match	53%	46%	43%	21%	46%
NRMP Match	51%	38%	39%	65%	39%
San Francisco Match	71%	55%	58%	88%	59%
Military Match	75%	63%	56%	57%	61%

\*participants only

We then asked how much pressure the residents felt at the time they gave assurance to the program they chose. The data, shown in Table 2.37, indicates that the greatest pressure overall was felt by those involved in the San Francisco and the Military Matches.

The survey also asked about plans for professional activities, specifically for joining or maintaining membership in various professional organizations. The pattern of these responses remains the same as for several others: osteopathic program residents

and those in dual programs give similar responses that were different from those in the other two types of programs. (See Table 2.38 for details.)

<b>Organizations</b>	<b>AOA- accred.</b>	<b>ACGME- accred.</b>	<b>Dual- accred.</b>	<b>Military</b>	<b>Overall average</b>
AOA	96%	74%	87%	79%	80%
AMA	32%	57%	55%	26%	50%
State and local osteopathic associations	68%	50%	59%	32%	55%
Osteopathic specialty societies	75%	31%	48%	50%	44%
Allopathic specialty societies	40%	66%	53%	61%	58%

We asked the residents to identify (by category) any persons who had been influential in their choice of career. Table 2.39 shows the percentages of residents who identified each of the listed types of people as influential.

<b>Types of people</b>	<b>AOA- accred.</b>	<b>ACGME- accred.</b>	<b>Dual- accred.</b>	<b>Military</b>	<b>Overall average</b>
An osteopathic physician	<b>80%</b>	57%	<b>58%</b>	50%	<b>62%</b>
An allopathic physician	35%	<b>65%</b>	53%	<b>53%</b>	56%
A patient	22%	24%	28%	13%	24%
A peer resident	26%	30%	32%	18%	23%
A medical student	4%	5%	5%	5%	5%
A family member	34%	28%	32%	18%	29%
A basic scientist	6%	7%	3%	5%	6%
A medical school administrator	4%	2%	3%	0%	2%
A counselor	2%	2%	4%	0%	2%
A member of the clergy	2%	3%	3%	3%	2%

\*Wording of question: "Looking back, has there been an individual who made a difference in how you look at and value medicine as a profession who was..."

The numbers in **bold** type are the highest values. For all residents, physicians were the most influential. It is apparent that the choice of program type was closely related to the

type of physician more likely to be a role model or mentor. This was especially true for the residents who choose osteopathic residency programs.

***Strengths and Weaknesses of Osteopathic Medical Education***

**(Open-ended questions)**

The survey questionnaire concluded with open-ended questions about the strengths and weaknesses of the medical education the residents had received. We asked the residents to list what they thought were the greatest strengths and weaknesses of the osteopathic medical pre-clinical and clinical education. (The content of the residents’ responses was coded, and the numbers of responses related to different topics and issues were computed.)

The residents’ assessments of the strengths and weaknesses of the preclinical education and the medical curriculum at their osteopathic medical schools are summarized in the following four tables.

<b>Table 2.40</b>					
<b>Second-year residents’ assessments of the greatest strengths of osteopathic preclinical education, by type of residency program, 2003</b>					
<b>Topics assessed</b>	<b>AOA- accredited</b>	<b>ACGME- accredited</b>	<b>Dual- accredited</b>	<b>Military</b>	<b>Overall average</b>
Basic Sciences	35%	34%	23%	29%	32%
Variety\Flexibility	27%	32%	36%	39%	32%
OMT/OPP	13%	12%	15%	4%	12%
Patient Education	8%	8%	8%	7%	6%
Clinical Relevance of Education	3%	8%	4%	7%	8%
Case Based Approach	4%	4%	5%	4%	4%
Lack of Competition among students	5%	1%	4%	0%	2%
High Resource Levels	2%	1%	1%	7%	2%
Primary Care Emphasis	2%	0%	0%	0%	1%
Specialty	1%	0%	0%	0%	1%
Systems Based Approach	1%	0%	2%	0%	0%
Preparation for Boards	0%	1%	0%	4%	0%

This table, sorted on descending overall average, shows all the topics mentioned by the 650 residents (68%) who answered this question. Slightly more residents (684, 72%) cited weaknesses in their pre-clinical education. These findings are shown in Table 2.41.

<b>Topics assessed</b>	<b>AOA- accred.</b>	<b>ACGME- accred.</b>	<b>Dual- accred.</b>	<b>Military</b>	<b>Overall average</b>
Weak in Specialty	23%	23%	28%	26%	24%
Weak Clinical Encounters	13%	17%	14%	6%	15%
Basic Sciences	10%	17%	9%	10%	14%
Teaching effectiveness	9%	10%	14%	10%	11%
OMT\OPP	9%	6%	8%	6%	7%
Research	7%	5%	8%	10%	6%
No Competition Between Students	3%	5%	2%	0%	4%
Excessive Class Size	4%	3%	2%	6%	7%
Insurance\HMO\Legal Discussion	4%	2%	3%	0%	2%
Organization	3%	2%	2%	3%	2%
Instability\New Program	1%	3%	1%	0%	2%
Issues of DOs versus MDs	3%	2%	0%	0%	2%
Weak Board Preparation	4%	0%	2%	6%	2%
Inflexible\Not Enough Variety	1%	2%	1%	3%	2%
Administrative Problems\Politics	2%	1%	1%	0%	1%
Preparation for intern/clerkship	1%	1%	0%	0%	1%
Practice Management	1%	0%	1%	0%	0%
Systems Based Approach	0%	1%	0%	0%	0%
OMM*	0%	0%	0%	0%	0%

\*One resident in an allopathic program mentioned OMM – thus 0.2% is displayed as 0%

Only four topics were mentioned by as many as 10% of the residents. In comparing responses across programs, note that the residents in allopathic programs reported greater weakness in their medical schools' treatment of the basic sciences than the other residents did; they were also more critical of the clinical encounters/hands-on training they received than the other residents were. Aside from those two differences, however, the ratings were remarkably uniform across program types.

The residents also assessed the clinical curriculum of their osteopathic medical schools. Table 2.42 shows the strengths of that curriculum as reported by the 715 [75%] residents who answered this question.

**Table 2.42**  
**Second-year residents' assessments of the strengths of the clinical curriculum of their osteopathic medical schools, by residency program type, 2003**

Topics assessed	AOA- accred.	ACGME- accred.	Dual- accred.	Military	Overall average
Rotations\Large teaching base	40%	45%	44%	46%	44%
Electives\Requirements\Well Rounded	13%	15%	10%	23%	14%
Teachers, clinicians, professors	13%	13%	14%	15%	13%
Lots of Hands on Training	11%	12%	10%	4%	11%
Specialty	10%	7%	11%	4%	8%
Family Practice\Medicine\Primary Care	3%	4%	6%	8%	4%
High Levels or Responsibility	3%	1%	1%	0%	1%
High Levels of Supervision	2%	1%	1%	0%	1%
OMM Training	2%	1%	1%	0%	1%
Having a Base Hospital	2%	0%	0%	0%	1%
Systems Based Learning	1%	1%	1%	0%	1%

Here we find good agreement across the programs for the one pre-eminent strength: the rotations and the benefits of a large teaching base.

The residents also assessed the weaknesses of the clinical curriculum: 702 residents (74%) noted one or more specific topic they considered weak. Moreover, the

**Table 2.43**  
**Second-year residents' assessments of weaknesses in the clinical curriculum of their osteopathic medical schools, by type of residency program, 2003**

Topics assessed	AOA- accred;	ACGME- accred.	Dual- accred	Military	Overall average
Mandatory\Poor\Distant Rotations	23%	26%	19%	8%	24%
Organization\lack of structure	14%	16%	18%	29%	16%
Emphasis on Certain Specialty (mentioned)	16%	14%	22%	8%	16%
Education\Teaching\Readings	12%	9%	9%	13%	10%
School did not have its own Hospital	6%	8%	5%	8%	16%
Lack of Hands on Training	4%	8%	7%	13%	7%
Lack of Variety\Inflexible	12%	4%	7%	85	6%
Weak Affiliates	6%	6%	9%	4%	6%
Lack of Follow Up\Abandon Students	3%	4%	2%	0%	4%
No Shelf Exams	2%	1%	1%	4%	1%
Unprepared for testing following training	0%	1%	0%	4%	1%
Problems between DOs and MDs	0%	1%	0%	0%	1%
Preventative Medicine	1%	0%	0%	0%	0%
No Competition between Students	0%	1%	0%	0%	0%

number one weakness was the same topic that was the number one strength: the rotations. Similarly, the number three strength was also the number four weakness: the educational experience / ability of the teachers.

### **Conclusion**

We have looked at selected demographic characteristics of the residents and the relationship between program options, i.e., AOA-accredited, ACGME-accredited, and dual-accredited training programs. We have looked at the residents' overall satisfaction with their choices and careers to date, the influence of debt, and their reflections upon the strengths and weaknesses of their medical school curricula.

### ***Section 3: Survey of Osteopathic Residency Directors***

The American Association of Colleges of Osteopathic Medicine and the American Osteopathic Association sponsored a survey in 2003 of the directors of osteopathic residency programs. Each association's leadership, like the profession as a whole, had become increasingly interested in the nature of programs needed by today's residents and to maintain the osteopathic tradition in increasingly complex educational environments.

#### **Study Description and Protocol**

Over a two-month period in Spring 2003, the Office for Survey Research (OSR) at Michigan State University's Institute for Public Policy and Social Research (IPPSR) sent questionnaires to 305 osteopathic program directors. The sample was obtained from the American Association of Colleges of Osteopathic Medicine (AACOM).

Initial contact was a letter to the 305 residency directors. The letter explained the purpose of the study and was accompanied by a questionnaire specially developed and tested for the survey. The OSR established a database to track the progress of returns, and two weeks after the first mailing, a reminder was sent to all respondents. After another week, a second questionnaire and follow-up letter was sent to all non-respondents, i.e., all who had neither returned a completed questionnaire nor been found to be ineligible. (The complete questionnaire and all correspondence letters can be found in Appendix E to this report entitled "Materials.")

<b>Table 3.1</b>		
<b>Survey statistics for survey of residency program directors</b>		
Sample Statistics		
Total Sample	305	
Out of Sample – Undeliverable	12	
Final Sample	293	
		Percent of Known
Total known	154	100
Returned completed	125	81
Ineligible	3	2
Refused	1	1
Duplicate	1	1
Deceased	0	0
Unknown	151	
Unknown assumed ineligible	2.9	
Eligible Unknown	148.1	
Response rate = Total complete divided by (Final sample – known ineligible – ineligible unknown) 43.7%		
Cooperation rate = 1 – (refusals/known) 99.4%		

The calculated response rate of 43.7% is based on the formula used by the American Association of Public Opinion Research (AAPOR). The formula applies the percentage of ineligible respondents in known cases to the unknowns.

### **Prior Experience**

The directors were asked questions about the previous medical training positions they had held before becoming program directors. Only 12% of the program directors reported that they had no experience in specialty training. Thus it seems that a large majority of program directors had such past experience. (Table 3.2)

<b>Table 3.2</b>		
<b>Residency program directors' years of specialty training</b>		
Specialty Training Years	N	Percent
1 to 5	48	42.5%
6 to 10	34	30.1%
More than 10	18	15.9%
N/A or None	13	11.5%

The next two questions addressed the program directors' experience as assistant and associate program directors, respectively. The responses indicate that about half of the program directors that responded to this question (54.4%) held an assistant program director position prior to becoming a program director. Although only 39.2% of the

program directors responded to the question about their experience as an associate program director, a large majority of them (75.5%) reported that they had never held such a position. (Table. 3.3)

<b>Table 3.3</b>		
<b>Residency program directors' experience as assistant and associate program directors</b>		
<i>Years Assistant P.D.</i>	<i>N</i>	<i>Percent</i>
1 to 5 Years	29	42.6%
6 to 10 Years	3	4.4%
More than 10 Years	1	1.5%
N/A or None	35	51.5%
<i>Years Associate P.D.</i>	<i>Count</i>	<i>Percent of Valid Responses</i>
1 to 5 Years	8	16.3%
6 to 10 Years	2	4.1%
More than 10 Years	2	4.1%
N/A or None	37	75.5%

### **Program Attributes**

The questionnaire contained many questions about the directors' programs.

**Program affiliation and accreditation.** The program directors were asked about their program's OPTI affiliation. The most common response (32%) was that the program's OPTI affiliate was Michigan State University. The program directors were then asked to classify their programs' affiliations. A majority of the responding directors reported that their programs were affiliated with a university to some extent (79%). An even larger majority were community-based to some degree (85%).

<i>School Affiliation</i>	<i>N</i>	<i>Percent</i>
MSU	29	31.2
OU/OU-COM/Ohio University	8	8.6
OSU/Oklahoma State	4	4.3
PCOM	12	12.9
LECOM	6	6.5
NYCOM/NYCOMEC	3	3.2
NEOM EN	3	3.2
Texas/OPTI Texas	3	3.2
OPTI West	3	3.2
OPTIK/OPTI Kirksville	3	3.2
UMONJ	2	2.2
KCOM	2	2.2
Misc.	15	16.1

<i>Type of Affiliation</i>	<i>N</i>	<i>Percent</i>
Community based - no university affiliation	19	15.2%
Community based – university affiliation	87	69.6%
University based	12	9.6%
Other	3	2.4%

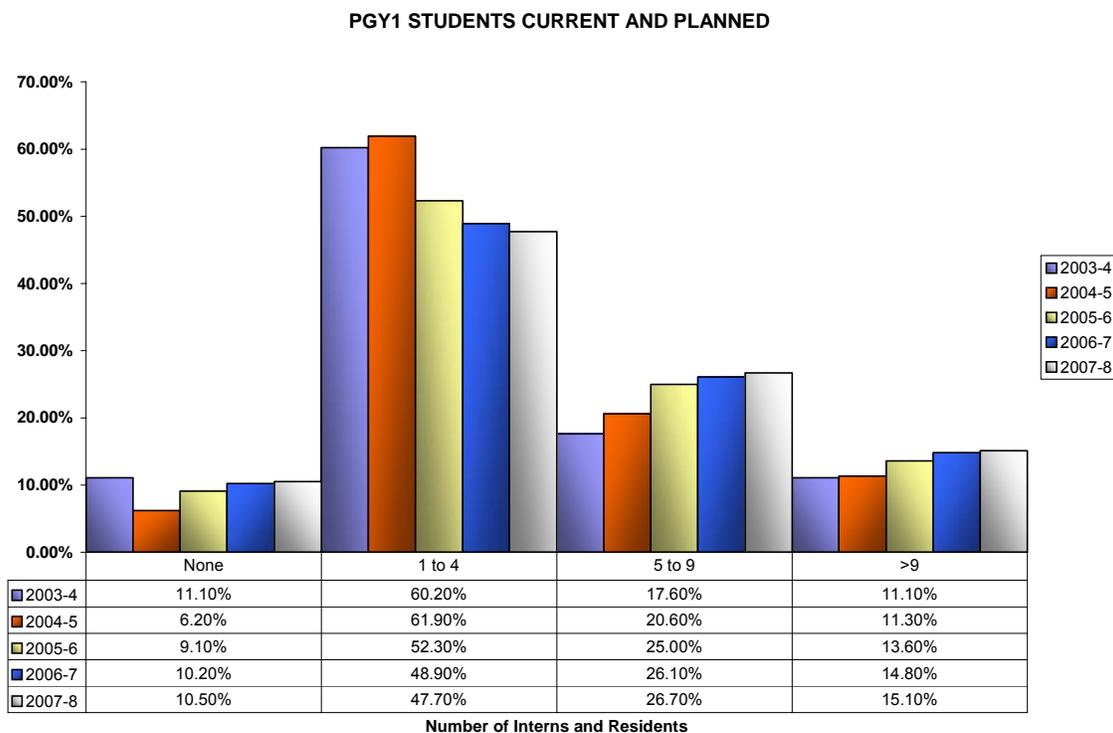
The directors were also asked about the type of accreditation available to their programs. As can be seen from the results shown in Table 3.6, a small number (8%) of the programs offered dual accreditation. A majority who responded indicated that they had no plans to acquire dual accreditation; 30 programs (24%) planned to acquire or continue it.

<i>Type of Accreditation</i>	<i>N</i>	<i>Percent</i>
ACGME	15	12.0%
AOA	100	80.0%
Dual Accreditation	10	8.0%

**Table 3.7**  
**Residency program directors' reports of plans to acquire or continue dual accreditation**

<i>Future Plans</i>	<i>N</i>	<i>Percent</i>
Do not plan to acquire dual accreditation	88	70.4
I plan to acquire dual accreditation	21	16.8
I do not plan to continue dual accreditation	1	0.8
I plan to continue dual accreditation	9	7.2

**Plans to increase size.** The program directors were asked to describe plans for the future size of their classes in their programs. The results for the PGY1—PGY4 are presented in Figure 1. (The response rates for information on the PGY5—PGY8 classes dropped so low that the data gathered is too small for meaningful analysis.)

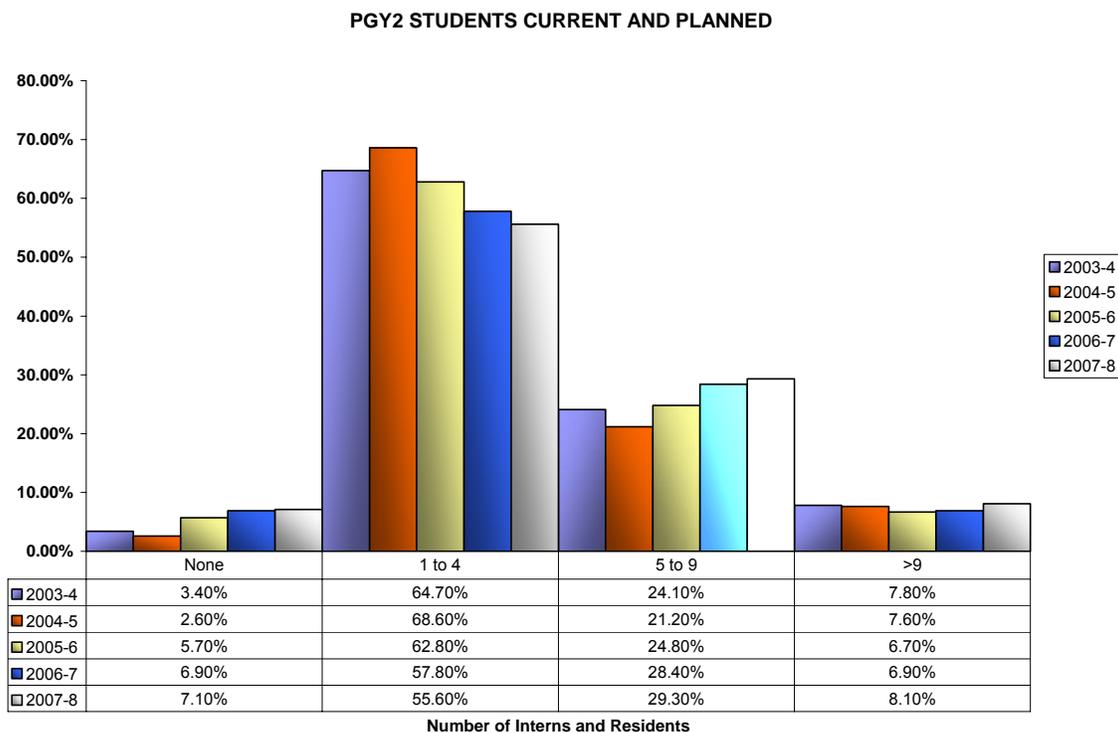


**Figure 3.1 Residency program directors' reported plans for class sizes of PGY1 residents, 2003-4 through 2007-8**

The numbers in the category *1 to 4* residents showed a downward trend while the categories *5 to 9* residents and *>9* residents showed an upward trend in the plans for the

next five years. Thus it would seem that the program directors planned to have more PGY1 residents in the future than they had then.

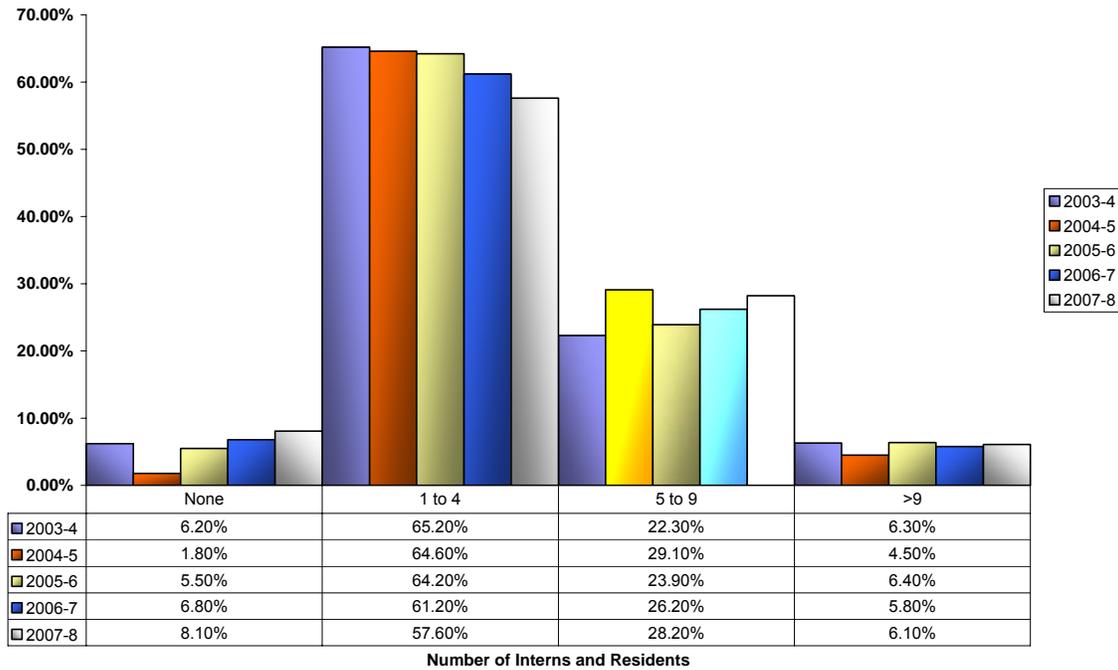
The trend in the *1 to 4* residents for PGY2 residents' has a trend similar to the one for the PGY1 residents (i.e., an increase followed by a steady decrease). The *5 to 9* category also has the same pattern as in the previous graph, indicating that the program directors planned to increase the number of PGY2 residents in their programs over the next few years.



**Figure 3.2 Residency program directors' reported plans for classes sizes of PGY2 residents, 2003-4 through 2007-8**

Again, with the PGY3 residents a downward trend in the *1 to 4* category of residents, and an upward trend in the *5 to 9* category, indicates that the program directors planned to have more PGY3 residents in the future.

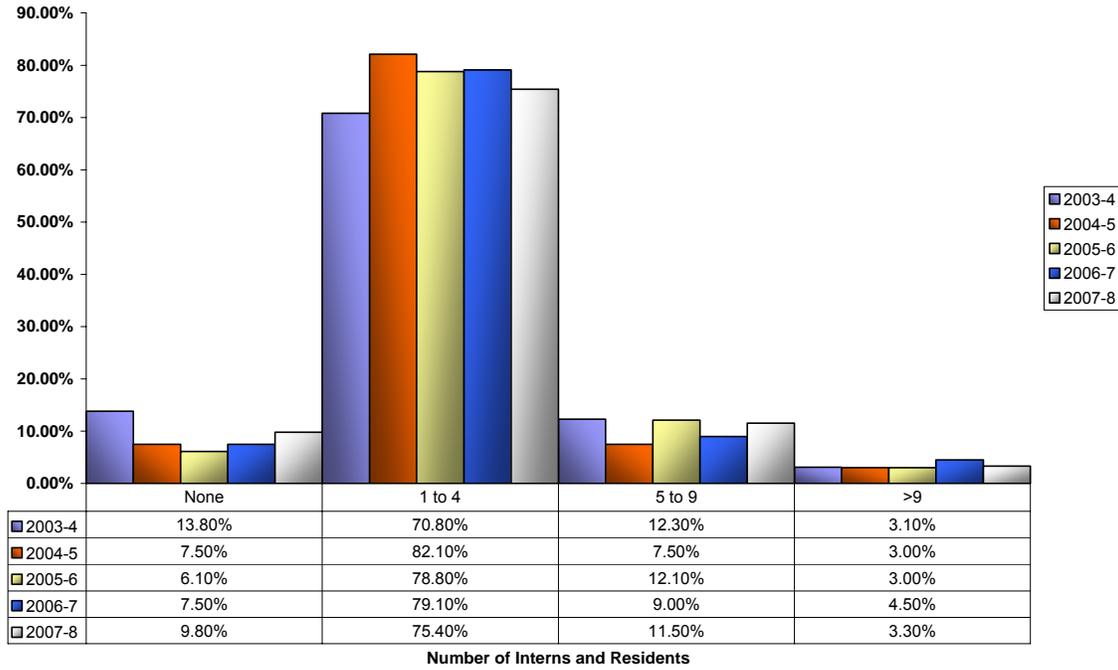
**PGY3 STUDENTS CURRENT AND PLANNED**



**Figure 3.3 Residency program directors’ reported plans for future class sizes of PGY3 residents, 2003-4 through 2007-8**

The responses to the PGY4 question showed an abrupt increase in the planned number of PGY4 residents during the 2004-5 year followed by a decrease in the *1 to 4* category. No other trends were observed.

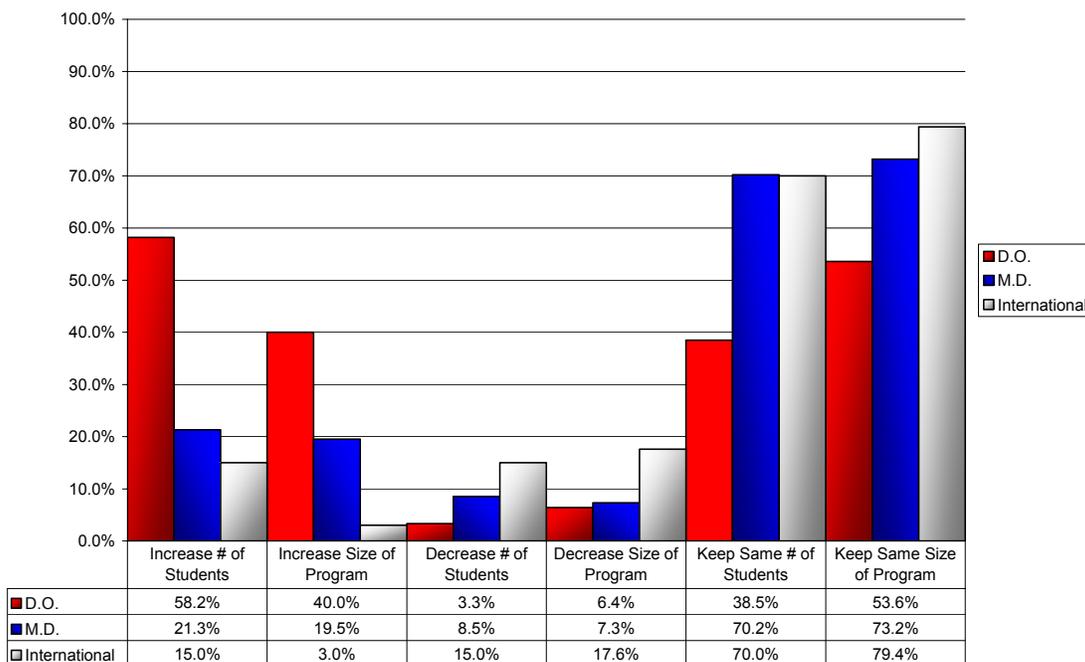
PGY4 STUDENTS CURRENT AND PLANNED



**Figure 3.4 Residency program directors’ reported plans for future class sizes of PGY4 residents, 2003-4**

Later in the questionnaire, the directors were asked similar questions about the expected future size of the programs that they oversaw. They were first asked about the future number of D.O., M.D., and International students in their programs, and then about the size of the D.O., M.D., and International components of their programs. The results of these questions are summarized in Figure 3.5.

Direction of Program Over Next 5 Years



**Figure 3.5 Residency program directors’ reports of the size and future planned size of the DO, MD, and International components of their programs**

A majority (58%) of the responding program directors reported that they planned to increase the number of D.O. residents in their programs over the next five years. Larger majorities reported having plans to keep the same number of trainees in their M.D. and International programs (70% for each).

These results are in line with the responses given to the question about the number of trainees in each stage of the program over the next five years, but notice that although the responses to the questions about the number of trainees in the program and about the program size are highly correlated (see Table 3.8), they are not exactly the same. The differences indicate that there may be some aspect of the program besides the number of students that the program directors see as influencing the “size” of the program.

<b>Table 3.8</b>				
<b>Correlation of residency directors' reported plans for number of trainees and program size</b>				
		<b>Correlations</b>		
		<b>D.O. Size</b>	<b>M.D. Size</b>	<b>Int. Size</b>
# D.O. Students	Pearson Correlation	0.397**	N/A	N/A
# M.D. Students	Pearson Correlation	N/A	0.652**	N/A
# Int. Students	Pearson Correlation	N/A	N/A	0.568**
** Correlation is significant at the 0.01 level (2-tailed).				

### *Educational Attributes*

The program directors were first asked if they believed that they educated a sufficient number of medical students. An overwhelming majority of program directors (88%) thought that their programs educated a sufficient number of medical students.

The program directors were also asked whether their programs were enriched by the presence of medical students.

<b>Table 3.9</b>		
<b>Residency program directors' agreement/disagreement about whether they educated a sufficient number of medical students</b>		
<i>Educate Sufficient # of Medical Students</i>	<i>N</i>	<i>Percent</i>
Strongly Agree	49	39.2%
Agree	61	48.8%
Neutral	9	7.2%
Disagree	4	3.2%
Strongly Disagree	2	1.6%

<b>Table 3.10</b>		
<b>Residency directors' judgment as to whether medical students enriched the residency program</b>		
<i>Program Enriched by Medical Students</i>	<i>N</i>	<i>Percent</i>
Strongly Agree	55	44.0%
Agree	53	42.4%
Neutral	15	12.0%
Disagree	1	0.8%
Strongly Disagree	1	0.8%

Only 2% of them responded that they did not think their program benefited from the presence of medical students, while 86.4% thought that their programs benefited. These numbers indicate a large consensus among program directors that their programs benefit from the positive externalities generated by the presence of medical students.

The next question was about whether a formalized instructional program was available to the residents.

<b>Table 3.11</b>		
<b>Percentages and numbers of residency directors who reported formalized instructional programs available in their programs</b>		
<i>Formalized Instructional Program Available</i>	<i>N</i>	<i>Percent</i>
Yes	87	71.3%
No	21	17.2%
In the Planning Stage	14	11.5%

A large majority (83%) of the responding program directors reported that such programs were available to the programs' residents (71%) or were being planned (12%).

The program directors were asked a series of questions about teaching opportunities provided by the program. First, they were asked whether their programs offered good opportunities for teaching.

<b>Table 3.12</b>		
<b>Residency directors' agreement or disagreement as to whether their programs provided good teaching opportunities for residents</b>		
<i>Provides Good Teaching Opportunities</i>	<i>N</i>	<i>Percent</i>
Strongly Agree	51	40.8%
Agree	54	43.2%
Neutral	12	9.6%
Disagree	7	5.6%
Strongly Disagree	1	0.8%

As shown in Table 3.12, a large majority of the program directors who responded (84%) thought that their programs provided the residents with good teaching opportunities.

The directors' requirements and/or expectations of the residents in a variety of teaching areas was the subject of a set of questions.

<b>Table 3.13</b>		
<b>Residency program directors' responses about teaching opportunities and expectations in their programs</b>		
<i>Teaching Medical Students</i>	<i>N</i>	<i>Percent</i>
Yes Expect to Teach	108	88.5%
No, Not Expected to Teach	14	11.5%
Yes, Encouraged	10	71.4%
No, Not Encouraged to Teach	1	7.1%
<i>Teaching Junior Residents</i>	<i>N</i>	<i>Percents</i>
Yes, Expected to Teach	123	100.0%
No, Not Expected to Teach	0	0.0%
<i>Teaching Medical Staff</i>	<i>N</i>	<i>Percents</i>
Yes, Expected to Teach	92	75.4%
No, Not Expected to Teach	30	24.6%
Yes, Encouraged	11	61.1%
No, Not Encouraged to Teach	7	38.9%
<i>Teach Allied Health Staff</i>	<i>N</i>	<i>Percents</i>
Yes, Expected to Teach	71	59.2%
No, Not Expected to Teach	49	40.8%
Yes, Encouraged	24	72.7%
No, Not Encouraged to Teach	9	27.3%

An overwhelming majority of the program directors indicated that they expected their residents to teach their medical students; and out of those that did not expect such teaching, a majority encouraged it. Combining the responses, it is found that 97% of the program directors either expected or encouraged residents to teach medical students. All of the directors expected their residents to educate the programs junior residents.

There was less agreement about resident's teaching allied health staff. A slight majority (59%) of the program directors required such activity. Overall, 78% of the program directors either expected or encouraged their residents to teach allied health staff.

As can be seen in the table, three-quarters of the program directors also expected their residents to teach the medical staff; and the majority of those who did not expect it,

encouraged it. Overall, 84% of the program directors either expected or encouraged their residents to teach the program's medical staff.

<b>Table 3.14</b>		
<b>Residency program directors' reports of their programs' expectations that their residents teach patients and the general public</b>		
<i>Teach Patients</i>	<i>N</i>	<i>Percents</i>
Yes, Expected to Teach	98	80.3%
No, Not Expected to Teach	24	19.7%
Yes, Encouraged	10	66.7%
No, Not Encouraged to Teach	5	33.3%
<i>Teach General Public</i>	<i>N</i>	<i>Percents</i>
Yes, Expected to Teach	59	49.2%
No, Not Expected to Teach	61	50.8%
Yes, Encouraged	26	59.1%
No, Not Encouraged to Teach	18	40.9%

In line with the responses for the other teaching activities, a majority of the responding program directors indicated that they expect their residents to teach patients (and a majority of those not expecting such teaching activity encourage it). Combining the categories shows that 89% of the responding program directors either expected or encouraged their residents to educate patients. Another area of teaching, however, elicited less agreement. There was a nearly an even split in between the program directors who expected their residents to educate the general public and those that did not, and only a slight majority of those that did not expect this teaching activity encouraged their residents to do it. However, combining the two responses reveals that almost three fourths indicated that they expected or encouraged their residents to educate the general public.

***General Miscellaneous Attributes***

The program directors were also asked about general miscellaneous attributes of their programs. They were asked to rate their agreement or disagreement with a series of statements about program attributes. The ratings were on a five-point scale, from strongly agree to strongly disagree. (The results are presented in Table 3.15.)

The directors were asked about the extent that personal data assistants and laptops were integrated into their programs. There was not a large consensus on the integration of

<b>Table 3.15</b>		
<b>Residency directors' agreement or disagreement that PDA/laptop computers were integrated into their programs</b>		
<i>PDA/Laptops are integrated into Program</i>	<i>N</i>	<i>Percent</i>
Strongly Agree	23	18.5%
Agree	42	33.9%
Neutral	24	19.4%
Disagree	28	22.6%
Strongly Disagree	7	5.6%

PDA/laptops. The directors were fairly evenly split (52% vs. 48%) between those who said they agreed or strongly agreed with this statement and those who were either neutral or disagreed.

<b>Table 3.16</b>		
<b>Residency program directors' assessment of the adequacy of their medical libraries</b>		
<i>Medical Library is Adequate</i>	<i>N</i>	<i>Percent</i>
Strongly Agree	62	50.4%
Agree	43	35.0%
Neutral	12	9.8%
Disagree	6	4.9%
Strongly Disagree	0	0.0%

Conversely, when asked about the adequacy of their medical libraries, a large positive consensus (84%) of the directors responded that the libraries were adequate.

Finally, the program directors were asked whether they were given ample opportunity to develop their skills in resident and fellow education. Of those who responded, 61% said

<b>Table 3.17</b>		
<b>Residency program directors' assessment of opportunities to develop their own educational skills</b>		
<i>Provided with Ample Opportunities</i>	<i>N</i>	<i>Percent</i>
Strongly Agree	25	20.0%
Agree	51	40.8%
Neutral	24	19.2%
Disagree	19	15.2%
Strongly Disagree	6	4.8%

they were given adequate opportunities to develop their own educational skills, while 20% thought they were not.

***Program Research Attributes***

Three questions were asked about the programs' research attributes. The directors were asked to rate their level of agreement or disagree with three statements, using a five-point scale ranging from strongly agree to strongly disagree.

The first question asked whether the house staff had adequate funding to give them opportunities for relevant research. Overall, the program directors who responded were evenly divided (38% vs. 40%) between those who agreed (strongly agree/agree) and those who disagreed with the statement (disagree/strongly disagree).

**Table 3.18**  
**Residency directors' assessments of selected research-related attributes of their programs**

	<i>N</i>	<i>Percent</i>
<i>Adequate funding for relevant research for residents</i>		
Strongly Agree	7	5.6%
Agree	41	32.8%
Neutral	26	20.8%
Disagree	43	34.4%
Strongly Disagree	7	5.6%
<i>Faculty with research experience available to mentor residents</i>		
Strongly Agree	14	11.2%
Agree	33	26.4%
Neutral	23	18.4%
Disagree	40	32.0%
Strongly Disagree	15	12.0%
<i>Adequate space available carry out research</i>		
Strongly Agree	11	8.8%
Agree	32	25.6%
Neutral	33	26.4%
Disagree	34	27.2%
Strongly Disagree	15	12.0%

The directors were next asked their level of agreement with the statement, “Faculty with research experience are available to mentor house staff on research projects. With only 38% of them agreeing, compared to the 44% who disagreed, it seems that, by a slight margin, the responding program directors considered that their house staff did not have adequate mentoring from the faculty on research projects.

To get a better idea of the program directors’ perceptions of the research capabilities of their programs, the directors were asked whether the house staff had adequate space to carry out their research studies. Their responses, like those to the previous research-oriented question, indicate that a small plurality of the program directors considered their programs’ research capabilities lacking. Only 34% agreed (strongly agree/agreed) that their house staff had adequate space to conduct their research projects, while 39% disagreed (disagreed/strongly disagreed).

### *House Staff Attributes*

A set of questions dealt with several aspects of the programs' house staff.

The program directors were asked whether they agreed that an adequate amount of faculty time was allotted for the education of the house staff. A majority (61%) of the program directors who responded agreed (strongly agreed/agreed) that adequate faculty time was allotted, with only 25% considering that the amount was inadequate (disagreeing/strongly agreeing) with the statement.

**Table 3.19**

**Residency program directors' agreement or disagreement as to whether adequate faculty time was allotted to educating residents**

	<i>N</i>	<i>Percent</i>
Strongly Agree	24	19.5%
Agree	51	41.5%
Neutral	17	13.8%
Disagree	26	21.1%
Strongly Disagree	5	4.1%

The directors were asked two questions about the balance between patient service and education in their programs. First, they were asked about their agreement with the

**Table 3.20**

**Residency directors' assessment of patient support services and time for education in their programs**

	<i>N</i>	<i>Percent</i>
<i>Sufficient patient support services to focus on education</i>		
Strongly Agree	30	24.0%
Agree	55	44.0%
Neutral	22	17.6%
Disagree	15	12.0%
Strongly Disagree	3	2.4%
<i>Proper balance between educational needs and patient care</i>		
Strongly Agree	44	35.2%
Agree	64	51.2%
Neutral	12	9.6%
Disagree	4	3.2%
Strongly Disagree	1	0.8%

statement, “The house staff has sufficient patient support services so that their time is focused on education.” A majority (68%) of the responding directors agreed (strongly agreed/agree) that their house staff had sufficient patient support services so that their time was focused on education, while only 14% did not.

The next question was about the balance between patient care and the educational needs of the house staff. The program directors were asked if they agreed that their programs had achieved a proper balance between educational needs and patient care.

A large majority of the program directors (86%) who responded agreed (strongly agree/agree) that they had struck a proper balance in their programs. Although it would be interesting to know which aspects of the house staffs’ needs those that disagreed thought needed more attention, such analysis is not possible from the data collected, and any results would be of little importance because only 4% of the directors disagreed (thought their programs did not have a proper balance).

The next question is in regards to the ability of the program to recruit house staff into senior staff positions in the program.

<b>Table 3.21 Residency directors’ reports of their programs’ ability to recruit house staff into senior staff positions</b>		
<i>Previous house staff into senior positions</i>	<i>N</i>	<i>Percent</i>
Strongly Agree	43	35.0%
Agree	50	40.7%
Neutral	17	13.8%
Disagree	13	10.6%
Strongly Disagree	0	0.0%

Over three fourths of the responding program directors (75.7%) indicated that they were able to successfully recruit past house staff into senior staff positions in their program.

The program directors were next asked questions about regards to the rotations that their house staffs participated in away from the program’s training site.

The first of these questions asked if the house staff was required to rotate away from the training site in order to meet AOA/ACGME requirements.

The responding program directors gave mixed responses about AOA-ACGME requirements for the rotation of their house staff, with 55.2% stating that this was a requirement and 37.4% stating that they did not think this was required.

<b>Table 3.22 Residency directors' responses about reasons their residents did rotations away from the home training site</b>		
<b>To meet standards</b>		
<i>Must Rotate Outside to Meet Standards</i>	<i>N</i>	<i>Percent</i>
Strongly Agree	34	27.6%
Agree	34	27.6%
Neutral	9	7.3%
Disagree	27	22.0%
Strongly Disagree	19	15.4%
<b>To enrich experience</b>		
<i>Rotate Outside to Enrich Experience</i>	<i>N</i>	<i>Percent</i>
Strongly Agree	49	39.5%
Agree	53	42.7%
Neutral	10	8.1%
Disagree	7	5.6%
Strongly Disagree	5	4.0%

The program directors were given a chance to identify other reasons that their house staff might rotate away from the training site, specifically they were asked if this was done in order to enrich the experience of the house staff.

82.2% of the program directors indicated that their house staff rotated away from the training site to enrich their experience. Since this statistic undoubtedly contains those that are required to rotate outside the training site to meet outside standards it is appropriate to check the difference between these two statistics. 27% more program directors state that their house staffs rotate outside their training site to enrich their experience than are required to do so.

### *Certifying Exam Attributes*

The directors were asked questions that dealt specifically with programs whose residents were eligible to sit for both osteopathic and allopathic certifying exams. The first of these questions dealt with the director's perceptions on the timing of the residents' decision on which set of boards to take.

<b>Table 3.23</b>		
<b>Residency directors' reported perceptions of when residents decide which set of Board examinations to take</b>		
<i>Perception of Decision Timing</i>	<i>N</i>	<i>Percent</i>
Prior to acceptance into training program	2	10.0%
During the program	13	65.0%
After the program	5	25.0%
N/A, AOA-accredited program only	86	N/A

As this question was only applicable to those programs whose residents were eligible to sit for both sets of boards, those programs who were AOA-accredited only were removed from the total when calculating the percentages. While the sample of programs whom this question applied and also responded to the question was quite small (20), the majority of these directors indicated that they believe the residents made this decision while still in the program.

The directors were also asked about their program's policy as to which type of board certifying exam the residents were required to take.

<b>Table 3.24</b>		
<b>Residency directors' reports of which Board examinations their programs required residents to take</b>		
<i>Program's Policy</i>	<i>N</i>	<i>Percent</i>
Must sit for Osteopathic, Allopathic Optional	7	28.0%
Must sit for Allopathic, Osteopathic Optional	6	24.0%
Must sit for both	3	12.0%
Either is Acceptable	9	36.0%
N/A AOA-accredited program only	80	N/A

A few more directors of dual-accredited programs responded to this question (25) than to the previous one. There was no strong consensus on policies in this area. The modal

answer among the eligible and responding program directors was that either board exam was acceptable under current policies.

***OPTI Attributes***

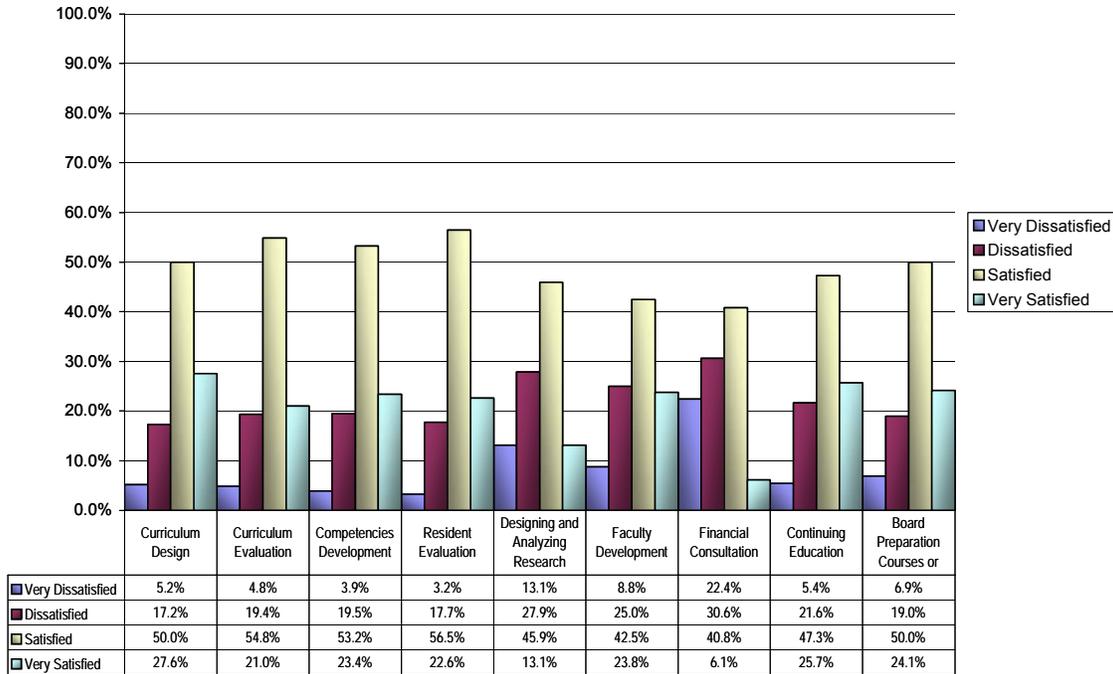
The program directors were asked whether their programs participated with an Osteopathic Postgraduate Training Program (OPTI), and if so, which program.

<b>Table 3.25 Residency directors' reports of whether and with which OPTI their program participated</b>		
<b><i>OPTI Affiliation</i></b>	<b><i>N</i></b>	<b><i>Percent</i></b>
MSU	27	21.6%
PCOM	12	9.6%
NYCOM/NYCOMEC	4	3.2%
OUCOM/Ohio University	9	7.2%
OPTI	3	2.4%
LECOM	7	5.6%
LNEOMEN	2	1.6%
KCOM	2	1.6%
CEME	4	3.2%
Misc	36	28.8%
Don't Participate in OPTI	19	15.2%

A majority of the responding program directors said that their program participated in an OPTI program, a finding that mirrored the responses to an earlier question regarding OPTI affiliation (although not replicating those results).

The directors who indicated that their programs participated with OPTIs were then asked a series of questions about their level of satisfaction with nine educational aspects of the OPTIs. The aspects were areas such as curriculum design, resident evaluation, and faculty development (Figure 3.6).

**Level of Satisfaction with OPTI**



**Figure 3.6 Residency directors’ levels of satisfaction with nine educational aspects of the OPTIs with which their programs were affiliated**

For most of the satisfaction categories, a large majority of the responding program directors reported high levels of satisfaction with their respective OPTI programs (over 75% indicating satisfied or very satisfied in *Curriculum Design*, *Curriculum Evaluation*, *Competencies and Development*, *Resident Evaluation*, and *Faculty Development*). The notable exception to was *Designing and Analyzing Research*, in which 41% of the responding directors indicated that they are either dissatisfied or very dissatisfied.

*Structurally-related Miscellaneous Attributes*

The directors were asked questions about four miscellaneous aspects of their programs. They were asked the number of beds in their hospital.

<b>Table 3.26</b>		
<b>Number of hospital beds in teaching hospital, reported by residency directors</b>		
<i>Number of Beds</i>	<i>N</i>	<i>Percent</i>
99 or less	1	0.9%
100-199	27	24.5%
200-299	30	27.3%
300-399	31	28.2%
400 or more	21	19.1%

A negligible percentage reported fewer than 99 beds in their hospital, but the rest of the responses were fairly evenly spread across the rest of the size categories. The mean number reported was 292 beds.

Three questions were asked about support and recruiting. The directors were asked to rate their degree of agreement or disagreement with a statement about each area of interest (the ratings were on a five-point scale ranging from strongly agree to strongly disagree).

The directors were asked first about the adequacy of on-call rooms and staff lounges in meeting the needs of the house staff.

<b>Table 3.27</b>		
<b>Residency directors' assessment of adequacy of call rooms and staff lounges for their house staff</b>		
	<i>N</i>	<i>Percent</i>
Strongly Agree	30	24.0%
Agree	55	44.0%
Neutral	23	18.4%
Disagree	14	11.2%
Strongly Disagree	3	2.4%

A majority (68%) of the responding directors agreed (strongly agree/agree) that the lounges and on-call rooms were adequate for their house staff.

They were asked about professional opportunities available to the graduates in the vicinity of their program’s training site. They were asked about professional opportunities in the vicinity of their program’s home institution.

<b>Table 3.28 Residency directors’ assessment that professional opportunities available nearby to graduates</b>		
<i>Professional Opportunities within 50 miles</i>	<i>N</i>	<i>Percent</i>
Strongly Agree	45	36.0%
Agree	66	52.8%
Neutral	8	6.4%
Disagree	5	4.0%
Strongly Disagree	1	0.8%

A very large majority (89%) of the responding program directors agreed that there were professional opportunities within 50 miles of their training sites.

The directors were also asked how successful their program had been in recruiting former medical students into their training programs as residents.

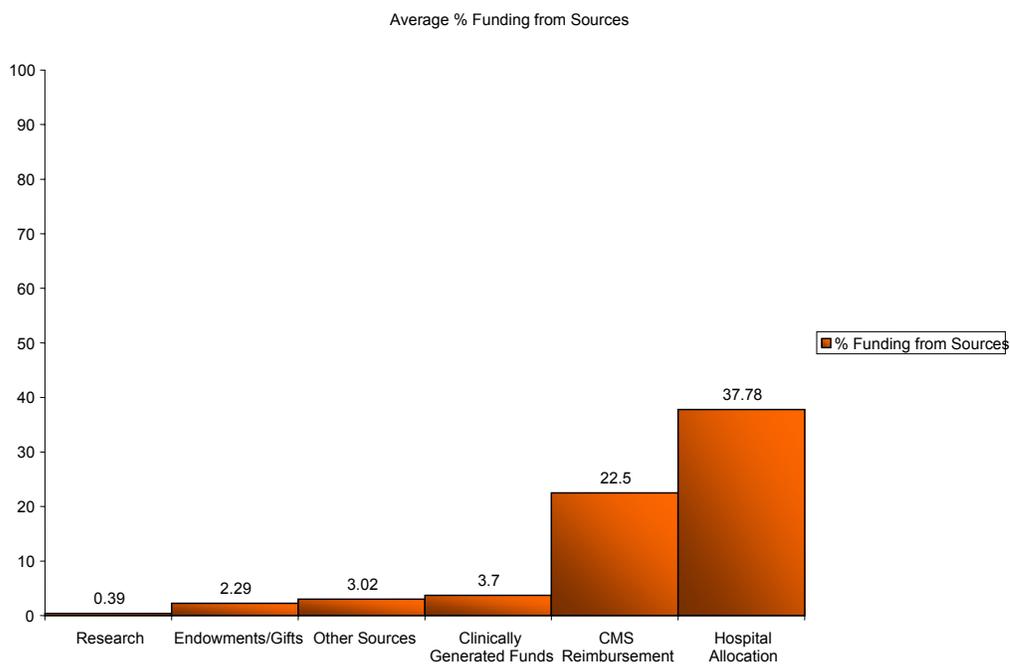
<b>Table 3.29 Residency directors’ judgment of their programs’ success in recruiting former medical students as residency</b>		
<i>Successful in Recruiting Past Medical Students</i>	<i>N</i>	<i>Percent</i>
Strongly Agree	49	39.2%
Agree	58	46.4%
Neutral	9	7.2%
Disagree	8	6.4%
Strongly Disagree	1	0.8%

Of the responding program directors, 86% agreed (strongly agree/agree) that their programs had been successful recruiting former medical students into their residency programs, while only 7% did not agree (disagree/strongly disagree).

### ***Program Finances***

The program directors were asked several questions about the financial attributes of their programs, ranging from the source of the program’s funding and its reimbursement levels to the necessity of incentives for staff and faculty. The response rates for these financial questions were lower than non-financial questions in the questionnaire.

The program directors were first asked the funding sources for their programs. Figure 7 displays the results.



**Figure 3.7 Sources of funding for residency programs, as reported by the residency directors**

The responding program directors’ responses about the sources of their funding indicated that the most common source was *hospital allocation* followed by Medicaid and Medicare reimbursement through the Centers for Medicaid and Medicare Studies (*CMS reimbursement*), *other sources*, and *endowments/gifts*; the least common source of funding was *research*.

The next set of questions was about the activities on which the program’s funds were spent. The directors were asked what proportion of their funds were spent on activities directly related to the training programs.

<b>Table 3.30</b>		
<b>Residency directors’ reports of the proportion of their programs’ funds spend directly, or shared, on training programs</b>		
<i>% Total Funds Not Spent on Training</i>	<i>N</i>	<i>Percent</i>
0-9%	28	63.6%
10-25%	7	15.9%
26-50%	3	6.8%
51-75%	2	4.5%
76-100%	4	9.1%
<i>% Total Funds Spent Directly on Training</i>	<i>N</i>	<i>Percent</i>
0-9%	4	6.8%
10-25%	6	10.2%
26-50%	2	3.4%
51-75%	6	10.2%
76-100%	41	69.5%
<i>% Total Funds Spent on Shared Training</i>	<i>N</i>	<i>Percent</i>
0-9%	34	70.8%
10-25%	8	16.7%
26-50%	4	8.3%
51-75%	1	2.1%
76-100%	1	2.1%

Of the responding program directors, 70% reported that 76-100% of their total funds were expended on training program activities. Fewer than half (response rates equaled 47%) of the program directors who returned the questionnaire did not answer this question, indicating the directors’ reluctance to discuss the issues or an ignorance of the financial issues of their programs.

The program directors were next asked to estimate how much of the program’s funds were spent on training services or activities shared with other training programs. The same percentage of directors (71%) answered the question, reporting that as 0-9% of their total funds were expended on shared training programs. The response rate (38%) on this question was even lower than for the previous one. The proportion of funds not spent on training activities, shared or otherwise, is also shown.

A majority (64%) of the responding directors indicated that the percentage of their total funds **not** spent on shared programs or their training program was in the category 0-9%. The 35% response rate to this question was the lowest of these three.

The next three questions addressed the program’s levels of reimbursement, Medicare utilization, and graduate student adjustment.

<b>Table 3.31</b>		
<b>Percentages and numbers of residency directors who reported direct GME reimbursement at each of five levels</b>		
<i>Direct Graduate Medical Education Reimbursement</i>	<i>N</i>	<i>Percent</i>
\$9,999 or less	5	6.8%
\$10,000 - \$19,999	4	5.4%
\$20,000 - \$39,999	21	28.4%
\$40,000 - \$79,999	32	43.2%
\$80,000 or more	12	16.2%

A majority (59%) of the responding program directors reported that they received \$40,000 or more in direct graduate medical education reimbursement, while only a small percentage (12.2%) indicated that they receive \$19,999 or less.. The rest of the directors indicated that they fell between those two ranges (28.4%). The overall response rate for this question was 59%.

<b>Table 3.32</b>		
<b>Percentages and numbers of residency directors who reported Medicare utilization rates at each of five levels</b>		
<i>Medicare Utilization Percent</i>	<i>N</i>	<i>Percent</i>
14% or less	3	6.1%
15% - 29%	9	18.4%
30% - 44%	12	24.5%
45% - 59%	16	32.7%
60% or more	9	18.4%

A very slight majority (51%) of the responding program directors reported that their program’s Medicare utilization percentage was over 45%, while a very small (6%) percentage reported a utilization percentage of less than 14%. The remaining 43% of the respondents fell in categories covering 15-44%. Low response rates to financial

questions is seen with 61% of those program directors returning the questionnaire failing to answer this question.

<i>Indirect Graduate Medical Education Adjustment</i>	<i>N</i>	<i>Percent</i>
\$24,999 or less	8	25.0%
\$25,000 - \$39,999	8	25.0%
\$40,000 - \$59,999	7	21.9%
\$60,000 - \$99,999	7	21.9%
\$100,000 or more	2	6.3%

The responding program directors were evenly split between receiving more than or less than \$40,000 in indirect graduate medical education adjustment. Only a quarter answered the question.

The program directors were also asked questions about the salaries, resources, and incentives for the programs' house staff and faculty. They were able to rate this question from strongly agree to strongly disagree.

	<i>N</i>	<i>Percent</i>
<b><i>Resources to recruit quality house staff adequate</i></b>		
Strongly Agree	20	16.0%
Agree	50	40.0%
Neutral	29	23.2%
Disagree	21	16.8%
Strongly Disagree	5	4.0%
<b><i>House Staff salaries/benefits are competitive</i></b>		
Strongly Agree	33	26.4%
Agree	55	44.0%
Neutral	20	16.0%
Disagree	13	10.4%
Strongly Disagree	4	3.2%
<b><i>Faculty incentives needed to increase participation</i></b>		
Strongly Agree	45	36.0%
Agree	35	28.0%
Neutral	20	16.0%
Disagree	19	15.2%
Strongly Disagree	6	4.8%
<b><i>Budget discretion is sufficient</i></b>		
Strongly Agree	3	2.4%
Agree	38	30.6%
Neutral	38	30.6%
Disagree	29	23.4%
Strongly Disagree	16	12.9%

Slightly over half (56%) of the responding program directors agreed (strongly agree/agree) that enough resources were allotted to recruit house staff for their programs. In a departure from their reactions to the specific financial questions, all the directors answered this question.

A majority (60%) of responding directors agreed (strongly agree/agree) that their program staff were adequately compensated. Again, all of the directors answered the question, while only 14% thought that their staff were under-compensated.

Regarding the need for faculty incentives, 64% of the responding program directors either agreed or strongly agreed that incentives were needed, while (20%) considered them unnecessary (disagree or strongly disagree).

The final financial question was the program directors' opinions about the discretion the program directors' have over their budgets. The program directors were mixed in their opinions about the amount of discretion they had over their programs' budgets. Overall, 36% of the responding directors said they are not given enough control, 33% that they were, and 31% that they did not care one way or another.

### ***Resident Attributes and Outcome Measures***

The program directors were asked a series of questions about the attributes of the residents in their programs and the outcome measures used to assess the residents' performance.

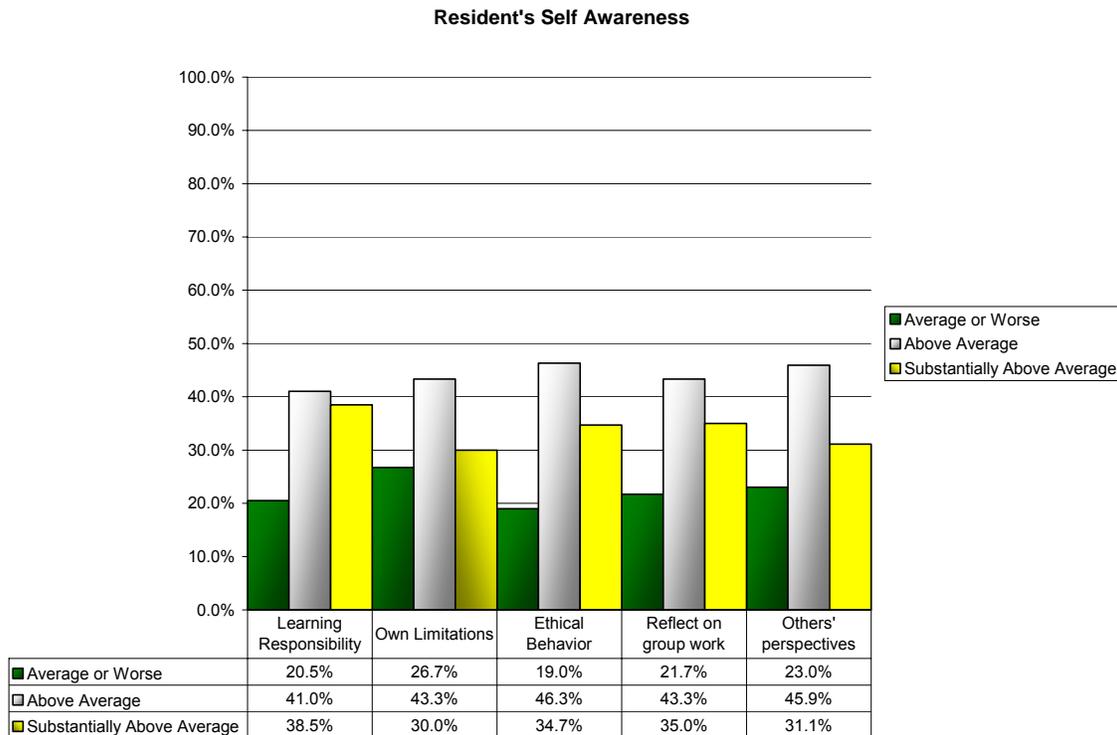
The directors were asked to rate the performances of their second-year residents on 11 different measures, the results are presented in Figure 3.8.



**Figure 3.8**  
**Residency directors' performance ratings for their residents on 11 measures**

Overall, the performance ratings given to the residents by the program directors was overwhelmingly positive (ranging from 71% for above average plus substantially above average for *written record* and *community member* to 87% for *professional attributes*). The notable exception to this norm was the rating given to *osteopathic principles*, where slightly under half (47%) of the second-year residents were rated as average or worse.

The directors were next asked to rate their second-year resident's self awareness on five different measures.



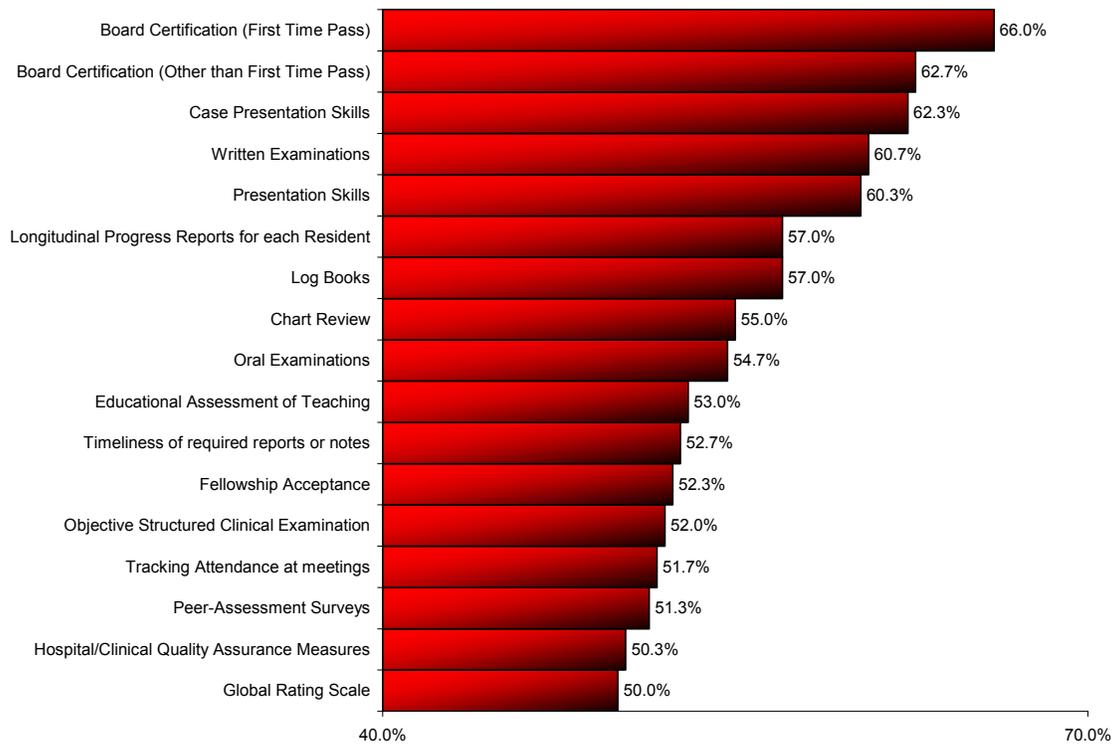
**Figure 3.9 Residency directors' ratings of their residents' self awareness in five areas of behavior**

The program directors' ratings of their residents' self awareness were consistently high over all the categories (ranging from 73% for *own limitations* to 81% for *ethical behavior*).

The importance of the outcome measures (for both patient and non-patient settings) used to monitor the resident's progress were rated by the program directors on a four-point scale of

0 – not important, but required; 1 – important; 2 – very important; and 3 – essential.

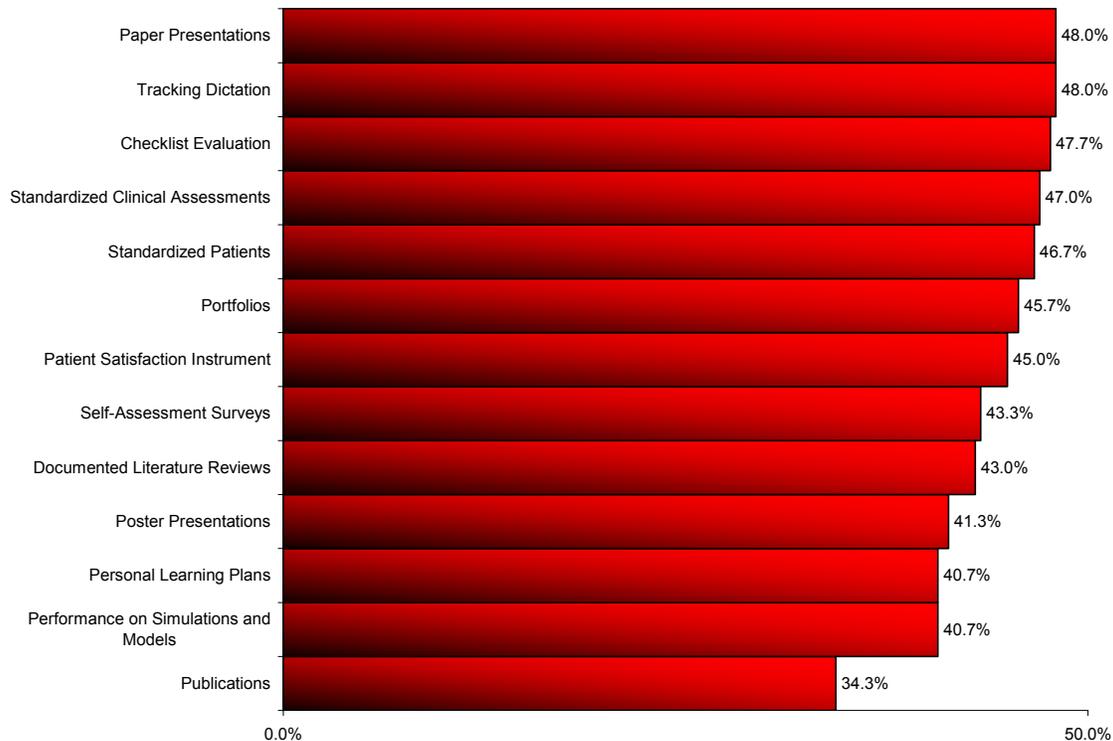
In Figure 4.10, the 17 outcome measures that received importance scores higher than 50% (i.e., a mean rating score of 1.5) are listed in descending order of importance. (The percentage score was derived by dividing the importance, an item's mean rating score, by three.)



**Figure 3.10 Seventeen outcome measures of resident performance receiving importance scores of 50% or higher by residency directors, listed in descending order of importance** (Outcome measures were rated on 4-point scale ranging from 0=*not important but required* to 3=*essential*; the percentage score was derived by dividing the mean rating score of an item by 3.)

The responding program directors thought that the two most important outcome measures they used to evaluate residents were the residents' board certification scores. Exams and presentation skills followed closely behind. All of the categories listed in this graph had a mean score of at least 1.5.

Figure 3.11 contains the outcome measures rated below 50% in importance by the program directors (that is, a mean score below 1.5).

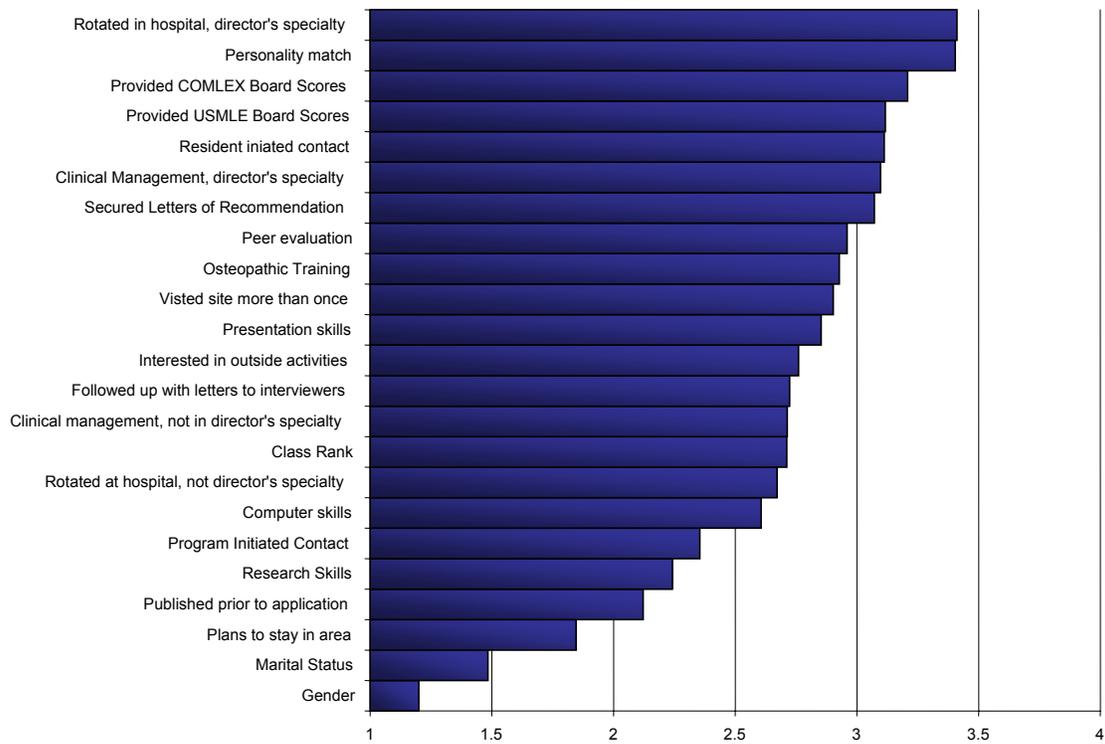


**Figure 3.11 Thirteen outcome measures of resident performance receiving importance scores lower than 50% by residency directors, listed in descending order of importance** (Outcome measures were rated on 4-point scale ranging from 0=*not important but required* to 3=*essential*; the percentage score was derived by dividing the mean rating score of an item by 3.)

The responding program directors thought that the least important outcome measure they used to evaluate their residents was the number of publications produced by the residents, followed by their performance on simulations/models and their personal learning plans.

### ***Recruitment and Selection***

The program directors were asked to rate a list of 23 criteria for selecting residents, using a four point scale (1, not a factor; 2, of little importance; 3, important; and 4, essential). Figure 3.12 displays these selection criteria and the directors' ratings.



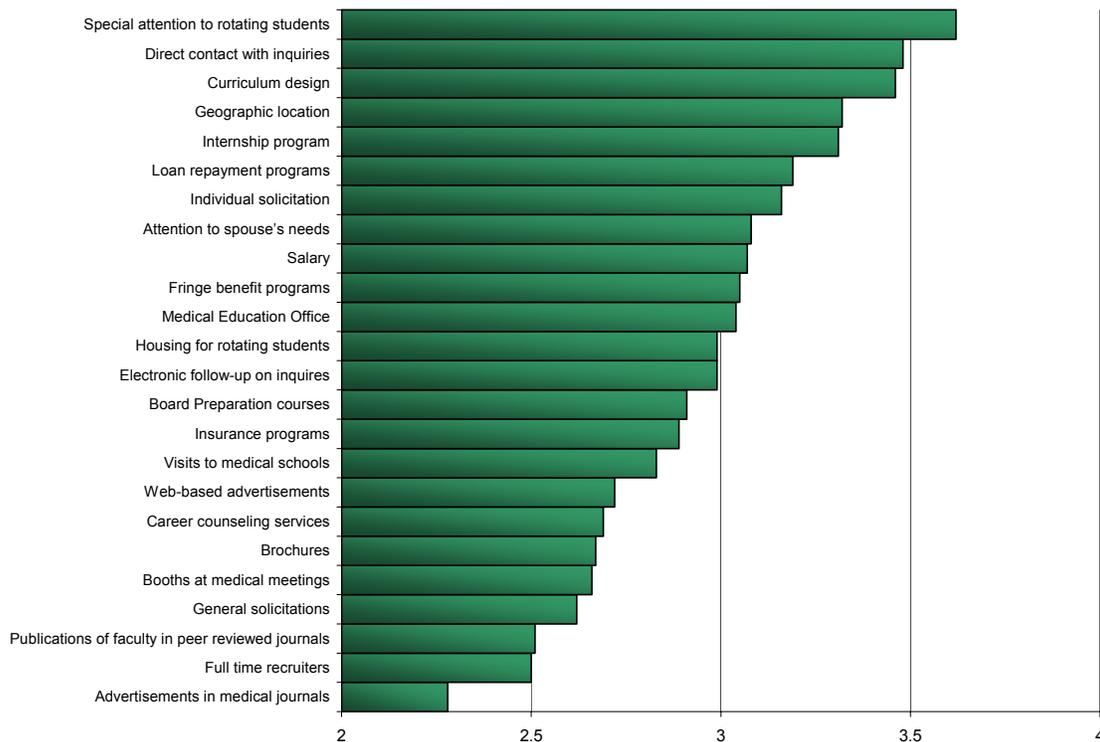
**Figure 3.12 Ratings of 23 criteria for importance in selecting residents by residency directors, displayed in descending order of rated importance.** (Ratings on 4-point scale ranging from 1=not a factor to 4=essential.)

The selection criteria are listed according to the responding program directors' ratings, with the most important listed first and the rest in decreasing order. Mean scores higher than 3 were considered higher than 75% (important % + essential %), any category (with a mean) of less than 2.5 was considered greater than 50% (not a factor % + of little importance %); and any category with a mean of less than 2.0 was considered to be greater than 75%.

The top two selection criteria, *rotated in the hospital, in director's specialty* and *personality match*, indicate that personal relationships built when doing rotations are of great importance to the resident's future success in obtaining a desired residency.

Similarly, the program directors were asked to rank a list of 24 recruitment strategies on a three-point scale (2, not effective; 3, somewhat effective; and 4, very effective).

The mean score for each recruitment strategy was calculated and the items were ranked by mean score. Figure 3.13 displays the rest of the directors' ratings by mean score of effectiveness, ranked in descending order of importance.



**Figure 3.13 Ratings by residency directors of the effectiveness of 24 strategies for recruiting residents, displayed in descending order of rated effectiveness (Ratings on 3-point scale ranging from 2=not effective to 4=very effective.)**

A few interesting remarks can be made about what is shown in this graph. First there is a perception that different types of “personal” attention to residents have varying degrees of success at recruiting residents. The two top-rated categories, *special attention to rotating students* and *direct contact with inquiries*, are types of personal attention, but so is *individual solicitation*, which is the seventh highest ranking category. After *individual solicitation*, the next strategy that could fall in this realm is very low on the list (*general solicitation*, ranked 21<sup>st</sup>) and *fulltime recruiters* is ranked 23<sup>rd</sup> of the 24 categories in effectiveness. Also, it seems that the responding program directors do not think that

getting a school's name out through advertising and faculty members' publications are effective recruiting strategies.

***Correlation of Recruitment Strategies and Selection Criteria***

Correlations between the recruitment strategies and selection criteria were calculated in order to examine whether any were significantly related. Of the 552 correlations between the recruitment strategies and the selection criteria, (12.5%) were significant at the .05 level (though many in the 69 reached significance levels higher than this).

Of particular interest were the top ranked recruitment strategies and the significantly correlated selection criteria. The top-rated recruitment strategy—*special attention to rotating students*—was significantly correlated to seven selection criteria. The criteria and the statistical details are presented in Table 3.35.

<b>Table 3.35</b>			
<b>Correlations between top-rated recruitment strategy and seven (of the 24) selection criteria</b>			
<b>Recruitment Strategy</b>	<b>Selection Criteria</b>	<b>Correlation</b>	<b>Sig</b>
Special attention to rotating students	Case presentation skills	0.2	0.028
	Clinical management of patients (in speciality)	0.247	0.006
	Clinical management of patients, not in speciality	0.264	0.004
	Computer Skills	0.231	0.011
	Osteopathic Training	0.262	0.004
	Rotated at the hospital, but not necessarily in your speciality	0.199	0.027
	Rotated at the hospital, in your speciality	0.263	0.003
All correlations were statistically significant at $p \leq 0.01$ or greater except case presentation skills.			

The selection criteria that are significantly correlated with the top-ranked recruitment strategy seem in general to flow in a similar stream. If the program director's paying special attention to students, they should be most impressed by those exhibiting good osteopathic, clinical management, and presentation skills, and the program director's are more likely to have an idea about applicant's skills if applicants have rotated at their hospital. (Notice that the correlation coefficient is higher on *rotated at the hospital, in your speciality* than it is for *rotated at the hospital, but not necessarily in your speciality*.)

Thus it would seem that program directors who pay special attention to their students, pay more attention to the students' ability to use their skills rather than to other indicators, such as Board scores or class rank, when selecting among applicants.

Other types of requirement strategies had different correlation patterns. For example, the recruitment strategy *electronic follow-up on inquiries* was significantly correlated with the selection criteria *provided COMLEX board scores*. The *web-based advertisements* recruitment strategy was significantly correlated with the four selection criteria *class rank, had publications prior to application, research skills/having participated in research, and secured letters of recommendation*.

The data show that particular recruitment strategies may be correlated with particular selection criteria, at least as based on the perceptions of residency program directors. It would seem that programs using certain recruitment strategies would be more likely to select candidates whose attributes best fit the selection criteria associated with those strategies.

### ***Open-ended Responses***

At the end of the questionnaire the program directors were asked to give their thoughts on the direction of their programs over the next five years. New programs and innovations were suggested as items of interest. Of the 125 total responding program directors, 75 gave some sort of additional comment (60%).

Their responses were analyzed and then coded into four categories, *expand the program, dual accreditation, financial issues, and misc/other*. These categories were created as part of the analysis process. A large majority of the comments fall into the first three; if a comment fit two or more categories, it was coded into all of the categories to which it applied. Then, each comment was coded as positive or negative. Table 3.43 gives details of the analysis results.

**Table 3.36**  
**Percentages and numbers of residency directors who gave open-ended responses in three of the categories identified during analysis**

	<i>N</i>	<i>Percent</i>
<b><i>Expand the Program</i></b>		
Positive Comment	28	90.3%
Negative Comment	3	9.7%
<b><i>Dual Accreditation</i></b>		
Positive Comment	7	63.6%
Negative Comment	4	36.4%
<b><i>Financial Issues</i></b>		
Positive Comment	0	0.0%
Negative Comment	10	100%

Of the program directors responding to the question about future directions, 41% mentioned expanding their programs. An overwhelming majority of them responded positively.

Although relatively few (13%) of the comments were on the financial issues, they were unanimously negative. It is difficult to derive conclusions despite this unanimous response because of the few responses that fell into this category. All that can be said is that those who mentioned financial issues did negatively.

The *misc./other* category had 31 responses, split nearly evenly between a positive and negative tone. There was no consistency or apparent pattern among the topics covered.

**Survey-to-Survey Comparisons: in 2002 as Medical Students, 2004 as Residents**

This 2004 survey of osteopathic residents offered an opportunity to compare their response with the response they had given in 2002 to the AACOM Senior Medical Student Questionnaire. Comparing the response to the two surveys shows the respondents plans, opinions and attributes when seniors have been realized or charged as their training continued.

**Medical Student versus Resident Responses**

Of the 951 residents who answered our 2004 AACOM questionnaire, we could match 463 who had completed the Senior Medical Student questionnaire. The findings presented in this section are based on only this group of residents (who serve as own controls in the analysis). The demographics for this group were presented in the original report on the medical student questionnaire.

**Plans and results.** As medical students, the respondents reported the type of osteopathic residency they intended to pursue after graduation. Those plans are in Table 3.37.

<b>Plans Upon Graduation</b>											
Traditional	65	14%	Internal Medicine		OBGYN		OTO/Facial Surgery		Pediatrics		
Specialty track	80	17%	39	49%	18	23%	4	5%	19	24%	
Special emphasis	107	23%	Anesthesiology		Diagnostic Radiology		Emergency Medicine		Family Practice		Psychiatry
Not osteopathic	197	43%	1	1%	2	2%	31	29%	70	65%	3   3%
Undecided	14	3%	Allopathic residency								
Total	463	100%	19	100%							

Of the 463 matched respondents, 43% (197) had said they intended to enter an allopathic residency. Of those 197, only one entered an osteopathic residency, 166 entered allopathic programs; 17 entered dual-accredited programs; eight entered military programs, and five did not identify their type of program.

In terms of entering primary care, 128 medical students had said they intended to go into osteopathic programs in internal medicine, pediatrics, or family practice (68% who intended to go into specialty track or special emphasis programs). Table 3.38 shows that most of the

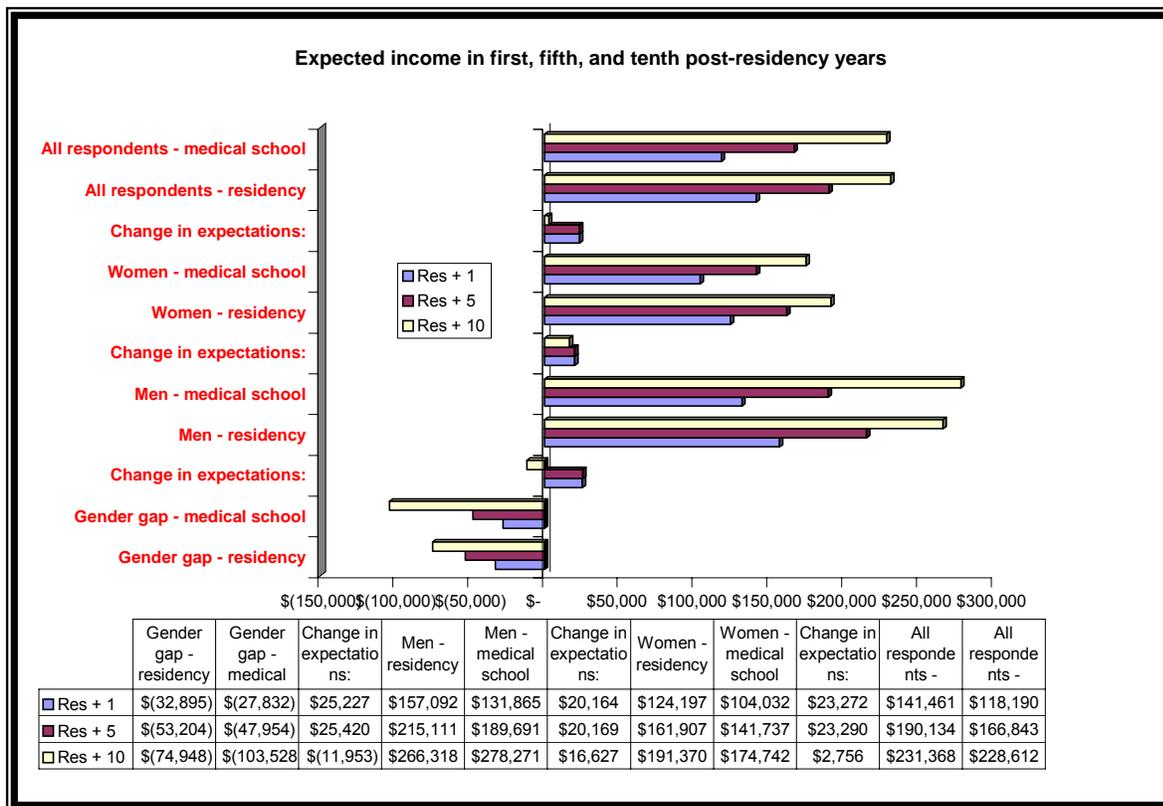
respondents entered the kinds of programs – primary care vs. other specialties – that they intended.

**Table 3.38**  
**Numbers of second-year residents in various types of programs in 2004, broken down by their intended choices as senior students in 2002**

	Intended primary care residencies	Intended other than primary care
Residency		
Osteopathic primary care	40	4
Osteopathic other	2	38
Allopathic primary care	24	0
Allopathic other	1	11
Dual primary care	50	0
Dual other	2	3
Military primary care	5	0
Military other	0	1
UNKNOWN	4	2
TOTAL	128	59
<b>Success placing</b>	<b>93%</b>	<b>90%</b>

However, if we consider that only 31% (40 of the 128) who intended to enter osteopathic primary care programs entered such programs, while 50 [39%] went to primary care programs in dual-accredited sites and 24 [19%] into primary care programs in allopathic residencies, the overall “success rate” is much lower.

**Expected income.** The respondents were asked the same question – what do you expect to earn per year in the first, fifth, and tenth year after residency—when they were seniors in medical school in 2002 and when they were 2<sup>nd</sup> year residents in 2004. Figure 3.14 shows clearly that the average estimates over all respondents were higher in the two years after medical school, but the expected income after 10 years was virtually the same for while they were medical students as when they were residents. Indeed, the men had higher expectations for income 10 years after residency than when they were medical school seniors than they did as residents. It is also clear that there is a consistent gender gap: the women expected far lower incomes than the men did at each time period; and therefore the gap increased progressively over time.



**Figure 3.14. Expected earnings in their first, fifth, and tenth year after residency, reported as senior medical students in 2002 and as second-year residents in 2004**

**Long range plans.** As seniors, and again as residents, the respondents were asked: "Select one item from the list below which best describes your intended activity five years *after* residency training."

The items were enter government service, practice in an HMO, self-employed as D.O. without partner, self-employed as D.O. with partner(s), employed in group practice, employed in other type of private practice, other professional activity (e.g. teaching, research, administration, fellowship), and undecided.

Table 3.43 displays the overall results, showing the extent to which the respondents have changed their professional plans. Table 3.39 below shows the overall picture:

	<i>Government Service</i>	<i>HMO</i>	<i>Self-employed w/o partner</i>	<i>Self-employed with partner</i>	<i>Group practice</i>	<i>Other practice</i>	<i>Other profession</i>	<i>Undecided</i>
Medical School	23	1	14	91	212	23	11	88
Residency	19	1	11	96	242	16	10	59
MS Percent	5%	0%	3%	20%	46%	5%	2%	19%
RES Percent	4%	0%	2%	21%	53%	4%	2%	13%

From the data it appears that an overwhelming majority kept to their plans. But such was not the case; only 50% (233) had the same plans after two years, as can be seen in the detail of Table 3.40.

**Table 3.40**  
**Numbers of 2004 second-year residents retaining or changing original plans, made as senior medical students in 2002, for type of professional activity five years after residency**

2004 Intention---Subjects as own controls

2002 Intention below	Government Service	HMO	Self-employed w/o partner	Self-employed with partner	Group practice	Other practice	Other profession	Undecided
Government service	<b>10</b>	0	1	1	<b>6</b>	1	0	4
HMO	0	<b>0</b>	0	0	<b>1</b>	0	0	0
Self-employed w/o partner	0	0	<b>4</b>	<b>7</b>	2	0	0	1
Self-employed with partner	1	0	1	<b>43</b>	<b>30</b>	4	4	8
Group practice	5	0	5	<b>23</b>	<b>150</b>	7	2	17
Other practice	0	0	0	7	<b>11</b>	<b>1</b>	1	2
Other profession	0	0	0	0	<b>6</b>	0	<b>1</b>	3
Undecided	3	1	0	15	<b>36</b>	3	2	<b>24</b>
PERCENT UNCHANGED	43%	0%	29%	47%	72%	5%	5%	30%

In Table 3.40, frequencies in bold **black** are the numbers of respondents who had the same long range plan as medical students and as residents; numbers in bold **red** represent the most popular alternative for those who had switched from their original plan. Group practice stands out as the one choice that is increasingly popular. And it remains unchanged for almost three quarters of the medical students who named it as their original plan – and it is the most popular second choice for all but the medical students who intended to be self-employed in solo practice. Of the 84 medical students who had been undecided as medical students and responded to this item as residents, more than 70% (60 residents) had made a decision, and a majority of them 60% (36) had chosen to enter group practice.

**Long range plans and primary care.** Table 3.41 presents data on shifts in the type of practice the respondents expected to be in five years after their residencies.

**Table 3.41**  
**Numbers and percentages of trainees who reported that they expected to be in one of various types of professional activity five years after residency, reporting as senior medical students in 2002 and as second-year-residents in 2004**

	Medical School			Residency			SHIFT
	<i>Primary</i>	<i>Other</i>	<i>Prim%</i>	<i>Primary</i>	<i>Other</i>	<i>Prim%</i>	
Government Service	18	5	78%	13	6	68%	-10%
HMO	0	1	0%	1	0	100%	100%
Self-employed w/o partner	12	2	86%	8	3	73%	-13%
Self-employed with partner	60	31	66%	63	33	66%	0%
Group practice	119	93	56%	137	105	57%	0%
Other practice	13	10	57%	12	4	75%	18%
Other profession	10	1	91%	10	0	100%	9%
Undecided	58	30	66%	40	19	68%	2%

In the most popular choice—group practice and self-employed partnerships—there was virtually no change in the proportion that planned to concentrate on primary care. The totals in the other areas are not large enough to support any hypotheses about primary care to practice mode.

**Primary Care as a Career.** The simple statistics are these: in the senior year of medical school, 45% of the respondents planned to go into primary care fields (family medicine, internal medicine and pediatrics, with no subspecialty). By their second residency year, that proportion had increased to 63% in this group. Only 5% of the medical students who had intended to specialize in primary care had switched to another area, vs. 55% who had changed from another area to primary care.

The profiles of those who stayed with their choices and those who switched are shown in Table 3.42.

	<b>Count</b>	<b>Age</b>	<b>% women</b>	<b>% unmarried</b>
Primary Med/Res	199	30.8	61%	27%
Other Med/Res	164	31.1	42%	36%
Primary Med/Other Res	9	32.2	44%	44%
Other Med/Prim Res	91	31.8	37%	34%
All respondents	463	31.1	49%	32%

The women were statistically over-represented in the cohort who stayed with the choice of primary care and were under-represented in the cohort who moved into primary care after indicating another choice during their senior year in medical school.

The medical school students had been asked about the importance of factors affecting their choice of specialty. We looked at the two that were rated most important – *intellectual content* and a preference for *dealing with people rather than techniques* -- and the two least rated influential factors – *research opportunities* and *debt level* –in relation to the respondents patterns of specialty choice and change from medical school to residency. Table 3.43 shows the results.

	<b>Count</b>	<b>Intellect</b>	<b>People</b>	<b>Research</b>	<b>Debt</b>
Primary Med/Res	199	63%	81%	(44%)	(51%)
Other Med/Res	164	67%	48%	(29%)	(19%)
Prim Med/Other Res	9	72%	50%	(44%)	(28%)
Other Med/Prim Res	91	56%	31%	(72%)	(59%)
All Respondents	463	65%	59%	(35%)	(35%)

The 199 respondents who had stayed with their intention to enter the field of primary care reported being most influenced by a desire to work with people; the 91 who switched into primary care later were least interested in working with people. As to negative influences, the most striking result is the rating of negative 72% for the respondents who switch from other specialties in medical school to primary care residencies; indeed, the profiles of all those who

eschewed primary care in medical school and then switched are diametric opposites on all four factors; those who switched into primary care from another interest showed the lowest factor rating of intellectual content, interest in people, research, and debt level.

**Instruction quality in medical school.** As seniors and again as residents the respondents answered a question about the amount and quality of instruction in their medical schools. They were asked: “Please evaluate the amount of instruction provided in each of the area listed below” in the questionnaire given to seniors, and “From your current perspective, how would you rate the amount of instruction provided in each of the areas listed below.” in the questionnaire for residents. The list contained 45 items.

We looked at the five areas that the medical students had rated (inappropriate, appropriate, or excessive) as having the most appropriate amount of time and the five rated as having the least appropriate amount.

- The same five areas were identified as least adequate – all with inadequate amounts of instruction – were as medical students and again as residents: Literature Analysis Skills, Biostatistics, Medical Care Cost Control, Cost Effective Medical Practice and at the very bottom, Research Techniques. The mean appropriateness rating for these five was 41% by the medical students and 36% later when they were residents.
- The five areas the medical students gave the highest ratings to—Basic Medical Science, Physician Patient Relationship, Patient Interviewing Skills, Infectious Disease Prevention and Clinical Science—were ranked 1-5 respectively. As residents, they ranked these same areas 2, 9, 10, 1, and 4, respectively. The mean appropriateness rating by medical students was 91%; then after they were residents, they gave an overall appropriateness of 87%.

In summary, there was very good correspondence between the two sets of ratings. The only noteworthy effect was the slight drop in the rating of patient interviewing skills and the physician/patient relationship that occurred by the second year of residency.

## Section 4: Survey of Deans of Osteopathic Medical Schools

Deans of osteopathic medical schools head institutions with a wide range of policies on educational and institutional issues. Tradition and circumstances mean that each medical college may take a different approach to issues. Understanding the similarities and differences of the schools' approaches to common issues would add institutional-level perspective.

### Responses to Questions

Question 1. *Some Colleges have a single track for their medical students while they are on campus, while other Colleges have more than one track. Using the definitions provided, please complete the following tables by indicating the curriculum **model(s)** you use and the percent of curriculum time using each **model** in years one and two of your curriculum.*

Comment: There are various definitions for curricular modeling and instructional formatting. For the purposes of this study, the Papa/Harasym <sup>1</sup> and Rennie <sup>2</sup> definitions were used, and the categories of instructional formats were from the Office of Educational Development at the University of North Carolina. <sup>3</sup>

**Table 4.1**  
**Curriculum models and examples**

<b>Curriculum Model</b>	<b>Example</b>
Discipline Based	Organizes knowledge, skills, and attitudes around disciplines. Content is usually under the direction of discrete departments. Basic science is the emphasis in the first two years. Clinical science is the emphasis in the last two years. <b>Primary teaching method is lecture.</b>
System Based	Organization of knowledge is around organ systems. Content is usually generated by topic committees. There is an emphasis on the basic sciences in the first year with introduction of clinical material. The emphasis on clinical material increases significantly in the second year. The third and fourth year emphasizes clinical sciences. <b>Primary teaching method is lecture with small groups.</b>
Problem Based	Organization of knowledge is around clinical problems. Content is usually generated by specialized committees under the guidance of the curriculum committee. Clinical and basic sciences are integrated within the context of clinical cases. <b>Primary teaching method is small groups.</b>
Clinical Presentation Based	Standard set of clinical presentations. Content is set by committee and supervised by Curriculum Committee. Integrated 50-50 within context of problem-specific schemata. <b>Primary teaching method is lecture and small groups.</b>
Lecture	Places responsibility on lecturer for presenting material to participants and controlling the group's progress. Fixed time. Specific topics covered. Outline of remarks or handout provided ahead of presentations. Handout usually hardcopy or electronic. Supplemental information available outside classroom (e.g. Library). Presenter has expertise in field. Q and A by students in real time or electronically. Generally large group audience.

<sup>1</sup> Papa FJ, Harasym PH. Medical curriculum reform in North America, 1765 to the present: a cognitive science perspective. *Acad Med* 1999;74(2):154-64

<sup>2</sup> Rennie S. Tossing Salads Too: a user's guide to medical student assessment: a booklet. 2003. Located at the Association for the Study of Medical Education, Edinburgh, Scotland.

<sup>3</sup> Office of Educational Development, University of North Carolina at Chapel Hill. Choosing Instructional Formats [Web page]. August 2001. available at <http://www.med.unc.edu/oed/eit/tformats.htm>. Accessed February 16, 2004

<sup>1</sup> Papa FJ, DO, PhD, Harasym PH, PhD. Medical Curriculum Reform in North America, 1765 to the Present: A Cognitive Science Perspective. *Academic Medicine*. February 1999; 74(2):154-164.

<sup>2</sup> Rennie S. Tossing Salads Too: A users' guide to medical student assessment: a Booklet. 2003. Located at: Association for the Study of Medical Education, Edinburgh, Scotland.

<sup>3</sup> Development OE. Choosing Instructional Formats [Web Page]. August 2001. Available at: <http://www.med.unc.edu/oed/eit/tormats.htm>. Accessed February 16, 2004.

Table 4.2 shows the curricula available to students in year 1 and year 2 at the medical schools. The curricula used both between and within medical schools, while not uniformly distributed, were nonetheless impressive in their variety.

**Table 4.2**  
**Curriculum models by year by school by percentage of time in each model**

Medical School <sup>1</sup>	Year 1				Year 2			
	Discipline Based	System Based	Problem Based	Clinical Presentation Based	Discipline Based	System Based	Problem Based	Clinical Presentation Based
COMP	45	45	5	5	5	75	10	10
DMUCOM	98	0	2	0	5	80	15	0
KCCOM				100				100
KCOM	98	0	0	2	66.27	33.7	0	0
LECOM Independent Study	30	70	0	0	25	75	0	0
LECOM Lecture	60	40	0	0	32	68	0	0
LECOM Problem Based Learning	60	40	0	0	32	0	68	0
MSUCOM	80	20	0	0	0	100	0	0
NSUCOM	60	20	20	0	20	60	20	0
NYCOM	80	20	0	0	20	80	0	0
OSUCOM	80	12		8	50	25	10	15
OUCOM - Clinical Presentation Continuum	0	0	0	100	0	0	0	100
OUCOM PCC	0	0	100	0	0	0	100	0
PCOM	27	63	0	10	0	62	6	32
PCSOM	100	0	0	0	100	0	0	0
TCOM	5	85	5	5		80	10	10
TUCOM	72	27	1	0	22	78	0	0
UMDNJ – Problem Based Learning	0	0	100	0	0	0	100	0
UMDNJ – Traditional	100	0	0	0	100	0	0	0
UNECOM	85	0	10	5				
VCOM	0	60	0	40	0	50	0	50
WVSOM Problem Based Learning	0	0	100	0	0	0	100	0
WVSOM System Based	90	0	10	0	0	85	15	0

<sup>1</sup> COMP = Western University College of Health Sciences College of Osteopathic Medicine of the Pacific; DMUCOM = Des Moines University College of Osteopathic Medicine; KCCOM = Kansas City University of Medicine and Bioscience College of Osteopathic Medicine; KCOM = A.T. Still University's Kirksville College of Osteopathic Medicine; LECOM = Lake Erie College of Osteopathic Medicine; MSUCOM = Michigan State University College of Osteopathic Medicine; NSUCOM = Nova Southeastern University College of Osteopathic Medicine; NYCOM = New York College of Osteopathic Medicine; OUCOM = Ohio University College of Osteopathic Medicine; OSUCOM = Oklahoma State University Center for Health Sciences – College of Osteopathic Medicine; PCOM = Philadelphia College of Osteopathic Medicine; PCSOM = Pikeville College School of Osteopathic Medicine; TUCOM = Touro University College of Osteopathic Medicine; UMDNJ = University of Medicine and Dentistry of New Jersey-School of Osteopathic Medicine; UNECOM = University of New England College of Osteopathic Medicine; TCOM = University of North Texas Health Science Center at Fort Worth/Texas College of Osteopathic Medicine; WVSOM = West Virginia School of Osteopathic Medicine

The intent of every college of osteopathic medicine reporting was to produce graduates who will go on to practice high-quality medicine. Each medical school dean believed they do just that. By these statements and the different curriculum models used by the schools, one might assume that all models produce acceptable results. Acceptable must be distinguished here from optimum. It is not reported in the literature whether one curriculum model consistently produces higher outcome measures than another model either currently or historically. As stated later in this document, the deans use a set of outcome measures to ascertain the success of their medical schools. These measures are all quantifiable and can be used to judge the effectiveness of the teaching and learning by the medical students. There is an opportunity to investigate both between schools and in some cases, within each school, the degree to which the curriculum model affects effectiveness, cost, student and faculty satisfaction, and faculty effort expended. For example, the first curriculum year is, generally speaking, dominated by the discipline-based model of instruction. The system-based curriculum is the second most popular model used in year 1. This system-based model is used both in conjunction with, or in one case, as an exception to the discipline-based curriculum. Although clinical problems and clinical correlations—two exceptions to discipline-based or system-based curricula—are introduced early on, the introduction appears to be more along the lines of supplementing, organizing, and showing applicability to or clinical relevance of the discipline-based material. The other exceptions to the most common two models are in alternative tracks. The problem-based curriculum was used in three schools and the clinical presentation-based curriculum in two schools. The second year showed a marked drop in the prevalence of the discipline-based model of curriculum organization, and the system-based model became the most popular.

The exceptions are two schools that use the problem-based model and the clinical presentation model as in year one. There was a slight increase among schools using the clinical presentation and problem-based models as supplements to the system-based curricula. These two models do not address the content of the curricula but rather the organizing principles, scope, sequence, and knowledge structure of the material presented in years one and two. A movement begun in allopathic medicine but now adopted and adapted into osteopathic medical education seeks to, in a sense, provide common themes throughout undergraduate and graduate medical education.

It is known as teaching toward competencies. These competencies are now in place in graduate medical education, with an associated implementation calendar. Its impact on the undergraduate curriculum is, at this time, not clear (cf. Question 13).

*Question 2. Laboratory teaching has been traditional in many schools to aid in teaching on-campus courses in the basic sciences, behavioral sciences, and clinical skills. These domains cover instruction in Gross Anatomy, Microbiology, Pathology, Physical Examination Skills, Doctor Patient Communication, Surgical Techniques, and many others. Some Colleges have augmented or replaced traditional laboratory formats with computerized simulations and other teaching techniques. In some cases schools have eliminated the laboratory altogether. Please complete the following table to reflect the teaching techniques used by inserting the PERCENTAGE OF INSTRUCTIONAL TIME allocated to techniques used.*

The resulting data is shown for each instructional format for each of 31 subject areas. Table 4.3 shows subject areas by instructional format. The data shown is the average percentage of time a student uses each format, the number of schools reporting the use of each format, and the standard deviation of each percentage.

**Table 4.3:  
Subject Area by Percent of Time Allocated to Instructional Formats**

Subject Area Code		Lecture	Laboratory / Large Group	Laboratory / Small Group	Laboratory / Individual	Computer Augmentation/ Large Group	Computer Augmentation/ Small Group	Computer Augmentation/ Individual
Biochemistry	Mean hrs/yr	89.65	6.67	11.33			1.00	15.00
	Std. .Dev.	15.748	3.055	5.508			.	7.071
	No. schools	17	3	3			1	2
Embryology	Mean hrs/yr	88.60		20.00		10.00		22.50
	Std. .Dev.	17.386		.		.		3.536
	No. schools	15		1		1		2
Gross Anatomy (Prosection)	Mean hrs/yr	61.75	41.50	30.00				15.00
	Std. .Dev.	11.354	12.021	.				14.142
	No. schools	4	2	1				2
Gross Anatomy (Dissection)	Mean hrs/yr	32.58	62.00	56.00	50.00			11.67
	Std. .Dev.	15.365	26.126	26.640	.			7.638
	No. schools	12	8	7	1			3
Histology	Mean hrs/yr	53.69	49.75	35.67	26.00	30.67		29.20
	Std. .Dev.	25.721	32.186	6.658	.	25.325		22.039
	No. schools	16	8	3	1	3		5
Immunology	Mean hrs/yr	87.93	5.50	14.00				20.00
	Std. .Dev.	18.964	.707	.				.
	No. schools	15	2	1				1

Microbiology	Mean hrs/yr Std. Dev. No. schools	73.40 22.643 15	27.67 26.608 9	4.00 1.414 2	18.50 2.121 2	28.33 18.930 3		12.50 3.536 2
Neuroscience	Mean hrs/yr Std. Dev. No. schools	68.94 17.695 16	25.38 15.620 8	24.67 20.067 6	10.00 .0 1		20.00 .0 1	10.00 .000 2
Pathology	Mean hrs/yr Std. Dev. No. schools	71.94 28.536 16	42.17 30.890 6	1.00 .000 2	10.00 .0 1	31.00 16.753 4		19.67 17.616 3
Pharmacology	Mean hrs/yr Std. Dev. No. schools	88.88 17.076 16	10.00 1.0 1	6.67 2.887 3				15.00 7.071 2
Physiology	Mean hrs/yr Std. Dev. No. schools	83.13 19.916 16	6.67 2.887 3	16.67 11.547 3		4.50 .707 2	3.50 2.121 2	14.25 10.275 4
Other Basic Science	Mean hrs/yr Std. Dev. No. schools	63.00 22.517 3			45.00 .0 1			27.50 31.820 2
Behavioral Medicine	Mean hrs/yr Std. Dev. No. schools	68.47 31.986 15	10.00 .0 1	51.67 34.157 6				
Ethics	Mean hrs/yr Std. Dev. No. schools	66.13 34.980 16	40.00 14.142 2	64.00 27.622 3				55.00 49.497 2
Law	Mean hrs/yr Std. Dev. No. schools	89.08 15.392 13	30.00 28.284 2	25.00 .0 1				60.00 56.569 2
Doctor Patient Communication	Mean hrs/yr Std. Dev. No. schools	29.58 19.285 12	25.00 .0 1	65.43 27.394 14	29.33 14.364 3			35.00 21.213 2
Other Behavioral Medicine	Mean hrs/yr Std. Dev. No. schools	65.60 29.391 10		30.50 20.599 4	7.00 .0 1			90.00 .0 1
Clinical Procedures	Mean hrs/yr Std. Dev. No. schools	33.67 13.775 9	38.00 27.803 7	52.00 33.793 8	35.00 35.355 2	10.00 .000 2	10.00 .0 1	8.33 2.887 3
Family Medicine	Mean hrs/yr Std. Dev. No. schools	54.18 35.880 11	35.00 30.414 3	48.75 36.142 4	20.00 .0 1			20.00 13.693 5
Geriatrics	Mean hrs/yr Std. Dev. No. schools	64.80 26.127 10	13.33 5.774 3	41.75 21.884 4				22.50 24.749 2
Internal Medicine	Mean hrs/yr Std. Dev. No. schools	75.55 23.543 11	20.00 .0 1	19.40 12.915 5			5.00 .0 1	25.00 21.213 2
Nutrition	Mean hrs/yr Std. Dev. No. schools	79.45 30.187 11	50.00 .0 1	3.00 .0 1				
OB/GYN	Mean hrs/yr Std. Dev. No. schools	81.75 20.289 12	8.00 .0 1	25.00 16.583 5	10.00 .0 1			5.50 6.364 2
OMM/OPP	Mean hrs/yr Std. Dev. No. schools	35.19 14.473 16	60.73 18.396 11	42.29 21.815 7	15.00 .0 1	5.00 .0 1		10.00 .0 1
Pediatrics	Mean hrs/yr Std. Dev. No. schools	77.00 24.004 12	20.00 .0 1	23.00 16.432 5				27.50 31.820 2
Physical/Differential Diagnosis	Mean hrs/yr Std. Dev. No. schools	33.70 13.776 10	30.83 23.752 6	47.33 30.418 9	11.25 10.112 4	11.00 8.544 3	7.50 3.536 2	9.25 7.890 4

Preventive Medicine/Public Health	Mean hrs/yr Std. Dev. No. schools	80.00 26.458 13		35.00 21.213 2				12.50 10.607 2
Psychiatry	Mean hrs/yr Std. Dev. No. schools	81.33 28.292 12	15.00 . 1					40.00 . 1
Radiology	Mean hrs/yr Std. Dev. No. schools	76.67 30.773 12	37.50 17.678 2	30.00 8.660 3	25.00 . 1			40.00 . 1
Surgery	Mean hrs/yr Std. Dev. No. schools	77.70 21.489 10	10.00 . 1	40.00 14.142 2	30.00 28.284 2			40.00 . 1
Subject Area Code		Lecture	Laboratory /Large Group	Laboratory /Small Group	Laboratory /Individual	Computer Augmentation/ Large Group	Computer Augmentation/ Small Group	Computer Augmentation/ Individual
OTHER CLINICAL SPECIALTY	Mean hrs/yr Std. Dev. No. schools	67.82 31.682 11	24.50 27.577 2	22.50 18.930 4				50.00 14.142 2
Total	Mean hrs/yr Std. Dev. No. schools	69.08 29.155 387	35.72 26.725 96	38.32 27.983 119	22.52 16.417 23	19.89 17.110 19	7.25 6.089 8	23.38 21.687 65

- 1 Mean = Average Percent of Time
- 2 N = Number of Schools reporting using this format
- 3 Std. Deviation = Standard Deviation

The percentage of time is used as an indicator of how a curriculum is distributed across the various teaching formats available to the school. Table 4.3 shows the dominance of the lecture method across disciplines. The laboratory is used to supplement the lecture, particularly in the basic sciences. The use of computers is emerging as a useful supplement to the lecture. The computer is certainly a mainstay in the lecture format and is used primarily by the instructor. Most schools use the commercial product *PowerPoint*<sup>®</sup>, a Microsoft Corporation product to produce slides, which are then presented via the computer. Some schools provide all of the slides on a computer disk and distribute them to the students at the start of the semester; some schools maintain a library of the lecturer's presentations for subsequent use by the students. Internet resources are also quite commonly integrated into the lecture presentation, but it is the lecture per se that is the common *modus operandi*. The theme seems to be to make the lecture more rich and interesting rather than using a replacement for the lecture itself. Coupling the information in Table 4.2 with the information in Table 4.3, we saw that the curriculum model and the instructional format are consistent. However, alternatives to the dominant curriculum model used to organize material, and the dominant methods used to deliver the curriculum, do exist across the colleges. The data needed to compare curricula across schools is still not systematically available at this time.

Question 3: *Assurance of exposure to and subsequent knowledge of basic science material are essential to the student's clinical diagnostic and decision-making skills. Please describe the process you use to determine the amount of curriculum instructional time you allocate to basic science instruction during years I and II (e.g., curriculum committee, oversight committee, basic science/clinical science review committee, task force committees, faculty senate, dean's decision, etc.).*

Time is perceived as one of the most valuable commodities in the curriculum. A common problem is apportioning of time to the basic and clinical sciences. It is generally agreed that exposure to and subsequent knowledge of basic science material is essential to the student's diagnostic and clinical decision making skills. The process all the medical schools use involves the college's curriculum committee, but the pathway to curriculum committees and final authority in curriculum decision making varies greatly among the colleges. The most common process for designing the curriculum among the colleges that responded was to use a curriculum committee comprised of faculty. The most common membership format was to have representatives from each department of the medical school, as well as students. The schools with clinical programs distributed across wide geographic areas, had student representation usually limited to the first two years. Although the colleges were not averse to having student representatives, the travel time prohibits full student representation in most cases in years three and four. In many cases, sub-groups of faculty were also represented, depending on the curricular organization being used. For example, for those schools using a cluster, block, phase, or modular model for curricular integration (hereafter collectively referred to as blocks), the coordinator of the block was usually represented. This coordinator speaks for the block rather than a home department. Representative(s) from community-based faculty were, in some schools, also invited to attend with vote. The administration was usually represented as well, and in many cases attended ex-officio. They could and did participate in discussion and could act as resource personnel.

The curriculum committee handled topic coverage and the allocation of time in a variety of ways. It could assume the sole responsibility for assigning the time to each course or block. Or, it could assign overall amounts of time to each block and subsequently have the coordinator work with the course representatives to allocate the overall time allotment proportionately to the courses. Some schools had a departmental curriculum committee that acted semi-

autonomously to decide on the scope and sequence of subject matter. The authority of the curriculum committee, however, divided itself along two distinct paths. First, the curriculum committee was the final authority on curriculum content. This is a traditional academic approach that established the case that the committee is NOT advisory to the dean of the college. The college curriculum committee may, however, be subsidiary to a university curriculum committee that ultimately has the final authority.

The alternative to the stand-alone committee is that the curriculum committee, like all other committees of the medical school, reports to the dean, who has final approval over the curriculum. For most colleges there may be intermediary pathways to the dean. It is not uncommon for the curriculum committee chair to meet with an assistant or associate dean or other administrators for advice and consultation before bringing curriculum proposals to the dean. Administrators and curriculum committee representatives usually have regularly scheduled meetings to discuss the curriculum. The role of the faculty as a decision-making body for curriculum is not uniform across the osteopathic colleges. In the traditional role, it is mandated that the curriculum is the sole province of the faculty, which means that all curricular change must receive a positive vote of the faculty to be implemented. Thus, in a sense, the curriculum committee is advisory to the faculty as a whole. In a majority of schools, however, the faculty is, like the curriculum committee, advisory to the dean.

A majority of colleges used additional sources of information to make time allocation decisions. This is collectively referred to as evaluative information. The sources varied across colleges. In no particular order they were: (1) Course or block faculty mid-course and post course administration evaluation conferences were held between course coordinators, students and administrative representatives. The scope of these conferences includes course planning, implementation, and evaluation to date. (2) Student focus groups that met during and at block end. (3) COMLEX Board scores. These scores were generally distributed to department chairs, course coordinators, block coordinators, the curriculum committee chair, and other designated support staff. (4) Computer generated, online information on student satisfaction. Some schools used the enrolled students as a whole, others used a sample of students to complete an in-depth, end-of-course evaluation. (5) Curriculum retreats held regularly (one or two times per

year) to discuss major curriculum projects or initiatives. (6) Regularly scheduled faculty meetings where the curriculum committee and associated discussion were on the agenda. (7) National meetings of basic science professional groups and clinical societies where curriculum content, scope, and evaluation were highlighted. (8) AACOM surveys of fourth-year osteopathic medical students. (9) Follow-up surveys of PGY1 students. (10) Classroom performance. (11) Specialty group recommendations. (12) Feedback forms from internship and residency directors. (13) College-generated student surveys. However, all reporting schools verified that the logistical support (such as staff, finance, technical, and space) was the province of the dean. It was the authority of the dean to allocate the resources necessary to implement the curriculum. Thus, planning usually rests with the faculty, but implementation (from a logistical perspective) rests with the Dean.

<b>Table 4.4</b>							
<b>Major mechanisms to determine allocation of time to basic and clinical sciences</b>							
<b>College</b>	<b>Department Chair</b>	<b>General Faculty Meetings</b>	<b>Curriculum Committee</b>	<b>Curriculum Retreat Annual</b>	<b>National Conferences</b>	<b>Course Coordinators</b>	<b>Faculty Team</b>
COMP			X				
DMUOMC	X					X	
KCCOM	X	X	X				
KCOM	X		X			X	
LECOM			X		X	X	X
MSUCOM		X	X			X	
NSUCOM	X		X				
NYCOM	X		X			X	
OSUCOM			X			X	
OUCOM						X	X
PCOM			X			X	
PCSOM			X				
TUCOM	X	X	X	X	X		
UMDNJ-SOM			X			X	
UNECOM			X				
UNTHSC		X	X			X	
VCOM			X			X	
WVSOM	X		X		X	X	X

Question 4: *Some schools use clinical training sites that are under the direct supervision of personnel who are campus based or employed by the College. Other Colleges use clinical training sites that use community based faculty who are essentially volunteer faculty of the medical school, and the sites might be located in a state different from the medical school. Please describe the College's supervision and oversight (direct and indirect) of their clinical clerks while on rotation.*

Clinical training for the medical student is in all cases a combination of in-patient and ambulatory care settings. The training sites, in the main, use volunteer or community-based faculty. Some sites, however, use only campus-based or campus-employed physicians; fewer sites use this approach than that who use volunteer- or community-based faculty. A definition of community-based faculty follows. That a majority of training sites use community-based physicians is due primarily to the geographic distribution of rotations for an individual college, and the number of elective rotations open to the medical students. Distinctions of historical precedence and of public and private funding strongly predicted the geographical distribution

of medical students in the third and fourth year. State-funded schools predominantly used affiliated hospital systems, ambulatory clinics, and physicians' offices located in the state that sponsored the medical school. Private medical schools tended to use hospitals and ambulatory training sites located in states outside their own. If the training site, instate or not, was far enough from the medical school to make it necessary, alternatives to having campus-based faculty supervise the clerks directly had been devised. The separation of required and elective clerkships also distinguished direct from indirect supervision. The required rotations—General Internal Medicine, Family Medicine, Emergency Medicine, Pediatrics, Obstetrics and Gynecology, Surgery, and Psychiatry—were cited most often as directly supervised by college-employed or partially-funded physicians, whether campus based or community based. Elective rotations were supervised by physicians who held an affiliated relationship with the medical school, but were essentially community-based, volunteer faculty. Because of the distance from the medical schools, the schools had independently constructed monitoring systems of varying degrees of sophistication. Uniformly the schools used clerks' performance as a major indicator of the adequacy of teaching and learning. Student-oriented objectives dominated the protocols distributed to the supervisors of required and elective rotations, rotation supervisors (or individual attending physicians) as well as the students. These objectives formed one criterion for successful completion of the clerkship rotation. Also several teaching sites (both hospital-based and ambulatory-based settings) trained clerks from more than one medical school (osteopathic; or osteopathic and allopathic) simultaneously. This has led to confusion as to how to accommodate various evaluation instruments, which are a common purpose (assessing student performance) but are idiosyncratic to their home institution. Student-oriented objectives help alleviate but do not remove the required accommodation needed for each affiliated school. These student-oriented (and hence student-responsible) objectives involved several domains: (1) cognitive knowledge, (2) social-behavioral knowledge and skills, (3) clinical knowledge and skills, and (4) direct measures outcome performance. In the cognitive area, the student was expected to learn through direct educational programs at the clinical training site, independent reading, case presentation, or other instructional media. The evaluation component of these objectives is addressed later in this report.

Clerkship training in the third year involved two basic models, which can be described as the base or core model and the traveling model. The base hospital model assigned a clerk to a single training setting for an extended period of time (12 to 50 weeks). The base hospital was the site for most required rotations. The traveling model had the student rotate to different training sites every two to six weeks depending on the length of the rotation. The fourth-year models commonly had few required rotations and were dominated by elective rotations that could be done at clinical settings in and out of direct supervision by the medical school system. The traveling model was used by most schools. The deans reported that one function of the fourth year was to enable the student to explore post-graduate training opportunities by doing “audition” rotations at sites of particular interest to them.

Ongoing monitoring of students’ clerkship performance as well as instructional excellence took many forms. The deans often reported that the director of medical education at the individual training site was responsible for the clerkship programs at affiliated hospitals. An alternative administrator at the training site might be locally responsible, but there was nonetheless an identified person affiliated with the medical school who oversaw a school’s clinical clerks. Department chairs or designees within departments of the medical school might also be charged with direct responsibility for all clerkships under their departmental specialty (required or elective rotations). They were held accountable by being required to sign off on all rotation reports of clerks on department-affiliated rotations. A number of schools used regularly scheduled meetings between medical school representatives (such as department chairs, assistant deans, medical education and department members) and clerkship supervisors to discuss the educational program, the support function, professional behavior, scope of exposure to clinical material, and administrative issues. The meetings between representatives of the medical school and the clinical training sites were scheduled regularly and ranged from monthly to every two years. The variance was in time between scheduled meetings due primarily to geographical location and the model used (base or traveling). Because medical school faculty could not directly supervise at geographically disparate sites in person, other measures had been devised to gain insight and supervise. The deans reported using the following evaluation measures.

- (1) Site evaluations by student with feedback to the training site generated (submitted in print or electronically)
- (2) Student evaluation of the clinical educator or preceptor
- (3) Student logs (submitted in print or electronically)
- (4) Site inspections (visits) by campus-based faculty and/or administrators at sites responsible for core rotations
- (5) Seminars held on campus, attended by training site personnel identified by the medical school, to discuss administrative and academic issues
- (6) Computer-based tracking systems to monitor the students' locations
- (7) Regularly scheduled "focus group" meetings of medical school representatives with students, located within a reasonable traveling distance, to discuss administrative and educational issues
- (8) Surveys of third- and fourth-year clerks about their clinical experiences
- (9) Examinations before and after rotations.
- (10) Preceptor's evaluation of student performance (submitted in print or electronically)
- (11) Case based write-ups particular to each core discipline
- (12) Students perform computer-generated clinical case simulation exercises (campus generated or part of commercially available computer programs)
- (13) Simulated patient evaluations (required during the third year)
- (14) Required faculty development workshops (required, on-site or interactive telecommunication)
- (15) Workbook exercises
- (16) Shelf exams

Question 5a. *Determining the progress of students through a medical school curriculum often involves regular, periodic and even episodic evaluation information. Please indicate the evaluation formats you use to determine a student's readiness to progress through your curriculum and your degree of satisfaction with the assessment techniques. Please indicate your degree of satisfaction with the information formats you currently employ, using the following scale:*  
(1) very satisfied, (2) satisfied, (3) dissatisfied, or (4) very dissatisfied.

Accompanying the question was a table that provided the definitions of common formats used to evaluate medical students (displayed here as Table 4.5). This table gave the deans a common basis for determining which format was being used to evaluate students.

<b>Evaluation Formats</b>	<b>Examples</b>
Multiple Choice Questions	A question with a choice of usually up to 5 possible responses. Generally, one correct answer. Can be true/false.
Extended Matching Items	Similar to multiple-choice questions but with more choices from which to choose.
Short Answer/Key Feature Questions	Questions that usually require a few sentences or key word to respond. The question usually contains a descriptive passage or key facts about a patient or a problem with spaces that the respondent is expected to fill in.
Constructed Response/Semi-structured/Modified Essay	Questions are preceded by a descriptive set of paragraphs built around a patient oriented clinical case. Questions follow in a sequential fashion. The questions may be multiple choice or short answer.
Essay questions	Usually asks the respondent to describe a condition, compare or contrast essential features of a problem. Topics range from clinical problems in general to specific patho-physiologic pathways, from ethical situations to prescriptive alternatives. Can also ask to analyze journal articles or stimulus materials. Expectation is for respondent to include as much relevant information in an organized and logical response.
Portfolios, Log Books, and Record of Achievements	Collection of work done by student as an individual or group. Usually includes: patient presentations of clinical encounters, procedures completed with descriptions of what was done, assessments done by supervising personnel, projects done either by assignment or self-chosen, reports on clinical services experienced, essays on interesting cases with a discussion about a particular aspect of the case, record of cases presented in a problem-based format which shows learning points and progression, publications, abstracts, and vitae.
Practical Exams/Simulated Patients	Several variations. <b>Long</b> exams --- the examinee is asked to take a full structured history and do a complete physical exam. Observation of the history and physical examination usually takes place. There is a write up of the history and physical. Questions on the findings and treatment plans follow. Discussion and feedback on the examination itself is part of the experience. <b>Short</b> examinations --- the respondent examines a system or region of the patient with clinical signs. A report of the findings is made and questions asked about the condition.
Objective Structured Clinical Exams (OSCE)	Usually a number of stations with a task such as an examination, history taking or practical skill asked at a particular station. An examiner assesses the respondent using a checklist. There is usually a fixed time allotted for each station.
Oral Exams/Case Presentation	Questions asked by an individual of the respondent. Knowledge, organization, and integration of material are assessed. Feedback is given after presentation.

<sup>1</sup> Development OE. Choosing Instructional Formats [Web Page]. August 2001. Available at: <http://www.med.unc.edu/oed/eit/tformats.htm>.

**Table 4.5a**  
**Evaluation of Medical Students by Format, Year in School and School Satisfaction with Format<sup>1</sup>**

Evaluation Format	Number of Schools Using Evaluation Format in Year 1	Average Satisfaction Index	Number of Schools Using Evaluation Format in Year 2	Average Satisfaction Index	Number of Schools Using Evaluation Format in Year 3	Average Satisfaction Index	Number of Schools Using Evaluation Format in Year 4	Average Satisfaction Index
MCQ	17	1.81	16	1.94	13	1.77	6	2.00
Constructed Response	7	1.50	5	1.60	5	1.60	2	2.00
Essay Questions	4	1.25	5	1.40	4	1.50	0	
Basic Science Laboratory Practical Examinations	17	1.63	8	2.00	1	2.00	1	2.00
Group Reports	8	2.00	8	2.13	2	2.00	0	
Oral Examinations	6	2.00	6	2.17	7	2.14	5	2.20
Standardized Examinations (e.g. shelf examinations)	4	1.75	6	1.67	6	1.80	4	2.00
OSCE	6	1.40	10	1.33	6	1.50	4	1.75
Patient Write-up	10	1.44	11	1.50	11	1.50	11	1.80
End of Rotation exams	0		0		12	2.08	9	2.00
Research projects	1	2.00	1	2.00	2	2.00	2	2.00
Simulated Patients	15	1.36	15	1.36	9	1.56	8	1.57
Evaluation by Live, non-simulated patients	3	2.33	5	2.00	4	1.75	4	1.75
Evaluation by Preceptors	7	1.86	8	2.00	15	2.07	15	2.00
Evaluation by Preceptor Staff	1	2.00	1	2.00	3	2.33	3	2.33
Evaluation by other students on Rotation	0		0		2	2.00	2	2.00
Evaluations by interns and/or Residents	1	2.00	2	2.00	13	2.25	12	2.00
Comlex I	0		17	2.06	3	2.00	1	2.00
Comlex II	0		0		5	1.60	15	1.71
Comlex PE	0		0		0		11	**
Satisfaction surveys	9	1.78	10	1.80	12	1.67	13	1.62
Observational Check lists by physicians of Student Performance	7	1.71	7	1.86	9	1.78	9	1.67
Chart Review	0		3	2.33	11	1.70	7	1.57
Log Books	0		1	2.00	13	1.85	12	1.91
Portfolios	0		0		0		0	
Computer simulation examinations	5	1.60	5	1.60	7	1.86	5	1.60
Student Evaluations of Rotations	3	1.67	3	1.67	17	1.63	17	1.56
Ethical Incident Reports	3	2.00	3	2.00	6	1.83	6	1.83

Attendance Records	11	2.20	11	2.20	13	1.75	13	1.80
Other								
case presentation	1		1		2		1	
Computer machine simulator	1		1					
Lab Practical	1		1					
Quality Progress Indicator	1		1		1		1	
<sup>1</sup> Satisfaction is scaled as 1 = Very Satisfied 2 = Satisfied 3 = Dissatisfied 4 = Very Dissatisfied ** Because this examination is in its first year of trial, no satisfaction scores are indicated.								

Table 4.5a shows the evaluation formats used by the medical schools to evaluate their medical students. The schools were asked to rate their satisfaction with the information received via these formats. The Edward Via Virginia College of Osteopathic Medicine in Blacksburg, Virginia, had not begun its clinical years for its students as of this writing. Other schools reported that they were beginning to develop evaluation methods different than those they were reporting in the questionnaire. These schools could not rate their satisfaction with those proposed formats because they were not yet using them or had too little history with them. Therefore, the analysis here covers only the evaluation formats rated by the schools. This approach produces an underestimation of the number of schools actually using certain formats. The average rating index, however, is accurate. A scan of Table 4.5a shows the preponderance of multiple-choice question formats in years 1 and 2, and an overall satisfaction with that type of instrument. Simulated patients were also used in year 1, which emphasizes the common pattern of introducing history taking and physical examination skills early in the curriculum. This pattern shows in the use of the patient write-up as well. Use of both patient write up and the simulated patient continued into year 2. The associated decrease in basic science laboratory examinations is consistent with the shift to an increasing clinical presence during year 2 of most medical curricula.

The distribution of COMLEX I examination scores raises an analytical point. All the schools require their students to take this examination. Each examination has eligibility criteria, but once a student satisfies criteria, there is no mandatory time the student needs to sit for the examination. Most of the schools had their students take the examination as soon as they were eligible (which means during their second year). However, some schools had their students sit for the examination only after completing year 2. The examination is offered only twice a year. Thus, when schools delay the examination, the third year has started before

students take it. When schools have students sit for the examination early, many times it serves as a gateway to year 3 with the result that the student must pass COMLEX I before taking clinical rotations. For the students who sit for the examination later COMLEX I can not be used as a gateway, because rotations have already begun.

The reasoning behind using the late examination is that the student will have advantages in taking part I of the examination after all relevant information has been presented in the year 2 curriculum. This timing lag places an evaluation constraint on the system, inasmuch as the time between presenting course material and sequencing it was not uniform across medical schools. It is important to acknowledge this because all schools use Board scores as an outcome measure. The schools need to adapt to this time lag between presentation and sequencing by interpreting the examination results with great caution.

Schools with different curriculum models can be compared by their students' Board scores. The two different uses of the examination—the evaluative function and the gateway function—must be taken into account in such a comparison. The rating (2.06) for COMLEX I scores in year 2 indicates that the Board scores were to be a satisfactory source of information but not overwhelmingly so. The consistently high satisfaction the deans reported with simulated patients showed the usefulness of this technique in the medical schools. The sophistication and complexity with which simulated patients were used, however was not uniform across schools. The level and dimensions of assessment varied. For example, video-recording the individual encounters with simulated patients was common. These recordings were used to evaluate the history taking and doctor-patient relationship skills as well as the clinical skills, if any, demonstrated in the encounter. How the recordings were made and used varied (such as structured individual or group sessions versus generalized review with minimal feedback; episodic versus longitudinal changes in performance; proprietary versus portfolio inclusion). As noted before, the deans reported general satisfaction with multiple-choice questions in years 1, 2, and 3 of medical school, with a slightly decreased satisfaction in year 4. The shift toward using the patient write up (shown by frequency of use) is consistent with the shift toward increased clinical emphasis in years three and four. There were, however, a large number of schools (12) that have end-of-rotation examinations. These examinations were

predominantly in required rotations, the most common being in internal medicine and family medicine. A majority of the deans reported using required student evaluation of rotations and preceptor evaluation of the student's clinical performance. The evaluation was usually done by a combination of a rating scale and a commentary section. The relatively high marks for satisfaction indicate that not only are they frequently used but the schools feel they are a useful source of information. In conversations (the telephone follow-up to the written survey), the deans said that should a student give a poor evaluation of a training site/program, it was looked into promptly. The first step was to see whether this is a trend (to distinguish it from, presumably, a personality clash or isolated problem). However, if the citation was egregious the director of medical education or other supervisor of the physician took immediate action. If the cited circumstances appeared to be, in a sense, a recurring problem, corrective action was taken, usually by an assistant or associate dean. This involved an in-depth conversation with the site supervisor, clinician, and student either singularly or together to determine an acceptable resolution of the issue or problem. The deans reported that physicians have been dropped as clinical teachers after repeatedly receiving low evaluations rating or for egregious behavior. The satisfaction indices in Table 4.5a make it clear that more-objective measures were prized. For example, patient write-ups, simulated patients, OSCEs, and computer-based examinations were all highly rated. End of rotation examinations had a rating of only 2.00. Schools have reported that they plan to develop end-of rotation exams. The exams are time intensive and require consideration and arrangements for security, updating, and feedback. Given the resources used to implement such a set of evaluation exercises, it might be expected to receive more favorable ratings.

The evaluation by interns and residents, used in most of the medical school rotations (in year 1; n=12 in year 2), also received somewhat less favorable marks than other methods of evaluation (year 1, 2.25; year 2, 0). This difference should be systematically investigated. Some may posit that interns and residents have not been taught how to teach or evaluate students; further, that they are now too busy to teach and evaluate because of limitations on the number of hours they may work. If this is the case, the structure of medicine may not allow a complete remedy. The residents' time and interest levels may not allow them to be taught how to teach, although there are programs designed to do this. However, one may cite the same

reasons for the attending physicians, who are under similar constraints. Time is a factor with attending physicians but, theoretically at least, not quite to the extent as interns and residents, and yet the satisfaction is higher.

Question 4b: *Please identify the options you have relative to the student's progress through your curricula by placing a checkmark in the appropriate cell.*

<b>Table 4.6</b>						
<b>Number of schools that choose selected options regarding student progress</b>						
Year	Allow the student to continue without interruption	Dismiss the student	Continue Curriculum only after successful remediation of unsuccessful performance	Place student on a specially constructed curriculum	Administrative leave for student with specific remedial completion tasks prior to readmission	Other
1	17	18	17	10	15	Summer Case by case Medical Leave Summer remediation
2	17	18	17	12	13	Case by case Medical Leave Case by case Medical Leave
3	17	17	18	14	14	Case by case Medical Leave Case by case Medical Leave
4	17	18	18	15	14	Case by case Medical Leave

Decisions about student promotion through or dismissal from the medical school were ultimately the responsibility of the dean. Each school seemed to have the same basic set of decision options. The student could be (1) permitted to progress uninterrupted through the curriculum, (2) dismissed from the medical school, (3) placed on probation, (4) placed on an extended curriculum, and (5) directed to engage in mandatory remediation of a course, system block, clinical rotation (clerkship), or national examination in order to continue through the curriculum (or to graduation). It should be noted that progress was judged on meeting not only academic standards but also professional standards. Each medical school had a faculty committee, which went by various names (e.g., Student Performance Committee, Student

Promotion Committee), but whose task was to advise the dean on which of these options to take. The dean could accept the committee's recommendations, not accept them, or modify them. In most schools the same committee addressed academic performance problems whether they occurred in the on-campus courses or the clinical training sites. For matters of academic or professional misconduct, an intervening committee reviewed the allegations. In some schools, an honor code committee (or similar name) composed of students heard the complaint and rendered an advisory decision to the faculty's student performance committee. This performance committee might also be sought out by the student or the administration to review a decision of the student promotion committee. The usual procedure, however, was to have the student performance committee address both categories of problems (academic performance and misconduct) and report to the dean.

The schools used a variety of mechanisms and procedures—from strict algorithms to faculty deliberations on each decision—about continuing, interrupting, or dismissing their students. Each school had an appeals process for any retention or dismissal decision. The dean made the final decision. The procedures used to choose between these categories of retention or dismissal and the options available within each category were not the same among the schools. For schools that used a numeric grading system (e.g., 4.0, 3.0), students had to maintain a stipulated overall grade-point average to be considered as making satisfactory progress toward graduation. For those schools using a percentage system, a minimum average percent had to be maintained (usually in the 70% range). The pass/fail grading system was used in some schools. An index of progress was calculated usually involving the credit hours attempted and the credit hours of courses in which a failing grade was assigned. A stipulated index value was set that is analogous to a minimum grade-point average or minimal percentage used in the other grading systems. A majority of schools reporting (80%) did not use the pass/fail grading system. In each case, regardless of grading system, all failed courses and clerkships had to be remediated before graduation was permitted. Most of the schools required students to pass Part I of the COMLEX examination to enter their clinical clerkships. The exceptions have been commented upon already. (Some of the schools wanted their students to sit for the exam after the end of year 2, which, because of the exam schedule meant they took it in the fall when their clerkships had already begun.) All of the schools required the student to take Part II of the

COMLEX examination before graduation but not all required the student to pass it in order to graduate. In accordance with the accreditation standards, however, by 2008 all the schools will have a requirement to pass the Boards. The schools will require students to take the COMLEX PE, in compliance with the accreditation standards, but again, not all the schools will be requiring their students to pass it in order to graduate. As expressed by their deans, the reasons some schools had for their reluctance) to make COMLEX PE a requirement ranged from the newness of the examination (being able to handle anomalies in the test administration), its expense, and the philosophical question of the appropriateness of external agencies determining the decision to graduate a medical student. However, objections aside, all the schools agreed to be in compliance with the accreditation standards.

The options for an extended curriculum had several entry points at the different schools. The extended program is usually five years long but has a maximum number of years a student may be in the curriculum. In some schools, a student may request an extended curriculum upon entry to medical school. This is the case when students enter multiple degree programs, for example. Other reasons for choosing an extended program at the outset of medical school are to conduct research, health, or other extenuating circumstances. In the schools offering this option, a special committee was convened to consider the student's request and recommend a decision to the dean. The considerations were partly logistical, because the number of students in extended curricular affect, for example, the number of clerkships needed, total class size for succeeding years, lab space, classroom size, and small-group determination. Most schools offer this elective extended curriculum but only after a trial period of full time class work (usually one semester). Again a committee is tasked with the responsibility of making a recommendation to the Dean relative to the student request. Criteria are established for deciding on these requests that are a combination of rules and guidelines. Some schools using this trial period require a minimum performance measure during the first semester or first year and a plan of activities that is acceptable to the committee to recommend positively on the request. A student may be placed on an extended curriculum by committee or academic fiat. Most schools have a set of rules, which state, in effect, that if a student's performance after a fixed period of time (first grading period, first semester, etc.) is below a criterion measure then they may request an extended curriculum or be placed on an extended curriculum by an

administrative decision as a condition of retention. The elective option is again open to committee ratification and subsequent recommendation to the Dean. The administrative fiat is not open to discussion but is many times, although not at all schools, reviewed by the committee to ascertain if there are extenuating circumstances or other reasons that may require special intervention by the college to assist the students in their studies. Subsequent performance of students on extended curricula is closely monitored and failure to progress in a satisfactory fashion makes them subject to dismissal from medical school. Students who fail a course, system, clerkship, or other component of the curriculum must remediate those experiences. Some schools require this remediation to take place at their institution, while others permit an academically equivalent experience to take place at another accredited institution. The stipulation of the nature of the remediation, timeframe, supervision, and successful determination of remediation is not common across schools. Some schools offer remediation exercises during normal breaks in the curriculum (e.g., semester or quarter breaks), a specified time period (e.g., first week of the next semester), a required time period (e.g., all remediation takes place during a given two week period in the summer, etc.). The rules at each institution have caveats relative to a student's eligibility to remediate specific courses. For example, if a student fails more than a stipulated number of courses they will be asked to repeat the entire academic year rather than remediate the failed courses and if successful, continue unabated. Hence repeating a course, set of courses, or an entire year are seen as examples of degrees of remediation rather than as a categorical distinction. A consequence of repeated failures in the same course is, in most schools, a condition for dismissal from medical school for academic reasons. Clinical clerkship failures are in some schools reviewed by a separate committee, while others use the same Student Performance Committee as before. Instances of failure are generally reviewed for extenuating circumstances as before, and eligibility for remediation is determined by the Committee. The location, timeline, supervision, and criteria for successful remediation, are usually stipulated in the review and recommendation to the dean.

Suspension is a status category used in some schools, which suggests a temporary interruption of attendance and ability to participate in curricular experiences. The reasons cited for this classification range from clerical (failure to supply forms or other documentation necessary to

show course completion, clinical rotational requirements, health clearances or other required components of the medical school or course/clinical protocols) to National Board performance to health related matters. This status category, in most cases, stipulates what needs to be done to remove oneself from this category and the timeline in which one must comply with the requirements for reinstatement to good standing. This can be done by administrative fiat or by committee review.

All colleges reporting have provision for leaves of absence for their medical students. This request can be initiated by the student directly or is available to the review committee (and hence the dean) as an option for counseling, remediation or other purposes. This usually has a stipulation of a time period for the leave of absence. Once the time period has expired the student must petition the school for re-entry into the class. Most schools have a format or specified procedure for student initiated leaves of absence. The procedure usually involves administrative personnel because of the consequences of an interrupted class size. As mentioned above, taking a student from one year, and in effect, placing them with another year's class has logistical implications that range from on-campus to clinical rotation accommodation.

*Academic probation* is, in most schools, deemed a status category to distinguish students from those who are students *in good standing*. The probationary status usually implies a restriction of activity on the part of a student, a closer monitoring of academic progress, a possible remediation program or other specially constructed educational experiences that must be completed in order to be reinstated to the status of "academic good standing".

Dismissal from medical school is seen as a drastic action. As a result, most schools have a committee review as part of the dismissal procedure. Some schools will permit the administration of the school to dismiss a student without committee review for extreme breeches of conduct. There is usually a codified list of behaviors that constitute grounds for dismissal and are provided to students usually in the form of a handbook or other official medical school publication.

Question 6: *What information do you routinely review to insure that the basic science and clinical faculty in on-campus courses and those physicians who teach in ambulatory and hospital venues are qualified to instruct your students? (E.g. promotion and tenure documentation, departmental review, peer review, personal observation by Dean, publications, student evaluation, vita, attendance at faculty development seminars, attendance at national meetings, etc.)*

The assessment process for determining faculty qualifications is quite similar across medical schools. This is true regardless of type of school or geographic location. Almost all colleges use a promotion and tenure committee. The major categories for assessment by this committee are Teaching, Research and Service. The category of service is sometimes split between professional service and community service. Professional service is activities related to the discipline of claimed expertise (professional societies, professional specialty groups, local, state, national, or international committees related to one's area of expertise, college or university committee membership, or other duties assigned by the department, college or university administration). Community service is defined as those activities, which promote the college but are not necessarily related to one's area of expertise. Examples of this may be activities in service clubs, community activities, etc. The relative weights between and among categories are idiosyncratic. The committee reviews several sources of information all of which are stipulated in the committee documents. Recommendations regarding promotion and tenure made by the committee are forwarded to the dean of the college. The dean, in most cases, forwards the decision to a provost or president of the organization and in turn to the Board of Trustees for final approval. Initial rank follows different pathways at the schools. One pathway is a direct appointment by the dean. This may be after consultation with the relevant department chair. A second is a suggested initial rank made by the dean and sent to the promotion and tenure committee for advice and consent. A third path is for the credentials of the candidate to be sent to the promotion and tenure committee without comment by the dean for a decision on initial rank and then that recommendation sent to the dean for action. Clinical faculty, in the main, must present evidence of holding a current license and present a history of professional accomplishments and history of past, current, or expected legal entanglements. These documents are reviewed on either a yearly basis or on a regular scheduled time interval. This documentation is required for volunteer clinical faculty as well. Clinical faculty whether campus based or community based are assessed by students on the site

and rotation evaluation forms submitted after the completion of their clinical rotation. Most schools use this information in periodic discussions with the DME (or appropriate designee) at the clinical site, the relevant department chair, and/or the college administration. The distinction between D.O. and M.D. does not appear to be an issue at the schools in the sense that the requirements for determining qualifications to instruct students follow the same process. Basic science faculty, generally speaking, must present evidence of a terminal degree in their claimed field of expertise of research or teaching. A curriculum vita showing outside evidence of expertise such as publications, presentations, societal membership, etc. must accompany the petition for appointment. Updates to these documents provide the basis for continuing evaluation. Faculty evaluation is done primarily by a combination of department chairs and the administration (either the dean or an assistant or associate dean for academic affairs or clinical affairs as appropriate). Evidence used in these reviews is: (1) Student evaluations done on a course or block evaluation form, and clinical rotation faculty evaluations are cited most frequently. (2) Peer evaluations. (3) Attendance at faculty development seminars, meetings, or workshops, is in some schools mandatory, while in others only suggested. (4) Research in the form of published papers or presentations, research grants awarded and research grants submitted are indicators of basic science faculty. (5) Annual faculty activity reports that are self generated. (6) Academic Portfolio presentation. (7) Direct observation of teaching performance by college or department administration for on campus faculty. (8) Monthly clinical activity reports. (9) 360° evaluation procedures. (10) Faculty-administrative interviews relative to teaching, research and service. (11) National Board scores. (12) AACOM survey of senior medical school students. (13) Advisor meetings and conferences between student advisors and administration. (14) Alumni surveys. (15) Student performance in course work or clinical rotations. (16) Special recognition awards for teaching in the basic and clinical sciences.

Question 7: *Please describe the communication process (initiation, information processing, dissemination and follow-up) you use with students and the information you attempt to obtain from them relative to curriculum design, curriculum implementation and curriculum evaluation.*

Students are involved in curriculum decision making at all schools or colleges of osteopathic medicine. Involvement occurs at multiple levels. 1) Students, usually with full voting privileges, are members of the curriculum committee. All colleges have year one and two represented. Others have all four years represented but this is a function of proximity of the students to the college for logistical as opposed to philosophical reasons. 2) Students, either as a class, or as a chosen sample, are asked to review all courses. In most cases this is a web-based evaluation procedure with opportunities to provide written commentary as well as quantitatively scaled scores. As mentioned earlier, these evaluations are used in promotion and tenure and retention decisions, annual departmental review, and annual administrative review of the faculty member in question. 3) Student focus groups are also convened in some schools to evaluate the courses or rotations. In some cases this is done during the administration of the course and at the end of the course. 4) Regularly scheduled class meetings attended by administrators are held to discuss curriculum issues. 5) Clinical evaluation by students of the site and the faculty are required by all schools. These are collected either as hard copy or as web-based submissions. This information is used as in the basic science course evaluation instance as a faculty evaluation, a curricula design and implementation, and an evaluation tool. 6) Participation in curriculum retreats or workshops. 7) Suggestion boxes. 8) Personal conferences with the appropriate administrative personnel relative to curricular issues. This takes place on an ad-lib basis as well as regularly scheduled meetings and exit interviews. 9) Student held conferences or meetings whereby students communicate curricular decisions and plans to peers. 10) Direct reports to the students by an appropriate administrator after student feedback regarding curriculum issues. 11) Annual report by students to curriculum committee. 12) College generated survey with specific sections on curriculum design, implementation, and evaluation. 13) AACOM surveys. 14) Regularly scheduled meetings with the Dean. 15) Regular web-based postings to the College's website for curricular information.

Question 8: *Please describe the communication process (initiation, information processing, dissemination and follow-up) you use with community-based physicians and the information you attempt to obtain from them relative to curriculum design, curriculum implementation and curriculum evaluation.*

Community-based physicians play a major role in the medical education of osteopathic medical students. They provide both didactic on-campus instruction as well as office based, clinic based

and hospital based clinical instruction. These community based physicians are defined by each institution but the common characteristics are: 1) their main objective is to engage in patient care; 2) have no or only minimal direct financial support from the medical school; 3) are considered part of the medical school faculty but only through an affiliation agreement with the individual physician or group. Because these individuals are critical in instructing medical students, communication with them regarding curricular design, implementation and evaluation is very important. The process used to communicate with these individuals on curriculum changes is less formal than with campus faculty, particularly in the realm of clinical instruction. The most direct line of communication is by an assistant or associate dean for clinical education. For those colleges that have on-site clinical coordinators – either administrative personnel or an appointed clinician – these individuals act as the main conduit of information. Direct communication from the college administration and these on-site individuals occur on a regular basis. There are scheduled meetings with all clinical personnel engaged in teaching medical students, the college administrator and on-site coordinator during regular site visits. But because these visits may be on a two-year cycle, the former route of communication is used. Usually, base hospital model clinical curricula convene hospital DMEs or their delegates on a regular schedule to discuss curriculum changes. Student evaluations of the site, curriculum and faculty, addressed earlier, occurs at all medical schools. This forms a basis for follow-up conversations between the clinical site, the faculty local administrative personnel and the college. Faculty development workshops for clinical instructors, either on-campus, off-campus (regional) or at national meetings, help impart the curriculum changes of the school. A regional dean approach has also been used. This individual will represent the college to the various clinical training sites and personnel much as the on-site coordinator might do. This individual has regular meetings with the assistant or associate dean for clinical affairs on campus. “Hospital Day” is an annual event at most medical schools. This event has several hospitals represented, usually by clinicians associated with the hospital, whose purpose is to recruit students to consider their hospital for some of their clinical rotations. The overall objective is to present opportunities for post-graduate education to the students as well. This offers a forum for the college to communicate with individual physicians regarding their curriculum design for their clinical clerkship years. Protocols for clinical clerkships, required or elective, are distributed to every training site and to all clinical trainers. It is expected that

the objectives, procedures, and curriculum principles are covered sufficiently to enable instruction consistent with the school's educational philosophy to take place. It is not uncommon to have these clinical protocols on a web-based access system. This will enable a more dynamic and easily distributable set of protocols. Telecommunication is being used more judiciously by the medical schools to meet with clinical faculty at sites distant from campus. These conferences have been with both groups of physicians as well as individual based. This method has been paired with on campus faculty meetings, particularly around curriculum issues, faculty workshops on curriculum, and general roundtable discussions. Web based evaluation protocols for students evaluating faculty and faculty evaluating students make administrative review and follow-up dissemination back to the clinical trainers and training site personnel more timely and efficient. Student evaluations are the most often cited vehicle for information transfer. Curriculum retreats are held by a number of schools. These are meetings over a protracted period of time that are focused strictly on curricular issues. Community based faculty, DMEs, students, support personnel, and on-campus faculty are invited to attend and expected to actively participate. Faculty meetings to which community based faculty are invited or featured are also used to communicate information. Simulated teaching situations illustrating different techniques or problem resolution have been prepared and disseminated to community based physicians. Medical school surveys to community based physicians asking questions about curriculum matters and student performance are also used to involve community based personnel. Exit interviews and national surveys provide an additional information base for the administration of the college. A few of the medical schools survey residency trainers regarding the readiness of their graduates to meet their post graduate training objectives. Depending on geographic proximity, community based clinical faculty attend clinical departmental meetings. National specialty meetings provide an additional forum for communication between the college and the community based physicians who may be attending. The Osteopathic Postdoctoral Training Institution (OPTI) is being used by some of the medical schools to communicate with community based faculty. The close relationship and integration of the pre- and post-doctoral educational programs that exist between a few of the OPTIs and the colleges make this a rich communication channel. It is also becoming increasingly common for community-based faculty to have a representative to the on-campus clinical departmental meetings. On-campus didactic lectures and clinical instruction given by

community-based physicians are coordinated by course or block coordinators, or department chairs, as appropriate. There are usually meetings prior to, during, and at course end to discuss the curriculum issues endemic in the student-instructor interactions. The expectation for the off-campus instructor is the same as for the on-campus instructor. There are some schools that have a community based physician as a member of the curriculum committee.

*Question 9: Please describe the communication process you use with medical specialty societies and the information you attempt to obtain from them relative to curriculum design, curriculum implementation and curriculum evaluation*

The relationship between the medical schools and the specialty medical societies is many times a fortuitous as opposed to a structured relationship. These societies may be state organizations or specialty colleges or specialty boards. While specialty colleges focus primarily on post graduate education some have individuals appointed to review undergraduate education curricula as well. Many medical schools cite leadership positions of their faculty in these professional societies and thus are in close communication with the changes in graduate medical education and the resources these specialties may have in assisting the medical school. There are student curricula written by some of the specialty colleges and these are consulted by the medical schools in planning their individual curricula. It should be mentioned that many of the DMEs are personally involved with the post graduate medical education changes and their communication with the colleges as previously mentioned are also channels for communication. There are national medical conferences sponsored by the AACOM and the AOA which the medical schools and the medical specialty colleges' representatives attend and discuss issues of curriculum design and content. From time to time, leaders in the specialty colleges visit campuses (particularly family medicine) and in connection with these visits, communication takes place between the administration and the specialty college leaders. Faculty members are also encouraged to belong to professional societies whose role is focused on education (Society of Teachers of Family Medicine, Association of Teachers of Preventive Medicine, IAMSE etc.) with particular emphasis on curricular issues, and have, in some cases constructed suggested undergraduate curricula. Consequently, for those medical schools whose faculty attend these seminars or meetings, a more formal avenue for curricular material is

available. There are national studies and curricula that are published (hard copy or on the Web) and are consulted from time to time by the colleges. The OPTI is in some cases a primary avenue for communication with specialty colleges. In many cases, pre-doctoral training takes place at sites where post-doctoral training also occurs. Consequently, there is a close relationship between the clinical instructors of the residents and the medical students. The medical school representation to the OPTI also helps on educational design and other educational questions overseen by the OPTI. This allows for close communication between the objectives for the residents (specialty college generated) and the medical student. Some colleges have assisted in developing certification examinations for residents and graduated physicians and this, by extension, helps to focus undergraduate education issues as well.

Question 10: *Please describe the communication process (initiation, information processing, dissemination and follow-up) you use with internship/residency directors and the information you attempt to obtain from them relative to curriculum design, curriculum implementation and curriculum evaluation.*

Training sites for clinical clerks are often the sites of internship and residency training programs. Site visits by the college's administrative designees (deans, associate deans, regional deans, etc.), provide the opportunity for communication to take place relative to curricular issues. Regularly scheduled meetings with college sponsored internship and residency program directors are attended by college administrative representatives whereupon curricular issues are discussed. DME and/or program directors regularly attend OPTI meetings at which the medical school is also present. Topics of curriculum import are standing agenda items.

Telecommunication plays an increasing role in the quasi face to face meetings between colleges and training sites. The availability of the equipment that will allow this distance video conferencing is mandatory in one school in order to be a training site. The OPTI is the most commonly cited vehicle for communication between the medical school and the program directors. College faculty also assist the post-graduate educational programs by giving lectures on clinical topics, teaching techniques, research, etc. Post-graduate program inspections are mandatory by AOA policy. At those inspections, the college is also represented and information relevant to the college's curriculum are conveyed back to the relevant college personnel. Follow up questionnaires, generated by the college, sent to post-graduate programs

receiving the college's graduates are used by some of the colleges. This information is used directly by college personnel for curriculum review. In those instances where the college has sponsored the internship, residency and fellowship programs, the directors of these programs many times hold full-time faculty positions at the college. There are additional opportunities to discuss curriculum issues at department meetings and faculty meetings. College generated surveys of medical school students during their first post graduate year have been used as either additional or primary sources of information relative to the readiness of the graduate to manage post-doctoral demands relative to their pre-doctoral curriculum experiences. In one instance, the OPTI is represented on the college's curriculum committee. Specialized curriculum conferences are held and representatives of post-graduate programs are invited to attend. Many colleges are particular in making sure the post graduate programs are present in curriculum retreats, continuing education programs, and faculty development seminars and workshops.

Question 11: *Please describe the communication process (initiation, information processing, dissemination and follow-up) you use with alumni and the information you attempt to obtain from them relative to curriculum design, curriculum implementation, and curriculum evaluation.*

All colleges reporting value their alumni. By technical definition, an alumnus is a graduate of the college. In this view, interns, residents, or individuals who attend other post graduate experiences (i.e. research fellowships, post graduate degree programs, etc.) are alumni. Surveys of these individuals are undertaken as previously mentioned. Their opinions are used in curriculum design, implementation, and evaluation. A common alternative definition used by schools classifies alumni as those individuals who have completed their clinical training and are, in the main, practicing physicians. Under this definition, the alumni role in curriculum matters is quite varied. The majority of the schools reporting have not *formally* integrated these alumni into the curriculum decision making process. However, some colleges survey their alumni and other colleges are planning to do so, on a regular basis. PGY1 surveys are increasing in number, while longitudinal programs are also being completed. The alumni are asked their views regarding the curriculum and its import and contributions to their professional lives and careers. In follow-up phone conversations, some deans are quite clear as to the role their alumni will play relative to the growth and support of their colleges. Support is

certainly mentioned. Some deans are quite clear about what programs or activities they want their alumni to support, while others look at the alumni as supporting more general funds. An often cited role for the alumni is one of recruitment of sites for clinical training. These individuals are asked to work with hospitals and clinics to secure the clerkship and residency slots for current students. This ambassadorial role also extends to geographic regions as well. They are in effect marketing representatives for their medical school. They have been asked to be community based advisors to the clinical clerks, even if they may not function in a preceptor role. The deans also look to their alumni to be preceptors, and for some, hope to recruit them as faculty. All of these acts carry with them an academic cloak. Alumni are informed of the changes that take place at the college through state, regional or national alumni meetings. Alumni suggestions regarding curriculum are encouraged and solicited, and reported back to the curriculum committee by the faculty, administration, or students, depending on the parties involved in the conversation. In some instances, representatives of the alumni association have been solicited to attend and contribute to curriculum planning sessions or conferences. Publications by the college or the respective state association, either as alumni magazines or general periodicals of the college featuring alumni, contain information about the college and are intended to reach the alumni population. Letters, emails, interviews regarding topics presented in these publications are encouraged and, on occasion published as alumni commentary. Electronic communication has opened newer avenues of communication – specialized web-sites, list-serves, email, etc. Alumni surveys of the practicing physician population are also conducted. In some instances, they are particularly oriented to curriculum issues. They are similar in scope to the residency surveys and are used in a similar manner. Grants have been obtained to assist in training recent alumni (i.e. current residents) to become better clinical teachers. Programs cited are a direct instructional program with a hierarchy of titles, teacher to master teacher and a mentoring program.

Question 12: A “continuum of learning” is a phrase that describes physician education today. Major components of this system are medical school, internship, residency and continuing education. Some medical schools see these components as separate and distinct from each other, although many times medical school personnel assist in each of these components. ***If your medical school has looked at formally associating activities of years 3 and 4 with internship and residency programs (a seven-year curriculum) please describe the process you use and progress you have made. If your college has not pursued such an association, please state as such below.***

**Table 4.7**  
**Responses of 18 medical school deans as to whether their schools had considered formally associating their year 3 and 4 activities with internship and residency programs.**

Colleges	Had made plans	No plans
COMP		X
DMUCOM		X
KCCOM		X
KCOM		X
LECOM		X
MSUCOM		X
NSUCOM		X
NYCOM		X
OSUCOM		X
OUCOM	X	
PCOM		X
PCSOM		X
TCOM		X <sup>1</sup>
TUCOM		X
UMDNJ		X
UNECOM		X
VCOM		X <sup>2</sup>
WVSOM		X

<sup>1</sup> TCOM has a graduate program (MPH) that while beginning in the on-campus years will extend into the residency years.

<sup>2</sup> VCOM is a new college that is currently planning the clinical years. The intent is to have an integrated 5 year curriculum with the first post-graduate year being the fifth year.

OUCOM has had an historical liaison with the internship year inasmuch as the College has administered examinations to years 3 and 4 and to the interns within the OU system. There is also a direct teaching relationship through their core teaching program (that is different from the OPTI) that brings teaching faculty to residency programs. The other colleges, it might be argued, have an informal agreement with post-graduate training sites to, in large measure, make a well integrated transition from pre-doctoral to post-doctoral training. This is done via the OPTI. However, neither the time in pre-doctoral training nor credit for clinical experiences taken prior to graduation from medical school, transfer to post doctoral training in an academic sense. There are several reasons why this may be so. In instances where the majority of the college's graduates go to only a few post-graduate training institutions, and control over the programs of these institutions is shared by the medical school, it would be feasible to engage in such a continuum. There is nothing, in principle, to prevent a separate track for a such a curriculum option, as this is done in the allopathic profession at the current time. However, osteopathic colleges with large OPTIs have trainees from a large number of colleges of osteopathic medicine. To engage in a fully integrated continuum of learning (an integration of curriculum philosophy and years to completion) would be difficult at best on any large scale endeavor. Care must be taken here to understand that providing a continuation in training opportunities is not the same as a continuum of learning as the term is used in this question. Providing training opportunities from pre-doctoral to and through residency and fellowship for medical students is something that is prized by all osteopathic medical schools. A part of the mission of all state supported osteopathic medical schools (and some private osteopathic medical schools) is to provide a physician workforce for the state of sponsorship. To provide training opportunities within the state (with an osteopathic orientation) increases the probability of meeting that mission.

Question 13: *From your perspective, of all information available to you, what are the **five** KEY performance indicators you regularly review to determine the success of your medical school? (e.g. Board scores, licensure passing rates, first choice of residency, primary care specialty choice by graduates, clinical revenue, student satisfaction surveys, faculty satisfaction surveys, in-state practice location, grant dollars, etc.)*

Table 4.8 summarizes the deans' responses. Some responses were replete with conjunctions. Every attempt has been made to faithfully capture the responses. Student performance on COMLEX Parts I and II were the most frequently cited data points used by the deans to assess the success of their respective school. It should be noted that relative comparisons between schools are difficult because, although the National Board of Osteopathic Medical Examiners could produce a table presenting the Board scores by school, it does not. This is a matter of policy. The student responses to both performance examinations and evaluations as well as satisfaction surveys were also frequently cited. These performance measures had wide import for the decision making process. First, it directly influenced student retention policies, because these measures are the most common reason for dismissal or prolongation of an individual's curriculum. Second, it forms the basis for faculty evaluation by the administration, depending on the passing to failing ratio of students in a course. The clinical evaluation by preceptors done by end of rotation evaluations is used by the college, the DME and the faculty as previously mentioned. The end of rotation examinations have both the quality control component (assessing either exposure to clinical material or the learning initiative of the students on rotation) as well as assisting (along with log books) in the quantity assessment of the scope of clinical material to which the student has been exposed. The mission of the College may be tied into the location and specialty choice of the medical student. Consequently, these data are used in answering annual college specific responses to governing boards at the state level. The selection of primary care specialties is still important to schools (by college publications, but does not appear to be a particular point of emphasis in the decision making role relative to overall school success; given that less than 50% of the schools reporting put this in their top 5 key variables.) Residency placement is defined by the reporting schools as being 1) competitive, or 2) first choice, or 3) within the "system". This latter term is taken to mean within the OPTI to which the college belongs. This criterion has been used to show success of the OPTI, providing a sufficient opportunity for graduates to pursue their specialty choice, meeting the mission of the college and showing the quality of their program by enabling their graduates to meet varied admissions criteria to a variety of programs scattered across the United States. Residency placement has also been used as a marketing statement. When recruiting applicants to their medical school, it has been often remarked that the

prospective medical students are already interested in where the graduates of the school go for their residency. The belief is that placement in well known post graduate training programs is perceived by applicants as a sign of excellence. Outcome measures are required by accreditation standards and all reporting medical schools comply. In discussion with the deans, it is understood that for an indicator to be an educational outcome it must possess certain characteristics. It must be measurable by a reliable instrument that is acceptable to those making the determination of success. It can be shown to be related to or be the consequent of some educational process. Its rules or guidelines of interpretation can be, in principle, stated and applied. A criterion of success can be established for each measure. Underlying each measure is a sense of the decisions or actions that would be initiated or followed through with depending on the results of from each outcome measure. This would be the basis for data driven decision making as opposed to intuitive or political decision making. What is at issue however is the validity of the measures. For example, AHRQ maintains that outcomes for medical education should be patient outcome based not exclusively process based.<sup>1</sup> One may argue that this emphasis speaks more to residency training than to undergraduate medical education. This is not so, say they. Clinical clerks are involved with patient care and therefore are included in their suggestion. To the extent that observations by attending physician judging clinical activities of clerks are used, to that extent then patient care outcomes ought to be included. The Health Resources and Services Administration (HRSA) maintains that valid measures will relate to the changes in the health status of patients (mortality rates, morbidity rates, etc.). This category of outcomes (patient centered) is usually not used in undergraduate medical education and, if considered will per force generate a new movement in medical education assessment. There is also a press for incorporation of medical competencies into the undergraduate medical education (as is the case in graduate medical education). The proffered set of Accreditation Standards for Colleges of Osteopathic Medicine (as of this writing) contains these competencies. The website associated with these competencies state:

“The COM should, at minimum, consider the Seven Core Competencies required of all AOA-accredited postdoctoral training programs. The seven competency areas include: medical knowledge; osteopathic philosophy and

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<sup>1</sup> Chen F, Bauchner H, Burstin H. A call for outcomes research in medical education. *Acad Med* 79(10):955-60

osteopathic manipulative medicine; patient care; professionalism; interpersonal & communication skills; practice-based learning and improvement; and systems based practice. For details on the requirements and guidelines of the core competency program, please refer to the AOA's Core Competency Compliance Program (CCCP) located on the website at [http://doonline.osteotech.org/index.cfm?PageID=acc\\_postdocstds](http://doonline.osteotech.org/index.cfm?PageID=acc_postdocstds) or contact the AOA's Division of Postdoctoral Training directly at 312.202.8074."

The majority of deans with whom follow-up conversations took place see their curricula as already addressing these competencies. This of course is an empirical question. The resolution to this lies in the stipulation of how outcomes (competencies) are to be addressed. Assessing the medical students on these competencies in a metric that is both common to graduate medical education and yet at a level appropriate to the year of training of the student will allow a longitudinal pattern of competence acquisition as well as, at least in principle, an assessment of the curriculum.

**Table 4.8**  
**Key Performance Indicators of medical school success by school**

Medical College	Specialty Choice <sup>1</sup>	Practice Location	Post-graduate Training Placements	Alumni Satisfaction Surveys and Donations	OMM use in practice	Osteopathic certification in specialty	Strategic Plan	Licensure Pass rates	COMLEX or USMLE Board Scores and Pass Rates	Student Evaluation <sup>2</sup>	Grant Dollars and Faculty Research	Attrition Rates	Entering Class Profile <sup>4</sup>	Longitudinal Studies of Graduates	Student Faculty Ratio	Support for OPTI	Clinical Revenues	National Comparisons	
COMP	X		X					X	X	X									
DMUCOM			X	X					X	X			X						
KCCOM			X						X	X									
KCOM	X		X	X				X	X								X		
LECOM			X	X			X		X	X			X	X					
MSUCOM		X	X						X		X					X	X		
NSUCOM		X	X	X					X	X									
NYCOM			X						X		X	X	X						
OSUCOM	X								X	X	X				X				
OUCOM	X	X							X	X									
PCOM	X			X					X	X									
PCSOM	X	X	X	X	X	X													
TCOM			X					X	X	X	X								
TUCOM			X						X <sup>3</sup>	X		X	X						
UMDNJ									X		X		X				X		
UNECOM	X		X						X	X									
VCOM	NEW SCHOOL						X												
WVSOM			X				X		X	X									X

<sup>1</sup> The most frequently occurring subdivision was Primary care vs. Non-Primary Care specialties. Closely related to this was the mention of Rural or other physician shortage areas as places of either residency training or practice location.

<sup>2</sup> Student evaluation covers the following things: a) student performance on college generated examinations, b) preceptor evaluation of students, c) student evaluation of faculty (on campus and clinical trainers), d) exit surveys, e) responses on national surveys and f) Student satisfaction surveys.

<sup>3</sup> COMLEX and USMLE are used as appropriate.

<sup>4</sup> Particular items mentioned were: a) GPA, b) MCAT, c) Under-represented minorities, d) State of Residency

Question 14: *How do you communicate your assessment of key findings to your other administrators, faculty, and students? (E.g. College Reports, AACOM survey, formal faculty presentations, departmental meetings, etc.)*

**Table 4.9**  
**Methods of Reporting key findings by medical school**

Medical School	Scheduled Report by President, Dean, or appropriate College Administrator to Relevant Constituents	Faculty Retreats or Forum	Faculty or Specialized Group Meetings with Relevant Constituents <sup>1</sup>	AACOM Surveys	Strategic Planning Sessions and Update Sessions	Publications, Presentations at State and National Meetings	College Reports of Curriculum Progress and Student Achievement	College Newsletters, Magazine, or other regularly published periodical	Dean's meetings with Student groups	Video or Web based presentation, Email	Performance Reviews
COMP	X		X						X		
DMUCOM	X	X	X						X	X	
KCOM	X			X			X		X	X	
KCSOM	X	X	X	X	X	X					
LECOM	X		X	X	X		X				
MSUCOM			X								
NSU-COM		X	X		X	X			X		
NYCOM	X	X	X						X		
OSUCOM		X	X	X					X		
OUCOM	X		X			X					
PCOM			X					X	X	X	
PCSOM			X						X	X	
TCOM	X		X				X	X			
TUCOM	X	X	X				X		X		X
UMDNJ			X						X		
UNECOM			X						X	X	
VCOM	X	X									
WVSOM	X		X							X	X

<sup>1</sup> Constituents include Deans Staff, OPTI directors, DME, Department Chairs, Program Directors, Faculty through faculty meetings or Department Meetings, Deans Council, Curriculum Committee

Table 7 shows the reporting methods used by the Deans to communicate with the primary individuals or groups regarding key findings of their medical schools. These groups are, logically, the dean's administrative superiors (Provost, President), and the administrative representatives (assistant and associate deans, and department chairs) and students. The reporting schools generally speaking use a formal meeting as the most common communication format with associated agendas and minutes. Intermediate reports are most often then communicated to the faculty via department meetings. General faculty meetings with an agenda item for the dean is held on a regular basis to make more direct statements of key

findings. There are regularly scheduled meetings with students held by a majority of the schools, which are used to communicate important issues as well. The administrative structure of the school (independent of private vs. public status), determines the groups to whom the dean formally meets to discuss the key findings. The publication of key findings with the associated strategies is becoming supplemented by electronic format. Email is seen as a valuable tool in communication. This involves individual as well as group email distribution. It should be noted that every school that uses email also uses the in-person faculty meetings and student meetings. This report attempts to limit its scope to curriculum issues. However, in discussion, these formats are used for a broad range of topics, issues, questions, and problems.

Question 15: *Based upon your review of all information available to you, please describe the process by which you translate your assessment of your medical school's performance into priorities for improvement?*

The strategic planning process is the major vehicle for translating information into priorities. The strategic planning process is not uniform in application across the schools. The most common description is the Continuous Quality Improvement (CQI) method. This is a method used in industry first and is now common in educational institutions. The basic steps described in the literature are, in brief form, to (1) establish a clear vision, purpose and mission. (2) Identify goals consistent with the vision, purpose and mission. (3) Construct plans to achieve each goal. (4) Assign responsibility to relevant parties for goal achievement. (5) Identify data elements (outcomes) that will serve as sufficient evidence for decision makers to determine formative progress toward, and summative decisions of, whether the objective is proceeding well or has been achieved. (6) Construct alternative courses of action if data show insufficient progress. (7) Regularly review progress and continuing relevance of goals, mission, purpose and vision. While the details are much more involved, it stresses the need for data driven decision making as opposed to intuitive decision making alone. The decision makers usually involve more than the dean. Advisory committees are formed in many cases. The advisory committees are composed in a variety of ways. The most common is a combination of Assistant/Associate Deans, faculty and other administrative personnel (e.g., budget officers). The curriculum committee is mentioned but only briefly. The distinction made here is that

while content is a function of the faculty, implementation rests in the dean's office. The ultimate decisions regarding priorities was mentioned as lying in one of three places, depending on the organization of the medical school: a) the Provost, 2) the President, or 3) the Board (or trustees or like term). The sources of information that was reported earlier as relates to the curriculum and the outcomes endemic in the information sources, are reviewed on a continuous basis as sequencing allows. For example, course evaluations are reviewed either midterm and course end or course end alone. If only the course endpoints are used, no opportunity for formative evaluation (i.e., intermediate monitoring) can occur, by definition. Thus, a narrower definition of continuous improvement must follow. Board scores are only reported one time per year and again can only serve the definition of continuous in a prolonged longitudinal sense. Thus, a definition of continuous, as a multiple sampling and dynamic process is stretched a bit in most medical curricula, given the sources of information cited. The form of CQI is certainly there and allows for decision making that is deliberate, planned and accountable. The basic steps of the process, regardless of the terms that are used, makes clear who the decision makers are, who is responsible for implementation, how progress is to be determined, what are the courses of action that will be taken or explored upon realization of the goals, or failure to realize the goals. In those instances where a budget and timeline are also included in the plans for achievement, additional monitoring points are, in principle, included and presumably used. It is not the frequency of occurrence that is the most important point to be made here, but rather the use of information that is mutually acceptable by those individuals involved in the implementation of curricula and the final decision maker regarding the contributions of the curriculum in meeting the vision, mission, and purpose of the medical school.

**Table 4.10**  
**Mechanisms used to translate assessment into priorities by school**

Medical School	Strategic Plan	Budget Committee	Faculty Meetings	Faculty Retreats	Self Study Reports Accreditation and College Generated	Dean's Advisory Committees <sup>1</sup>	Presentational Presentations and Board Reports	Progress Reports	AACOM Annual Surveys	Curriculum Committee
DMUCOM	X				X					
KCCOM	DID NOT COMPLETE									
KCOM					X			X		
LECOM	X		X			X	X	X		
MSUCOM	X	X								X
NSUCOM	X					X		X		
NYCOM						X		X		
OSUCOM	X	X							X	
OUCOM	X									
PCOM	X									
PCSOM	X									
TCOM	X					X				
TUCOM	X									
UNDNJ	X	X				X				
UNECOM	X				X	X				
VCOM	X					X	X			
WCOMP	X					X				X
WVSOM	X					X				

Questions 16: **Multiprofessional** (Multidisciplinary) education is defined as two or more professional **students** coming together in a teaching/learning situation to learn for whatever reason. **Interprofessional** (interdisciplinary) education is defined as two or more professional **students** learning from each other and about each other to improve collaboration and the quality of care. Most Colleges of Osteopathic Medicine reside on a campus with more than one educational program. It is often the case that students from other programs simultaneously share the teaching activities and other resources of the medical school. Many clinical training sites have more than Osteopathic medical students on a rotation at the same time (e.g. allopathic medicine, pharmaceutical sciences, podiatric medicine, nursing, Physician Assistance, Nurse Practitioner, etc.). If your school has either multiprofessional or interprofessional courses or rotations please identify the constituents of these groups.

Multiprofessional\Medical School	Grad Degree	RN	NP	ANP	DPM	DDS	MD	PA	PharmD.	Other
COMP								X	X	
DMUCOM					X			X		
KCCOM										
LECOM										
MSUCOM										
NSUCOM	X				X	X			X	
NYCOM	X	X					X	X		
OSUCOM	X									
OUCOM	X						X		X	
PCOM							X			
PCSOM						X				
TCOM								X		
TUCOM								X		
UMDNJ	X	X	X	X		X	X		X	X <sup>1</sup>
UNECOM	X						X	X		
VCOM										
WVCOM		X					X	X	X	

*Note:* Grad Degree = Master's or higher, RN = Registered Nurse, NP = Nurse Practitioner, ANP = Advanced Nurse Practitioner, DPM = Podiatrist, DDS = Dentistry, MD = Allopathic Medicine, PA = Physician Assistants, Pharm D. = Doctor of Pharmaceutical Sciences  
<sup>1</sup> Social Workers (MSW), Physical Therapists, Dieticians, Mental Health workers

Medical School	Grad Degree	RN	NP	ANP	DPM	DDS	MD	PA	PharmD.	Other
COMP								X	X	
DMUCOM		X			X		X	X	X	
KCCOM										
KCOM		X								X <sup>2</sup>
LECOM										
MSUCOM										
NSUCOM					X	X	X	X		
OSUCOM		X					X	X		
OUCOM							X		X	
PCOM							X			
PCSOM							X			
TCOM								X		
TUCOM										
UMDNJ	X	X	X	X		X	X	X	X <sup>1</sup>	
UNECOM							X			
VCOM										
WVCOM							X			

*Note:* Grad Degree = Master's or higher, RN = Registered Nurse, NP = Nurse Practitioner, ANP= Advanced Nurse Practitioner, DPM = Podiatrist, DDS = Dentistry, MD = Allopathic Medicine, PA = Physician Assistants, Pharm D. = Doctor of Pharmaceutical Sciences  
<sup>1</sup>Social Workers (MSW), Physical Therapists, Dieticians, Mental Health workers  
<sup>2</sup>Team approach clinical care (nurses, dieticians, communicable disease workers, interdisciplinary house calls (geriatrics))

Because many health and medical complexes offer more than the than the D.O. degree, the opportunity for collegial interaction with other health and medical professions exists on the same campus. There is a distinction to be drawn between classroom interaction (e.g. many disciplines represented at a joint lecture, or as members of a small group) and joint instruction in a clinical setting. The former will be called multiprofessional and the latter interprofessional. The distinction is made to differentiate the decision making role and responsibility of the group members either by design or by non-medical restrictions (i.e. legal). The team concept is many times present in both situations, but has a higher fidelity in the interdisciplinary setting. Table 4.11 shows the physician assistants program is the most

common non-physician group that is associated with the multiprofessional groups. On many occasions, joint lectures are given as a matter of economic convenience. Anatomy and biochemistry are good examples. The topics covered and the details involved are common in the objectives of many health disciplines. The lecture in common is an efficient way of meeting otherwise multiple demands. The ancillary savings, aside from faculty presence, is seen in handout preparation, office hours, test preparation etc. There are secondary benefits that are gained in multiprofessional education as well. The opportunity to learn of each others scope of practice and professional capabilities is ostensibly an advanced organizer to what can be done in a clinical team regarding health care, should it arise.

Table 4.12 shows a different pattern. The merging of hospitals and other clinical settings has created the joint medical teaching environment. Allopathic medical students as well as allopathic residents join the teaching/learning mix. The effect of this joint association on post-graduate training choice, specialty, or future membership is difficult to quantify. Data, in this study, indicate that most medical students choose their specialty in the third and fourth year of medical school. It is shown also that the percent of instruction provided by the allopathic profession increases in the clinical years. This is only an indirect inference as to the impact of non-D.O. interaction and caution must be taken to make definitive statements about this interaction. However, when this information is coupled with the data in Table 4.13, the Dean's of the Colleges who offer the option of interprofessional encounters, feel the performance of their medical students is enhanced by these interactions. There are nine schools reporting having interprofessional or multiprofessional encounters during in their curriculum. Seven of these reporting schools are private and two are public (data not shown). There is no statistical difference between the public and private schools relative to the satisfaction of the programs. The majority of the interactions take place in the clinical years to a greater extent than the pre-clinical years. Of those schools who report offering interprofessional activities; in the main, they actively promote these encounters. However, the public schools reporting are slightly more active in promoting these types of interactions than the private schools who reported (data not shown).

**Table 4.13.**  
**Satisfaction with Multiprofessional and Interprofessional interactions by**  
**medical schools offering the options.**

Question	Strongly Agree	Agree	Disagree	Strongly Disagree	Does Not Apply
Question 17. The performance of our medical students is enhanced because of exposure to a multiprofessional education learning encounter in our basic science courses.	2	2			7
Question 18. The performance of our medical students is enhanced because of exposure to a multiprofessional educational learning encounter in our behavioral science courses.	2				7
Question 19. The performance of our medical students is enhanced by exposure to a multiprofessional educational learning encounter in our clinical science courses.	2	1	1		7
Question 20. The performance of our medical students is enhanced by exposure to interprofessional educational learning encounters on clinical rotations.	9	4			
Question 21. Our college actively promotes multiprofessional and interprofessional educational learning encounters.	9	4			

Question 22. *The cost and structure of clerkships (rotations) vary by college. The costs may be administrative, resource based, or a combination of many factors decided upon by the College and the training site. Students, may bear additional costs such as housing, meals, transportation, etc. which are different for each College or rotation. Please indicate the percent of your College's total revenues that are allocated to the following activities, the actual dollar amounts where indicated, and your estimate of non-tuition costs to students for their rotations.*

**Table 4.14**  
**Descriptive Statistics by Activity by Percentage of Total Revenue Allocated to Activity**

Activity	Number medical schools reporting	Minimum percentage reported	Maximum percentage reported	Average percentage reported	Standard deviation
Percent of Total Revenue for Basic Science Faculty	16	5.40	25.00	13.14	6.05
Percent of Total Revenue for Clinical Science Faculty	16	7.04	33.59	19.15	8.08
Percent of Total Revenue for Faculty Development	14	.01	14.00	2.96	4.26
Percent of Total Revenue for Program Development	12	.68	.54	36.1	71.36
Ave Direct Cost of Required Rotations per Student to College per Month Year 3	15	.00	1667.00	418.30	465.57
Ave Direct Cost of Selective Rotations per Student to College per Month Year 3	11	.00	1667.00	302.32	502.36
Ave Direct Cost of Elective Rotations per Student to College per Month Year 3	11	.00	1667.00	195.51	492.62
Ave Direct Cost of Required Rotations to Student per Month Year 3	9	.00	1621.00	892.59	711.54
Ave Direct Cost of Selective Rotations to Student per Month Year 3	5	.00	1621.00	844.67	807.45
Ave Direct Cost of Elective Rotations to Student per Month Year 3	7	.00	1583.33	627.33	648.25
Ave Direct Cost of Required Rotations per Student to College per Month Year 4	11	.00	1667.00	421.69	527.78
Ave Direct Cost of Selective Rotations per Student to College per Month Year 4	13	.00	1667.00	362.97	495.32
Ave Direct Cost of Elective Rotations per Student to College per Month Year 4	11	.00	1667.00	225.32	491.14
Ave Direct Cost of Required Rotations to Student per Month Year 4	9	.00	2146.00	674.56	824.21
Ave Direct Cost of Selective Rotations to Student per Month Year 4	10	.00	2146.00	884.10	857.28
Ave Direct Cost of Elective Rotations to Student per Month Year 4	9	.00	2146.00	701.44	776.70

**Table 4.15**  
**Percent of Total Revenue Per Category of Expenditure by Type of Institution**

Category	Public or Private Institution	N	Mean	Std. Deviation	Std. Error Mean	Statistical Significance
Basic Science Faculty Percent of Revenue	Private	10	13.35	5.66	1.79	.87
	Public	6	12.80	7.21	2.95	
Clinical Science Faculty Percent of Revenue	Private	10	17.91	8.68	2.75	.45
	Public	6	21.22	7.21	2.94	
Faculty Development Percent of Total Revenue	Private	9	3.85	4.98	1.66	.31
	Public	5	1.35	2.06	.92	
Program Development Support Percent of Total Revenue	Private	7	20.25	17.71	6.69	.49
	Public	5	58.29	111.70	49.95	

**Table 4.16**  
**Average Direct Cost of Rotations by Type of Rotation and Year in School per Student per Month by Type of Institution**

	Public or Private	N	Mean	Std. Deviation	Statistical Significance <sup>1</sup>
Ave Direct Cost of Required Rotations per Student to College per Month Year 3	Private	10	320.16	341.34	.33
	Public	6	553.83	601.30	
Ave Direct Cost of Selective Rotations per Student to College per Month Year 3	Private	5	94.51	76.68	.21
	Public	6	475.50	648.73	
Ave Direct Cost of Elective Rotations per Student to College per Month Year 3	Private	7	69.08	76.26	.47
	Public	4	416.75	833.50	
Ave Direct Cost of Required Rotations to Student per Month Year 3	Private	6	1174.39	441.25	.10
	Public	4	455.25	782.86	
Ave Direct Cost of Selective Rotations to Student per Month Year 3	Private	2	1301.17	401.87	.37
	Public	3	540.33	935.88	
Ave Direct Cost of Elective Rotations to Student per Month Year 3	Private	4	782.83	642.20	.52
	Public	3	420.00	727.46	
Ave Direct Cost of Required Rotations per Student to College per Month Year 4	Private	7	218.36	350.99	.18
	Public	5	633.00	645.79	
Ave Direct Cost of Selective Rotations per Student to College per Month Year 4	Private	9	242.06	303.75	.32
	Public	5	519.00	715.46	
Ave Direct Cost of Elective Rotations per Student to College per Month Year 4	Private	8	108.32	120.05	.30
	Public	4	416.75	833.500	
Ave Direct Cost of Required Rotations to Student per Month Year 4	Private	6	740.00	829.56	.63
	Public	4	470.25	812.65	
Ave Direct Cost of Selective Rotations to Student per Month Year 4	Private	8	926.25	828.41	.55
	Public	3	560.33	970.53	
Ave Direct Cost of Elective Rotations to Student per Month Year 4	Private	7	739.14	770.62	.62
	Public	3	463.00	801.94	

<sup>1</sup> Determined by student's t, 2 tailed.

The above tables 4.14-4.16 show a discrepancy in the number of colleges from which data are collected from the total number of Colleges that reported. Some schools left out the financial information altogether while others reported only part of the data. In respect to those who wish to hold their data confidential only the average figures are reported here. The minimum value of 0.00 for cost to College and Student for rotations is because of the differing cost agreements between the medical schools and the clinical training sites. Many schools have solicited training sites that train medical students at no cost. The rationale in many cases is one of recruitment for their respective graduate training programs. Other medical schools have standing agreements with training centers that will charge per student per rotation or per student per week fee. Table 13 shows a breakdown by private vs. public medical schools. Note that this is computed only on those schools who reported via this questionnaire. A comparison between “type of institution” shows no difference between percent of revenue devoted to the categories listed. This is to say that the differences between the public and private colleges of osteopathic medicine among the categories listed are not large enough to be statistically significant. The reason for this non-statistical significance is two fold. First, the number of schools is few for each category. Secondly, the range of values between the schools is large. This means the variance (standard deviation) is also large. This in effect masks any differences that might be statistically significant. Should we have all schools reporting all data, no statistical tests would be needed since one would have the population of schools. One could then look at the average difference and conclude directly their management importance. Regrettably, this is not the case. Questions related to cost-to-student per type of rotation (Required, Selective, Elective) by year are also addressed. Most schools do not collect this information. At the majority of colleges required rotations are taken at training sites, which provide housing. However, the cost of transportation, food, and incidentals are usually borne by the student. Many colleges make a strong effort to make sure the meals, housing, and scrub suits are provided by the training site, but this is not guaranteed. When these amenities are not provided, the cost of such activities is to be incorporated into the student loan calculations. Estimation for such things is done by the student with additional help provided by fellow students (directly by conversation or indirectly by the site feedback forms completed as a requirement of clinical rotations) and the student affairs office. Should a student take an out-of-system rotation, the cost and tuition if any for doing so are to be borne by the student. The

dean's office makes these facts known to students but does not routinely collect information on the cost to student category. For those schools reporting this amount, federal guidelines were the source of their estimation. The information while faithfully reported is unlikely to be consistent across medical schools. As a result of the few schools who reported this category of cost and the inconsistent collecting of this information across schools this data is not reported.

Question 23: *What measures of budgetary and financial performance, including measures of cost containment, does your College routinely collect?*

**Table 4.17**  
**Routinely collected measures of budgetary and financial performance by school**

Medical School	University Reporting Forms	Comparison with other State medical schools	National Benchmarks	Auditors Reports	Depart Budget Reviews Clinical and Basic Science	Faculty Workload Analysis	Cost Allocation Models/Cost Center Model	Individual Revenue and Expense Forms	College Revenue Expense Reports	Regular Administrative Committee Reviews
COMP									X	
DMUCOM						X	X			
KCOM										
LECOM					X					
MSUCOM	X									
NSUCOM										
NYCOM	X								X	
OSUCOM	X				X					
OUCOM										
PCOM									X	
PCSOM				X	X		X		X	
TCOM	X	X	X	X						
TUCOM					X			X		
UMDNJ	X				X		X			X
UNECOM					X					
VCOM					X					
WVSOM	X				X					X

Financial and budgetary oversight is remarked upon by a majority of the deans reporting as key elements in their duties and responsibilities. In the case of State supported or state assisted schools, the budgeting process is dictated in large measure by the state rules and regulations regarding budgeting. This is a process that has mandatory beginning and ending dates for preparation and has required forms and procedures that must be followed. This process guides the overall budgeting for the university of which the medical school is a part and the medical school itself. The process itself dictates much of the required reporting by date and detail. Nonetheless, all schools have both a centralized and decentralized system to some degree. The most common structure and hence information reviewed by the deans is taken at the unit level. That is to say, details at the Department level or program level. The clinical practice plan, which is monitored quite closely is really not a department in the academic definition but is a separate reporting structure even though it involves each clinical department. This information is balanced against certain directional objectives like the strategic plans for the medical school or strategic plan for the department or reporting unit. It is not done in all instances, but some deans look at the revenue per FTE as a marker for not only productivity but also for individual

evaluative objectives by the department chair or unit coordinator. The monitoring of the financial picture of the medical school involves more than the dean of each school, although the final responsible person for each medical school, regardless of private or public institution is the dean. This monitoring function is a combination of senior administration and academic and clinical representatives. The discussion of budget revenues and expenditures occurs from a weekly to quarterly interval at budget meetings. The most frequent time interval is monthly. These are also done on an individual basis as well as open discussions with other chairs or unit representatives. The dean also meets regularly with their financial officers and appropriate associate deans to discuss the budget changes on regular intervals. The schools (public and private) also prepare budget reports for frequent board meetings. This reporting requires standardized reporting forms and the dean is responsible for the accuracy and accountability that appertains to these reports. The state schools and some private schools frequently report their budget transaction to the provost or other centralized administrative officer. This process requires a standardized reporting form and in some cases a structured report. Reports and information sources mentioned also include monitoring of expense reports and capital expenditure reports on a continuing basis by the dean's office, continuing monitoring of budget to actual expenditures and clinical revenue.

### **Qualifications for Dean**

In the follow up phone calls to the deans about responses to the questions presented above, each dean was asked what ought the characteristics of the dean to be in today's osteopathic medical school. The answers are presented in tabular form below.

**Table 4.18**  
**Characteristics that any dean ought to have, as cited most often by deans of osteopathic medical schools**

<b>Characteristic</b>
Academic experience
Visionary
Ability to make decisions
Comprehensive understanding of the health care system
Finance
Leadership
Communication skills
Credentials outside of medicine
Clinical experience
Political experience

Of the characteristics mentioned, the most commonly cited was visionary or closely related terms. Academic experience and credentials were both common but there was a split among state supported colleges and private colleges. Credentialing outside of medicine (at the masters level or higher) is seen as more important in by state institution deans as opposed to private school deans because the audiences with whom the deans interacted. The respondents claimed these audiences were slightly different. Political expertise is seen as more important in private institutions than in state institutions. All characteristics were cited to one degree or another by all the deans. Circumstances seemed to dictate which characteristic predominated at the time. The most frequently cited example of this was in the area of finance. The importance of the ability to handle this component of administration, either directly (by the dean) or indirectly (associate dean or assistant to the dean for finance) was cited. There has been a shift from general overall leadership and curriculum development, to financial oversight and fundraising.

### **Summary**

This section summarizes the curriculum by model and teaching method and types of courses taught across all medical schools. Outcome measures were solicited and degrees of satisfaction with these measures was obtained. The communication process between the dean and the various constituencies to whom they responded were also studied. Financial information

reported on the percentage of total revenue allocated to educational activity was also presented. The qualifications for a dean in today's medical climate was examined and reported.

## **Part III. Recommendations**

## **Recommendations for Curriculum Change**

This study had as its goal to establish a base of knowledge, supported in data, on the continuum of the osteopathic student's education, from medical school through the end of residency. The information collected and the knowledge to be elicited from it will depict the current state of osteopathic medical education and can be the essential foundation for discussion and planning for needed change.

### **Recommendations from the Deans' Section**

**1. Appropriate content in educationally sound formats.** An underlying assumption in the medical schools is that what one is teaching is correct and applicable to our current and near future world of medicine. That is to say, independent of pedagogy, the content is fundamentally correct. This study has shown a variety of teaching methods in the first two years with outcome measures directed at assessing how well the medical students have mastered the material presented by the medical schools and clinical teaching sites. The first two years are considered grounding in the principles of patho-physiology and other fundamental building blocks to enable a student the opportunity to apply these principles in clinical problem solving, management and treatment, and follow-up care during the last two years of undergraduate medical training. The introduction of clinical problem solving formats and early patient exposure has also been commented upon in the questionnaire and follow-up phone conversations with the deans. The majority of these curricular innovations have been in the first two years of medical school. These changes in the first two years are "nibbling" around the edges of change. This term was used in an address to the Colleges in 2001, by Dr. Douglas Wood, then president of the American Association of Colleges of Osteopathic Medicine. Slowly adding and rarely subtracting content. However, to this day, very little change has been implemented in a structural sense, in the last two years of medical school. Consequently, the more basic question is to raise issues with the content itself. Is the current curriculum content appropriate for today's changing medical environment? These remarks are applicable to both the first two years and the last two years. There is reported exposure to

multiple disciplines in inter- and multi-professional education. Has this changed the clinical rotations in any way? Has it brought into question whether the rotations are in any sense still needed? The basic design of the clinical curriculum dates from the 1960s. This is an opportunity for discussion at the most basic level of curriculum design. It should be noted that the OPTI forms a basis for entrée into residency curricula.

**RECOMMENDATION 1: That a structured investigation be undertaken to examine clinical content delivered by various curriculum formats for teaching clinical clerks (and by extension, residents).**

**2. Which curricular models have most successful outcomes.** The opportunity exists to conduct comparative studies on different curricular models using common outcome variables. Given the commonality of current outcome measures used by the medical schools, direct comparison is in principle possible. The lecture dominated set of curricula in the first two years and the case-based, case presentation models used in part or exclusively by other medical schools make this a realistic opportunity. The design will have to take into account time as an independent variable and to look much broader than cognitive outcomes. For all deans see their curriculum as more than a vehicle for just knowledge. It also emphasizes opportunity for moving on to post-graduate training of the student's choice, compassionate care, and Osteopathic orientation. Geographic considerations and specialty choice are also given priority in some schools. However, there are other considerations. The cost, both of design, implementation, and maintenance of curricula is an increasingly larger concern in schools. All of this is independent of the willingness of the faculty to consider change.

**RECOMMENDATION 2: That comparative studies be undertaken to investigate the efficacy and efficiency of curriculum models across osteopathic medical schools using outcome measures of students' cognitive achievement, curriculum infrastructure costs, and faculty and students' satisfaction and professionalism.**

**3. Knowing and measuring outcomes.** Determining readiness to graduate medical students is certainly open for study. There is genuine dispute as to what constitutes a valid set of measures for assessing a student's readiness to graduate and therefore move to postgraduate training and possible licensure. Recommendation 2 is based on an assumption that such a set of measures exists, and the present AACOM Annual Report makes these measures explicit. The question remains, however, whether the set of outcome measures is itself valid: How do these measures relate to patient care and health status? An interlocking set of constraints makes this assumed set of outcomes in Recommendation 1 presumably valid. In this present study of deans, they reported the outcome measures their schools used to judge effectiveness in meeting their goals, but none of these measures related directly to patient outcomes. There are the Board examinations, which have a gateway function and test in such a way that the current curriculum is reinforced and the evaluation instruments are rendered reliable. There are the accreditation standards, which reinforce the current set of outcomes by strong suggestion and stipulation. Thus, academic discussion about what one should examine in order to allow a medical student to progress to post-graduate training is the important issue. Coupled with this is the articulation between the undergraduate curricula content and the post-graduate content. The medical schools' follow-up surveys of graduates and alumni and the close inter-workings of the medical schools with the OPTIs allow for a closely connected and academically consistent set of phases of medical education.

**RECOMMENDATION 3: That a conference be convened to study the question of devising outcome measures that will relate directly to patient-centered outcomes; further, that medical educators, National Board members, and accreditation committee members be invited and strongly encouraged to attend in order to create a coherent and consistent plan for moving the deliberations of this conference forward.**

**4. Understand commitment to clinical teaching.** The quality of clinical instruction is perhaps in doubt, as the deans pointed out in noting the only mild satisfaction of interns and residents in teaching medical students. Is the attention being paid to the genuine question of who teaches medical students sufficient to ensure that what is being designed for clinical teaching is being implemented in an educationally sound way?

**RECOMMENDATION 4: That a set of studies be conducted to determine the factors that influence and predict commitment to effective clinical teaching in a changing service delivery environment.**

Thus, as the deans' responses and comments made clear, to address curriculum change effectively the leaders of osteopathic institutions must address the organizational component; the curriculum's content, scope, and sequence; instructional techniques; and the commitment of the teaching personnel.

### **Recommendations from Student Data**

The student responses were initially analyzed overall and then analyzed on three characteristics: gender; intention to enter a primary care specialty or a non-primary care non-surgical residency; and whether they intended to enter an AOA-accredited or ACGME-accredited residency program.

**5. Longitudinal evidence of reaching goals and missions.** Primary care medicine is explicitly stated in the mission of several colleges of osteopathic medicine. (The study took primary care medicine to consist of Family Medicine, whether combined with other specialties or not, General Internal Medicine, and General Pediatrics.) We have shown that counting a graduate's placement in a second-year primary care program as evidence of placement in a primary care specialty is risky and will overestimate outcomes of the college's primary care programs. This is because some subspecialties require residents to train first in General Internal Medicine or General Pediatrics before beginning the target specialty and subspecialty

training. Applying data from the study of the residents showed that approximately 75% of the residents in General Internal Medicine and 36% of Pediatrics residents planned to leave for subspecialty training. Although this example is an extension of the residency study findings to students, it strongly suggests that data collected on specialty choice is affected by when in the educational timeline it is collected and therefore must be considered preliminary. It may be correct in the short term (at the time of entrance into specialty training), but it will need adjustment in the long term (after specialty training). With this example of primary care in mind, it is useful to consider how to assess progress toward other goals that each college officially states are reflected in the practice location, specialty choice, and professional interests of its graduates.

**RECOMMENDATION 5: That each college undertake longitudinal studies to determine higher fidelity evidence of the extent to which it reaches the goals in its mission statement and goal statements.**

**6. Foster primary care careers, using realistic data.** Students’ satisfaction with medical school is a goal of medical schools. Although the goal is interpreted in different ways, attaining it can be translated into providing an environment where students feel they achieve the education and training necessary to acquire postgraduate training opportunities that are consistent with their own goals. The final test is a graduate’s sense of “was it worth it?” so to speak.

<b>Table 5.1</b>				
<b>Numbers and percentages of fourth-year medical students preferring various options if they were beginning their medical education again, by their type of intended specialty</b>				
<b>Q40. If given the opportunity to begin your medical education again, would you prefer to enroll in:</b>				
<b>Options</b>	<b>Primary-care specialties</b>		<b>Non-primary-care specialties</b>	
	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>
Enroll in same COM	73	412	64	639
Enroll in another COM	9	51	7	66
Enroll in allopathic medical school	12	66	24	241
Not go into medicine	7	39	6	57
Total	100	568	100	1003

An immediate difference stands out: 73% of the PCS group would stay with the same program as opposed to 64% of the NPCS group; further, another 9% and 7% respectively would stay with osteopathic medicine, albeit in another college. A fair interpretation would be that colleges of osteopathic medicine satisfy at least 70% of their students. It would also be justifiable to claim that between 12% and 24% of the students in colleges of osteopathic medicine would prefer to be in allopathic institutions. One factor that will help distinguish between these numbers is the students stated intent to enter primary care. The students who stated a preference for primary care were more likely to be satisfied with their medical education than those entering a non-primary care specialty. Thus, overall, for a majority of students, the schools are creating an environment that is consistent with their students' goals. Because there is a gap in satisfaction between the groups that chose primary care and non-primary care medical specialties, and although non-primary care was more popular with both men and women, nevertheless there do seem to be some common characteristics, although only slightly different, among the students who chose primary care in their senior year. These students tended to be women, married, had more than one dependent, came from towns with populations of less than 100,000, and were financially independent of their parents.

A word of caution is in order here. The distinction between explanation and prediction must be made clear. In a sense, they are related but the order of these two notions must be borne in mind. Explanation, from an analytical point of view, means that all the relevant variables bearing on the outcome have been compiled. This means that an explanation of what has happened or will happen can only reliably be based on the factors that are subsequently used to predict an outcome. That is why the questions are critical to the process. Prediction is a statistical process that tries to establish a future event. It will be based on the explanatory factors. The accuracy of the prediction is the correspondence between what one predicts will happen and the reality of that event happening. Again, the prediction will be based on the explanatory variables.

**RECOMMENDATION 6: That schools with primary care as a goal may need to focus their recruitment strategies on particular characteristics; but they may also need to adjust their expectations in light of the trend found in the student data and subsequently**

**confirmed by the residency data, showing that, generally speaking, primary care is losing popularity among medical students. Following this recommendation increases the probability of a student's staying with a primary care specialty but not guarantee it.**

**7. Complicated effect of debt on specialty choice.** Debt was looked at specifically in the student study. Deans are commonly concerned about tuition and associated costs, and student debt is part of ongoing debate in political circles about existing student loan programs. A majority of loans come not from the medical schools but from government-subsidized loans and third-party payees (e.g., banks). The interest paid on loans is set by lenders, as is the repayment schedule. The schools themselves have constructed loan consolidation programs that many students participate in, although estimates are that it would take, on average, more than 15 years to repay the loans (cf. Residency study data). Of particular importance is the impact of debt on specialty choice. The discrepancy between what the students and residents say on this topic is important. The students view debt as important but not to the degree the residents do. In the section on the residency study, the issue is split between high debt load and low debt load. The reader is directed to the residency data for comments and recommendations on debt.

**RECOMMENDATION 7: That a creative financing plan should be investigated to make specialty choice more independent of debt.** (This recommendation is also made in the section for residents.)

**8. Women expect lower income—and their view seems realistic.** One discovery in the student data was men's and women's different expectations of income. The women showed a consistent pattern of undervaluing their expected salary, as shown in Table 1.42. This pattern is not confounded by the student's plans for employment after graduation. As shown in Table 1.43, men and women had nearly identical plans for their sites of employment.

<b>Table 1.42</b>			
<b>Annual expected income, after expenses but before taxes: Senior students' estimates, by gender (Q17)</b>			
<b>Time frame</b>	<b>Gender</b>	<b>No. of students</b>	<b>Estimated income</b>
First year after internship and residency	Men	1020	\$140,322
	Women	673	\$110,803
Fifth year after internship and residency	Men	991	\$203,137
	Women	636	\$157,109
Tenth year after internship and residency	Men	988	\$259,533
	Women	636	\$196,074

<b>Table 1.43</b>		
<b>Expected type of career after residency: Senior students' estimates, by gender (Q21)</b>		
	<b>Men</b>	<b>Women</b>
<b>Long range plans</b>	Percent.	Percent.
Enter government service	7	6
Practice in an HMO	1	1
Self-employed without partner	6	4
Self-employed with partner	18	11
Employed in group practice	42	47
Employed in other type of private practice (salary, commission, percentage)	4	3
Other professional activity (teaching, research, administration, fellow)	4	5
Undecided or indefinite	18	22
Total	100	100

In 2000, an article in the *Annals of Internal Medicine*<sup>2</sup> stated that even after adjusting for differences in type of job, hours worked, and leave taken from work for family reasons, such as child-care, in internal medicine women still earned 14% less than men. Although the study was done only in Pennsylvania using 1998 data, our present study includes nearly all osteopathic medical schools and therefore covers a broad spectrum of states. The correspondence between the women students' predicted salary expectations and the reality as reported in the *Annals* study warrants careful scrutiny.

<sup>2</sup> R.B. Ness, F. Ukoli, S. Hunt, S.C. Kiely, M.A. McNeil, V. Richardson, N. Weissbach, and S.H. Belle "Salary Equity among Male and Female Internists in Pennsylvania." *Annals of Int. Med.* v 133, p 104-110, 18 July 2000.

**RECOMMENDATION 8:** That a study be undertaken incorporating the variables in this study as well as appropriate variables from the literature to determine whether a systematic pattern of reimbursement differences essentially discriminates against women or, after adjustment for potential confounding variables, there is equity in salary between men and women physicians.

**9. Confidence about clinical skills and error.** The men and women students had different perceptions of the curriculum, although the differences were modest. Highlighting each of the differences would not be statistically justified because the spread was modest. However, differences in their perceived confidence in doing certain procedures and interpreting certain tests are noteworthy (Table 1.45).

<b>Table 1.45</b>		
<b>Influence of gender on confidence in performing clinical examinations: Percentages of senior students who reported being very confident or confident (Q43, Q44 and Q45)</b>		
<b>Task</b>	<b>Men</b>	<b>Women</b>
	Percentage	Percentage
Gynecological examination	78	93
Routine pre-natal examination	73	84
Breast examination	89	97
Interpretation of Pap smear	83	94
Interpretation of cervical/urethral swab	82	92
Well-baby examination	85	77
Sports participation physical	92	88
Osteopathic structural examination	84	77
Workup of back symptoms	94	89
Workup of vision dysfunction	62	54
Workup of knee symptoms	93	81
Workup of generalized pain	82	75
Workup of generalized muscle weakness	79	69
Integration of OPP in diagnosis and treatment	73	65
Interpretation of electrocardiogram	80	63
Interpretation of cardiac stress test	71	60
Interpretation of exercise prescription	79	72
Interpretation of chest X-ray	92	88
Interpretation of cardiac profile	92	88

The pattern of responses needs to be explained. Performing examinations may be a function of familiarity. Although this seems to be the obvious explanation in certain exams (gynecological and breast, for example), it fails in others (well- baby examination and osteopathic structural examination). The interpretation and workup differences cannot be explained by experience; presumably, interpretation and workup are cognitive exercises rather than technical and procedural maneuvers. Why the differences? Even though a set of structured questions needs to be designed, the logical first question may very well be whether it is a difference that matters in post-graduate years. An overestimation of confidence may be a potential source of medical error; underestimation of error raises the issues of patient ease and comfort. This underestimation of confidence may then be reflected in the student's assessment of the quality of the medical education. This is unlikely because both men and women, generally speaking, gave their medical education high ratings. The questions presented by this finding cannot be answered by the study.

**RECOMMENDATION 9: That two linked studies be designed. First, a follow-up study of first-year residents' performance on work-up, procedural techniques, and interpretive laboratory and diagnostic tests. The areas of specificity would be topic areas presented in this study, gender would be one independent variable, and performance on these selected procedures would be the outcome. This recommendation implies an accurate assessment of clinical performance, which is the crux of the recommendation. If the performance assessment is incomplete or absent, the assessment is likewise absent. Therefore, a second study should be undertaken to test the correlation between accuracy of performance assessment and the student's self-perception as an undergraduate. The study at the medical school level would allow for differing curriculum models and their subsequent predictive value for clinical performance (cognitive, attitudinal, or psychomotor). The outcome would be the medical student's perception of confidence in performance. This type of study would start to develop three things: (1) a relevance of curriculum models to patient care, (2) a refinement, if needed, of clinical measures of performance, and (3) a linkage between undergraduate and graduate medical education. Stratification of the residents should be along the demographic variables used in this study (e.g., choice of primary vs. non-primary care, gender, AOA vs. ACGME programs).**

**10. Men’s and women’s satisfaction with evaluation.** The student data also showed a consistent pattern of the women having been less satisfied than the men with the evaluation methods they experienced (simulated patients being the exception). This difference bears on Recommendation 9 because it also speaks to evaluation.

**RECOMMENDATION 10: That studies be conducted to identify the sources of differences between men and women students in their satisfaction and dissatisfaction with the standard evaluation modes (as cited in this study) used by medical schools.**

**11. Much needed communication along the education continuum.** A few factors are statistically significant predictors of students’ choosing osteopathic vs. allopathic residencies. One set of differences were the areas the students felt were appropriately emphasized in the curriculum, shown in Table 1.27.

	Residency Choice		
	AOA	ACGME	Dual
<b>Area of instruction</b>	Appropriate %	Appropriate %	Appropriate %
Biostatistics	56	47	52
Genetics	65	59	72
Nutrition*	65	60	69
Rehabilitation*	62	54	61
Research Techniques*	45	37	40

P <.001 except where noted. \*p<0.05

Although all the factors are listed in the report, one can see that Biostatistics was a flip between appropriate and inappropriate, and each group felt that research techniques were lacking in their education. This pattern was seen in the residency data as well. The dichotomy of DO vs. MD residency programs does not discriminate well between choices in curriculum topics. An overall look at curriculum topics is helpful (Table 1.11).

**Table 1.11**  
**The 10 areas of their medical school instruction that senior medical students most often rated as inadequate**

Area of instruction	Percentage who rated it as inadequate
Research techniques	57%
Medical care cost control	56%
Cost-effective medical practice	51%
Biostatistics	49%
Literature analysis skills	49%
Care of HIV/AIDS	47%
Instruction in legal medicine	43%
Practice management	42%
Rehabilitation	40%
Medical socio-economics	39%

It is clear that, other than *Rehabilitation* and *Care of HIV/AIDS*, eight of the top 10 topics dealt with either research or the “business” of medicine. Despite this, 84% of the students reported that they were satisfied with the quality of their medical education. This pattern bears directly on the offerings of the undergraduate curriculum. An alternative view is that these are topics that should be incorporated into the resident’s curriculum. The residency directors seemed pleased with the preparation of the current second-year residents. If these topics were not covered in detail during undergraduate education, content was learned somewhere and to a requisite level. A quandary now exists. How is the topic coverage to be handled for not only the basic curricula (presented in depth in the report) but also for the new emphasis on competencies and new topics in medicine as the disciplines change over time? Coordination between the residency program directors and the medical schools is critical. The OPTI has forged a link between the two inasmuch as the medical school is a major supporter of a majority of the OPTIs represented in this report. This linkage has provided a positive working arrangement for communication and sharing of resources between the undergraduate and graduate programs. This close communication also sets the structure for a more closely knit continuum of pre-requisites and expectations of both parties responsible. A close working relationship is essential to generate a framework for both the current, near future, and distant future for what and where medical information is to be taught. That is to say, *a priori* knowledge, needed to enter a residency program, and *a posteriori* knowledge, acquired during

the residency must be constantly discussed and agreed upon in a mutually satisfactory manner. The forum to date (the OPTI) has started to encourage this conversation. The deans have cited it as a productive way to communicate.

**RECOMMENDATION 11: That an OPTI-like forum be continued to enable continuing close communication between the medical schools, the residency programs, and the program directors.**

### **Recommendations from the Study of Residents and Program Directors**

A vision of osteopathic residency programs (meaning those accredited by the American Osteopathic Association) might be that they are of the highest quality, of sufficient number and spectrum of medical specialties as to be attractive to any graduate of any accredited medical school (osteopathic, allopathic, or international) who will then seek placement into these residencies. Osteopathic graduate medical education in the United States serves many roles. From a philosophical perspective, it enables a system of medicine to deliver the necessary education and training to continue to infuse future practitioners with the osteopathic viewpoint of medical practice. From the perspective of a graduate medical student, it will enable them to obtain education and training in their choice of medical specialty. From a professional perspective, as postgraduate training is a necessary prerequisite to obtaining a license to practice in the United States, it enables a continuous stream of individuals who will be able to practice medicine and affiliate with an organization that will represent the practicing physician in matters of licensure, regulation, and legislative matters. From a training site perspective, it represents an opportunity for that site to deliver higher quality care, be viewed professionally as a higher quality institution, and produce a positive revenue stream. It is almost circular to point out that in order for a residency program to provide all the positive things cited, it must first exist. Then it must meet the vision.

This section of recommendations addresses the point of preserving osteopathic residency programs. The results cited below are from this present study and a discussion on this topic by the Graduate Oversight Committee. The members present were: (1) Howard S. Teitelbaum, D.O., Ph.D., project director; (2) Michael Oipari, D.O., Vice President for

Medical Affairs, Henry Ford Health Systems and Bi-County Hospital, and architect of the Osteopathic Post-Graduate Training Institution (OPTI) movement, and past chair of the Committee on Postgraduate Training of the American Osteopathic Association; (3) Gary Moorman, D.O., president (at time of committee formation) of the Association of Osteopathic Directors of Medical Educators; (4) Mark Cummings, Ph.D., executive director of the state-wide campus system (OPTI) of the Michigan State University College of Osteopathic Medicine; (5) Thomas Gentile, M.A., internationally recognized expert on financing of graduate medical education and at time of committee formation Vice President for Medical Education, St. Johns Health System; and 6) Nathaniel Erhlich, Ph.D., survey research specialist, Institute for Public Policy and Social Research, Michigan State University. Marguerite Elliott, D.O., program director of the Family Medicine residency program at the University of Wisconsin, also opined on the remarks of this discussion by written commentary.

The history of osteopathic graduate medical education has been chronicled elsewhere (Gevitz), thus, the osteopathic residency programs follow a pathway consistent with but nonetheless currently distinct from allopathic residency programs. The scope of these programs is wide and has addressed many of the specialties of interest to osteopathic graduates in the United States, but the scene has changed in the recent years. In the Balanced Budget Act (BBA) of 1997, the number of residency positions were frozen or capped by Congress at the 1996 levels. The restriction meant that extant programs could not be enlarged; and, in many instances, positions were allocated but for a variety of reasons were unfilled and were subsequently removed from governmental funding. The funding came primarily through the Medicare/Medicaid program of the federal government. Funding covered both the direct and indirect costs of training a resident in the chosen specialty of medicine or surgery and, in so doing, provide care to patients.

**12. Residency programs in high concentrations of faculty and patients.** Because of the BBA provision, the only way the number of residency slots could be increased was to start new residency programs. This task involves several formal steps that must satisfy both the American Osteopathic Association (AOA) committees as well as the specialty college of which the new program wishes to become a member. The AOA and the specialty colleges themselves impose certain standards or requirements that must be met before a program can receive

approval to begin and subsequently receive certification to continue teaching, educating, and training residents. These restrictions or standards are instituted to ensure that the program can and will, in all probability, continue to provide training and education by highly qualified teachers and have a scope of pathology and patient load to ensure garnering experience-based encounters with patients and their diseases to be able to diagnose, treat and manage such cases in the future. The honing of diagnostic and management skills is judged to be better taught from an experiential perspective as much as possible. The communication skills necessary to practice good osteopathic medicine are also best taught at the bedside. These perspectives are also shared by the residents themselves. However, there is also the notion of critical mass that needs to be considered. This is to mean that a sufficient number of teachers (on-site attending physicians) in both the major divisions of osteopathic medicine and the subspecialties are needed in order to foster a strong educational environment. It not only becomes the scope of disease (pathology) that is represented in a teaching facility but also the number, depth and breadth of teachers. When the residents were asked to identify the determining factors in choosing a residency program, four factors became evident. The most pre-eminent factor was the perceived quality of training, cited by 75% of the osteopathic program residents, 79% of the allopathic residents, 80% of the dual program residents, and 61% of the military residents. Because quality choice involved the term “perceived” in the question, we also asked about certain aspects of quality to see if we could understand the term with more precision.

The other major positive factors were case mix (spectrum of pathology), (40%), geographic location (28%), reputation of the institution (25%), and career opportunities upon completion of residency programs (21%). Smaller programs (fewer than six residents) were seen as a deterrent (osteopathic program, -87%; allopathic programs, -91%; dual programs, -93%; military programs, -74%). An active research program was not seen as an overall positive determiner; in fact, just the opposite. It was a negative determiner across all types of programs, although less with allopathic programs (osteopathic, -78%; allopathic, -53%; dual, -71%; military, -47%). Reputation of the institution was higher among the allopathic residents (osteopathic residents, 12%; allopathic, 31%; dual, 26%; military, 11%). The residents also thought that one of the greatest strengths of their undergraduate medical curriculum was having rotations at large teaching institutions (40% or greater across all types of programs). The

residents tended to come from the more populous areas. The median was a city of 100,000 to 500,000, with a mean being a metropolitan area with a population of 500,000 to 1 million. Our data also showed that the residents tended to go back to locales that were identical with or slightly larger than those they had come from. When asked if they intended to practice in underserved areas, the residents were roughly evenly divided between *Unsure* (42%) and *No* (35%), with only a small minority saying *Yes* (13%). Consequently, the probability of residents' returning to rural areas is less and less as the admission patterns of applicants hold.

**RECOMMENDATION 12. That osteopathic residency training programs be developed in sites with large numbers of teaching faculty, high admitting rates, and large supporting cadre of medical specialists. This description suggests that the programs should be in areas with large populations, but there is a trend for previously rural areas to become “regionalized” medical centers, which makes their catchment area larger, yet does not meet the critical mass criteria characteristic necessary to be considered a strong program by prospective residents.**

**13. Maximum exposure to osteopathic physicians crucial.** The residents in this study chose their specialties primarily in the third and fourth year of medical school, but a high percentage of residents made the decision during their internship. The distribution is shown in Table 2.35.

<b>When convinced</b>	<b>AOA- accredited</b>	<b>ACGME- accredited</b>	<b>Dual- accredited</b>	<b>Military</b>	<b>Overall average</b>
Prior to medical school	18%	20%	25%	5%	19%
First year of medical school	6%	3%	0%	8%	4%
Second year of medical school	7%	5%	8%	5%	6%
Third year of medical school	24%	27%	<b>29%</b>	24%	26%
Fourth year of medical school	<b>25%</b>	<b>30%</b>	25%	<b>37%</b>	<b>29%</b>
Internship year	20%	16%	14%	21%	17%

When asked who had made a difference in how they looked at and valued medicine as a career, a majority reported a physician. Interestingly, the distribution was as follows (realizing that multiple responses were allowed): of those in an osteopathic residency, 80% chose an

osteopathic physician and 35% chose an allopathic physician; for those in an allopathic residency, 57% chose an osteopathic physician but 65% chose an allopathic physician; for those in a dual program, 58% chose an osteopathic physician and 53% chose an allopathic physician. When the residents were asked to reflect on their exposure to allopathic physicians during their training, their responses showed that the first two years were, as expected, very much the same regardless of the type of residency program. Required clerkship experiences in the hospital had sharply higher numbers in all programs with allopathic faculty, but particularly in allopathic programs and dual accredited programs. More elective time was spent with allopathic physicians in allopathic or dual programs than in osteopathic programs. The student data show the same pattern. The student data also show that exposure to allopathic physicians was a strong determiner of choice between allopathic and osteopathic programs. Further, the perception of a difference between osteopathic and allopathic physicians is dwindling. We were able to show that there was not a great deal of difference in how the residents perceived allopathic and osteopathic physicians in the way they taught, dealt with patients, or supervised the residents' performance.

The choice, then, between osteopathic and allopathic programs seems to be partly a systemic problem. The last two years of the undergraduate curriculum and the time students spend in electives create more exposure to allopathic physicians. To be candid, this pattern represents an outsourcing of medical education to allopathic physicians. In part, this is necessary because not enough osteopathic clinical venues are available. The profession has a decreasing supply of strictly osteopathic hospitals and uses training facilities that are more and more staffed by allopathic physicians. Our students receive advice from allopathic physicians and, apparently, the advice is given positively and persuasively.

**RECOMMENDATION 13: That every effort be made to maximize exposure to osteopathic physicians in required as well as elective clinical rotations; future training sites, hospitals, and clinics should be located in areas with a strong presence of osteopathic physicians.**

**14. Strategy to create residencies in specialty areas of growth.** This study of residents used a federal definition of primary care—Family Medicine, General Internal Medicine, and General Pediatrics. Looking at residency choices as reported in the study, it appears that primary care dominates the choice of residencies. A closer statistical look, however, suggests that the pattern is there but it is not as strong as it first appears. When second-year residents were asked about their specialty choice, the dominant choices by type of program were reported in Table 5.2.

<b>Field of specialization</b>	<b>Total sample</b>	<b>AOA- accredited (percent)</b>	<b>ACGME- accredited (percent)</b>	<b>Dual- accredited (percent)</b>	<b>Military (percent)</b>
Family Medicine	28%	30%	22%	52%	30%
Internal Medicine	22%	14%	27%	13%	24%
Pediatrics	8%	2%	9%	14%	<1%
Other	42%	54%	42%	21%	45%

As one can see, a majority of the respondents were in primary care. However, we also asked about the resident's primary expectation upon completion of the residency. The answers were revealing because they showed that many residents expected to enter subspecialty training and, to do so, needed a completed residency or partially completed residency in the general field of internal medicine or general pediatrics. Based on our calculations, it is estimated that only 1 in 4 (25%) planned to stay in general internal medicine and only 64% planned to stay in general pediatrics. The study counted the specialty of family medicine—even when combined with other programs—as still Family Medicine. Thus, when attrition to subspecialty training is taken into account, the figures for numbers of residents in primary care specialties diminish, as shown here.

<b>Field of specialization</b>	<b>Total Sample</b>	<b>AOA- accredited</b>	<b>ACGME- accredited</b>	<b>Dual- accredited</b>	<b>Military</b>
Family Medicine	28%	30%	22%	52%	30%
Internal Medicine	5%	3.5%	6.8%	3.3%	6%
Pediatrics	5.1%	1.3%	5.8%	8.96%	<1%
Other	61.9%	65.2%	65.4%	35.74%	63%

There is a movement away from primary care. Those who went into primary care were still mainly in family practice. That those in dual programs outnumbered those in traditional programs is to be expected because a majority of dual programs are in Family Medicine. A second statistical artifact is at work here as well. The availability of alternative programs to primary care produces a ceiling effect. That is to say, if emergency medicine, for example, fills because of “supply and demand,” the rejected resident may well apply for primary care specialties, perhaps as a temporary position, with the result that the numbers will go up in the primary care area. Although this possibility should be accounted for by asking residents for their eventual specialty plans, this contingency remains a possibility. Alternatively, if additional programs in high-demand specialties were to be created (e.g. emergency medicine, dermatology, radiology, anesthesiology, orthopedic surgery), the data suggest that they will be filled. Given that new residency programs must be created to increase the availability of residency slots (as noted in Recommendation 11), the data show diminishing returns in establishing new primary care residency positions. The pattern of differences can be seen by noting which residency programs fill to the maximum every year for a period of five years. (Historical data is available from the AACOM annual survey, AOA survey, and the AMA annual educational report.) The health manpower report done by the AOA (Magen Report), *Trend in Physician Supply and Demand* (Richard Cooper) and the Governmental Accounting Office study suggests this approach as well. The issue, though, is what the students and residents consider important at the time they choose a specialty.

**RECOMMENDATION 14:** That primary care, although still a popular choice among residents, is diminishing in numbers and percentages choosing it as their primary specialty choice. The future may well be in non-primary care residencies. Developing new residencies is a function of “supply and demand” in specialties such as emergency medicine, dermatology, and orthopedic surgery. Tracking the maximum fill rate for residencies over a five-year period will identify the trends and enable strategic planning to develop the more popular programs among the students, interns and residents.

**15. Preservation of OPP/OMP crucial.** The osteopathic graduate, in many cases, can choose between an AOA-accredited program and a ACGME-accredited program. The AOA-accredited programs and ACGME-accredited programs, in a sense, must compete for the osteopathic graduate. It is a buyer’s market. With the perceived equivalence of the two professions by the residents, the increased quality perception of allopathic programs, the size and location elements as determiners of choice, one may ask what the current characteristics that would help distinguish AOA programs from ACGME programs would be. The overall view of residents may also be affected by the overall satisfaction, sense of proficiency, and overall perception of osteopathic principles and practice (OPP) and osteopathic manipulative treatment (OMT). The residents felt that their undergraduate training prepared them to diagnose structural problems, treat, and document structural problems in patients. There was very little difference in responses among those who went with either AOA-accredited or ACGME-accredited programs. The dual program residents were less confident however, in their ability to perform these tasks. However, all residents felt less confident in their ability to integrate OPP into a practice setting. The residents were also asked about their opportunity to practice OPP during their past years of training and into their current year of training. The results are presented in Table 2.31.

<b>I experienced osteopathic physicians practicing OMT in ...</b>	<b>AOA- accredited</b>	<b>ACGME- accredited</b>	<b>Dual- accredited</b>	<b>Military</b>	<b>Overall average</b>
My first two years of medical school	53%	57%	54%	59%	56%
My required in-hospital rotations	-17%	-19%	-20%	-21%	-19%
My required ambulatory non-primary care rotations	-25%	-27%	-26%	-21%	-26%
My required ambulatory primary care rotations	14%	3%	10%	17%	7%
My electives	-15%	-29%	-19%	-17%	-24%
My first year of post-graduate training	-10%	-29%	-9%	-34%	-28%
My current year of training	-14%	-48%	-8%	-37%	-34%

Residents witnessing physicians using OMT in a practice setting after the first two years of medical school is difficult to find, say they. These results parallel the findings of students who were asked about their opportunity to practice OPP in the practice setting. The failure of opportunity combined with the failure of having role models does little to enhance the techniques, underscore philosophy, and contribute to the profession. This contributes to the perception of NO DIFFERENCE between the osteopathic and allopathic physicians as noted above. While these findings may be distressing they are consistent with two separate studies (Johnson et al. and Aguwa) which showed that, save for the medical schools, the OPP/OMM softly palls over

ivy-covered walls. One cannot deflect the percentage based on type of residency program, because all programs follow a similar pattern.

**RECOMMENDATION 15: That stronger standards, oversight, instruction, and accountability be enacted to preserve the OPP/OMM philosophy, practice, and documentation in the clinical setting to help ensure the opportunity or the role models necessary to preserve the practice of OMM/OPP in the non-ambulatory clinical setting after medical school.**

**16. Need for specialty choice to be more independent of debt.** The role of debt is somewhat complicated. The students report that debt is not a factor in determining their specialty. This, on first pass, seems to be the case for residents. However, a closer statistical look suggests a different picture. From a descriptive perspective the average amount of debt, by type of program was AOA-accredited, \$147,072; ACGME-accredited, \$147,851; Dual, \$149,932; and Military, \$50,838. The amount repaid at time of response was 3%, 5%, 5% and 11% respectively. The range of debt of those reporting was \$8,000 to \$400,000. To assess impact of debt on specialty choice an initial analysis computed a correlation between the amount of debt and the 4 point scale of *No impact*, *Minor impact*, *Moderate Impact*, and *Major impact*. The scale of the response was from 1 to 4. Thus, a positive correlation would indicate that a rise in debt would suggest a rise in impact. The correlation at this level of analysis was +0.15 ( $p < .0001$ ). To obtain a clearer picture of impact, the residents were split on the mean of the debt load. Then a comparison was run on the percent of high- vs. low-debt-load residents who responded with the four levels of impact. A ratio between the high-debt-load to low-debt-load was formed for each level of impact. A ratio of 1 would indicate that there is no difference between the high debtors and the low debtors. A ratio of less than 1 would indicate that the low debtors outnumbered the high debtors, and a ratio of greater than one would indicate the high debtors outnumbered the low debtors. The progression from “No impact” to “Major impact” make clear that the greater the debt load, the greater the impact on choice of specialty. This is shown in Table 2.23.

**Table 2.23****Impact of debt load on choice of specialty:  
Residents' specialties and their reported medical education debt**

<b>Impact of debt load on specialty choice</b>	<b>No impact</b>	<b>Minor Impact</b>	<b>Moderate Impact</b>	<b>Major Impact</b>
Ratio of residents with high debt loads to residents with low debt loads	0.78 to 1	1.25 to 1	1.96 to 1	2.51 to 1

This is a monotonic increase; that is to say, a steadily increasing value of the ratio as the impact assessment increases. This is coupled with a similar pattern but in a negative way with satisfaction: as debt INCREASES, the more DISSATISFIED one became with medicine as a career. This study also shows that the residents are aware of the amount of income they expect, one year, five years, and ten years out of residency. The import of these facts contributes to the choice away from primary care. There was no association between any of the variables and current gross yearly income of the residents. These data indicate that residents are more sensitive to debt than students. These data suggest that debt does have an impact on specialty choice, and that high debt loads shift individuals away from primary care, whereas low debt load removes debt as a barrier to primary care.

**RECOMMENDATION 16: That a creative financing plan should be investigated to make specialty choice more independent of debt.**

17. **Curriculum re-design around outcomes, shifts in topic coverage.** Residents were asked about their undergraduate experience. This was done in a series of questions. Areas judged excessive in their experience were: primary care, basic medical science, the physician-patient relationship, and patient interviewing skills. Inadequate coverage areas were: HIV/AIDS, legal medicine, practice management skills, cost effective medicine, biostatistics, medical care cost control, literature analysis skills, and research techniques. Most residents were satisfied with their medical school and if given the opportunity would do it again. However, 40% of the residents would choose a different path; 23% would have chosen an allopathic medical school, 7% would have chosen a different osteopathic medical school and 10% would not have gone into medicine. This finding can be encouraging or problematic. The movement in medicine toward competency-based education has been embraced by the AOA

and the ACGME. Both organizations have developed timelines for development and implementation. Each cites communication skills as one of the basic competencies. However, the residents see the doctor-patient relationship as, if anything, excessive in its current emphasis in curricular design. This certainly speaks to a potentially less than enthusiastic response by the residents if additional time is required in the residents' curriculum for this aspect of the clinical encounter. The citation of management issues (cost-effective management, etc.) speaks to relevance and placement in an undergraduate curriculum; or, ought it to be in the graduate curriculum? The reading of medical literature and its associated interpretation is a skill necessary at all levels of medicine and as such can be argued for its placement in the undergraduate curriculum. The students also cite literature analysis as a deficiency.

The medical curriculum of the resident has been slow to change. The residency requirements, save for the competency stipulations, have not substantially changed relative to AOA requirements, curriculum organizing principles, or specialty college stipulations since the 1970s. Should the requirements and program dimensions of the residency program structure remain constant? The data from this study suggest that there are additional topics that the residents think need expanded coverage. Similarly, there are areas that need to be reviewed relative to excessive coverage. However, the responsibility of curriculum planners is to adjust and design curricula that will serve more than just the press of immediacy. The lack of OMM/OPP is an example. Thus, many specialty colleges are suggesting curricula in great detail so as to incorporate adult learning principles and topic coverage that is deemed professionally appropriate. This, systematically, is to be assessed by certification examinations. Assuming there is correspondence between intent, design, and evaluation, the context of the suggested inadequate or excessive coverage of topics can be better judged. There are additional forces that guide the design of the residents' curriculum (e.g. the agencies of the federal government and outside agencies—Health Resources and Services Administration (HRSA), Agency for Healthcare Research and Quality (AHRQ), and the Institute of Medicine (IOM)). The impact of these agencies is not assessed in this study but it becomes clear that they set expectations on evaluative strategies and points of emphasis, (patient-centered outcomes, competency-based education, and IOM reports).

**RECOMMENDATION 17: That substantial changes be undertaken in overall evaluation to use in parallel with competency-based curricula, with educational outcome measures, patient outcome measures attributed to educational programming, and long-term evaluative measures to assess quality, and that these be explicitly referenced in designs for new residency curricula.**

**18. Openness about residency selection criteria and expectations.** There is a discrepancy between the factors residents think are important in being chosen for a residency and what the directors of medical education think are the important factors. More than half of the program directors deemed 10 factors *Essential* in choosing residents (Table 5.1).

<b>Factors</b>	<b>Essential</b>
Peer evaluation	65%
Clinical management on rotations in specialty	64%
Case presentation skills	63%
Class rank	62%
Rotated at the hospital, but not necessarily on your specialty	61%
Visited your training site more than once	60%
Clinical management on rotations not in specialty	60%
Resident initiated contact with the program	59%
Expressed additional interest in activities outside of formal clinics	56%
Provided COMLEX Board Scores	50%

<b>Factors</b>	<b>AOA- accred.</b>	<b>ACGME -accred.</b>	<b>Dual- accred.</b>	<b>Military</b>	<b>Overall average</b>
Personality match between you and your prospective trainers	70%	68%	74%	54%	69%
Provided letters of recommendation	60%	69%	68%	58%	66%
You initiated contact with the program	60%	55%	54%	67%	56%
Provided COMLEX Board scores	54%	57%	53%	61%	56%
Followed up with personal letters to interviewers	25%	45%	43%	22%	39%
Rotated at the hospital in your chosen specialty	44%	23%	48%	55%	33%
Peer evaluations	37%	28%	44%	24%	32%
Clinical management of patients as a student (or PGY 1) in rotations in your specialty	44%	26%	33%	41%	32%

Visited prospective training site more than once	36%	24%	43%	-3%	28%
Class rank	19%	24%	15%	29%	22%
Rotated at the hospital, but not necessarily in your chosen specialty	37%	13%	36%	26%	22%
Expressed additional interest in activities outside of formal clinical training	32%	16%	23%	34%	21%
Clinical management of patients as a student (or PGY 1) in rotations not in your specialty	27%	13%	20%	15%	17%
Case presentation skills	19%	8%	13%	9%	11%
Program initiated contact with you	5%	-3%	8%	-13%	-0%
Osteopathic training	25%	-19%	-0%	-33%	-7%
Plan to stay in area after residency	-11%	-6%	-11%	-45%	-9%
Research skills or having participated in research activities without publication	-19%	-11%	-21%	0%	-14%
Had publications prior to application	-19%	-14%	-26%	1%	-16%
Provided UMSLE Board scores	-31%	-7%	26%	-32%	-16%
Computer skills	-18%	-18%	-21%	-18%	-18%
Marital status	-37%	-36%	-33%	-33%	-35%
Gender	-31%	-39%	-40%	-37%	-37%

By contrast, *no one factor* was thought to be essential by at least 50% of the residents. Table 2.34 shows the top 10 ratings of factors the residents deemed *Essential*. For example, the program directors cited *Peer evaluations* as essential (65%), while the residents cited it 10<sup>th</sup> on their essential list (18%). The number one essential factor on the residents' list, *Personality match*, chosen by 47% of the residents, does not even appear in the program directors' top 10 list. *Personality match* was ranked 13<sup>th</sup> by the program directors (47%). The next most important factors to the program directors were: 2<sup>nd</sup> *Clinical management on rotations in specialty* (64%) and ranked 9<sup>th</sup> by residents (20%); 3<sup>rd</sup> *Case presentation skills* (63%), residents ranked it 16<sup>th</sup> (7%); and 4<sup>th</sup> *Class rank* (62%), residents ranked it 13<sup>th</sup> (9%). Something is not transparent here. The residents, who become a major information source to medical students who seek potential positions, can perpetuate untrue beliefs. On the other hand, perhaps the residents are right and the directors are not entirely forthcoming. This is doubtful because of the number of options and the wide disparity in rankings between the residents and directors. This gap has curricular implications because of students' preferences in scheduling (what to take when looms large, as with audition rotations) and performance on standardized tests (e.g., Board scores). Some medical schools use pass/fail grading system rather than a numerical or

multiple letter grading system; some schools use only the first two years to rank students, while others use all four years for rankings. Does this put students at a disadvantage? The analysis presented here looks at “essential” items as rated by residents and program directors. That the factors considered essential selection criteria by the residents varied so widely, and that these factors were so different from the selection criteria the program directors considered essential, suggests a strong need for more openness and transparency.

**RECOMMENDATION 18: That selection criteria for residencies be made more transparent between director and resident, so that the mismatch revealed between the students and residents’ views and the directors’ criteria can be lessened, preventing misleading expectations by student and potentially excluding excellent applicants from a program’s applicant pool.**

**19. Common standards for ACGME and AOA residents.** The intent of residents who take ACGME-accredited residencies to sit for the AOA certification boards presents a point of concern. While many say they intend to sit for the AOA Boards, there are inherent drawbacks to this position. A standing criterion for success for programs having ACGME certification is first time pass rate. To the extent that ACGME programs hold to this criterion means that the DOs in these programs must sit for the ACGME Boards. Those programs that are dually certified and claim to provide options for the residents must also admit that there is increased pressure to have the resident sit for and pass on first time the ABMS Boards, because the DOs are counted against the allopathic allocation. They are also counted in the total number of resident slots. If they do not sit for the ACGME Boards, then, perforce, the total number of passing residents falls. Thus it is safer to say that in ACGME programs or dual programs, the residency director is a key person in establishing a policy that DO residents shall sit for either both Boards or the AOA board. If this policy is adopted, there is a strong likelihood that AOA membership can be maintained. Recertification may be an interesting point here. Because recertification is becoming an issue and the ACGME is changing its requirements for the evidence necessary to present for recertification eligibility (competency-based office experience), there may be an opportunity to reclaim DOs who have initial certification by the

ACGME and allow for recertification by the AOA. On this point, further, a movement toward common standards between the ACGME and the AOA is underway as previously cited, the DO residents perceive very little difference between the osteopathic and allopathic physician on certain key variables. The opportunity to practice OPP/OMM in the residency program is difficult to find. If no concerted effort is made to instill these aspects of osteopathic medicine throughout the continuum of medical education, its importance and critical presence must be called into question. Task forces are now meeting and reportedly some progress is being made. A common set of standards, in essence, would help alleviate pressure and unequal choice on the part of the resident as to program choice and certification. A common set of standards would also allow AOA-accredited programs to enlarge their recruitment pool to include allopathic graduates and international medical graduates. Although this would require a bold move by the AOA, it is in principle possible. This scenario, drafted from comments by program directors and consultants, suggest that this, in theory, is a scenario that will help the osteopathic graduate medical education programs.

**RECOMMENDATION 19: That the Task Force on Graduate Medical Education be encouraged to establish vigorously and expeditiously patient oriented outcomes for graduate programs.**

## **Part IV. Sources**

## Sources

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## Appendix A

Data on Osteopathic Medical Students:

## **Appendix A**

Appendix A is based on data from the 2003-04 survey of senior students in U.S. osteopathic medical schools. The survey was funded jointly by the American Association of Colleges of Osteopathic Medicine and the American Osteopathic Association.

The collected data were analyzed and the basic results are presented here in 59 tables and 14 figures. They cover

- general demographic data
- general background data
- career intentions, plans for training, and expectations for practice
- assessments of educational experiences and confidence in clinical skills.

### ***Notes on the data presentation:***

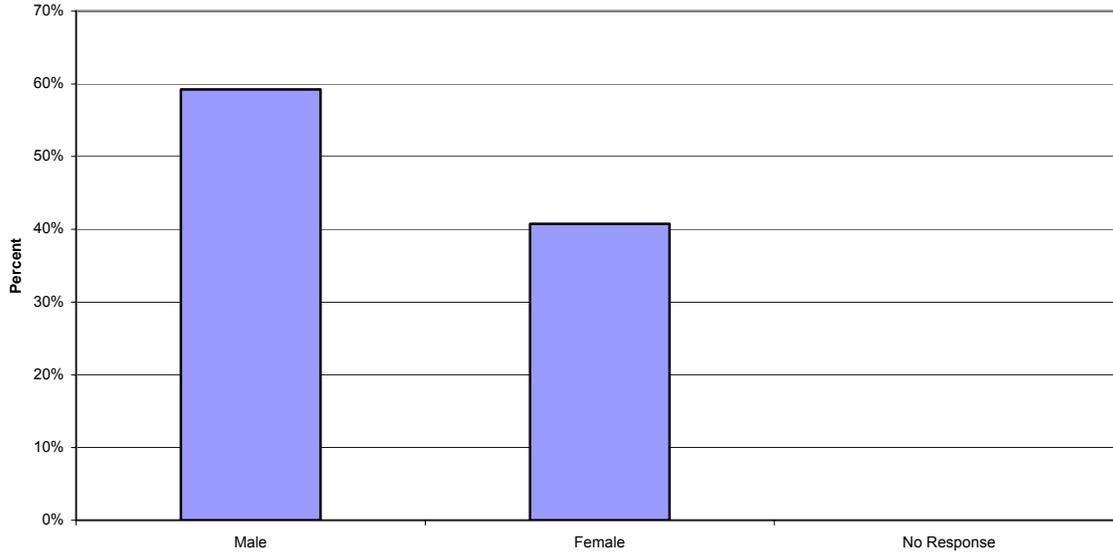
- a. The total number of respondents for each question or sub-question varied because not all students answered all questions.
- b. The survey question used to collect the table data may be given in the table; the question will be identified by its number on the survey questionnaire (e.g., Q5, Q23).
- c. Two abbreviations used in Appendix A are PCS, for primary care specialty, and NPCS, for non-primary care specialty.
- d. All differences shown between groups of students are statistically significant unless indicated otherwise. The standard for statistical significance was set at  $P < 0.001$ ; other values may be shown for comparison or additional information.

**Table A-1****Students at public and private osteopathic medical schools in the United States, 2003-04**

	School Code <sup>a</sup>	N	%
Public	OUCOM	97	18
	MSUCOM	98	19
	UNTHSC	115	22
	OSUCOM	77	15
	WVSOM	71	13
	UMDNJ	71	13
Private	PCOM	66	5
	CCOM	146	11
	UHSCOM	202	15
	DMU	74	5
	KCOM	126	9
	NYCOM	68	5
	WCOMP	37	3
	NSUCOM	166	12
	UNECOM	106	8
	LECOM	167	12
	AZCOM	114	8
	TUCOM	33	2
	PCSOM	48	4
	LECOM	167	9
	AZCOM	114	6
	TUCOM	33	2
PSCOM	33	4	
<b>Total</b>		<b>1353</b>	<b>529</b>

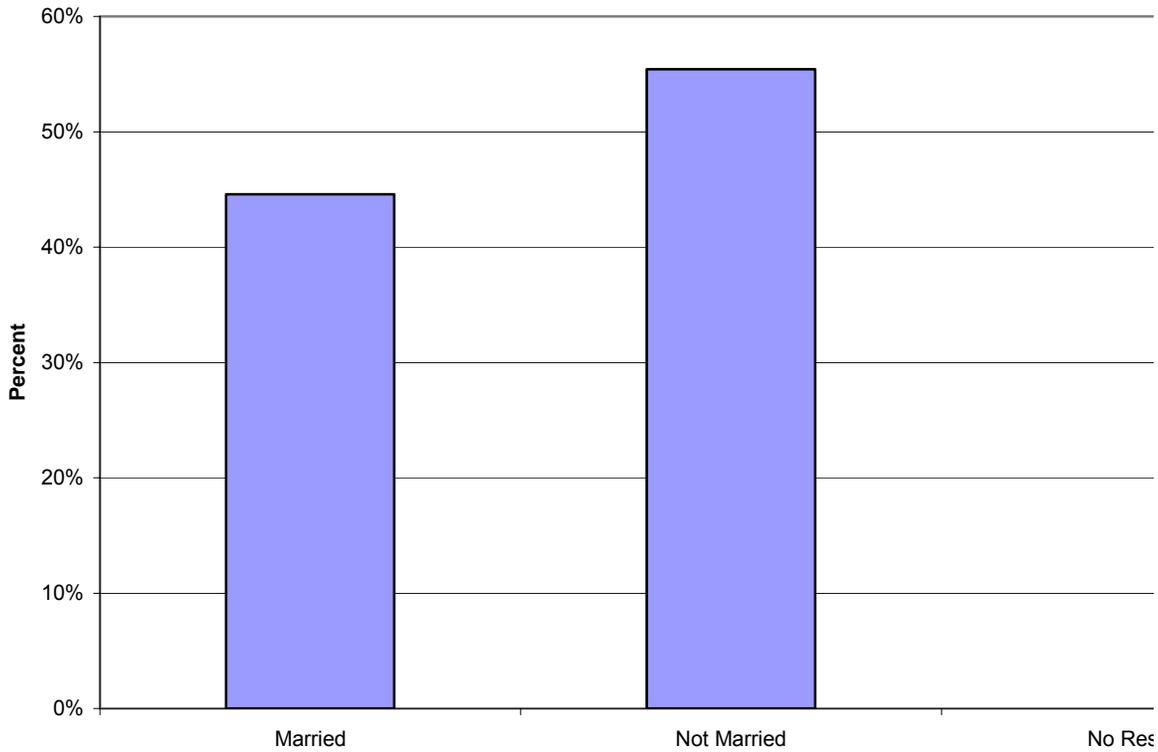
<sup>a</sup> Full names of the schools are: COMP = Western University College of Health Sciences College of Osteopathic Medicine of the Pacific; DMUCOM = Des Moines University College of Osteopathic Medicine; KCCOM = Kansas City University of Medicine and Bioscience College of Osteopathic Medicine; KCOM = A.T. Still University's Kirksville College of Osteopathic Medicine; LECOM = Lake Erie College of Osteopathic Medicine; MSUCOM = Michigan State University College of Osteopathic Medicine; NSUCOM = Nova Southeastern University College of Osteopathic Medicine; NYCOM = New York College of Osteopathic Medicine; OUCOM = Ohio University College of Osteopathic Medicine; OSUCOM = Oklahoma State University Center for Health Sciences – College of Osteopathic Medicine; PCOM = Philadelphia College of Osteopathic Medicine; PCSOM = Pikeville College School of Osteopathic Medicine; TUCOM = Touro University College of Osteopathic Medicine; UMDNJ = University of Medicine and Dentistry of New Jersey-School of Osteopathic Medicine; UNECOM = University of New England College of Osteopathic Medicine; TCOM = University of North Texas Health Science Center at Fort Worth/Texas College of Osteopathic Medicine; WVSOM = West Virginia School of Osteopathic Medicine.

<b>Table A-2</b>		
<b>Senior osteopathic medical students, 2003-04: gender*</b>		
<b>Gender</b>	<b>N</b>	<b>%</b>
Men	1104	59
Women	759	41
No response	19	
<b>Total</b>	<b>1882</b>	<b>100</b>
* In 19 U.S. osteopathic medical schools; see table A1.		



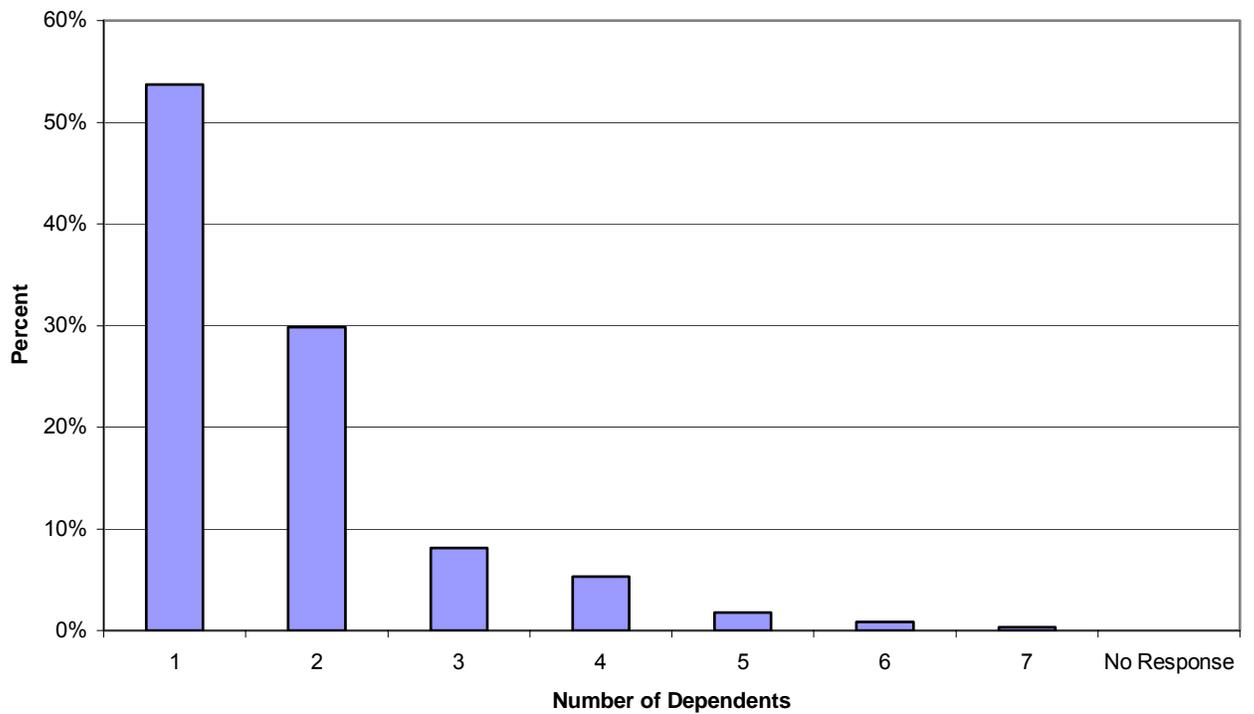
**Figure A-1. Gender of senior osteopathic medical students, 2003**  
(In 19 U.S. osteopathic medical schools; see Table A1)

<b>Table A-3 Senior osteopathic medical students, 2003-04: marital status</b>		
<b>Marital status</b>	<b>N</b>	<b>%</b>
Married	808	45
Not married	1004	55
No response	70	
<b>Total</b>	<b>1882</b>	<b>100</b>



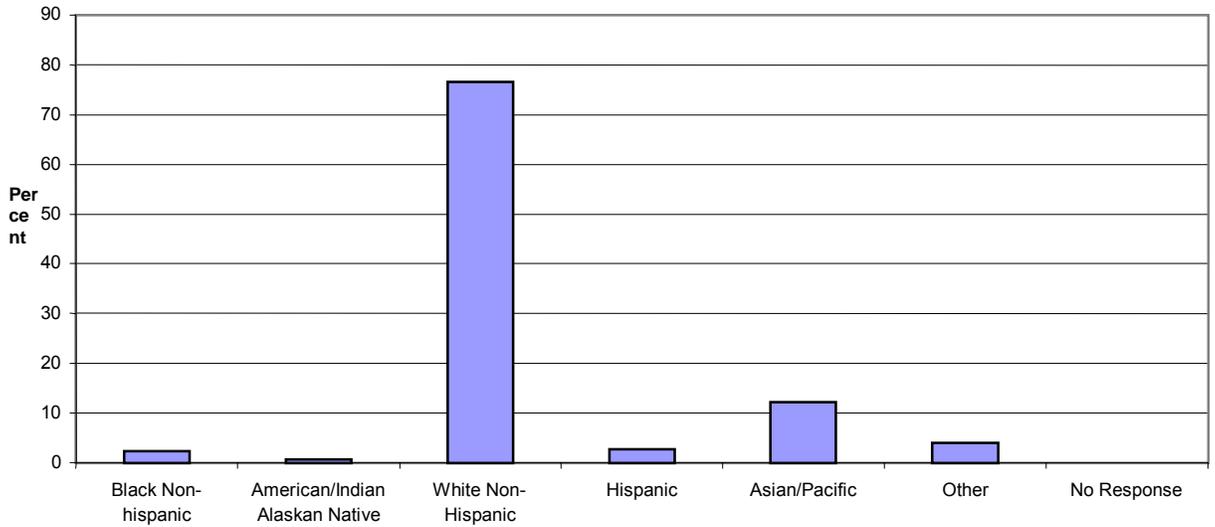
**Figure A-2. Senior osteopathic medical students' marital status, 2003-04  
(1,882 students total)**

Table A-4 r osteopathic medical students, 2003-04: number of dependents		
Q1. Dependents: Counting yourself, how many dependents do you support financially?		
No. dependents	N	%
1	977	54
2	543	30
3	148	8
4	97	5
5	32	2
6	16	1
7	6	0
<b>No response</b>	63	
<b>Total</b>	1882	100%



**Figure A-3. Senior osteopathic medical students, 2003-04: number of dependents**

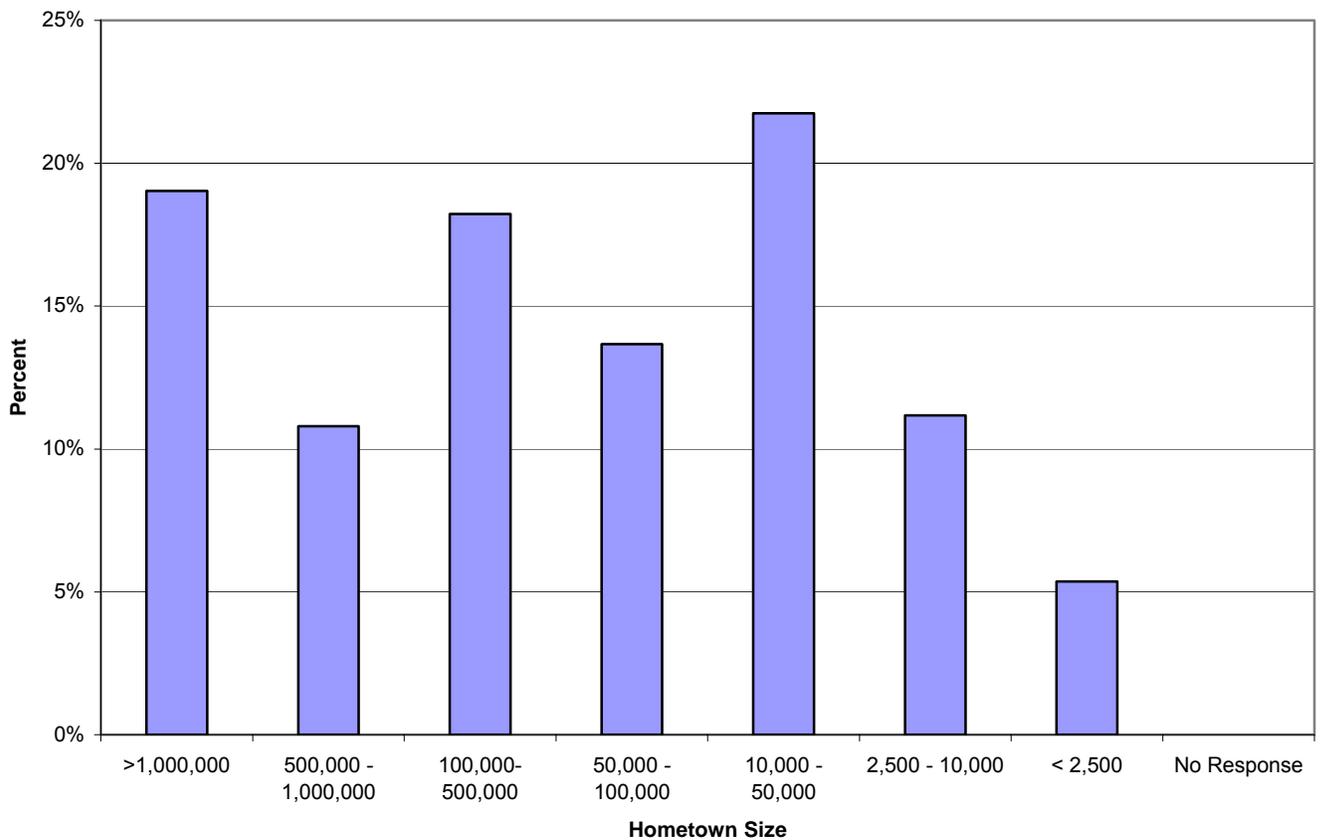
Table A-5 Senior osteopathic medical students, 2003-04: ethnic backgrounds		
<i>Q2. Ethnic background: Indicate your ethnic identification from the categories below:</i>		
	<b>N</b>	<b>%</b>
Black Non-Hispanic	44	2
American/Indian Alaskan Native	10	1
White Non-Hispanic	1442	77
Hispanic	50	3
Asian/Pacific	231	12
Other	74	4
No Response	31	
<b>Total</b>	<b>1882</b>	<b>100</b>



**Figure A-4. Ethnic backgrounds of senior osteopathic medical students, 2003-04**

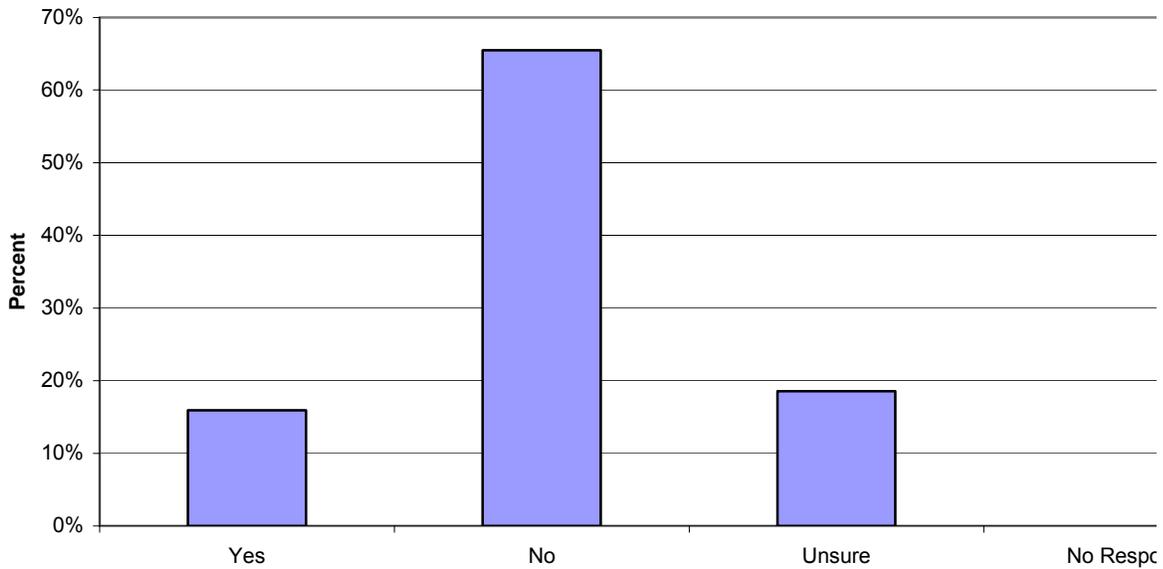
<b>Table A-6</b>						
<b>Senior osteopathic medical students, 2003-04: legal residence</b>						
Q4. "State of Legal Residency": Use 2 letter abbreviations (or FO if not U.S. citizen or permanent resident).						
<b>State</b>	<b>N</b>	<b>%</b>		<b>State</b>	<b>N</b>	<b>%</b>
No Response	76	4		Mississippi	9	0
Alaska	1	0		Montana	4	0
Alabama	9	0		North Carolina	9	0
Arkansas	2	0		North Dakota	3	0
Arizona	78	4		Nebraska	3	0
California	92	5		New Hampshire	8	0
Colorado	37	2		New Jersey	101	5
Connecticut	19	1		New Mexico	1	0
Delaware	3	0		Nevada	4	0
Florida	135	7		New York	82	4
FO	4	0		Ohio	140	7
Georgia	9	0		Oklahoma	70	4
Hawaii	1	0		Oregon	7	0
Iowa	23	1		Pennsylvania	149	8
Idaho	5	0		Rhode Island	8	0
Illinois	127	7		South Carolina	4	0
Indiana	16	1		South Dakota	2	0
Kansas	26	1		Tennessee	15	1
Kentucky	29	2		Texas	122	6
Louisiana	4	0		Utah	18	1
Massachusetts	26	1		Virginia	20	1
Maryland	19	1		Vermont	1	0
Maine	21	1		Washington	18	1
Michigan	163	9		Wisconsin	14	1
Minnesota	9	0		West Virginia	52	3
Missouri	82	4		Wyoming	2	0
				<b>Total</b>	<b>1882</b>	<b>100%</b>

<b>Table A-7</b>		
<b>Senior osteopathic medical students, 2003-04: size of hometowns</b>		
<b>Q5. Size of home town or area": Select what best describes your home town area from the following list:</b>		
	<b>N</b>	<b>%</b>
>1,000,000	351	19
500,000 - 1,000,000	199	11
100,000-500,000	336	18
50,000 - 100,000	252	14
10,000 - 50,000	401	22
2,500 - 10,000	206	11
< 2,500	99	5
No Response	38	
<b>Total</b>	<b>1882</b>	<b>100</b>



**Figure A-5. Senior osteopathic medical students, 2003-04: reports of size of hometowns**

<b>Table A-8</b>		
<b>Senior medical students who considered hometowns to be medically underserved</b>		
<i>Q5a. Do you consider your home town to be in a medically underserved area?</i>		
	N	%
Yes	296	16
No	1217	66
Unsure	345	19
No response	24	
<b>Total</b>	<b>1882</b>	<b>100</b>



**Figure A-6. Senior medical students who considered hometowns to be medically underserved**

<b>Table A-9</b>		
<b>Senior osteopathic medical students, 2003-04: fathers' highest education levels</b>		
<i>Q6. Father's education: Select the highest level of education your father attained. Complete this item even if he is deceased.</i>		
	<b>N</b>	<b>%</b>
Medical (DO or MD)	198	11
Nursing	5	0
Other health profession	72	4
Law	54	3
Business	112	6
Engineering	156	8
Other professional degree	82	4
Other graduate degree	191	10
Some graduate school	38	2
College graduate	309	17
Some college	230	12
Technical school	74	4
High school graduate	226	12
Some high school	57	3
Less than high school	42	2
No response	36	
<b>Total</b>	<b>1882</b>	<b>100</b>

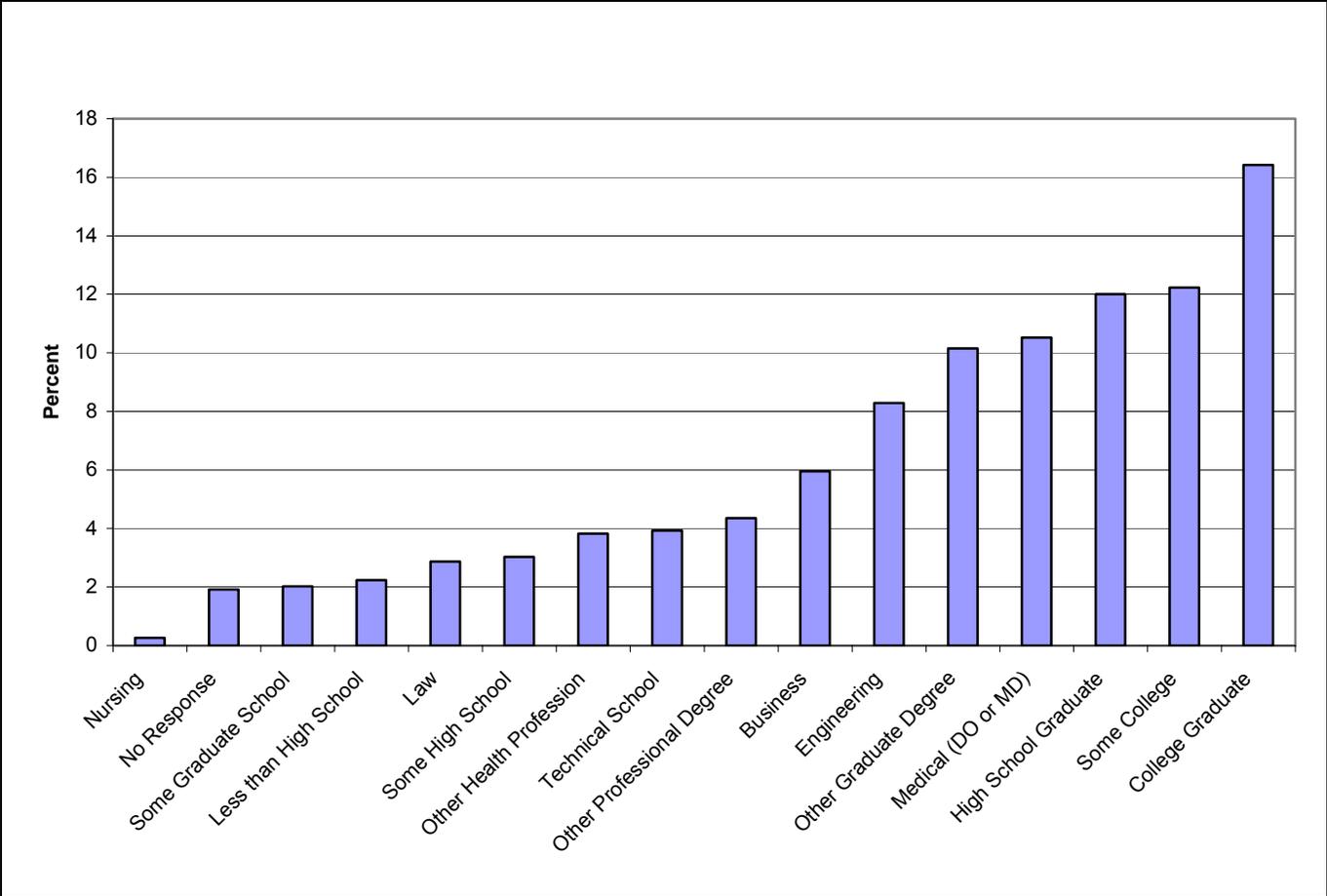
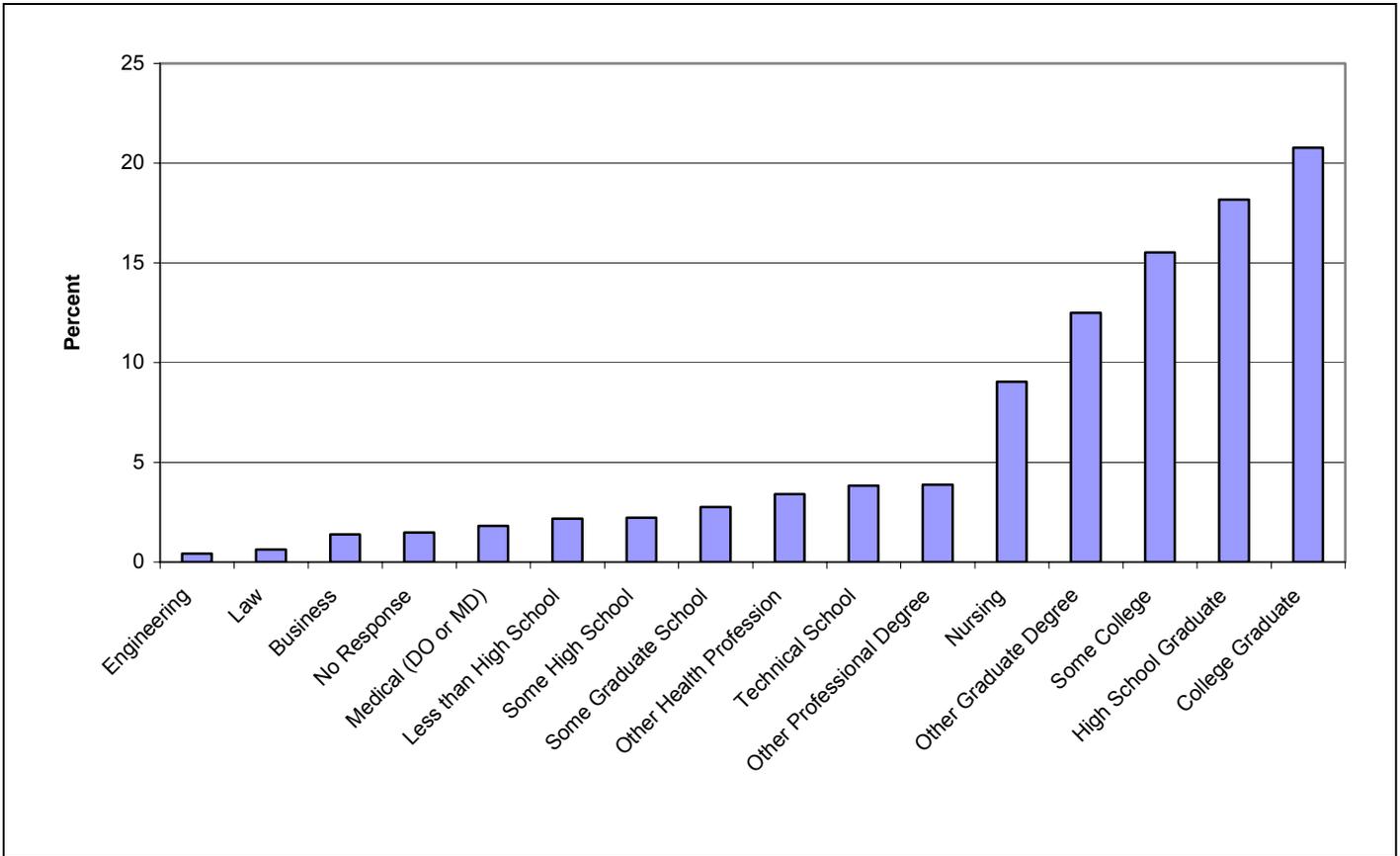


Figure A-7. Senior osteopathic medical students, 2003-04: fathers' highest education level

<b>Table A-10</b>		
<b>Senior osteopathic medical students, 2003-04: mothers' highest education level</b>		
<i>Q7. Mother's education: Select the highest level of education your mother attained. Complete this item even if she is deceased.</i>		
	<b>N</b>	<b>%</b>
Medical (DO or MD)	34	2
Nursing	170	9
Other health profession	64	3
Law	12	1
Business	26	1
Engineering	8	0
Other professional degree	73	4
Other graduate degree	235	13
Some graduate school	52	3
College graduate	391	21
Some college	292	16
Technical school	72	4
High school graduate	342	18
Some high school	42	2
Less than high school	41	2
No response	28	
<b>Total</b>	<b>1882</b>	<b>100</b>

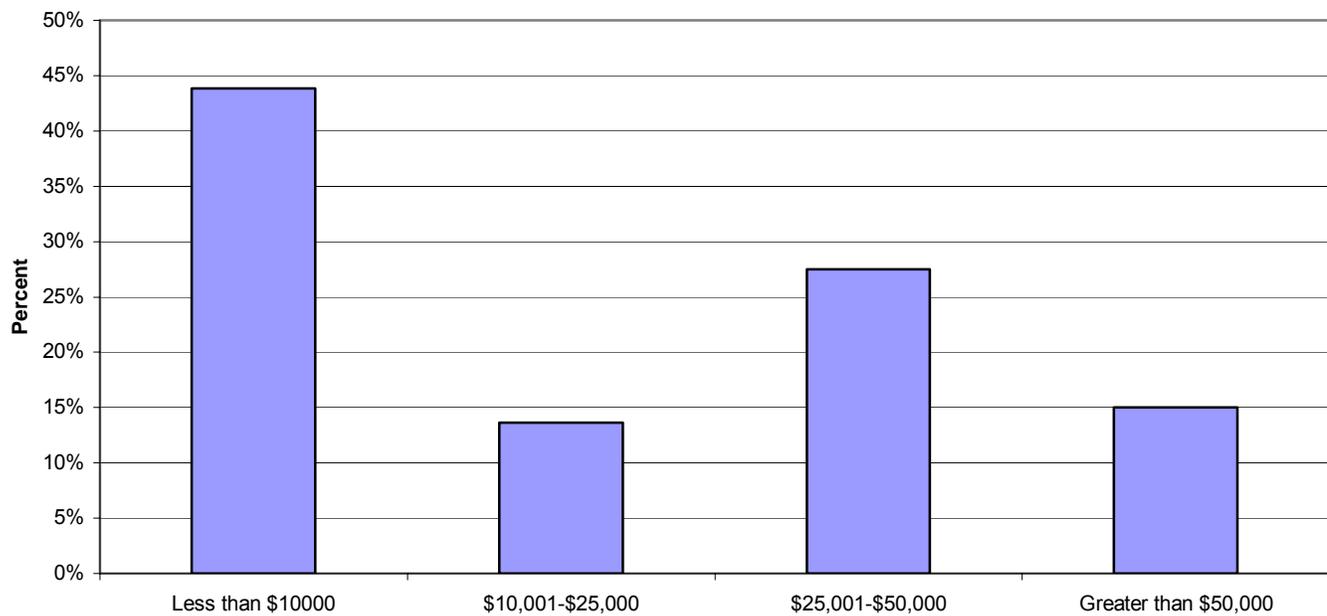


**Figure A-8. Senior osteopathic medical students, 2003-04: mothers' highest education levels**

<b>Table A-11</b>		
<b>Senior osteopathic medical students, 2003-04: estimates of parents income</b>		
<i>Q8. Parents' income: Estimate your parents' combined income for the current year before taxes.</i>		
	<b>N</b>	<b>%</b>
Less than \$10,000	46	2
10,000 - 19,999	41	2
20,000 - 29,999	89	5
30,000 - 39,999	106	6
40,000 - 49,999	96	5
50,000 - 59,999	166	9
60,000 - 69,000	140	8
70,000 - 79,000	103	6
80,000 - 89,000	126	7
90,000 - 99,999	116	6
more than 100,000	552	30
Deceased or unknown	277	15
No response	24	
<b>Total</b>	<b>1882</b>	<b>100</b>

<b>Table A-12</b>		
<b>Senior osteopathic medical students, 2003-04: financial independence</b>		
<i>Q9. Financial independence: Do you consider yourself financially independent from you parents?</i>		
	<b>N</b>	<b>%</b>
Yes	1551	86
No	247	14
No response	84	
<b>Total</b>	<b>1882</b>	<b>100</b>

<b>Table A-13</b>		
<b>Senior osteopathic medical students, 2003-04: annual income</b>		
<i>Q18. What is your current household yearly income?</i>		
	<b>%</b>	<b>%</b>
Less than \$10000	783	44
\$10,001-\$25,000	243	14
\$25,001-\$50,000	491	28
Greater than \$50,000	268	15
No response	97	
<b>Total</b>	<b>1882</b>	<b>100</b>



**Figure A-9. Senior osteopathic medical students' reports of annual income, 2003-04**

<b>Table A-14</b>		
<b>Senior osteopathic medical students, 2003-04: plans immediately after internship, by PCS or NPCS choice</b>		
<i>Q20a. Immediate post internship residency plans: Select the one item that best describes your plans immediately after internship, (or upon graduation if not planning an osteopathic internship):</i>		
	<b>N</b>	<b>%</b>
Pursue osteopathic residency	572	31
Pursue allopathic residency	881	47
Pursue AOA/ACGME residency dual approved program	168	9
Enter governmental service	191	10
Self-employed without a partner	1	0
Self-employed with partner	1	0
Employed in group practice (salary, commission, percentage)	2	0
Other professional activity	1	0
Undecided or indefinite post-grad/intern plan	41	2
	24	
<b>Total</b>	<b>1882</b>	<b>100</b>

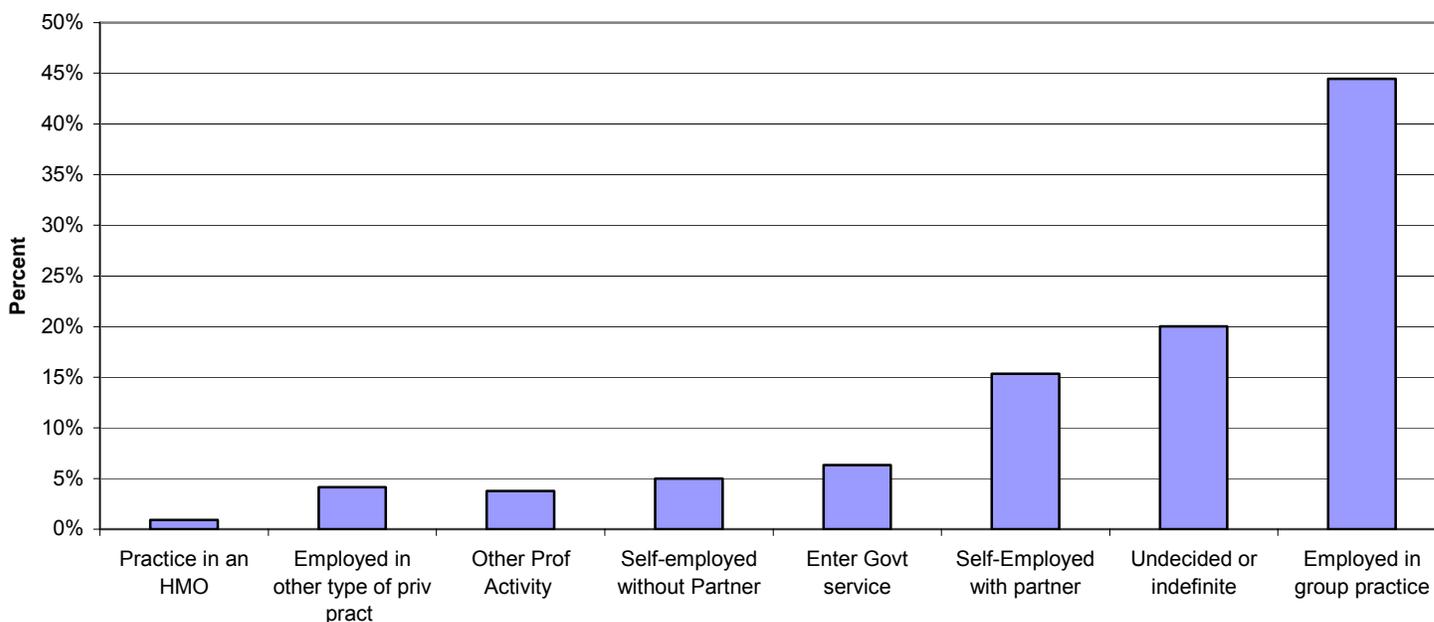
<b>Table A-15</b>								
<b>Senior osteopathic medical students, 2003-04: reasons for pursuing allopathic or government service residencies</b>								
<i>Q20b. If you plan to pursue an allopathic or government service residency, please give all the reasons that apply to you.</i>								
	<b>Does not apply</b>		<b>Reason</b>		<b>No response</b>		<b>Total</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Specialty training not available in osteopathic program	1544	83	314	17	24		1882	100
Believe better training available in allopathic program	1367	74	491	26	24		1882	100
Shorter training period	1699	91	159	9	24		1882	100
Preferred osteopathic residency not available in preferred geographic location	1445	78	413	22	24		1882	100
Better chance of being accepted in allopathic program	1756	95	102	5	24		1882	100
Higher pay	1737	93	121	7	24		1882	100
Military or government service obligation	1665	90	193	10	24		1882	100
Opens more career opportunities	1479	80	379	20	24		1882	100
Family considerations	1538	83	320	17	24		1882	100

**Table A-16**

**Senior osteopathic medical students, 2003-04: intended professional activity after training**

Q21. Long-range plans: Select one item from the list below which best describes your intended activity five years after internship and residency training.

	N	%
Enter govt. service	118	6
Practice in an HMO	17	1
Self-employed without partner	93	5
Self-Employed with partner	285	15
Employed in group practice	826	44
Employed in other type of private practice (salary, comm., %)	70	4
Other professional activity (teaching, research, admin., fellow)	77	4
Undecided or indefinite	372	20
No response	24	
<b>Total</b>	<b>1882</b>	<b>100</b>



**Figure A-9. Senior osteopathic medical students, 2003-2004: intended professional activity after training**

**Table A-17****Senior osteopathic medical students, 2003-04: selections of specialty most likely to choose**

Q22a. Area Of interest: Select a specialty in which you are most likely to work of seek training. Choose only one.

	<b>N</b>	<b>%</b>
Family practice	412	22
Internal medical general	93	5
Internal medical subspecialty	213	11
Neuromusculo. medicine and osteo. man. Tx	11	1
Pediatrics, general	76	4
Pediatrics, subspecialty	69	4
Allergy and immunology	3	0
Anesthesiology	118	6
Critical care	10	1
Dermatology	28	2
Emergency medical	199	11
Geriatrics	11	1
Neurology including subspecialties	32	2
Psychiatry including subspecialties	57	3
OB/GYN Including subspecialties	105	6
Ophthalmology	10	1
Otolaryngology	20	1
Pathology including subspecialties	21	1
Physical medical and rehab medical	63	3
Radiology (diagnostic) including subspecialties	48	3
Sports medical	19	1
Surgery, general	45	2
Orthopedic surgery	67	4
Surgery subspecialties	22	1
Colon and rectal surgery	1	0
Facial plastic surgery	2	0
Plastic/recon surgery	9	0
Neurological surgery	10	1
Thoracic cardiovascular surgery	2	0
Vascular surgery	5	0
Urology/urological surgery	11	1
Undecided or indefinite	66	4
No response	24	
<b>Total</b>	<b>1882</b>	<b>100</b>

**Table A-18****Senior osteopathic medical students, 2003-04: intentions to seek certification in preferred specialty***Q22b. Do you plan to be board-certified in this specialty?*

	<b>N</b>	<b>%</b>
Yes	1768	95
No	3	0
Unsure	87	5
No response	24	
<b>Total</b>	<b>1882</b>	<b>100</b>

**Table A-19****Senior osteopathic medical students, 2003-04: ratings of factors in specialty choice***Q23. Please indicate the importance of each of the following factors affecting your specialty choice decision.*

	<b>Major influence</b>		<b>Strong influence</b>		<b>Moderate influence</b>		<b>Minor influence</b>		<b>No influence/NA</b>		<b>No response</b>	<b>Total</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>N</b>	<b>%</b>
Intellectual content of specialty	978	53	536	29	241	13	49	3	30	2	48	1882	100
Dealing with people	848	46	459	25	292	16	155	8	83	5	45	1882	100
Prestige and income	173	9	310	17	566	31	493	27	292	16	48	1882	100
Lifestyle	637	35	482	26	410	22	201	11	106	6	46	1882	100
Technical skills	510	28	448	24	426	23	276	15	169	9	53	1882	100
Role models	511	28	530	29	432	24	209	11	151	8	49	1882	100
Peer influence	217	12	322	18	491	27	430	23	375	20	47	1882	100
Possess the skills now	641	35	689	38	349	19	101	6	53	3	49	1882	100
Debt level	169	9	246	13	459	25	447	24	515	28	46	1882	100
Academic environment	376	21	470	26	537	29	251	14	198	11	50	1882	100
Research	223	12	273	15	388	21	434	24	518	28	46	1882	100
Independence	506	28	520	28	435	24	230	13	144	8	47	1882	100
Previous experience	419	23	406	22	402	22	226	12	376	21	53	1882	100

**Table A-20**

**Senior osteopathic medical students, 2003-04: reports of where they expect to locate after training**

*Q24. Answer only ONE item. A. State (two-letter abbreviation) where you expect to locate after completion of internship and residency?*

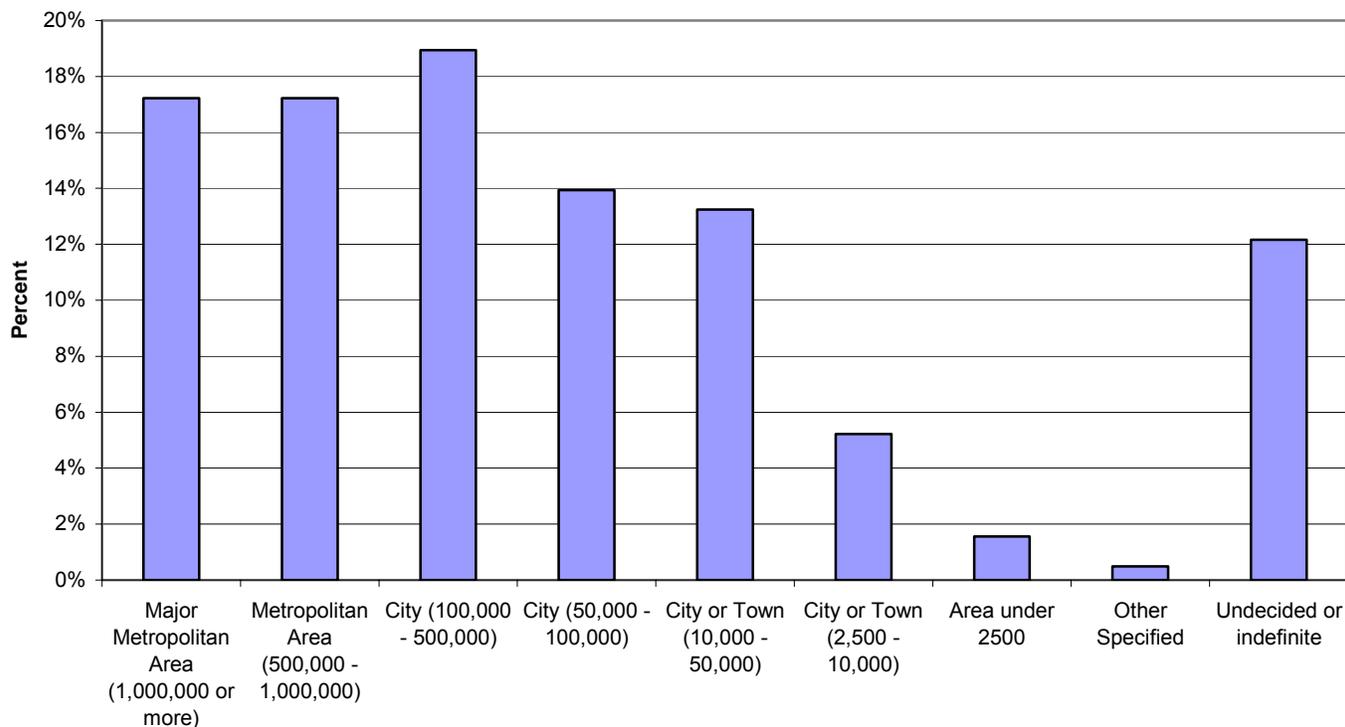
	<b>N</b>	<b>%</b>
Outside of the United States	8	2
Unknown or undecided	517	98
No response	1357	
<b>Total</b>	<b>1882</b>	<b>100</b>

**Table A-21**

**Senior osteopathic medical students, 2003-04: preferred location after training**

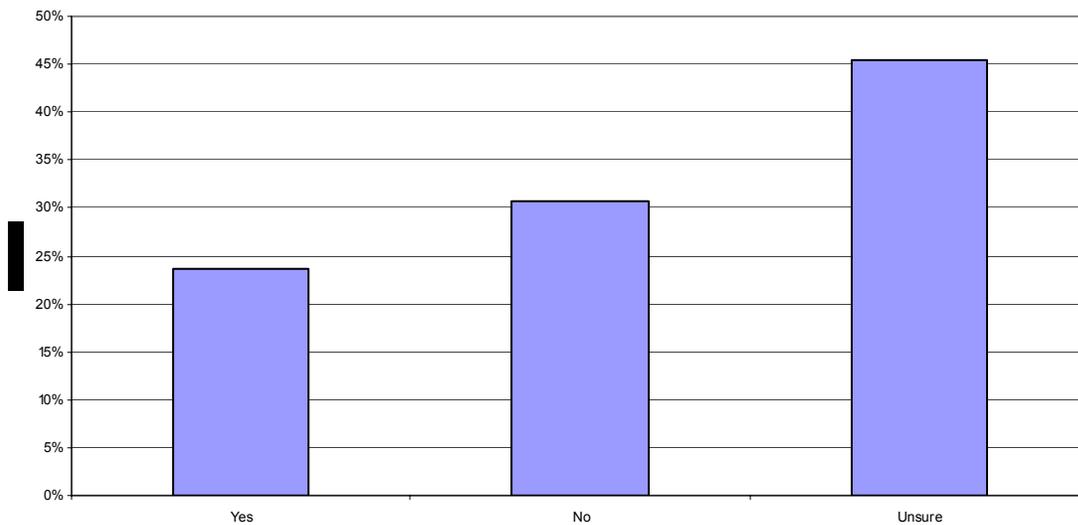
Q25a. Which of the following best describes the kind of area where you plan to be employed or in practice after completion of internship or residency?

	N	%
Major metropolitan area (1,000,000 or more)	320	17
Metropolitan area (500,000 - 1,000,000)	320	17
City (100,000 - 500,000)	352	19
City (50,000 - 100,000)	259	14
City or town (10,000 - 50,000)	246	13
City or town (2,500 - 10,000)	97	5
Area under 2500	29	2
Other specified	9	0
Undecided or indefinite	226	12
No response	24	
<b>Total</b>	<b>1882</b>	<b>100</b>



**Figure A-9. Senior osteopathic medical students, 2003-04: preferred location after training**

<b>Table 22</b>		
<b>Senior osteopathic medical students, 2003-04: plans to practice in underserved or shortage areas</b>		
<i>Q25b: Are you planning to practice in any underserved or shortage areas?</i>		
	<b>N</b>	<b>%</b>
Yes	441	24
No	572	31
Unsure	845	45
No response	24	
<b>Total</b>	<b>1882</b>	<b>100</b>



**Figure A-10. Senior osteopathic medical students, 2003-04: plans to practice in underserved or shortage areas**

**Table A-23**  
**Senior osteopathic medical students, 2003-04: amount of instruction devoted to areas of the curriculum**

*Q26. Instruction. Please evaluate the amount of instruction provided in each of the areas listed below.*

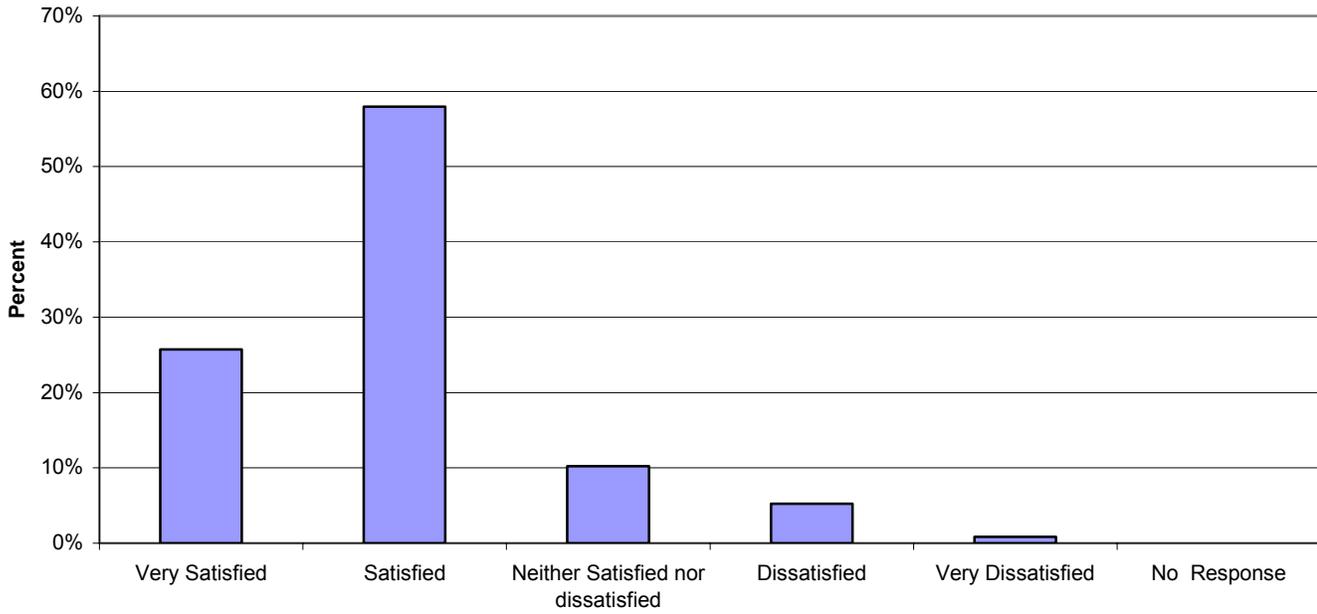
	Appropriate		Inadequate		Excessive		No response	Total	
	N	%	N	%	N	%	N	N	%
Basic science	1631	89	140	8	68	4	43	1882	100
Behavioral science	1338	73	412	22	84	5	48	1882	100
Biostatistics	869	47	908	49	58	3	47	1882	100
Care of ambulatory patients	1560	85	165	9	109	6	48	1882	100
Geriatrics	1443	79	326	18	68	4	45	1882	100
Care of hospitalized patients	1513	82	297	16	26	1	46	1882	100
Care of HIV/AIDS	942	51	858	47	38	2	44	1882	100
Clinical decision making	1569	85	257	14	11	1	45	1882	100
Clinical pharmacology	1403	76	405	22	30	2	44	1882	100
Clinical science	1628	89	181	10	23	1	50	1882	100
Cost-effective medical practice	874	48	928	51	32	2	48	1882	100
Instruction in diagnostic skills	1563	85	258	14	15	1	46	1882	100
Drug and alcohol abuse	1401	76	391	21	46	3	44	1882	100
Family and domestic violence	1267	69	519	28	50	3	46	1882	100
Genetics	1160	63	627	34	50	3	45	1882	100
Health promotion & disease prevention	1570	86	199	11	65	4	48	1882	100
Human sexuality	1263	69	474	26	98	5	47	1882	100
Independent learning/self evaluation	1474	80	310	17	50	3	48	1882	100
Infection control	1562	85	253	14	18	1	49	1882	100
Infectious disease prevention	1599	87	220	12	17	1	46	1882	100
Integrative medical	1458	80	347	19	23	1	54	1882	100
Legal medical	978	53	786	43	68	4	50	1882	100
Literature analysis skills	900	49	899	49	32	2	51	1882	100
Medical care cost control	781	43	1016	56	29	2	56	1882	100
Medical ethics	1351	74	356	19	123	7	52	1882	100
Medical record-keeping	1097	60	699	38	32	2	54	1882	100
Medical socio-economics	1086	59	706	39	35	2	55	1882	100
Nutrition	1149	63	638	35	42	2	53	1882	100
OMM-NMSK	1409	77	219	12	203	11	51	1882	100

Pain management	1169	64	646	35	18	1	49	1882	100
Patient education	1583	86	231	13	18	1	50	1882	100
Patient follow up	1590	87	227	12	13	1	52	1882	100
Patient-interviewing skill	1662	91	96	5	73	4	51	1882	100
Physician/patient relationship	1668	91	110	6	54	3	50	1882	100
Practice management	1028	56	762	42	40	2	52	1882	100
Primary care	1475	81	96	5	259	14	52	1882	100
Public health and community medicine	1419	78	314	17	97	5	52	1882	100
Rehabilitation	1077	59	728	40	25	1	52	1882	100
Research techniques	739	41	1019	57	37	2	87	1882	100
Role of medicine in community	1531	84	264	14	33	2	54	1882	100
Screening for diseases	1633	89	179	10	16	1	54	1882	100
Teamwork with other health professionals	1610	88	191	10	27	1	54	1882	100
Therapeutic management	1600	88	214	12	10	1	58	1882	100
Use of computers	1467	80	338	18	24	1	53	1882	100
Utilization review & quality management	1217	67	578	32	27	1	60	1882	100

<b>Table A-24</b>		
<b>Senior osteopathic medical students, 2003-04: overall satisfaction with medical education</b>		
<i>Q27. Please rate your overall satisfaction with the quality of your medical education.</i>		
<b>Ratings</b>	<b>N</b>	<b>%</b>
Very satisfied	463	26
Satisfied	1043	58
Neither satisfied nor dissatisfied	184	10
Dissatisfied	94	5
Very dissatisfied	15	1
No response	83	
<b>Total</b>	<b>1882</b>	<b>100</b>

<b>Table A-25</b>		
<b>Senior osteopathic medical students, 2003-04: overall satisfaction with medical education</b>		
<i>Q27. Please rate your overall satisfaction with the quality of your medical education.</i>		
<b>Ratings <sup>a</sup></b>	<b>N</b>	<b>%</b>
Satisfied	1506	84
Neither satisfied nor dissatisfied	184	10
Dissatisfied	109	6
No response	83	
<b>Total</b>	<b>1882</b>	<b>100</b>

<sup>a</sup> 5 original response categories collapsed into 3



**Figure A-11. Senior osteopathic medical students, 2003-04: overall satisfaction with medical education**

**Table A-26**  
**Senior osteopathic medical students, 2003-04: satisfaction with student services**

Q28. Please indicate your level of satisfaction with the following.

	Satisfied		Dissatisfied		No opinion		No response	Total	
	N	%	N	%	N	%	N	N	%
Academic counseling	1155	63	489	27	195	11	43	1882	100
Accessibility to administration	1408	77	349	19	82	4	43	1882	100
Awareness of student problems by administration	1102	60	645	35	88	5	47	1882	100
Career counseling	888	48	763	42	185	10	46	1882	100
Computer resource center	1606	87	165	9	68	4	43	1882	100
Disability insurance	869	48	212	12	745	41	56	1882	100
Electronic communication	1628	89	161	9	46	3	47	1882	100
Faculty mentoring	1121	61	585	32	131	7	45	1882	100
Financial aid administration services	1518	83	228	12	91	5	45	1882	100
Library	1633	89	161	9	44	2	44	1882	100
Participation of students on key medical school committees	1413	77	196	11	228	12	45	1882	100
Personal counseling	1005	55	342	19	487	27	48	1882	100
Student health insurance	879	48	626	34	327	18	50	1882	100
Student health service	1155	63	399	22	278	15	50	1882	100
Student relaxation space	1256	68	390	21	190	10	46	1882	100
Study space	1404	76	336	18	97	5	45	1882	100
Tutorial help	1169	64	203	11	463	25	47	1882	100

**Table A-27**  
**Senior osteopathic medical students, 2003-04: satisfaction with aspects of experiences as medical students**

*Q29. Please indicate how satisfied you are with each of these aspects of your experience as a medical student.*

	Satisfied		Neither satisfied nor dissatisfied		Dissatisfied		No response	Total	
	N	%	N	%	N	%	N	N	%
People	1755	96	56	3	14	1	57	1882	100
Scientific research	876	48	724	40	226	12	56	1882	100
Income	1438	79	322	18	61	3	61	1882	100
Helping others	1750	96	55	3	18	1	59	1882	100
Membership in profession	1649	90	152	8	23	1	58	1882	100
Colleagues	1639	90	157	9	28	2	58	1882	100
Independence	1560	85	217	12	48	3	57	1882	100
Leadership and authority	1433	79	360	20	32	2	57	1882	100
Intellectual stimulation	1749	96	56	3	18	1	59	1882	100
Changing society	1419	78	355	19	47	3	61	1882	100
Controllable lifestyle	1396	77	314	17	112	6	60	1882	100
Manageable workload	1377	76	338	19	107	6	60	1882	100
Personnel resources	1467	81	276	15	78	4	61	1882	100
Role in organizational decisions	1400	77	337	18	86	5	59	1882	100
Non-physician personnel	1544	85	232	13	47	3	59	1882	100

**Table A-28****Senior osteopathic medical students, 2003-04: educational aspects of medical school experience**

Q30. Please indicate whether you agree or disagree with the following statements about your first two years of medical education.

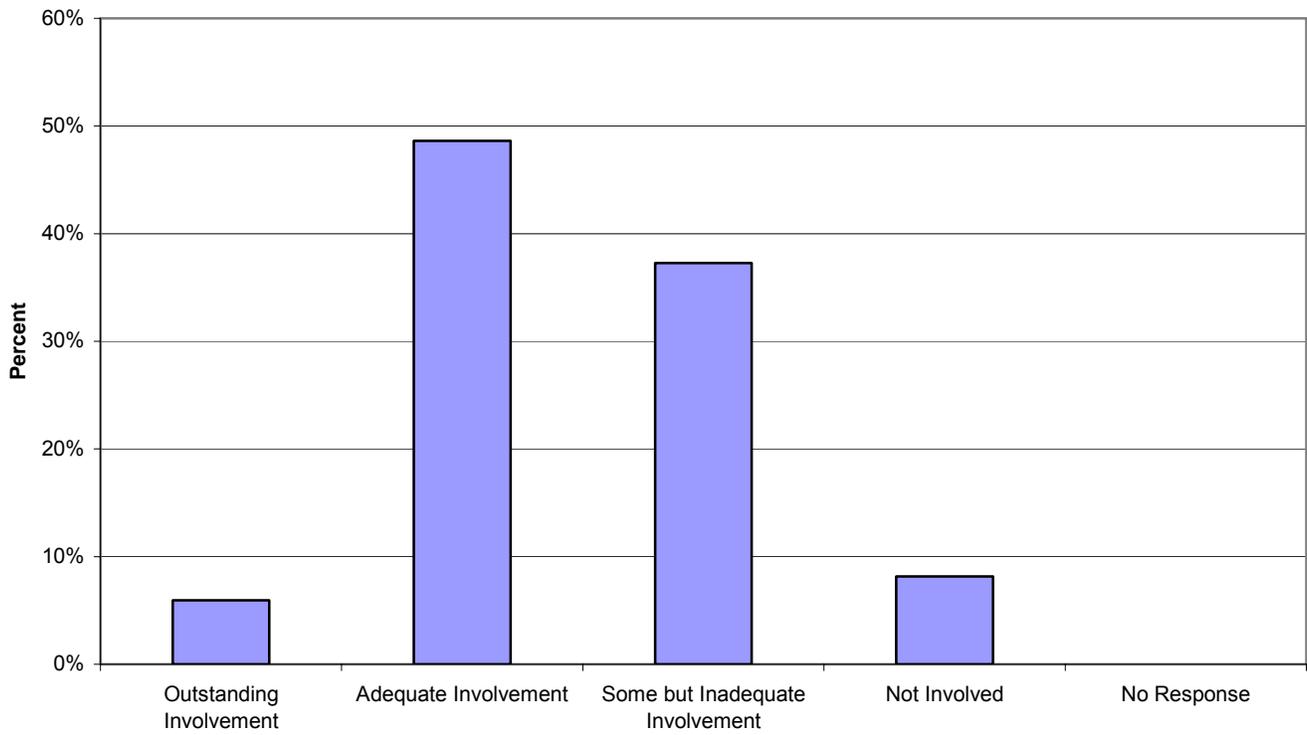
	Agree		Disagree		No opinion		No response	Total	
	N	%	N	%	N	%	N	N	%
Course objectives were clear	1611	88	176	10	36	2	59	1882	100
Basic science courses were integrated	1503	83	287	16	31	2	61	1882	100
Course objectives and examinations were matched	1484	82	298	16	38	2	62	1882	100
Course work prepared you for clerkships	1488	82	295	16	39	2	60	1882	100
First 2 years were well organized	1367	75	407	22	48	3	60	1882	100
Timely feedback on performance	1508	83	264	15	48	3	62	1882	100
Adequate exposure to patient care	1198	66	582	32	41	2	61	1882	100
Adequate preparation for COMLEX Level 1	1321	73	462	25	37	2	62	1882	100

**Table A-29****Senior osteopathic medical students, 2003-04: ways in which schools were involved during clerkship years.**

Q31a. In what ways was your osteopathic medical school involved in your clerkship years? Please check all that apply.

	No		Yes		No response	Total	
	N	%	N	%	N	N	%
COMLEX 2 preparation	1303	71	534	29	45	1882	100
Distance learning	1315	72	522	28	45	1882	100
E-mail	422	23	1415	77	45	1882	100
Faculty visits	1536	84	301	16	45	1882	100
Newsletter	1486	81	351	19	45	1882	100

<b>Table A-30</b>		
<b>Senior osteopathic medical students, 2003-04: schools' involvement during clerkship years</b>		
<i>Q31b. To what degree was your osteopathic medical school involved in your clerkship years?</i>		
	<b>N</b>	<b>%</b>
Outstanding involvement	106	6
Adequate involvement	869	49
Some but inadequate involvement	666	37
Not involved	146	8
No response	95	
<b>Total</b>	<b>1882</b>	<b>100</b>



**Figure A-12. Senior osteopathic medical students, 2003-0: schools' involvement during clerkship years**

**Table A-31****Senior osteopathic medical students, 2003-04: educational aspects of medical school education**

Q32. Please indicate whether you agree or disagree with the following statements about your last two years of medical education.

	Strongly agree		Agree		Disagree		Strongly disagree		No opinion		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Clear objectives	292	16	1168	64	261	14	65	4	33	2	1819	100
Performance objectives	275	15	1129	62	304	17	73	4	35	2	1816	100
Organization of clerkships	211	12	947	52	455	25	155	9	47	3	1815	100
End of clerkship examinations	243	13	904	50	405	22	185	10	78	4	1815	100
Timely feedback	227	13	1005	55	391	22	163	9	29	2	1815	100
Involvement of attendings in teaching and evaluation	284	16	1087	60	287	16	119	7	37	2	1814	100
Residents role (too large) in teaching and evaluation	151	8	471	26	875	48	196	11	124	7	1817	100
Your appropriate role in patient care	373	21	1228	68	147	8	38	2	29	2	1815	100
Diversity of patients and their health issues	468	26	1196	66	100	6	28	2	23	1	1815	100
Number of in-patient experiences	435	24	1110	61	164	9	82	5	22	1	1813	100
OPP integration into each clerkship	109	6	454	25	661	36	510	28	80	4	1814	100
Adequate preparation for COMLEX 2	233	13	889	49	416	23	192	11	83	5	1813	100

<b>Table A-32</b>	
<b>Senior osteopathic medical students, 2003-04: estimates of time spent in medical activities during senior year</b>	
<i>Q33. Approximately how many hours per week have you worked in medicine-related activities during your senior year?</i>	
No. responding	1688
No. missing	194
Mean no. of hours	47
Median no. of hours	50
Standard deviation	15
Minimum	0
Maximum	100

<b>Table A-33</b>							
<b>Senior osteopathic medical students, 2003-04: estimated time in Year 3 activities</b>							
<i>Q34: Please estimate the Percentage of time you devoted to the following activities in year 3:</i>							
	No. students	Missing students	Hours		Std. deviation	Min. hrs.	Max. hrs.
			Mean	Median			
Inpatient care	1817	65	52	50	20	0	100
Outpatient care	1818	64	39	40	19	0	100
Extended care	1818	64	3	0	6	0	50
Research	1818	64	1	0	3	0	30
Administration	1818	64	1	0	3	0	30
Medical teaching	1818	64	3	0	7	0	80
Other	1817	65	0	0	3	0	60
Year 3 totals	1815	67	100	100	0	100	100

<b>Table A-34</b> <b>Senior osteopathic medical students, 2003-04:</b> <b>responses for 'other' in Question 34</b> <i>(Please estimate the percentage of time you devoted to the following activities in Year 3.)</i>		
Q35. "Write in for the 'Other' [in Q34]:		
Responses	N	%
Anesthesia	1	3
Basic science	1	3
Board studies	1	3
Classes to underserved	1	3
<b>Community</b>	1	3
Diagnostic	1	3
Didactics	1	3
<b>Family</b>	1	3
Free time	1	3
<b>Independent learning</b>	1	3
<b>Independent study/r</b>	1	3
<b>Journals</b>	1	3
Master's degree in public h	1	3
Miscellaneous	1	3
OMM fellowship	1	3
Pathology lab	1	3
Personal time	1	3
Presentation	1	3
Private study	1	3
<b>Reading time</b>	2	5
Return to NYCOM for	1	3
<b>Self study</b>	1	3
<b>SOMA</b>	1	3
<b>Specialty</b>	1	3
Student government	1	3
Studying	3	8
Studying, assignment	1	3
Surgery	1	3
Tech. skills	1	3
Underserved patient	1	3
<b>Undetermined</b>	1	3
<b>Vacation</b>	1	3
Working as a nurse.	1	3
Writing notes	1	3
Total	37	100

**Table A-35**  
**Senior osteopathic medical students, 2003-04: percentages of patients cared for in selected ethnic groups**

Q36. *What percentage of the patients you helped care for were:*

Ethnic group	No. students	Missing students	Mean	Median	Std. deviation	Min	Max
White	1828	54	49	50	23	0	100
Black	1828	54	24	20	16	0	99
Hispanic	1828	54	17	15	14	0	90
Native American or Alaskan	1828	54	1	0	4	0	50
Asian or Pacific Islander	1828	54	3	0	6	0	100
Did not determine ethnicity	1828	54	5	0	20	0	100
Total percentage	1828	54	100	100	0	100	100

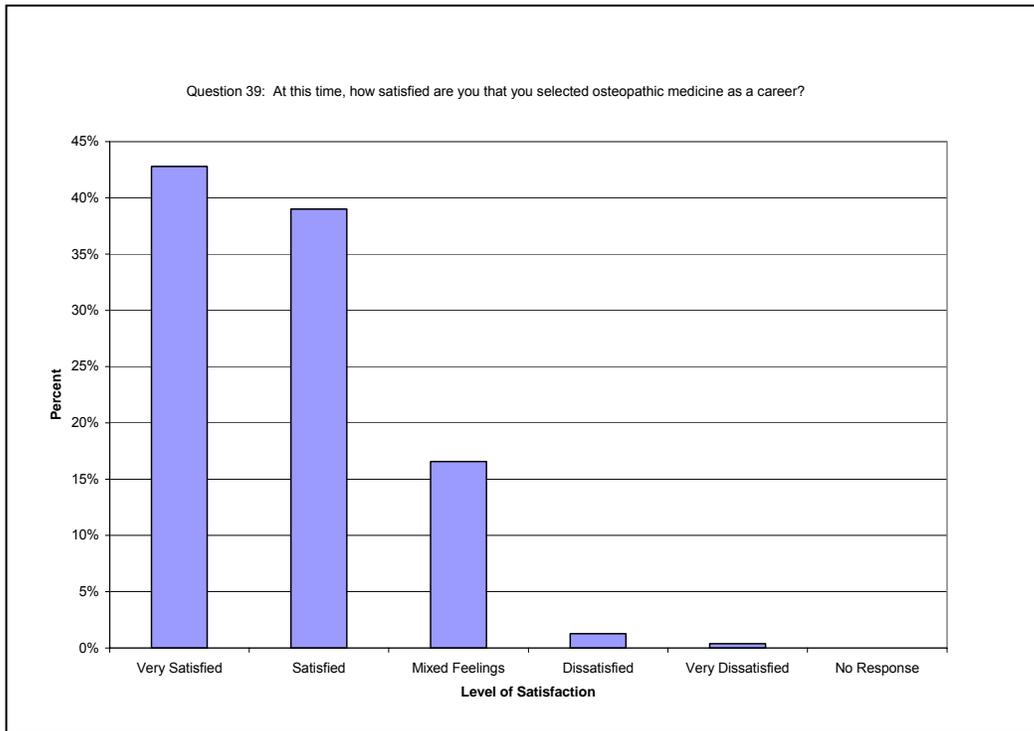
**Table A-36**  
**Senior osteopathic medical students, 2003-04: preferences for structure of senior year**

Q37. *Which statement best describes your preferences for the structure of your clinical years?*

	N	%
Same location for Y3 and Y4	270	15
Same location Y3 travel Y4	697	40
Travel for Y3 and Y4	780	45
No response	135	
<b>Total</b>	<b>1882</b>	<b>100</b>

<b>Table A-37</b>							
<b>Senior osteopathic medical students, 2003-04: professional activities during previous two years</b>							
<i>Q38. In the past two years, have you:</i>							
	Yes		No		No response	Total	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>N</u>	<u>%</u>
Subscribed to a refereed journal	<u>977</u>	<u>54</u>	<u>848</u>	<u>46</u>	<u>57</u>	<u>1882</u>	<u>100</u>
Requested a lit search from lib	<u>1371</u>	<u>75</u>	<u>455</u>	<u>25</u>	<u>56</u>	<u>1882</u>	<u>100</u>
Participate in research study	<u>556</u>	<u>30</u>	<u>1269</u>	<u>70</u>	<u>57</u>	<u>1882</u>	<u>100</u>
Published in a refereed journal	<u>190</u>	<u>10</u>	<u>1635</u>	<u>90</u>	<u>57</u>	<u>1882</u>	<u>100</u>
Spoken to a community group	<u>873</u>	<u>48</u>	<u>955</u>	<u>52</u>	<u>54</u>	<u>1882</u>	<u>100</u>
Written or appeared in a health related journal	<u>182</u>	<u>10</u>	<u>1641</u>	<u>90</u>	<u>59</u>	<u>1882</u>	<u>100</u>
Worked in a community group	<u>480</u>	<u>26</u>	<u>1345</u>	<u>74</u>	<u>57</u>	<u>1882</u>	<u>100</u>
Gathered data on a health problem in your community	<u>341</u>	<u>19</u>	<u>1484</u>	<u>81</u>	<u>57</u>	<u>1882</u>	<u>100</u>
Provided non-paid expert testimony	<u>65</u>	<u>4</u>	<u>1758</u>	<u>96</u>	<u>59</u>	<u>1882</u>	<u>100</u>
Volunteered your expertise to a community org	<u>589</u>	<u>32</u>	<u>1234</u>	<u>68</u>	<u>59</u>	<u>1882</u>	<u>100</u>

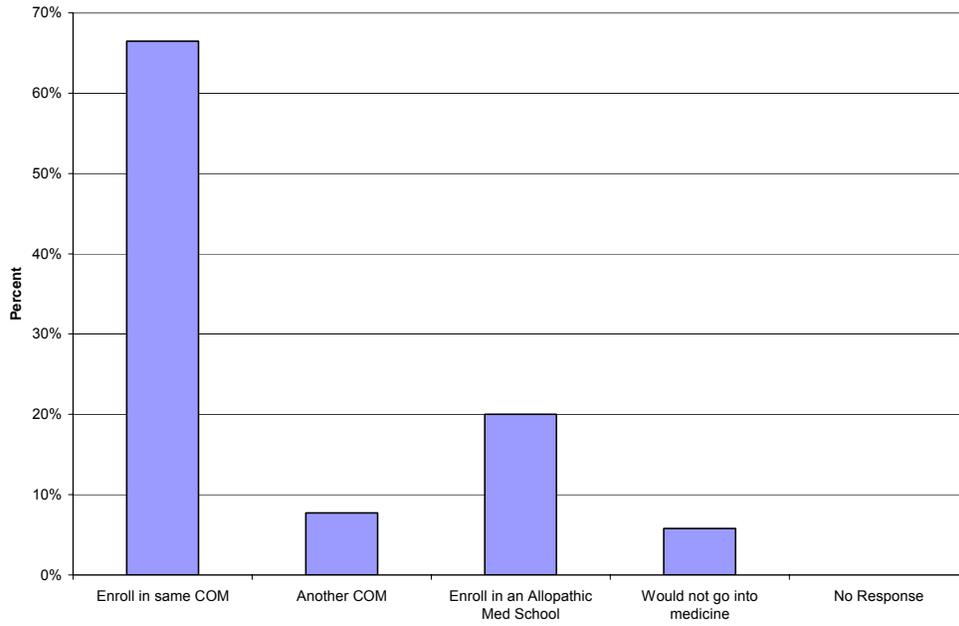
<b>Table A-38</b>		
<b>Senior osteopathic medical students, 2003-04: satisfaction with osteopathic medicine as career</b>		
<i>Q39. At this time, how satisfied are you that you selected osteopathic medicine as a career?</i>		
	<b>N</b>	<b>%</b>
Very satisfied	778	43
Satisfied	709	39
Mixed feelings	301	17
Dissatisfied	23	1
Very dissatisfied	7	0
No response	64	
<b>Total</b>	<b>1882</b>	<b>100</b>



**Figure A-13. Senior osteopathic medical students, 2003-04: satisfaction with medicine as career**

<b>Table A-39</b>		
<b>Senior osteopathic medical students, 2003-04: if considering medicine again as career</b>		
<i>Q 40. If given the opportunity to begin your medical education again, would you prefer to enroll in:</i>		
	<b>N</b>	<b>%</b>
Enroll in same COM	1196	66
Another COM	139	8
Enroll in an allopathic med school	360	20
Would not go into medicine	104	6
No response	83	
<b>Total</b>	<b>1882</b>	<b>100</b>

Question 40: If given the opportunity to begin your medical education again, would you prefer to enroll in:



**Figure A-14. Senior osteopathic medical students, 2003-04: if considering medicine again as career**

**Table A-40**  
**Senior osteopathic medical students, 2003-04: person with extremely positive influence on medical education**

*Q41. If there has been an individual who has been an extremely positive influence on your medical education, please indicate that which best describes this individual. (Choose as many as apply.)*

	No		Yes		No Response	Total	
	N	%	N	%	N	N	%
D.O.	762	41	1088	59	32	1882	100
M.D.	985	53	865	47	32	1882	100
Basic scientist	1699	92	151	8	32	1882	100
Undergraduate faculty	1735	94	115	6	32	1882	100
Friend	1460	79	390	21	32	1882	100
Family member	1204	65	646	35	32	1882	100
Patient	1603	87	247	13	32	1882	100
Another medical student	1482	80	368	20	32	1882	100
Another health care provider	1760	95	90	5	32	1882	100
Other	1788	97	62	3	32	1882	100
No person identified	1704	92	146	8	32	1882	100

**Table A-41**  
**Senior osteopathic medical students, 2003-04: confidence in abilities in community-health areas**

Q42. How confident are you in your abilities to do the following (whether or not you are actually doing it):

	Confident		Apprehensive		No response	Total	
	N	%	N	%	N	N	%
Use the tools of epidemiology to understand community needs	1029	56	794	44	59	1882	100
Understand the community perception of its health problems	1439	79	387	21	56	1882	100
Employ the full range of CHS for patients	1363	75	461	25	58	1882	100
Locate health resources for patients	1436	79	390	21	56	1882	100
Important health issues for particular populations	1585	87	240	13	57	1882	100
Understand the health beliefs of your patients	1609	88	217	12	56	1882	100

**Table A-42**  
**Senior osteopathic medical students, 2003-04: confidence in performing aspects of physical examinations**

Q43. Using the following scale, please indicate how confident you are in your ability to perform the following examinations:

	Confident		Apprehensive		No response	Total	
	N	%	N	%	N	N	%
General medical examination	1799	98	28	2	55	1882	100
Well-baby examination	1451	79	376	21	55	1882	100
Gynecological examination	1532	84	295	16	55	1882	100
Routine pre-natal examination	1415	77	412	23	55	1882	100
Breast examination	1687	92	138	8	57	1882	100
Sports participation physical	1652	90	174	10	56	1882	100
Osteopathic structural examination	1480	81	347	19	55	1882	100

**Table A-43****Senior osteopathic medical students, 2003-04: confidence in abilities to work-up clinical presentations**

*Q44. Using the following scale, please indicate how confident you are in your ability to work-up the following clinical presentations:*

	Confident		Apprehensive		No response	Total	
	N	%	N	%	N	N	%
Abdominal pain	1774	97	62	3	46	1882	100
Chest pain	1773	97	63	3	46	1882	100
Fever	1714	93	122	7	46	1882	100
Headache	1716	94	119	6	47	1882	100
Cough	1792	98	44	2	46	1882	100
Back symptoms	1687	92	148	8	47	1882	100
Shortness of breath	1765	96	70	4	47	1882	100
Workup of diabetes mellitus	1750	95	86	5	46	1882	100
Earache or ear infection	1776	97	60	3	46	1882	100
Hypertension	1792	98	42	2	48	1882	100
Depression	1565	85	270	15	47	1882	100
Nasal congestion	1792	98	43	2	47	1882	100
Sore throat	1805	98	28	2	49	1882	100
Skin rash	1252	68	583	32	47	1882	100
Vision dysfunction	1081	59	753	41	48	1882	100
Knee symptoms	1614	88	220	12	48	1882	100
Generalized pain	1454	79	380	21	48	1882	100
Dementia	1395	76	439	24	48	1882	100
Generalized muscle weakness	1378	75	455	25	49	1882	100
OPP in both Dx and Tx of the above presentations	1265	69	559	31	58	1882	100

**Table A-44****Senior osteopathic medical students, 2003-04: confidence in interpreting laboratory results**

Q45. Using the following scale, please indicate how confident you are in interpreting the following laboratory or diagnostic tests:

	Confident		Apprehensive		No response	Total	
	N	%	N	%	N	N	%
EKG	1344	73	490	27	48	1882	100
BP	1811	99	25	1	46	1882	100
Cardiac stress test	1215	66	620	34	47	1882	100
Exercise prescription	1391	76	432	24	59	1882	100
TB skin test	1774	97	61	3	47	1882	100
Fetal monitoring	1318	72	518	28	46	1882	100
Lipid profile	1790	98	45	2	47	1882	100
CBC	1800	98	36	2	46	1882	100
Urinalysis	1803	98	33	2	46	1882	100
PSA	1693	92	142	8	47	1882	100
Cervical/urethral swab	1582	86	252	14	48	1882	100
Hematocrit hemoglobin	1810	99	25	1	47	1882	100
Pap test	1601	87	233	13	48	1882	100
CXR	1656	90	179	10	47	1882	100
Mammogram	1021	56	814	44	47	1882	100
Cardiac profile	1657	90	176	10	49	1882	100
Hepatitis profile	1614	88	220	12	48	1882	100

**Table A-45**  
**Senior osteopathic medical students, 2003-04: perceptions of accuracy of evaluations used to gain information about students' medical knowledge and clinical competence**

*Q47: Please indicate your perception of how accurate the following types of evaluation were in providing/assessing information about your knowledge of medicine and clinical competency.*

**YEARS 1 and 2**

	Accurate		Inaccurate		No experience		No response		Total	
	N	%	N	%	N	%	N		N	%
MCQ	1427	78	386	21	12	1	57		1882	100
Practical examination	1572	86	234	13	18	1	58		1882	100

Oral examinations	1016	56	176	10	626	34	64		1882	100
Student assigned lecture	1107	62	242	13	446	25	87		1882	100
Student selected component examinations	896	50	178	10	708	40	100		1882	100
Problem vignettes	1521	85	143	8	123	7	95		1882	100
Case vignettes	1555	87	132	7	101	6	94		1882	100
Problem-based learning	1399	78	157	9	235	13	91		1882	100
Case-based learning	1491	83	146	8	156	9	89		1882	100
Simulated (standardized) patients	1333	74	280	16	182	10	87		1882	100
Simulation models for clinical procedures	1206	68	266	15	314	18	96		1882	100
Live models for clinical procedures	1235	69	210	12	337	19	100		1882	100
OSCE	947	54	234	13	583	33	118		1882	100
Portfolios	603	34	221	13	943	53	115		1882	100
Log books	632	36	423	24	711	40	116		1882	100
Longitudinal record of achievement	696	40	239	14	821	47	126		1882	100
Computer examinations	832	47	366	21	572	32	112		1882	100
Essay examinations	864	49	227	13	663	38	128		1882	100
Short answer questions	1028	58	195	11	540	31	119		1882	100
National board shelf-examinations	922	52	300	17	538	31	122		1882	100
National boards part I	1245	70	425	24	100	6	112		1882	100
National boards part II	840	58	307	21	302	21	433		1882	100
Digitalization of physical examination	582	39	167	11	739	50	394		1882	100
Post-rotation examinations	623	42	329	22	522	35	408		1882	100
Student evaluation of rotations	848	57	200	14	427	29	407		1882	100
Attending evaluation of student at end of rotation	871	59	168	11	432	29	411		1882	100

**Table A-46****Senior osteopathic medical students, 2003-04: percentions of accuracy of types of evaluation to provide information about knowledge of medicine and clinical competence**

*Q4. Please indicate your perception of how accurate the following types of evaluation were in providing/assessing information about your knowledge of medicine and clinical competency.*

**YEARS 3 and 4**

	<b>Accurate</b>		<b>Inaccurate</b>		<b>No experience</b>		<b>No response</b>	<b>Total</b>	
	N	%	N	%	N	%	N	N	%
MCQ	991	57	616	36	127	7	148	1882	100
Practical examination	1196	69	147	8	388	22	151	1882	100
Oral examinations	969	56	115	7	639	37	159	1882	100
Student assigned lecture	1240	73	153	9	315	18	174	1882	100
Student selected component examinations	826	49	127	7	741	44	188	1882	100
Problem vignettes	1329	78	96	6	278	16	179	1882	100
Case vignettes	1370	80	85	5	250	15	177	1882	100
Problem-based learning	1267	74	101	6	336	20	178	1882	100
Case-based learning	1357	80	95	6	250	15	180	1882	100
Simulated (standardized) patients	992	58	194	11	513	30	183	1882	100
Simulation models for clinical procedures	991	58	176	10	529	31	186	1882	100
Live models for clinical procedures	1127	66	170	10	401	24	184	1882	100
OSCE	807	48	194	12	681	40	200	1882	100
Portfolios	574	34	198	12	917	54	193	1882	100
Log books	800	47	521	31	387	23	174	1882	100
Longitudinal record of achievement	681	40	221	13	786	47	194	1882	100
Computer examinations	765	45	413	25	505	30	199	1882	100
Essay examinations	744	44	196	12	752	44	190	1882	100
Short answer questions	849	51	163	10	669	40	201	1882	100
National board shelf-examinations	895	53	265	16	522	31	200	1882	100
National boards part I	1009	62	297	18	320	20	256	1882	100
National boards part II	1043	71	400	27	30	2	409	1882	100
Digitalization of physical examination	571	40	139	10	722	50	450	1882	100
Post-rotation examinations	760	52	544	37	167	11	411	1882	100
Student Evaluation of rotations	1140	77	246	17	87	6	409	1882	100
Attending evaluation of student at end of rotation	1205	82	216	15	55	4	406	1882	100

**Table A-47**  
**Senior osteopathic medical students, 2003-04: abilities to diagnose sexual problems, 2003-04**

<i>Q48. I was well prepared in my training to diagnose structural problems.</i>		
	<b>N</b>	<b>%</b>
Strongly agree	473	26
Agree	1140	63
Disagree	163	9
Strongly disagree	29	2
No response	77	
<b>Total</b>	<b>1882</b>	<b>100</b>

**Table A-48**  
**Senior osteopathic medical students, 2003-04: well prepared to treat structural problems.**

<i>Q49. I was well prepared in my training to treat structural problems.</i>		
	<b>N</b>	<b>%</b>
Agree	1496	83
Disagree	308	17
No response	78	
<b>Total</b>	<b>1882</b>	<b>100</b>

<b>Table A-49</b> <b>Senior osteopathic medical students, 2003-04: well-prepared to document findings of structural examination</b>		
<i>Q5. I was well prepared in my training to document findings in a structural examination.</i>		
	<b>N</b>	<b>%</b>
Agree	1495	83
Disagree	306	17
No response	81	
<b>Total</b>	<b>1882</b>	<b>100</b>

<b>Table A-50</b> <b>Senior osteopathic medical students, 2003-04: sites to practice OPP</b>							
<i>Q51. I had the opportunity to practice OPP in:</i>							
	<b>Agree</b>		<b>Disagree</b>		<b>No response</b>	<b>Total</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>N</b>	<b>%</b>
First 2 years in medical school	1745	97	62	3	75	1882	100
In-hospital rotations	636	35	1166	65	80	1882	100
Ambulatory non-primary care rotations	635	35	1167	65	80	1882	100
Ambulatory primary care rotations	1213	67	589	33	80	1882	100

**Table A-51**  
**Senior osteopathic medical students, 2003-04: when during medical education they had physician role models**

Q52. *I had osteopathic physician role models in:*

	Agree		Disagree		No response	Total	
	N	%	N	%	N	N	%
First 2 years in medical school	1639	91	167	9	76	1882	100
Required in-hospital rotations	1036	57	769	43	77	1882	100
Required ambulatory non-primary care rotations	965	54	835	46	82	1882	100
Required ambulatory primary care rotations	1334	74	470	26	78	1882	100
Selectives/electives	1073	60	729	40	80	1882	100

**Table A-52**  
**Senior osteopathic medical students, 2003-04: percentage of training by allopathic physicians**

Q53. *What percentage of your training was delivered by allopathic physicians.*

	Less than 10%		10-25%		26-50%		51-75%		more than 75%		No response	Total	
	N	%	N	%	N	%	N	%	N	%	N	N	%
MD: % training in first two years	871	48	520	29	241	13	92	5	73	4	85	1882	100
MD: % training in required in-hosp rotations	236	13	335	19	463	26	418	23	350	19	80	1882	100
MD: % training in ambulatory non-primary care rotations	296	16	320	18	472	26	393	22	315	18	86	1882	100
MD: % training in ambulatory primary care rotations	434	24	346	19	450	25	329	18	245	14	78	1882	100
MD: % training in selectives/electives	183	10	271	15	417	23	419	23	508	28	84	1882	100

**Table A-53**

**Senior osteopathic medical students, 2003-04: perceptions of distinguishing characteristics of osteopathic and allopathic physicians**

Q54. As you look back on your training to date, how well do you agree or disagree with the following statements regarding proposed distinguishing characteristics between osteopathic and allopathic physicians?

	Agree		Disagree		No response	Total	
	N	%	N	%	N	N	%
DO/MD distinction in rapport	1170	65	630	35	82	1882	100
DO/MD distinction in Tx approach	1060	59	742	41	80	1882	100
DO/MD distinction in holistic approach	1075	60	721	40	86	1882	100
DO>MD in better teaching	545	30	1248	70	89	1882	100
DO>MD in higher standards of performance	455	25	1340	75	87	1882	100
DO>MD in <i>more rigorous</i> workup	428	24	1368	76	86	1882	100

**Table A-54**

**Senior osteopathic medical students, 2003-04: perceptions of aspects of the doctor-patient relationship**

*Question 55: Below is a set of questions that address aspects of Doctor-Patient Interactions in a clinical encounter. Please indicate your agreement or disagreement with each statement.*

	Agree		Neutral		Disagree		No response	Total	
	N	%	N	%	N	%	N	N	%
Discuss preventive measures	1761	97	43	2	5	0	73	1882	100
Discuss general/unrelated health measures	1468	81	289	16	50	3	75	1882	100
Discuss family/social issues unrelated to health	1424	79	317	18	67	4	74	1882	100
Discuss health issues in relation to family life	1661	92	133	7	15	1	73	1882	100
Discuss health issues related to work	1693	94	104	6	10	1	75	1882	100
Discuss patient's emotional state	1685	93	106	6	17	1	74	1882	100
Discuss your personal experiences not professional experience with patients	939	52	539	30	329	18	75	1882	100
Discuss how patients can improve their own condition	1724	95	72	4	10	1	76	1882	100
Discuss body's self-healing potential	1522	84	236	13	48	3	76	1882	100
Discuss MSK causes or consequences related to patient's condition	1600	89	176	10	30	2	76	1882	100
Discuss literature or the scientific basis of Tx	1502	83	249	14	51	3	80	1882	100
Discuss alternative modes of therapy the patient may or could use	1576	87	203	11	26	1	77	1882	100
Discuss patient's opinion on cause of problem	1646	91	142	8	17	1	77	1882	100
Discuss patient's opinion about treatment	1681	93	106	6	17	1	78	1882	100
Examine organ systems unrelated to the chief complaint	1489	83	258	14	55	3	80	1882	100
Delay prescribing medications, including OTC, until trying non-Rx measures	1021	57	475	26	305	17	81	1882	100
Explain causes of the problem or reasoning behind treatment	1716	95	71	4	15	1	80	1882	100
Use patient's first name in clinical encounter	1149	64	467	26	184	10	82	1882	100
Use your first name during clinical encounter	802	45	495	28	500	28	85	1882	100
Appropriately touching patient during clinical encounter other than OPP	1599	89	181	10	20	1	82	1882	100
Anything else?	1662	92	115	6	26	1	79	1882	100
Do you have questions?	1736	96	61	3	6	0	79	1882	100
ROS including unrelated areas	1548	86	227	13	28	2	79	1882	100
Always include review of MSK system	1096	61	511	28	191	11	84	1882	100
Recommend her/nutritional/physical or other non-Rx, including OMT	1016	57	577	32	205	11	84	1882	100

<b>Table A-55</b>		
<b>Senior osteopathic medical students, 2003-04: preferred Board certification</b>		
<i>Q56. If you had the opportunity to sit for board certification in your chosen specialty, would you choose osteopathic boards (AOA-recognized), allopathic boards (ABMS-recognized), or both?</i>		
	<b>N</b>	<b>%</b>
AOA Boards examinations	522	29
ABMS Boards examinations	273	15
Both Boards examinations	1011	56
Other	5	0
Do not plan to sit for Board certification	1	0
No response	70	
<b>Total</b>	<b>1882</b>	<b>100</b>

<b>Table A-56</b>		
<b>Senior osteopathic medical students, 2003-04: appeal of dual-accredited and ACGME-accredited residency programs</b>		
<i>Question 58: Are dual accredited (AOA/ACGME) residency programs in your field more appealing to you than are residency programs accredited by ACGME only?</i>		
	<b>N</b>	<b>%</b>
Yes	1312	72
No	507	28
No response	63	
<b>Total</b>	<b>1882</b>	<b>100</b>

**Table A-57**  
**Senior osteopathic medical students, 2003-04: appeal of dual-accredited and AOA-accredited residency programs**

*Question 59: Are dual accredited (AOA/ACGME) residency programs more appealing to you than are residency programs accredited by AOA only?*

	<b>N</b>	<b>%</b>
Yes	1332	73
No	483	27
No response	67	
<b>Total</b>	<b>1882</b>	<b>100</b>

**Table A-58**  
**Senior osteopathic medical students, 2003-04: reasons dual-accredited residencies were appealing**

*Question 60: Dual accredited programs (AOA/ACGME) appeal to me because: (check all that apply)*

	No		Yes		Total	
	N	%	N	%	N	%
They are not appealing to me	1578	86	265	14	1843	100
They would be located in larger institutions	1360	74	483	26	1843	100
They would be located in more diverse geographic location	1377	75	466	25	1843	100
They would offer more specialties	1213	66	630	34	1843	100
They would allow board certification by ABMS-recognized boards	1055	57	788	43	1843	100
The would offer better educational opportunities	1126	61	717	39	1843	100
Other	1705	93	138	7	1843	100

**Table A-59**  
**Senior osteopathic medical students, 2003-04: expect to maintain professional memberships**

*Question 61: I expect to obtain/maintain professional membership in the following: (check all that apply)*

	No		Yes		No response	Total	
	N	%	N	%	N	N	%
AOA membership	269	15	1574	85	39	1882	100
AMA membership	879	48	964	52	39	1882	100
State and local DO associations membership	775	42	1068	58	39	1882	100
State and local MD associations membership	1325	72	518	28	39	1882	100
Osteopathic specialty society	1007	55	836	45	39	1882	100
Allopathic specialty society	1116	61	727	39	39	1882	100
Other membership	1801	98	42	2	39	1882	100

## Appendix B

Data analyzed by Students' Interest in Primary Care Specialties or Non-primary Care Specialties

**Data from medical student survey jointly sponsored by the American Association of Colleges of Osteopathic Medicine and the American Osteopathic Association, 2003**

Tables presenting data on statistically significant differences between the groups in

- general demographic characteristics
- career intentions and expectations
- assessments of medical education experiences and outcomes

*Notes on the data presentation:*

1. Two abbreviations are used throughout Appendix B: PCS = primary care specialties; NPCS = non-primary care specialties.
2. The total number of respondents for each question or sub-question varied because not all students answered all questions.
3. A table may give the text of the survey question used to collect the table data; the question will be identified by its number on the questionnaire (e.g., Q5, Q23).
3. All differences shown between PCS groups and NPCS groups are statistically significant unless indicated otherwise. The standard for statistical significance was  $p < 0.001$ ; other values may be shown for comparison or additional information.

**Table B-1**  
**Demographic characteristics of senior medical students**  
**choosing a PCS or NPCS, 2003**  
**Characteristics**

**Gender**

	PCS		NPCS	
	%	N	%	N
Men	48	276	61	628
Women	52	300	39	402

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

*Comment:* A slight majority (52%) of the students planning to enter a PCS were women, while a larger majority (61%) planning to enter a NPCS were men.

<b>Marital status</b>				
	PCS		NPCS	
	%	N	%	N
Married	55	314	39	395
Not married	45	259	61	612

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

*Comment:* A larger percentage (55%) of the students planning to go into a PCS were married than not married, while the proportions were reversed for a NPCS choice (61% were not married).

<b>Number of dependents</b>														
	1		2		3		4		5		6		7	
	%	N	%	N	%	N	%	N	%	N	%	N	%	N
PCS*	44	254	36	205	10	58	7	41	1	6	1	8	0	1
NPCS†	59	597	26	265	8	77	5	47	2	21	1	6	0	3

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

\*1% of unmarried students with dependents planned to enter a PCS.

† 2% of unmarried students with dependents planned to enter a NPCS.

*Comment:* Although 44% of the students planning to go into a PCS had only one dependent, 59% of the students planning to go into a NPCS had only one (close to the 61% who were not married). Only 2% of the unmarried NPCS students had dependents, as did 1% of the unmarried PCS students. Few of the unmarried students had dependents.

**Size of home town or area**

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**Q5. Size of Home Town or Area:** Select what best describes your home town area from the following list:

Size	PCS		NPCS	
	%	N	%	N
>1,000,000	17	98	20	208
500,000 - 1,000,000	10	56	12	122
100,000-500,000	16	90	19	198
50,000 - 100,000	14	80	14	141
10,000 - 50,000	21	121	22	231
2,500 - 10,000	14	81	9	92
< 2,500	9	53	3	35
Total	100	579	100	1027

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

*Comment:* Of the students planning to enter a PCS, 58% came from cities with populations of less than 100,000, compared to 49% of the NPCS group. The students choosing a PCS seemed on the whole to have come from smaller cities.

### Financial independence

**Q9. Financial Independence:** Do you consider yourself financially independent *from your parents*?

	PCS		NPCS	
	%	N	%	N
Yes	91	511	83	840
No	9	52	17	168

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

*Comment:* More of the PCS students than the NPCS students (91% to 88%) were financially independent.

**Table B-2**  
**Senior students in private and public osteopathic medical schools,**  
**2003, by type of specialty choice**

	PCS		NPCS		Total	
	%	N	%	N	%	N
Private	38	442	62	722	100	1164
Public	31	139	69	315	100	454

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

*Comment:* In the private schools, 62% of the students chose an NPCS, compared to 69% of the students in the public schools.

**Table B-3**  
**Senior medical students' choice of a PCS or NPCS at each of 19 osteopathic**  
**medical schools, 2003**

School *	PCS		NPCS	
	%	N	%	N
PCOM	37	22	63	38
CCOM	44	55	56	70
UHSCOM	38	66	62	108
OUCOM	30	24	70	56
DMU	57	28	43	21
KCOM	39	42	61	67
MSUCOM	19	16	81	69
UNTHSC	31	31	69	69
OSUCOM	47	31	53	35
WVSOM	43	27	57	36
UMDNJ	17	10	83	50
NYCOM	18	11	82	49
WCOMP	50	17	50	17
NSUCOM	33	47	67	96
UNECOM	42	40	58	55
LECOM	26	38	74	109
AZCOM	36	36	64	64
TUCOM	61	17	39	11
PCSOM	58	23	43	17
	<b>Aver = 36%</b>	<b>Total = 581</b>	<b>Aver = 64%</b>	<b>Total = 1037</b>

All values significant by  $\chi^2$  analysis,  $p < 0.001$ .

\* Full names of the schools are: COMP = Western University College of Health Sciences College of Osteopathic Medicine of the Pacific; DMUCOM = Des Moines University College of Osteopathic Medicine; KCCOM = Kansas City University of Medicine and Bioscience College of Osteopathic Medicine; KCOM = A.T. Still University's Kirksville College of Osteopathic Medicine; LECOM = Lake Erie College of Osteopathic Medicine; MSUCOM = Michigan State University College of Osteopathic Medicine; NSUCOM = Nova Southeastern University College of Osteopathic Medicine; NYCOM = New York College of Osteopathic Medicine; OUCOM = Ohio University College of Osteopathic Medicine; OSUCOM = Oklahoma State University Center for Health Sciences – College of Osteopathic Medicine; PCOM = Philadelphia College of Osteopathic Medicine; PCSOM = Pikeville College School of Osteopathic Medicine; TUCOM = Touro University College of Osteopathic Medicine; UMDNJ = University of Medicine and Dentistry of New Jersey-School of Osteopathic Medicine; UNECOM = University of New England College of Osteopathic Medicine; TCOM = University of North Texas Health Science Center at Fort Worth/Texas College of Osteopathic Medicine; WVSOM = West Virginia School of Osteopathic Medicine

*Comment:* The schools had from 17% to 61% of their students choosing a PCS.

**Table B-4**  
**Senior osteopathic medical students' ratings of influential factors affecting specialty choice, 2003**

*Q23 Please indicate the importance of each of the following factors affecting your specialty choice decision.*

<b>Intellectual content of specialty</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	45	259	57	590
Strong Influence in choosing specialty	32	187	29	294
Moderate Influence in choosing specialty	18	105	11	109
Minor influence in choosing specialty	3	17	2	25
No influence/NA	2	10	1	13
Total	100	578	100	1031

<b>Dealing with people</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	65	374	39	405
Strong Influence in choosing specialty	23	134	27	274
Moderate Influence in choosing specialty	8	44	18	184
Minor influence in choosing specialty	3	16	11	114
No influence/NA	2	11	5	54
Total	100	579	100	1031

<b>Prestige and income</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	3	16	11	114
Strong Influence in choosing specialty	7	40	21	220
Moderate Influence in choosing specialty	28	160	33	339
Minor influence in choosing specialty	36	207	24	246
No influence/NA	27	154	11	112
Total	100	577	100	1031

<b>Lifestyle</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	29	166	41	426
Strong Influence in choosing specialty	30	172	25	262
Moderate Influence in choosing specialty	28	162	18	186
Minor influence in choosing specialty	10	58	9	95
No influence/NA	3	20	6	61

Total	100	578	100	1030
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<b>Technical skills</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	8	47	34	347
Strong Influence in choosing specialty	17	100	27	282
Moderate Influence in choosing specialty	38	222	18	181
Minor influence in choosing specialty	23	133	13	133
No influence/NA	13	75	8	83
Total	100	577	100	1026

<b>Role models</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	30	172	26	265
Strong Influence in choosing specialty	30	172	29	303
Moderate Influence in choosing specialty	25	143	23	234
Minor influence in choosing specialty	10	57	12	123
No influence/NA	6	35	10	103
Total	100	579	100	1028

<b>Possess the skills now</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	28	162	37	382
Strong Influence in choosing specialty	39	224	37	384
Moderate Influence in choosing specialty	23	131	18	183
Minor influence in choosing specialty	7	41	5	53
No influence/NA	3	20	3	28
Total	100	578	100	1030

<b>Academic environment</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	14	78	24	246
Strong Influence in choosing specialty	26	148	26	272
Moderate Influence in choosing specialty	31	177	28	291
Minor influence in choosing specialty	16	95	12	125
No influence/NA	14	78	9	97
Total	100	576	100	1031

<b>Research</b>		
	<b>PCS</b>	<b>NPCS</b>

	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	7	39	14	149
Strong Influence in choosing specialty	11	64	17	171
Moderate Influence in choosing specialty	16	91	23	240
Minor influence in choosing specialty	28	161	22	227
No influence/NA	38	222	24	247
Total	100	577	100	1034

*Comments:* More of the students in the NPCS group than the PCS group thought that academic and lifestyle variables were more influential to them. More students in the PCS group thought that “people variables” were more influential to them than did the students in the NPCS group.

**Table B-5**  
**Senior medical students' plans immediately after internship, 2003, by PCS or NPCS choice**

*Q20a. Immediate Post-Internship Residency Plans: Select the one item that best describes your plans immediately after internship, (or upon graduation if not planning an osteopathic internship):*

<i>Intermediate plans</i>				
	PCS		NPCS	
	%	N	%	N
Pursue AOA-accredited residency	27	157	27	280
Pursue ACGME-accredited residency	45	260	54	564
Pursue AOA/ACGME dual-approved residency	14	82	7	74
Enter governmental service	13	75	9	93
Other	0	2	0	2
Undecided or indefinite post-graduate/internship plan	1	5	2	24
Total	100	581	100	1037

*Comment:* The major differences between the two groups were in three categories. Overall, 54% of the NPCS group wished to pursue ACGME-accredited residencies, compared to 45% of the PCS group.

*Q56. If you had the opportunity to sit for board certification in your chosen specialty would you choose osteopathic boards (AOA-recognized), allopathic boards (ABMS-recognized) or both?*

<b>Chapter 2 Plans for Board certification</b>				
	PCS		NPCS	
	%	N	%	N
AOA-recognized Board examinations	44	250	21	212
ABMS-recognized Board examinations	11	60	19	191
Both Board examinations	45	257	60	610
Other	0	0	0	3
Do not plan to sit for board certification	0	0	0	1
Total	100	567	100	1017

*Comments:* In the NPCS group, 60% of the students wanted to take both Board examinations, compared to 45% of the PCS group. On the other hand, 44% of the PCS students planned to sit for the AOA Board examinations, compared to 21% of the NPCS group. The PCS group included 11% who wished to take the ABMS examination, compared to 19% of the NPCS group.

Q59. Are dual-accredited (AOA—ACGME) residency programs more appealing to you than are residency programs accredited by AOA only?

	PCS		NPCS	
	%	N	%	N
Yes	68	383	76	773
No	32	184	24	244
Total	100	567	100	1017

*Comment:* A higher percentage of the NPCS group (76%) than the PCS group (68%) preferred dual-accredited programs to those accredited by the AOA only.

**Table B-6**  
**Senior osteopathic medical students' plans for professional memberships, 2003, by**  
**PCS or NPCS choice**

Q61. *I expect to obtain/maintain professional membership in the following: (check all that apply).*

**Item/membership**

**a. AOA membership**

	PCS		NPCS	
	%	N	%	N
Yes	89	514	83	853
No	11	63	17	178

P<.001

**b. State and local DO associations' membership**

	PCS		NPCS	
	%	N	%	N
Yes	64	369	55	571
No	36	208	45	460

P<.001

**c. State and local MD associations' membership**

	PCS		NPCS	
	%	N	%	N
Yes	25	142	31	320
No	75	435	69	711

P<.001

**d. Osteopathic specialty society membership**

	PCS		NPCS	
	%	N	%	N
Yes	39	225	46	474
No	61	352	54	557

P<.001

**e. Allopathic specialty society**

	PCS		NPCS	
	%	N	%	N
Yes	25	142	48	500
No	75	435	52	531

P<.001

*Comments:* A larger percentage of the PCS group planned to maintain AOA membership and state and local DO membership than did the NPCS group. A larger percentage of the NPCS group than the PCS group planned to maintain memberships in the state and local MD associations, the allopathic specialty society, and the osteopathic specialty society.

**Table B-7  
Long range plans of senior osteopathic medical students choosing aPCS or a  
NPCS, 2003**

Q17. *Expected Income. What annual income do you expect to earn (after expenses, before taxes) during:*

<b>Chapter 3 Time interval</b>	<b>Specialty choice</b>	<b>N</b>	<b>Aver. expected income</b>
a. First year after internship and residency	PCS	539	\$ 99,188
	NPCS	951	\$ 138,659
b. Fifth year after internship and residency	PCS	513	\$ 134,261
	NPCS	917	\$ 201,073
c. Tenth year after internship and residency	PCS	511	\$ 164,802
	NPCS	912	\$ 251,980

*Comments:* The NPCS group expected to make more money on average than the PCS group did: \$38,000 more in the first year, \$65,000 more in the fifth year, and \$90,000 more in the tenth year.

Q21. *Long-Range Plans: Select one item from the list below which best describes your intended activity five years after internship and residency training.*

<b>Long-range plans</b>	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
	Enter government service	9	53	5
Practice in an HMO	1	7	1	8
Self-employed as DO without partner	7	40	4	44
Self-Employed as DO with partner	22	128	10	102
Employed in group practice	37	213	51	527
Employed in other type of private practice (salary, commission, percentile)	4	21	4	44
Other professional activity (teaching, research, administration, fellowship)	1	5	7	68
Undecided or indefinite	20	114	19	194

*Comments:* A higher percentage of the students in the PCS group than in the NPCS group planned to be self-employed with a partner(s) (22% to 10%), while half of the students in the NPCS group (51%) planned to be employed in group practice, compared to 37% in the PCS group.

Q25. Which of the following best describes the kind of area where you plan to be employed or in practice after completion of internship or residency?

Size of area for practice	PCS		NPCS	
	%	N	%	N
	Major metropolitan area (1,000,000 or more)	11	65	20
Metropolitan area (500,000 - 1,000,000)	12	70	21	222
City (100,000 - 500,000)	14	83	21	219
City (50,000 - 100,000)	13	74	15	155
City or town (10,000 - 50,000)	21	122	10	100
City or town (2,500 - 10,000)	12	72	1	15
Area under 2500	4	22	0	5
Other, specified	1	3	0	2
Undecided or indefinite	12	70	10	107
Total	100	581	100	1037

*Comment:* The NPCS students on the whole planned to live in larger cities: 50% of the PCS group planned to live in cities with populations of 100,000 or less, as compared to 27% of the NPCS group.

**Table B-8**  
**Senior osteopathic medical students' assessment of medical training, 2003, by PCS or NPCS choices**

*Q26. Instruction. Please evaluate the amount of instruction provided in each of the areas listed below.*

**Item/area**

**b. Behavioral science**

	PCS		NPCS	
	%	N	%	N
Appropriate	78	446	70	723
Inadequate	18	106	25	256
Excessive	4	23	5	53

P<.001

**c. Biostatistics**

	PCS		NPCS	
	%	N	%	N
Appropriate	54	309	44	450
Inadequate	42	244	54	553
Excessive	4	22	3	30

P<.001

**d. Care of ambulatory patients**

	PCS		NPCS	
	%	N	%	N
Appropriate	90	517	83	862
Inadequate	7	43	9	98
Excessive	3	15	7	73

P<.001

**cc. OMM-NMSK**

	PCS		NPCS	
	%	N	%	N
Appropriate	82	468	76	780
Inadequate	11	62	12	120
Excessive	8	44	13	130

P<.001

**jj. Primary care**

	PCS		NPCS	
	%	N	%	N
Appropriate	88	504	78	805
Inadequate	5	30	5	49

Excessive	7	38	17	177
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P<.001

*Comment:* A higher percentage of the PCS students found the instruction to be appropriate than the did the NPCS students.

Q29. Please indicate how satisfied you are with each of these aspects of your experience as a medical student.

<b>Item/area</b>				
<b>b. Doing work involving science and research</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Satisfied	13	77	15	155
Satisfied	32	182	34	347
Neither Satisfied nor dissatisfied	47	270	37	378
Dissatisfied	6	33	11	115
Very Dissatisfied	2	12	3	28

P<.001

*Comment:* Only one item of 15 showed differences with statistical significance, with a complicated interaction. The NPCS group’s level of satisfaction (‘very satisfied’ + ‘satisfied’) was 4 percentage points higher than the PCS group’s satisfaction, yet the NPCS group also had a dissatisfaction rating (‘dissatisfied’ + ‘very dissatisfied’) that was 6 percentage points higher than the PCS group’s dissatisfaction. Further, the PCS group had 10% percentage points more of students who did not care! (That is, they were ‘neither satisfied nor dissatisfied.’)

Q46. If you were to describe the BEST clinical rotation you experienced during your medical education, which of the following terms or phrases would you use?

<b>Item/rotation</b>				
<b>e. Osteopathic orientation</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	14	80	11	110
Very Important	27	154	22	228
Important	29	163	27	277
Somewhat Helpful	15	87	18	184

Not a Factor	15	83	21	217
P<.001				

<b>o. Participate in ancillary activities such as journal club</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	11	60	16	165
Very Important	25	140	27	273
Important	25	139	25	251
Somewhat Helpful	21	118	18	179
Not a Factor	19	110	14	147

P<.001

<b>r. Attending was influential on hospital selection committees</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	11	62	13	131
Very Important	17	97	21	213
Important	15	83	17	170
Somewhat Helpful	12	68	15	148
Not a Factor	45	257	35	352

P<.001

<b>Q34. Please estimate the percentage of time you devoted to the following activities during year 3.</b>			
<b>Activity</b>	<b>Specialty choice</b>	<b>No. students</b>	<b>% of time spent</b>
a. Inpatient care	PCS	572	49
	NPCS	1015	54
b. Outpatient care	PCS	573	43
	NPCS	1015	37

P<.001

*Comments:* The PCS students' estimates of the time spent on outpatient care was higher than the NPCS students' estimates; therefore, the NPCS students' estimates of the percentage of their time spent on inpatient care was higher than that of the PCS group.

Q35. Please estimate the percentage of time you devoted to the following activities during year 4.			
Activity	Specialty choice	No. students	% of time spent
a. Inpatient care	PCS	570	49
	NPCS	1008	53
b. Outpatient care	PCS	570	47
	NPCS	1008	38

*Comments:* The PCS group's estimates of the percentage of their time spent on outpatient care were higher than those of the NPCS group, whereas the NPCS group estimated a higher percentage for inpatient care.

Chapter 4 Q38. In the past two years, have you:					
Chapter 5					
Chapter 6 Item/area					
		PCS		NPCS	
		%	N	%	N
c. Participated in research study	Yes	22	126	34	347
d. Published in a refereed journal	Yes	6	37	12	120

P<.001

*Comment:* The NPCS group participated more than the PCS group, but neither did much.

**Table B-9**  
**Senior osteopathic medical students' confidence in performing clinical exams, 2003, by PCS or NPCS choice**

*Q43. Using the following scale, please indicate how confident you are in your ability to perform the following examinations:*

**Item/examination**

**b. Well-baby examination**

	PCS		NPCS	
	%	N	%	N
Very Confident	35	202	28	285
Confident	50	286	49	500
Somewhat Apprehensive	13	75	20	209
Very Apprehensive	2	10	3	28
Total	100	573	100	1022

*Comments:* Overall, 85% of the PCS group was confident or very confident as opposed to 77% of the NPCS group.

**s. Workup of generalized muscle weakness**

	PCS		NPCS	
	%	N	%	N
Very Confident	14	78	22	231
Confident	57	325	54	551
Somewhat Apprehensive	28	163	22	229
Very Apprehensive	1	6	2	18

*Q45. Using the following scale, please indicate how confident you are in interpreting the following laboratory or diagnostic tests:*

**Item/test**

**a. Electrocardiogram**

	PCS		NPCS	
	%	N	%	N
Very Confident	16	92	21	215
Confident	52	298	54	557
Somewhat Apprehensive	30	174	22	229
Very Apprehensive	2	11	3	27

**c. Cardiac stress test**

	PCS	NPCS
--	-----	------

	%	N	%	N
Very Confident	12	71	19	194
Confident	47	273	49	507
Somewhat Apprehensive	36	207	27	281
Very Apprehensive	4	24	4	46

<b>c. Fetal monitoring</b>				
	<b>PCS</b>		<b>NPCS</b>	
	%	N	%	N
Very Confident	19	109	26	263
Confident	49	281	49	500
Somewhat Apprehensive	30	170	23	234
Very Apprehensive	3	15	3	32

<b>k. Cervical/urethral swab</b>				
	<b>PCS</b>		<b>NPCS</b>	
	%	N	%	N
Very Confident	33	190	38	388
Confident	56	319	47	484
Somewhat Apprehensive	11	64	13	137
Very Apprehensive	0	1	2	19

<b>m. Pap test</b>				
	<b>PCS</b>		<b>NPCS</b>	
	%	N	%	N
Very Confident	40	230	40	410
Confident	50	286	46	473
Somewhat Apprehensive	10	56	12	128
Very Apprehensive	0	2	2	17

<b>o. Mammogram</b>				
	<b>PCS</b>		<b>NPCS</b>	
	%	N	%	N
Very Confident	14	78	17	179
Confident	38	219	39	398
Somewhat Apprehensive	41	237	33	337
Very Apprehensive	7	40	11	115

*Comments:* The NPCS group had a higher percentage of students confident in interpreting the electrocardiogram, cardiac stress test, fetal monitoring, and the mammogram, while the PCS

group, while PCS group had a higher percentage confident in interpreting the cervical/urethral swab and the Pap test.

**Table B-10**  
**Senior osteopathic medical students' estimates of amount of training in selectives/electives rotations performed by allopathic physicians**

Q53. *What percentage of your training was delivered by allopathic physicians?*

**Chapter 7 During your selectives/electives?**

	PCS		NPCS	
Less than 10%	10	54	10	100
10-25%	14	81	15	153
26-50%	29	162	20	201
51-75%	23	128	25	248
more than 75%	25	138	30	303
Total	100	563	100	1005

*Comment:* Slightly more than half (55%) of the NPCS students, had 50% or more of their training by MDs in selective/electives, compared to 45% of the students in the PCS group.

**Table B-11****Senior medical students' satisfaction with choice of osteopathic medical education and osteopathic medicine as a career**

*Q40. If given the opportunity to begin your medical education again, would you prefer to enroll in:*

	PCS		NPCS	
	%	N	%	N
Same college of osteopathic medicine	73	412	64	639
Another college of osteopathic medicine	9	51	7	66
An allopathic medical school	12	66	24	241
Would not go into medicine	7	39	6	57
Total	100	568	100	1003

*Comment:* Asked what they would do if they could start again, 73% of the PCS group replied they would stay in the same program, in contrast to the 64% of the NPCS group who would do so. However, 24% of the NPCS group would enroll in an allopathic medical school, compared to 12% of the PCS group.

*Q39. At this time, how satisfied are you that you selected osteopathic medicine as a career?*

	PCS		NPCS	
	%	N	%	N
Very Satisfied	50	287	39	396
Satisfied	37	213	40	402
Mixed Feelings	11	61	20	202
Dissatisfied	1	7	1	12
Very Dissatisfied	1	3	0	4

*Comment:* The PCS group had a higher percentage of students satisfied with osteopathic medicine as a career than the NPCS group had.

## Appendix C

Data on Osteopathic Medical Students:

Analysis by Choice of Specialty  
(Primary Care vs. Non-Primary Care)

## Appendix C

Appendix C is based on data from the 2003-04 survey of senior students in U.S. osteopathic medical schools. The survey was funded jointly by the American Association of Colleges of Osteopathic Medicine and the American Osteopathic Association.

The data were analyzed by the students' intention to pursue either a primary care or non-primary care specialty, with the results presented here in 11 tables. The tables cover

- **general demographic data**
- **general background data**
- **areas that the analysis indicated had statistically significant differences between the two groups.**

### *Notes on the data presentation:*

- e. Two abbreviations are used throughout Appendix C: PCS = primary care specialty; NPCS = non-primary care specialty.
- f. The total number of respondents for each question or sub-question varied because not all students answered all questions.
- g. The survey question used to collect the table data may be given in the table; the question will be identified by its number on the survey questionnaire (e.g., Q5, Q23).
- h. All differences shown between PCS groups and NPCS groups are statistically significant unless indicated otherwise. The standard for statistical significance was set at  $P < 0.001$ ; other values may be shown for comparison or additional information.

<b>Table C-1 Senior osteopathic medical students, 2003-04: demographic characteristics, by PCS or NPCS choice</b>				
<b>Characteristics</b>				
<b>Gender</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Men	48	276	61	628
Women	52	300	39	402

p<0.001.

*Comment:* A slight majority (52%) of the students planning to enter a PCS were women, while a larger majority (61%) planning to enter a NPCS were men.

<b>Marital status</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Married	55	314	39	395
Not married	45	259	61	612

p<0.001.

*Comment:* A larger percentage (55%) of the students planning to go into a PCS were married than not married, while the proportions were reversed for a NPCS choice (61% were not married).

<b>Number of dependents</b>														
	<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>		<b>5</b>		<b>6</b>		<b>7</b>	
	<b>%</b>	<b>N</b>												
PCS <sup>a</sup>	44	254	36	205	10	58	7	41	1	6	1	8	0	1
NPCS <sup>b</sup>	59	597	26	265	8	77	5	47	2	21	1	6	0	3

<sup>a</sup>1% of unmarried students with dependents planned to enter a PCS.

<sup>b</sup> 2% of unmarried students with dependents planned to enter a NPCS.

p<0.001.

*Comment:* Although 44% of the students planning to go into a PCS had only one dependent, 59% of the students planning to go into a NPCS had only one (close to the 61% who were not married). Only 2% of the unmarried NPCS students had dependents, as did 1% of the unmarried PCS students. Few of the unmarried students had dependents.

<b>Size of home town or area</b>				
Q5. <i>Size of Home Town or Area: Select what best describes your home town area from the following list:</i>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
>1,000,000	17	98	20	208
500,000 - 1,000,000	10	56	12	122
100,000-500,000	16	90	19	198
50,000 - 100,000	14	80	14	141
10,000 - 50,000	21	121	22	231
2,500 - 10,000	14	81	9	92
< 2,500	9	53	3	35
Total	100	579	100	1027

p<0.001.

*Comment:* Of the students planning to enter a PCS, 58% came from cities with populations of less than 100,000, compared to 49% of the NPCS group. The students choosing a PCS seemed on the whole to have come from smaller cities.

<b>Financial independence</b>				
Q9. <i>Financial Independence: Do you consider yourself financially independent from your parents?</i>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Yes	91	511	83	840
No	9	52	17	168

p<0.001.

*Comment:* More of the PCS students than the NPCS students (91% to 88%) were financially independent.

<b>Table C-2</b>						
<b>Senior osteopathic students, 2003-04: in private and public, by PCS or NPCS choice</b>						
	<b>PCS</b>		<b>NPCS</b>		<b>Total</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Private	38	442	62	722	100	1164
Public	31	139	69	315	100	454

p<0.001.

*Comment:* In the private schools, 62% of the students chose an NPCS, compared to 69% of the students in the public schools.

**Table C-3**  
**Senior osteopathic medical students at 19 schools, 2003-04: by choices of a PCS or NPCS**

School code <sup>a</sup>	PCS		NPCS	
	%	N	%	N
PCOM	37	22	63	38
CCOM	44	55	56	70
UHSCOM	38	66	62	108
OUCOM	30	24	70	56
DMU	57	28	43	21
KCOM	39	42	61	67
MSUCOM	19	16	81	69
UNTHSC	31	31	69	69
OSUCOM	47	31	53	35
WVSOM	43	27	57	36
UMDNJ	17	10	83	50
NYCOM	18	11	82	49
WCOMP	50	17	50	17
NSUCOM	33	47	67	96
UNECOM	42	40	58	55
LECOM	26	38	74	109
AZCOM	36	36	64	64
TUCOM	61	17	39	11
PCSOM	58	23	43	17
	<b>Aver = 36%</b>	<b>Total = 581</b>	<b>Aver = 64%</b>	<b>Total = 1037</b>

<sup>a</sup> Full names of the schools are: COMP = Western University College of Health Sciences College of Osteopathic Medicine of the Pacific; DMUCOM = Des Moines University College of Osteopathic Medicine; KCCOM = Kansas City University of Medicine and Bioscience College of Osteopathic Medicine; KCOM = A.T. Still University's Kirksville College of Osteopathic Medicine; LECOM = Lake Erie College of Osteopathic Medicine; MSUCOM = Michigan State University College of Osteopathic Medicine; NSUCOM = Nova Southeastern University College of Osteopathic Medicine; NYCOM = New York College of Osteopathic Medicine; OUCOM = Ohio University College of Osteopathic Medicine; OSUCOM = Oklahoma State University Center for Health Sciences – College of Osteopathic Medicine; PCOM = Philadelphia College of Osteopathic Medicine; PCSOM = Pikeville College School of Osteopathic Medicine; TUCOM = Touro University College of Osteopathic Medicine; UMDNJ = University of Medicine and Dentistry of New Jersey-School of Osteopathic Medicine; UNECOM = University of New England College of Osteopathic Medicine; TCOM = University of North Texas Health Science Center at Fort Worth/Texas College of Osteopathic Medicine; WVSOM = West Virginia School of Osteopathic Medicine

\*\* p<0.001

*Comment:* The schools had from 17% to 61% of their students choosing a PCS.

**Table C-4**  
**Senior osteopathic medical students, 2003-04: ratings of influential factors affecting specialty choice, by PCS or NPCS choices**  
*Q23 Please indicate the importance of each of the following factors affecting your specialty choice decision.*

<b>Intellectual content of specialty</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	45	259	57	590
Strong Influence in choosing specialty	32	187	29	294
Moderate Influence in choosing specialty	18	105	11	109
Minor influence in choosing specialty	3	17	2	25
No influence/NA	2	10	1	13
Total	100	578	100	1031

<b>Dealing with people</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	65	374	39	405
Strong Influence in choosing specialty	23	134	27	274
Moderate Influence in choosing specialty	8	44	18	184
Minor influence in choosing specialty	3	16	11	114
No influence/NA	2	11	5	54
Total	100	579	100	1031

<b>Prestige and income</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	3	16	11	114
Strong Influence in choosing specialty	7	40	21	220
Moderate Influence in choosing specialty	28	160	33	339
Minor influence in choosing specialty	36	207	24	246
No influence/NA	27	154	11	112
Total	100	577	100	1031

<b>Lifestyle</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	29	166	41	426
Strong Influence in choosing specialty	30	172	25	262
Moderate Influence in choosing specialty	28	162	18	186
Minor influence in choosing specialty	10	58	9	95
No influence/NA	3	20	6	61
Total	100	578	100	1030

<b>Technical skills</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	8	47	34	347
Strong Influence in choosing specialty	17	100	27	282
Moderate Influence in choosing specialty	38	222	18	181
Minor influence in choosing specialty	23	133	13	133
No influence/NA	13	75	8	83
Total	100	577	100	1026

<b>Role models</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	30	172	26	265
Strong Influence in choosing specialty	30	172	29	303
Moderate Influence in choosing specialty	25	143	23	234
Minor influence in choosing specialty	10	57	12	123
No influence/NA	6	35	10	103
Total	100	579	100	1028

<b>Possess the skills now</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	28	162	37	382
Strong Influence in choosing specialty	39	224	37	384
Moderate Influence in choosing specialty	23	131	18	183
Minor influence in choosing specialty	7	41	5	53
No influence/NA	3	20	3	28
Total	100	578	100	1030

<b>Academic environment</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	14	78	24	246
Strong Influence in choosing specialty	26	148	26	272
Moderate Influence in choosing specialty	31	177	28	291
Minor influence in choosing specialty	16	95	12	125
No influence/NA	14	78	9	97
Total	100	576	100	1031

<b>Research</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>

Major influence in choosing specialty	7	39	14	149
Strong Influence in choosing specialty	11	64	17	171
Moderate Influence in choosing specialty	16	91	23	240
Minor influence in choosing specialty	28	161	22	227
No influence/NA	38	222	24	247
Total	100	577	100	1034

*Comments:* More of the students in the NPCS group than the PCS group thought that academic and lifestyle variables were more influential to them. More students in the PCS group thought that “people variables” were more influential to them than did the students in the NPCS group.

**Table C-5**  
**Senior osteopathic medical students, 2003-04: plans immediately after internship, by PCS or NPCS choices**

*Q20a. Immediate Post-Internship Residency Plans: Select the one item that best describes your plans immediately after internship, (or upon graduation if not planning an osteopathic internship):*

	PCS		NPCS	
	%	N	%	N
Pursue AOA-accredited residency	27	157	27	280
Pursue ACGME-accredited residency	45	260	54	564
Pursue AOA/ACGME dual-approved residency	14	82	7	74
Enter governmental service	13	75	9	93
Other	0	2	0	2
Undecided or indefinite post-graduate/internship plan	1	5	2	24
Total	100	581	100	1037

*Comment:* The major differences between the two groups were in three categories. Overall, 54% of the NPCS group wished to pursue ACGME-accredited residencies, compared to 45% of the PCS group.

*Q56. If you had the opportunity to sit for board certification in your chosen specialty would you choose osteopathic boards (AOA-recognized), allopathic boards (ABMS-recognized) or both?*

	PCS		NPCS	
	%	N	%	N
AOA-recognized Board examinations	44	250	21	212
ABMS-recognized Board examinations	11	60	19	191
Both Board examinations	45	257	60	610
Other	0	0	0	3
Do not plan to sit for board certification	0	0	0	1
Total	100	567	100	1017

*Comments:* In the NPCS group, 60% of the students wanted to take both Board examinations, compared to 45% of the PCS group. On the other hand, 44% of the PCS students planned to sit for the AOA Board examinations, compared to 21% of the NPCS group. The PCS group included 11% who wished to take the ABMS examination, compared to 19% of the NPCS group.

<i>Q59. Are dual-accredited (AOA—ACGME) residency programs more appealing to you than are residency programs accredited by AOA only?</i>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Yes	68	383	76	773
No	32	184	24	244
Total	100	567	100	1017

*Comment:* A higher percentage of the NPCS group (76%) than the PCS group (68%) preferred dual-accredited programs to those accredited by the AOA only.

**Table C-6**  
**Senior osteopathic medical students, 2003-04: plans for professional memberships, by PCS or NPCS choices**

Q61. I expect to obtain/maintain professional membership in the following: (check all that apply).

**Item/membership**

<b>a. AOA membership</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Yes	89	514	83	853
No	11	63	17	178

P<.001

<b>b. State and local DO associations' membership</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Yes	64	369	55	571
No	36	208	45	460

P<.001

<b>c. State and local MD associations' membership</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Yes	25	142	31	320
No	75	435	69	711

P<.001

<b>d. Osteopathic specialty society membership</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Yes	39	225	46	474
No	61	352	54	557

P<.001

<b>e. Allopathic specialty society</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Yes	25	142	48	500
No	75	435	52	531

P<.001

*Comments:* A larger percentage of the PCS group planned to maintain AOA membership and state and local DO membership than did the NPCS group. A larger percentage of the NPCS

group than the PCS group planned to maintain memberships in the state and local MD associations, the allopathic specialty society, and the osteopathic specialty society.

<b>Table C-7</b>			
<b>Senior osteopathic medical students, 2003-04: expected income, by PCS or NPCS choices</b>			
<i>Q17. Expected Income. What annual income do you expect to earn (after expenses, before taxes) during:</i>			
<b>Chapter 8 Time interval</b>	<b>Specialty choice</b>	<b>N</b>	<b>Aver. expected income</b>
a. First year after internship and residency	PCS	539	\$ 99,188
	NPCS	951	\$ 138,659
b. Fifth year after internship and residency	PCS	513	\$ 134,261
	NPCS	917	\$ 201,073
c. Tenth year after internship and residency	PCS	511	\$ 164,802
	NPCS	912	\$ 251,980

*Comments:* The NPCS group expected to make more money on average than the PCS group did: \$38,000 more in the first year, \$65,000 more in the fifth year, and \$90,000 more in the tenth year.

<i>Q21. Long-Range Plans: Select one item from the list below which best describes your intended activity five years after internship and residency training.</i>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Enter government service	9	53	5	50
Practice in an HMO	1	7	1	8
Self-employed as DO without partner	7	40	4	44
Self-Employed as DO with partner	22	128	10	102
Employed in group practice	37	213	51	527
Employed in other type of private practice (salary, commission, percentile)	4	21	4	44
Other professional activity (teaching, research, administration, fellowship)	1	5	7	68
Undecided or indefinite	20	114	19	194

*Comments:* A higher percentage of the students in the PCS group than in the NPCS group planned to be self-employed with a partner(s) (22% to 10%), while half of the students in the NPCS group (51%) planned to be employed in group practice, compared to 37% in the PCS group.

Q25. Which of the following best describes the kind of area where you plan to be employed or in practice after completion of internship or residency?				
	PCS		NPCS	
	%	N	%	N
Major metropolitan area (1,000,000 or more)	11	65	20	212
Metropolitan area (500,000 - 1,000,000)	12	70	21	222
City (100,000 - 500,000)	14	83	21	219
City (50,000 - 100,000)	13	74	15	155
City or town (10,000 - 50,000)	21	122	10	100
City or town (2,500 - 10,000)	12	72	1	15
Area under 2500	4	22	0	5
Other, specified	1	3	0	2
Undecided or indefinite	12	70	10	107
Total	100	581	100	1037

*Comment:* The NPCS students on the whole planned to live in larger cities: 50% of the PCS group planned to live in cities with populations of 100,000 or less, as compared to 27% of the NPCS group.

**Table C-8**  
**Senior osteopathic medical students, 2003-04: assessment of medical training, by PCS or NPCS choices**

*Q26. Instruction. Please evaluate the amount of instruction provided in each of the areas listed below.*

**Item/area**

<b>b. Behavioral science</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	78	446	70	723
Inadequate	18	106	25	256
Excessive	4	23	5	53

P<.001

<b>c. Biostatistics</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	54	309	44	450
Inadequate	42	244	54	553
Excessive	4	22	3	30

P<.001

<b>d. Care of ambulatory patients</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	90	517	83	862
Inadequate	7	43	9	98
Excessive	3	15	7	73

P<.001

<b>cc. OMM-NMSK</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	82	468	76	780
Inadequate	11	62	12	120
Excessive	8	44	13	130

P<.001

<b>jj. Primary care</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	88	504	78	805
Inadequate	5	30	5	49
Excessive	7	38	17	177

P<.001

*Comment:* A higher percentage of the PCS students found the instruction to be appropriate than did the NPCS students.

Q29. Please indicate how satisfied you are with each of these aspects of your experience as a medical student.

<b>Item/area</b>				
<b>b. Doing work involving science and research</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Satisfied	13	77	15	155
Satisfied	32	182	34	347
Neither Satisfied nor dissatisfied	47	270	37	378
Dissatisfied	6	33	11	115
Very Dissatisfied	2	12	3	28

P<.001

*Comment:* Only one item of 15 showed differences with statistical significance, with a complicated interaction. The NPCS group’s level of satisfaction (‘very satisfied’ + ‘satisfied’) was 4 percentage points higher than the PCS group’s satisfaction, yet the NPCS group also had a dissatisfaction rating (‘dissatisfied’ + ‘very dissatisfied’) that was 6 percentage points higher than the PCS group’s dissatisfaction. Further, the PCS group had 10% percentage points more of students who did not care! (That is, they were ‘neither satisfied nor dissatisfied.’)

Q46. If you were to describe the BEST clinical rotation you experienced during your medical education, which of the following terms or phrases would you use?

<b>Item/rotation</b>				
<b>e. Osteopathic orientation</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	14	80	11	110
Very Important	27	154	22	228
Important	29	163	27	277
Somewhat Helpful	15	87	18	184
Not a Factor	15	83	21	217

P<.001

**o. Participate in ancillary activities such as journal club**

	PCS		NPCS	
	%	N	%	N
Essential Component	11	60	16	165
Very Important	25	140	27	273
Important	25	139	25	251
Somewhat Helpful	21	118	18	179
Not a Factor	19	110	14	147

P<.001

<b>r. Attending was influential on hospital selection committees</b>				
	PCS		NPCS	
	%	N	%	N
Essential Component	11	62	13	131
Very Important	17	97	21	213
Important	15	83	17	170
Somewhat Helpful	12	68	15	148
Not a Factor	45	257	35	352

P<.001

<b>Q34. Please estimate the percentage of time you devoted to the following activities during year 3.</b>			
Activity	Specialty choice	No. students	% of time spent
a. Inpatient care	PCS	572	49
	NPCS	1015	54
b. Outpatient care	PCS	573	43
	NPCS	1015	37

P<.001

*Comments:* The PCS students' estimates of the time spent on outpatient care was higher than the NPCS students' estimates; therefore, the NPCS students' estimates of the percentage of their time spent on inpatient care was higher than that of the PCS group.

<i>Q35. Please estimate the percentage of time you devoted to the following activities during year 4.</i>			
<b>Activity</b>	<b>Specialty choice</b>	<b>No. students</b>	<b>% time</b>
a. Inpatient care	PCS	570	49
	NPCS	1008	53
b. Outpatient care	PCS	570	47
	NPCS	1008	38

*Comments:* The PCS group's estimates of the percentage of their time spent on outpatient care were higher than those of the NPCS group, whereas the NPCS group estimated a higher percentage for inpatient care.

<i>Chapter 9 Q38. In the past two years, have you:</i>					
		<b>PCS</b>		<b>NPCS</b>	
<b>Chapter 10 Item/activity</b>		<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
c. Participated in research study	Yes	22	126	34	347
d. Published in a refereed journal	Yes	6	37	12	120

P<.001

*Comment:* The NPCS group participated more than the PCS group, but neither did much.

**Table C-9**  
**Senior osteopathic medical students, 2003-04: confidence in performing clinical activities, by PCS or NPCS choice**

*Q43. Using the following scale, please indicate how confident you are in your ability to perform the following examinations:*

**Item/activity**

<b>b. Well-baby examination</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	35	202	28	285
Confident	50	286	49	500
Somewhat Apprehensive	13	75	20	209
Very Apprehensive	2	10	3	28
Total	100	573	100	1022

*Comments:* Overall, 85% of the PCS group was confident or very confident as opposed to 77% of the NPCS group.

<b>s. Workup of generalized muscle weakness</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	14	78	22	231
Confident	57	325	54	551
Somewhat Apprehensive	28	163	22	229
Very Apprehensive	1	6	2	18

*Q45. Using the following scale, please indicate how confident you are in interpreting the following laboratory or diagnostic tests:*

**Item/test**

<b>a. Electrocardiogram</b>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	16	92	21	215
Confident	52	298	54	557
Somewhat Apprehensive	30	174	22	229
Very Apprehensive	2	11	3	27

<b>c. Cardiac stress test</b>				
	<b>PCS</b>		<b>NPCS</b>	

	%	N	%	N
Very Confident	12	71	19	194
Confident	47	273	49	507
Somewhat Apprehensive	36	207	27	281
Very Apprehensive	4	24	4	46

<b>c. Fetal monitoring</b>				
	<b>PCS</b>		<b>NPCS</b>	
	%	N	%	N
Very Confident	19	109	26	263
Confident	49	281	49	500
Somewhat Apprehensive	30	170	23	234
Very Apprehensive	3	15	3	32

<b>k. Cervical/urethral swab</b>				
	<b>PCS</b>		<b>NPCS</b>	
	%	N	%	N
Very Confident	33	190	38	388
Confident	56	319	47	484
Somewhat Apprehensive	11	64	13	137
Very Apprehensive	0	1	2	19

<b>m. Pap test</b>				
	<b>PCS</b>		<b>NPCS</b>	
	%	N	%	N
Very Confident	40	230	40	410
Confident	50	286	46	473
Somewhat Apprehensive	10	56	12	128
Very Apprehensive	0	2	2	17

<b>o. Mammogram</b>				
	<b>PCS</b>		<b>NPCS</b>	
	%	N	%	N
Very Confident	14	78	17	179
Confident	38	219	39	398
Somewhat Apprehensive	41	237	33	337
Very Apprehensive	7	40	11	115

*Comments:* The NPCS group had a higher percentage of students confident in interpreting the electrocardiogram, cardiac stress test, fetal monitoring, and the mammogram, while the PCS

group, while PCS group had a higher percentage confident in interpreting the cervical/urethral swab and the Pap test.

<b>Table C-10</b>				
<b>Senior osteopathic medical students, 2003-04: estimates of amount of training by allopathic physicians</b>				
<i>Q53. What percentage of your training was delivered by allopathic physicians?</i>				
<b>Chapter 11 During your selectives/electives?</b>				
	<b>PCS</b>		<b>NPCS</b>	
Less than 10%	10	54	10	100
10-25%	14	81	15	153
26-50%	29	162	20	201
51-75%	23	128	25	248
more than 75%	25	138	30	303
Total	100	563	100	1005

*Comment:* Slightly more than half (55%) of the NPCS students, had 50% or more of their training by MDs in selective/electives, compared to 45% of the students in the PCS group.

<b>Table C-11</b>				
<b>Senior osteopathic medical students, 2003-04: satisfaction with choice of osteopathic medicine</b>				
<i>Q40. If given the opportunity to begin your medical education again, would you prefer to enroll in:</i>				
	<b>PCS</b>		<b>NPCS</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Same college of osteopathic medicine	73	412	64	639
Another college of osteopathic medicine	9	51	7	66
An allopathic medical school	12	66	24	241
Would not go into medicine	7	39	6	57
Total	100	568	100	1003

*Comment:* Asked what they would do if they could start again, 73% of the PCS group replied they would stay in the same program, in contrast to the 64% of the NPCS group who would do so. However, 24% of the NPCS group would enroll in an allopathic medical school, compared to 12% of the PCS group.

Q39. At this time, how satisfied are you that you selected osteopathic medicine as a career?				
	PCS		NPCS	
	%	N	%	N
Very Satisfied	50	287	39	396
Satisfied	37	213	40	402
Mixed Feelings	11	61	20	202
Dissatisfied	1	7	1	12
Very Dissatisfied	1	3	0	4

*Comment:* The PCS group had a higher percentage of students satisfied with osteopathic medicine as a career than the NPCS group had.

## Appendix D

Data on Osteopathic Medical Students:

Analysis by Gender

## Appendix D

**Appendix D is based on data from the 2003 survey of senior students in U.S. osteopathic medical schools. The survey was funded jointly by the American Association of Colleges of Osteopathic Medicine and the American Osteopathic Association.**

**The data were analyzed by gender, and the results are presented here in 20 tables. The tables cover**

- general demographic data
- general background data
- areas that the analysis indicated had statistically significant differences between men and women

### *Notes on the data presentation:*

- a. The total number of respondents for each question or sub-question varied because not all students answered all questions.
- b. The survey question used to collect the table data may be given in the table; the question will be identified by its number on the survey questionnaire (e.g., Q5, Q23).
- c. All differences shown between men and women are statistically significant unless reported otherwise. The standard for statistical significance was set at  $p < 0.001$ ; other values may be shown for comparison or additional information.

**Table D-1  
Senior medical students at U.S. osteopathic medical schools, 2003-04:  
by gender**

School Code	Men		Women		Total	
	%	N	%	N	%	N
PCOM	60	39	40	26	100	65
CCOM	55	80	45	66	100	146
UHSCOM	62	126	38	76	100	202
OUCOM	67	65	33	32	100	97
DMU	61	42	39	27	100	69
KCOM	72	91	28	35	100	126
MSUCOM	58	57	42	41	100	98
UNTHSC	54	62	46	52	100	114
OSUCOM	61	47	39	30	100	77
WVSOM	59	42	41	29	100	71
UMDNJ	49	35	51	36	100	71
NYCOM	46	31	54	36	100	67
WCOMP	72	26	28	10	100	36
NSUCOM	60	96	40	64	100	160
UNECOM	42	45	58	61	100	106
LECOM	58	96	42	70	100	166
AZCOM	64	72	36	41	100	113
TUCOM	45	14	55	17	100	31
PCSOM	79	38	21	10	100	48
Total	59	1104	41	759	100	1863

*Full names of the schools are:* COMP = Western University College of Health Sciences College of Osteopathic Medicine of the Pacific; DMUCOM = Des Moines University College of Osteopathic Medicine; KCCOM = Kansas City University of Medicine and Bioscience College of Osteopathic Medicine; KCOM = A.T. Still University's Kirksville College of Osteopathic Medicine; LECOM = Lake Erie College of Osteopathic Medicine; MSUCOM = Michigan State University College of Osteopathic Medicine; NSUCOM = Nova Southeastern University College of Osteopathic Medicine; NYCOM = New York College of Osteopathic Medicine; OUCOM = Ohio University College of Osteopathic Medicine; OSUCOM = Oklahoma State University Center for Health Sciences – College of Osteopathic Medicine; PCOM = Philadelphia College of Osteopathic Medicine; PCSOM = Pikeville College School of Osteopathic Medicine; TUCOM = Touro University College of Osteopathic Medicine; UMDNJ = University of Medicine and Dentistry of New Jersey-School of Osteopathic Medicine; UNECOM = University of New England College of Osteopathic Medicine; TCOM = University of North Texas Health Science Center at Fort Worth/Texas College of Osteopathic Medicine; WVSOM = West Virginia School of Osteopathic Medicine  
P < 000

*Comments:* The percentages of women in the programs ranged from 21% in PCSOM to 58% in UNECOM. The overall average was 41%.

<b>Table D-2</b> <b>Senior osteopathic medical students, 2003-04:</b> <b>marital status, by gender,</b>				
<b>Status</b>	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Married	49	516	39	806
Not married	51	544	61	452
Total	100	1060	100	742
P<.000				

*Comments:* Overall 49% of the men and 39% of the women were married.

<b>Table D-3</b> <b>Senior osteopathic medical students, 2003-04: number of dependents, by</b> <b>gender of student</b>								
<i>Q1. Dependents: Including yourself, how many dependents do you support financially.</i>								
<b>Dependents</b>								
	<b>Students</b>							
<b>Dependents</b>	<b>Men</b>		<b>Women</b>		<b>Dependents</b>	<b>Cumulative</b>		
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>		<b>Men</b>	<b>Women</b>	
1	50	534	59	435	1	50	59	
2	28	302	33	239	2	78	92	
3	10	111	5	35	3	88	97	
4	8	81	2	16	6	96	99	
5	2	26	1	6	7	98	100	
6	1	14	0	2		99	100	
7	1	6	0	0		100	100	
Total	100	1074	100	733				

*Comments:* A higher percentage of the men had more than two dependents than the women did (22% vs.8%), probably because 10% more men were married.

<b>Table D-4</b>			
<b>Senior osteopathic medical students, 2003-04: anticipated income, by gender</b>			
Q17. <i>Expected Income. What annual income do you expect to earn (after expenses, before taxes) during:</i>			
		<b>N</b>	<b>Amount</b>
a. First year after internship and residency	Men	1020	\$140,322
	Women	673	\$110,803
b. Fifth year after internship and residency	Men	991	\$203,137
	Women	636	\$157,109
c. Tenth year after internship and residency	Men	988	\$259,533
	Women	636	\$196,074

*Comments:* The men expect to make more money on the average than the women did, \$30,000 more the first year, \$43,000 the fifth year and \$63,000 more the tenth year.

<b>Table D-5</b>				
<b>Senior osteopathic medical students, 2003-04: intended professional activity after training, by gender</b>				
Q21: <i>Long-Range Plans: Select one item from the list below which best describes your intended activity five years after internship and residency training.</i>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Enter Government service	7	74	6	44
Practice in an HMO	1	8	1	9
Self-employed as D.O. without Partner	6	65	4	27
Self-Employed as D.O. with partner	18	198	11	86
Employed in group practice	42	464	47	355
Employed in other type of private practice (salary, commission, or percentage)	4	46	3	24
Other Professional Activity (e.g. teaching, research, administration, fellowship)	4	39	5	38
Undecided or indefinite	18	198	22	169
Total	100	1092	100	752

*Comment:* The major difference shown between men and women were in *self-employment with a partner* chosen by a higher fraction of men (18%) than women (11%). On the other hand, 47% of the women plan to be employed in group practice compared to 42% of the men.

**Table D-6**  
**Senior osteopathic medical students, 2003-04: ratings of factors in making specialty choice, by gender**

Q23. Please indicate the importance of each of the following factors affecting your specialty choice decision.

Item/factor				
<b>b. Like dealing with people more than techniques</b>				
	Men		Women	
	%	N	%	N
Major influence in choosing specialty	41	449	53	392
Strong Influence in choosing specialty	25	271	25	186
Moderate Influence in choosing specialty	19	203	12	87
Minor influence in choosing specialty	9	102	7	52
No influence/NA	6	60	3	21
Total	100	1085	100	738

$p < .000$

<b>c. Prestige/income potential</b>				
	Men		Women	
	%	N	%	N
Major influence in choosing specialty	12	134	5	37
Strong Influence in choosing specialty	20	218	12	89
Moderate Influence in choosing specialty	32	343	29	218
Minor influence in choosing specialty	24	260	31	231
No influence/NA	12	126	22	164
Total	100	1081	100	739

$p < .000$

<b>e. Like the emphasis on technical skills</b>				
	Men		Women	
	%	N	%	N
Major influence in choosing specialty	31	333	23	173
Strong Influence in choosing specialty	27	289	21	154
Moderate Influence in choosing specialty	24	257	23	167
Minor influence in choosing specialty	12	131	19	143
No influence/NA	6	68	14	100
Total	100	1078	100	737

$p < .000$

<b>i. Debt level</b>				
	Men		Women	
	%	N	%	N

Major influence in choosing specialty	10	112	7	54
Strong Influence in choosing specialty	15	159	12	86
Moderate Influence in choosing specialty	27	291	22	164
Minor influence in choosing specialty	24	260	25	185
No influence/NA	24	260	34	251
Total	100	1082	100	740

p<.000

<b>I. Desire for independence</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Major influence in choosing specialty	30	326	24	174
Strong Influence in choosing specialty	28	305	29	215
Moderate Influence in choosing specialty	23	253	24	175
Minor influence in choosing specialty	12	125	14	104
No influence/NA	7	72	10	72
Total	100	1081	100	740

p<.000

<b>Table D-6a Summary Table for Question 23</b>			
<i>Q23: Importance of each factor in affecting your specialty choice.</i>			
<b>Item/area</b>		<b>Men</b>	<b>Women</b>
		<b>%</b>	<b>%</b>
<b>b. Dealing with people</b>	Major influence + Strong Influence	66	78
<b>c. Prestige and Income</b>	Major influence + Strong Influence	33	17
<b>e. Technical skills</b>	Major influence + Strong Influence	58	44
<b>i. Debt Level</b>	Major influence + Strong Influence	25	19
<b>I. Independence</b>	Major influence + Strong Influence	58	53

*Comments: Prestige, technical skills, debt level. and independence were major and strong influences for a larger percentage of men than women. Dealing with people was a strong influence with a greater percentage of women.*

<b>Table D-7</b>				
<b>Senior osteopathic medical students, 2003-04: amount of instruction in areas of curriculum, by gender</b>				
<i>Q26. Instruction. Please evaluate the amount of instruction provided in each of the areas listed below.</i>				
<b>Item/area</b>				
<b>k. Cost-effective medical practice</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	52	563	42	307
Inadequate	46	497	57	422
Excessive	2	22	1	10
Total	100	1082	100	739

<b>q. Human sexuality</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	71	769	66	485
Inadequate	23	253	29	217
Excessive	6	60	5	38
Total	100	1082	100	740

<b>v. Legal medicine</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	55	598	51	374
Inadequate	40	434	47	345
Excessive	4	48	3	20
Total	100	1080	100	739

<b>x. Medical care cost control</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	48	516	36	261
Inadequate	50	542	63	465
Excessive	2	20	1	9
Total	100	1078	100	735

<b>aa. Medical socio-economics</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	62	667	56	413
Inadequate	36	383	43	316
Excessive	3	28	1	7
Total	100	1078	100	736

<b>ii. Practice management</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	59	638	52	383
Inadequate	39	418	46	338
Excessive	2	24	2	16
Total	100	1080	100	737

<b>mm. Research techniques</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Appropriate	44	467	37	266
Inadequate	53	563	62	449
Excessive	2	25	2	12
Total	100	1055	100	727

<b>Table D-7a</b>					
<b>Summary Table for Question 26</b>					
<i>Q26: Evaluate the amount of instruction provided in each of the areas listed.</i>					
		<b>Men</b>		<b>Women</b>	
<b>Item/area</b>	<b>Rating</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
<b>k.</b> Cost-effective medical practice	Appropriate	52	563	42	307
<b>q.</b> Human sexuality	Appropriate	71	769	66	485
<b>v.</b> Legal medicine	Appropriate	55	598	51	374
<b>x.</b> Medical care cost control	Appropriate	48	516	36	261
<b>aa.</b> Medical socio-economics	Appropriate	62	667	56	413
<b>ii.</b> Practice management	Appropriate	59	638	52	383
<b>mm.</b> Research techniques	Appropriate	44	467	37	266

*Comment:* More men than women thought that the seven instructional areas were covered appropriately, while more women felt they were inadequately covered.

**Table D-8**  
**Senior osteopathic medical students, 2003-04: satisfaction with student services, by gender**

Q28: Please indicate your level of satisfaction:

Item/area				
<b>a. Academic counseling</b>				
	Men		Women	
	%	N	%	N
Very Satisfied	15	168	12	90
Satisfied	50	541	47	350
Dissatisfied	14	156	18	135
Very Dissatisfied	9	99	13	94
No Opinion	11	120	10	73
Total	100	1084	100	742
<i>P</i> <.007				

<b>f. Disability insurance</b>				
	Men		Women	
	%	N	%	N
Very Satisfied	10	113	9	66
Satisfied	41	439	33	243
Dissatisfied	9	92	8	60
Very Dissatisfied	4	40	2	18
No Opinion	37	396	47	346
Total	100	1080	100	733
<i>P</i> <.001				

<b>I. Personal counseling</b>				
	Men		Women	
	%	N	%	N
Very Satisfied	15	158	14	102
Satisfied	43	468	37	270
Dissatisfied	12	135	13	93
Very Dissatisfied	5	58	7	52
No Opinion	24	263	30	222
Total	100	1082	100	739
<i>P</i> <.009				

<b>Table D-8a</b>			
<b>Summary Table for Question 28</b>			
<i>Q28. Please indicate your level of satisfaction:</i>			
		<b>Men</b>	<b>Women</b>
<i>Item/area</i>		<b>%</b>	<b>%</b>
<b>a.</b> Academic counseling	Very satisfied + Satisfied	65	59
<b>f.</b> Disability insurance	Very satisfied + Satisfied	51	42
<b>l.</b> Personal counseling	Very satisfied + Satisfied	58	50

Comments: More men were satisfied with the amount of academic counseling, disability insurance and personal counseling than women.

**Table D-9**  
**Senior osteopathic medical students, 2003-04: satisfaction with experiences as medical students, by gender**

*Q29. Please indicate how satisfied you are with each of these aspects of your experience as a medical student.*

**Item/experience**

<b>a. Being able to work with people</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Satisfied	51	544	62	460
Satisfied	44	471	36	267
Neither Satisfied nor dissatisfied	4	47	1	9
Dissatisfied	1	8	0	1
Very Dissatisfied	0	4	0	1
Total	100	1074	100	738

*P*<.001

<b>b. Doing work involving science and research</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Satisfied	16	175	12	92
Satisfied	36	383	30	222
Neither Satisfied nor dissatisfied	36	384	45	332
Dissatisfied	10	104	10	73
Very Dissatisfied	3	29	3	19
Total	100	1075	100	738

*P*<.001

<b>c. Anticipating a comfortable income</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Satisfied	23	249	17	125
Satisfied	56	603	61	450
Neither Satisfied nor dissatisfied	18	192	18	129
Dissatisfied	2	22	4	27
Very Dissatisfied	1	8	0	3
Total	100	1074	100	734

*P*<.001

<b>d. Opportunity to be helpful to others</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>

Very Satisfied	45	484	59	436
Satisfied	49	523	40	294
Neither Satisfied nor dissatisfied	5	50	1	5
Dissatisfied	1	8	0	1
Very Dissatisfied	1	7	0	2
	100	1072	100	738

$P < .001$

<b>e. Membership in a respected profession</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Satisfied	36	387	46	340
Satisfied	53	566	47	346
Neither Satisfied nor dissatisfied	9	102	6	47
Dissatisfied	1	10	0	3
Very Dissatisfied	1	9	0	1
	100	1074	100	737

$P < .001$

<b>f. Having interesting and intelligent colleagues</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Satisfied	36	385	46	341
Satisfied	52	562	46	339
Neither Satisfied nor dissatisfied	10	105	7	51
Dissatisfied	1	9	1	6
Very Dissatisfied	1	12	0	1
Total	100	1073	100	738

$P < .001$

<b>g. Doing work that is intellectually stimulating</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Satisfied	45	487	55	406
Satisfied	49	528	43	315
Neither Satisfied nor dissatisfied	4	44	2	12
Dissatisfied	1	6	0	2
Very Dissatisfied	1	8	0	2
Total	100	1073	100	737

$P < .001$

<b>h. Using medicine to change society</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Satisfied	28	297	36	262
Satisfied	48	509	46	341
Neither Satisfied nor dissatisfied	21	230	17	123
Dissatisfied	2	18	1	5
Very Dissatisfied	2	17	1	6
Total	100	1071	100	737

*P*<.001

<b>Table D-9a Summary Table for Question 29</b>			
<i>Q29. Please indicate how satisfied you are with each of these aspects of your experience as a medical student.</i>			
	<b>Rating</b>	<b>Men</b>	<b>Women</b>
<b>Item/aspect</b>		<b>%</b>	<b>%</b>
<b>b. Doing work involving science and research</b>	Very satisfied + Satisfied	52	43
<b>h. Using medicine to change society</b>	Very satisfied + Satisfied	75	82

*Comments:* Both men and women were satisfied with these aspects of their medical education. Although eight items of the 15 items showed 0.000 statistically significant differences (*P*< .000), only two distinguished between satisfactory and non-satisfactory. The other six items merely distinguished between satisfied and very satisfied.

<b>Table D-10 Senior osteopathic medical students, 2003-04: type of school involvement in clerkship years, by gender</b>				
<i>Q31a. In what ways was your osteopathic medical school involved in your clerkship years? Please check all that apply.</i>				
<b>3. E-mail</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Yes	75	814	80	595
No answer	25	269	20	414
Total	100	1083	100	740

*Comments:* Only this item of the five showed statistical significant difference. More of the women than men felt that the osteopathic medical school was involved with e-mail

<b>Table D-11</b> <b>Senior osteopathic medical students, 2003-04: influential person in their medical education, by gender</b>
<i>Q41. If there has been an individual who has been an extremely positive influence on your medical education, please indicate that which best describes this individual. (Choose as many as apply).</i>
<b>Item/category</b>

<b>f. Family member</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
No	68	743	60	1195
Yes	32	344	40	297
Total	100	1087	100	749

<b>h. Another medical student</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
No	84	912	75	1471
Yes	16	175	25	190
Total	100	1087	100	749

<b>Table D-11a</b> <b>Summary Table for Question 41</b>			
<i>Q41. If there has been an individual who has been an extremely positive influence on your medical education, please indicate that which best describes this individual. (Choose as many as apply).</i>			
<b>Positive influence by</b>			
		<b>Men</b>	<b>Women</b>
		<b>%</b>	<b>%</b>
f. Family Member	Yes	32	40
h. Another medical student	Yes	16	25

*Comments:* More women than men (in statistically significant differences) thought that these two types of people had been extremely positive influences on them.

**Table D-12**  
**Senior osteopathic medical students, 2003-04:**  
**confidence in performing physical examinations, by**  
**gender**

*Q43. Using the following scale, please indicate how confident you are in your ability to perform the following examinations:*

**Item/examination**

<b>b. Well-baby examination</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	35	202	28	285
Confident	50	286	49	500
Somewhat Apprehensive	13	75	20	209
Very Apprehensive	2	10	3	28
Total	100	573	100	1022
<i>P</i> <.001				

<b>c. Gynecological examination</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	28	296	50	373
Confident	50	538	42	314
Somewhat Apprehensive	19	206	6	47
Very Apprehensive	3	34	1	6
Total	100	1074	100	740
<i>P</i> <.001				

<b>d. Routine pre-natal examination</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	25	270	41	301
Confident	48	517	43	319
Somewhat Apprehensive	24	259	14	106
Very Apprehensive	3	28	2	14
Total	100	1074	100	740
<i>P</i> <.001				

<b>e. Breast examination</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	37	398	57	419
Confident	52	561	40	296
Somewhat Apprehensive	10	103	3	21
Very Apprehensive	1	12	0	2
Total	100	1074	100	738
<i>P</i> <.001				

<b>f. Sports participation physical</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	49	530	37	276
Confident	43	461	50	373
Somewhat Apprehensive	7	72	11	85
Very Apprehensive	1	10	1	6
Total	100	1073	100	740

*P*<.001

<b>g. Osteopathic structural examination</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	37	394	31	227
Confident	48	512	46	340
Somewhat Apprehensive	13	135	20	145
Very Apprehensive	3	33	4	28
Total	100	1074	100	740

*P*<.001

<b>Table D-12a</b>			
<b>Summary Table for Question 43</b>			
<i>Q43. Using the following scale, please indicate how confident you are in your ability to perform the following examinations:</i>			
<b>Area of physical examination</b>	<b>Level of confidence</b>	<b>Men</b>	<b>Women</b>
		<b>%</b>	<b>%</b>
<b>b. Well-baby Examination</b>	VC+C*	85	77
<b>c. Gynecological Examination</b>	VC+C	78	93
<b>d. Routine Pre-natal Examination</b>	VC+C	73	84
<b>e. Breast Examination</b>	VC+C	89	97
<b>f. Sports Participation Physical</b>	VC+C	92	88
<b>g. Osteopathic Structural Examination</b>	VC+C	84	77

\* Very Confident combined with Confident

*Comments:* More men were confident in performing a well-baby exam, sports participation, and structural examination than women, while more women were confident in gynecological exam, pre-natal exam, and breast exam.

**Table D-13**  
**Senior osteopathic medical students, 2003-04: confidence in working-up clinical presentations, by gender**

*Q44. Using the following scale, please indicate how confident you are in your ability to work-up the following clinical presentations:*

**Item/area**

<b>f. Back Symptoms</b>				
	<b>Male</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	41	438	30	224
Confident	54	578	58	435
Somewhat Apprehensive	5	57	11	81
Very Apprehensive	0	5	1	4
Total	100	1078	100	744

*P*<.001

<b>o. Vision Dysfunction</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	17	179	12	88
Confident	46	492	43	317
Somewhat Apprehensive	34	369	41	302
Very Apprehensive	3	37	5	37
Total	100	1077	100	744

*P*<.001

<b>p. Knee Symptoms</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	38	412	26	192
Confident	55	587	55	412
Somewhat Apprehensive	7	72	17	130
Very Apprehensive	1	6	1	10
Total	100	1077	100	744

*P*<.001

<b>q. Generalized Pain</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	27	291	20	151
Confident	55	595	55	406
Somewhat Apprehensive	16	174	24	177
Very Apprehensive	2	17	1	10
Total	100	1077	100	744

*P*<.001

<b>s. Generalized Muscle Weakness</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	23	252	17	123
Confident	56	602	53	391
Somewhat Apprehensive	19	208	29	216
Very Apprehensive	1	15	2	13
Total	100	1077	100	743

*P*<.001

<b>t. Integrate OPP in both diagnosis and treatment of the above presentations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	22	240	19	140
Confident	50	542	46	337
Somewhat Apprehensive	21	230	30	222
Very Apprehensive	6	62	5	38
Total	100	1074	100	737

*P*<.001

<b>Table D-13a</b>			
<b>Summary Table for Question 44</b>			
<i>Q44. Using the following scale, please indicate how confident you are in your ability to work-up the following clinical presentations:</i>			
<b>Confidence in work up</b>			
		<b>Men</b>	<b>Women</b>
<b>Item/area</b>		<b>%</b>	<b>%</b>
f. Back Symptoms	VC+C*	94	89
o. Vision Dysfunction	VC+C	62	54
p. Knee Symptoms	VC+C	93	81
q. Generalized Pain	VC+C	82	75
s. Generalized Muscle Weakness	VC+C	79	69
t. Integrate OPP in both diagnosis and treatment of the above presentations	VC+C	73	65

\* Very Confident and Confident

*Comments:* In all of the workups above, more men were confident than women.

<b>Table D-14</b>	
<b>Senior osteopathic medical students, 2003-04: confidence in interpreting laboratory results, 2003, by gender</b>	
<i>Q45: Using the following scale, please indicate how confident you are in interpreting the following laboratory or diagnostic tests:</i>	
<b>Item/area</b>	

<b>a. Electrocardiogram</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	23	252	14	104
Confident	57	612	49	365
Somewhat Apprehensive	18	197	34	249
Very Apprehensive	2	18	3	24
Total	100	1079	100	742

*P*<.001

<b>c. Cardiac Stress Test</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	20	213	12	91
Confident	51	547	47	353
Somewhat Apprehensive	27	286	34	255
Very Apprehensive	3	32	6	45
Total	100	1078	100	744

*P*<.001

<b>d. Exercise Prescription</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	26	274	20	148
Confident	54	575	52	382
Somewhat Apprehensive	19	203	25	188
Very Apprehensive	2	20	3	20
Total	100	1072	100	738

*P*<.001

<b>k. Cervical/Urethral Swabs</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	33	353	42	315
Confident	50	535	49	367
Somewhat Apprehensive	16	173	8	57
Very Apprehensive	2	17	1	4
Total	100	1078	100	743

*P*<.001

<b>m. Pap Test</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	33	352	50	373
Confident	50	538	44	327
Somewhat Apprehensive	16	168	6	42
Very Apprehensive	2	19	0	2
Total	100	1077	100	744

*P*<.001

<b>n. Chest X-ray</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	38	414	31	231
Confident	53	576	57	422
Somewhat Apprehensive	8	83	12	87
Very Apprehensive	0	5	1	4
Total	100	1078	100	744

*P*<.001

<b>p. Cardiac Profile</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Confident	41	439	31	233
Confident	51	551	57	421
Somewhat Apprehensive	8	82	11	78
Very Apprehensive	1	6	1	10
Total	100	1078	100	742

*P*<.001

<b>Confidence in interpretation</b>		
<b>Item/test</b>	<b>Men</b>	<b>Women</b>
	<b>%</b>	<b>%</b>
a. Electrocardiogram	80	63
c. Cardiac Stress Test	71	60
d. Exercise Prescription	79	72
k. Cervical/Urethral Swabs	82	92
m. Pap Test	83	94
n. Chest X-ray	92	88
p. Cardiac Profile	92	88

*Comments:* Men were more confident than women in the six work ups listed above.

In the two procedures gender-specific for women, a higher percentage of women were more confident.

<b>Table D-15</b>
<b>Senior osteopathic medical students, 2003-04: description of their best clinical rotation, 2003, by gender</b>
<i>Q46. If you were to describe the BEST clinical rotation you experienced during your medical education, which of the following terms or phrases would you use?</i>
<b>Item/description</b>

<b>h. Able to participate in the diagnostic work-up of the patients.</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	60	648	69	502
Very Important	30	320	26	193
Important	9	98	5	34
Somewhat helpful	1	6	0	3
Total	100	1072	100	732

*P*<.001

<b>i. Able to participate in the management of the patient</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	60	644	69	508
Very Important	30	318	25	185
Important	9	101	5	36
Somewhat helpful	1	7	0	2
Not a factor	0	2	0	0
Total	100	1072	100	731

*P*<.001

<b>I. Able to work on a personal basis with the patient</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	46	491	54	394
Very Important	38	409	37	271
Important	13	142	7	53
Somewhat helpful	2	24	1	7
Not a factor	1	6	1	7
Total	100	1072	100	732

*p*<.001

<b>o. Asked to participate in ancillary activities such as journal club</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	17	181	13	94
Very Important	29	309	23	166
Important	26	274	24	178
Somewhat helpful	16	168	21	155
Not a factor	13	139	19	137
Total	100	1071	100	730

*P*<.001

<b>q. There were other medical students on the same rotation</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	17	182	13	95
Very Important	26	274	24	173
Important	22	239	17	122
Somewhat helpful	14	155	19	137
Not a factor	21	221	28	204
Total	100	1071	100	731
<i>P</i> <.001				

<b>r. The attending was influential on hospital selection committees</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	14	150	12	86
Very Important	22	237	16	116
Important	19	202	14	99
Somewhat helpful	13	135	14	104
Not a factor	32	347	44	324
Total	100	1071	100	729

*P*<.001

<b>t. I had no weekend coverage duties.</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	14	151	13	92
Very Important	22	234	17	124
Important	22	236	19	142
Somewhat helpful	14	150	15	107
Not a factor	28	297	36	266
Total	100	1068	100	731

*P*<.001

<b>u. I was expected to do weekend coverage during part or all of the rotation</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	11	120	8	57
Very Important	20	210	12	91
Important	23	242	18	133
Somewhat helpful	15	160	17	127
Not a factor	31	336	44	322
Total	100	1068	100	730

*P*<.001

<b>w. Food was provided</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	24	257	16	120
Very Important	28	300	20	148
Important	22	237	21	157
Somewhat helpful	12	129	18	130
Not a factor	14	147	24	177
Total	100	1070	100	732

*P*<.001

<b>x. Housing was provided</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	19	206	14	102
Very Important	24	256	19	136
Important	20	216	16	113
Somewhat helpful	9	97	11	83
Not a factor	28	294	40	295
Total	100	1069	100	729

*P*<.001

<b>y. The use of technology was appropriate to the situation</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	30	318	25	184
Very Important	39	419	39	287
Important	26	273	24	174
Somewhat helpful	4	39	4	32
Not a factor	2	21	7	54
Total	100	1070	100	731

*P*<.001

<b>bb. I felt free to ask questions</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	58	617	69	504
Very Important	31	333	25	180
Important	10	111	6	46
Somewhat helpful	1	7	0	2
Not a factor	0	2	0	0
Total	100	1070	100	732

*P*<.001

<b>ff. I was able to meet with attending to discuss areas of concern outside of the clinical setting</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	28	294	27	198
Very Important	33	358	27	196
Important	23	243	19	136
Somewhat helpful	8	85	11	77
Not a factor	8	89	17	124
Total	100	1069	100	731

*P*<.001

<b>hh. The attending modeled excellent patient relationship skills</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Essential Component	40	429	52	378
Very Important	40	423	37	267
Important	18	188	10	74
Somewhat helpful	2	18	1	7
Not a factor	1	12	1	5
Total	100	1070	100	731

*P*<.001

<b>Table D-15a Summary Table for Question 46</b>			
<i>Q46. If you were to describe the BEST clinical rotation you experienced during your medical education, which of the following terms or phrases would you use?</i>			
<b>Description of best clinical rotation</b>		<b>Men</b>	<b>Women</b>
<b>Item/descriptor</b>	<b>Rating*</b>	<b>%</b>	<b>%</b>
h. Able to participate in the diagnostic work-up of the patients.	EC+VI	90	95
i. Able to participate in the management of the patient	EC+VI	90	95
l. Able to work on a personal basis with the patient	EC+VI	84	91
o. I was asked to participate in ancillary activities such as journal club	EC+VI	46	36
q. There were other medical students on the same rotation	EC+VI	43	37
r. The attending was influential on hospital selection committees	EC+VI	36	28
t. I had no weekend coverage duties.	EC+VI	36	30
u. I was expected to do weekend coverage during part or all of the rotation	EC+VI	31	20
w. Food was provided	EC+VI	52	37
x. Housing was provided	EC+VI	43	33
y. The use of technology was appropriate to the situation	EC+VI	69	64
bb. I felt free to ask questions	EC+VI	89	93
ff. I was able to meet with attending to discuss areas of concern outside of the clinical setting	EC+VI	61	54
hh. The attending modeled excellent patient relationship skills	EC+VI	80	88

\* Essential Component and Very Important

<b>Table D-16</b> <b>Senior osteopathic medical students, 2003-04: perception of accuracy of evaluations, by gender</b>
<i>Q47. Please indicate your perception of how accurate the following types of evaluation were in providing/assessing information about your knowledge of medicine and clinical competency.</i>
<b>Item/evaluation</b>

<b>c. Years 1&amp;2: Oral examinations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	12	133	9	62
Accurate	48	512	41	301
Inaccurate	9	101	6	42
Very Inaccurate	2	20	1	10
No Experience	29	307	43	313
Total	100	1073	100	728
<i>P&lt;.000</i>				
<b>d. Years 1&amp;2: Student-assigned lecture</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	11	117	9	67
Accurate	54	573	48	343
Inaccurate	12	129	10	70
Very Inaccurate	3	28	1	10
No Experience	20	218	31	223
Total	100	1065	100	713
<i>P&lt;.000</i>				
<b>e. Years 1&amp;2: Student-selected component examinations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	9	93	5	38
Accurate	47	495	37	263
Inaccurate	9	100	5	36
Very Inaccurate	3	28	1	9
No Experience	32	340	51	364
Total	100	1056	100	710
<i>P&lt;.000</i>				

<b>i. Years 1&amp;2: Case-based learning</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	18	188	17	124
Accurate	67	714	63	452
Inaccurate	6	64	6	44
Very Inaccurate	2	25	1	10
No Experience	7	70	12	85
Total	100	1061	100	715
<i>P</i> <.000				
<b>j. Years 1&amp;2: Simulated (Standardized) Patients</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	15	160	14	98
Accurate	59	627	61	437
Inaccurate	13	140	9	67
Very Inaccurate	5	56	2	14
No Experience	8	81	14	98
Total	100	1064	100	714
<i>P</i> <.000				
<b>m. Years 1&amp;2: Objective Structured Clinical Examinations (OSCE)</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	9	89	8	55
Accurate	47	495	43	301
Inaccurate	11	116	7	50
Very Inaccurate	4	45	3	18
No Experience	29	300	40	278
Total	100	1045	100	702
<i>P</i> <.000				
<b>n. Years 1&amp;2: Portfolios</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	6	58	3	19
Accurate	34	351	24	172
Inaccurate	10	104	8	54
Very Inaccurate	4	39	2	17
No Experience	47	491	63	445
Total	100	1043	100	707
<i>P</i> <.000				

<b>o. Years 1&amp;2: Log Books</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	6	65	2	16
Accurate	33	344	29	204
Inaccurate	14	145	11	77
Very Inaccurate	12	130	9	64
No Experience	34	359	49	346
Total	100	1043	100	707
<i>P</i> <.000				
<b>p. Years 1&amp;2: Longitudinal Record of Achievement</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	7	69	3	23
Accurate	37	379	31	217
Inaccurate	12	121	7	48
Very Inaccurate	4	40	4	26
No Experience	41	429	55	388
Total	100	1038	100	702
<i>P</i> <.000				
<b>q. Years 1&amp;2: Computer-based examinations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	6	65	4	29
Accurate	45	467	37	263
Inaccurate	14	148	15	103
Very Inaccurate	7	72	5	37
No Experience	28	291	39	278
Total	100	1043	100	710
<i>P</i> <.000				
<b>r. Years 1&amp;2: Essay examinations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	9	97	7	49
Accurate	43	444	38	268
Inaccurate	10	105	7	52
Very Inaccurate	5	50	2	15
No Experience	33	339	45	318
Total	100	1035	100	702

<i>P</i> <.000				
<b>s. Years 1&amp;2: Short-answer questions</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	9	96	8	55
Accurate	51	527	48	340
Inaccurate	11	111	6	39
Very Inaccurate	3	29	2	12
No Experience	27	279	37	258
Total	100	1042	100	704
<i>P</i> <.000				
<b>t. Years 1&amp;2: National Board shelf-examinations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	10	106	6	43
Accurate	48	502	37	263
Inaccurate	12	124	13	94
Very Inaccurate	4	45	5	32
No Experience	25	264	39	271
Total	100	1041	100	703
<i>P</i> <.000				
<b>u. Years 1&amp;2: National Boards Part I</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	15	153	9	64
Accurate	58	607	57	407
Inaccurate	17	173	21	151
Very Inaccurate	6	58	6	40
No Experience	5	52	7	48
Total	100	1043	100	710
<i>P</i> <.000				
<b>v. Years 1&amp;2: National Boards Part II</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	12	99	8	44
Accurate	48	413	48	276
Inaccurate	17	143	16	92
Very Inaccurate	5	46	4	22
No Experience	18	154	25	144

Total	100	855	100	578
<i>P</i> <.000				
<b>w. Years 1&amp;2: Digitalization of physical examination</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	6	56	4	23
Accurate	38	329	28	168
Inaccurate	10	91	5	32
Very Inaccurate	3	25	2	14
No Experience	43	376	60	359
Total	100	877	100	596
<i>P</i> <.000				
<b>x. Years 1&amp;2: Post-rotation examinations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	7	58	4	23
Accurate	41	356	32	183
Inaccurate	15	128	16	91
Very Inaccurate	7	64	7	39
No Experience	31	272	42	244
Total	100	878	100	580
<i>P</i> <.000				
<b>z. Years 1&amp;2: Attending evaluation of student at end of rotation</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	11	95	9	52
Accurate	51	446	47	274
Inaccurate	8	67	8	45
Very Inaccurate	4	39	2	11
No Experience	26	224	35	202
Total	100	871	100	584
<i>P</i> <.000				
<b>a. Years 3&amp;4: Multiple-choice examinations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	9	94	5	32
Accurate	50	521	49	336
Inaccurate	23	235	26	175
Very Inaccurate	11	112	13	87

No Experience	7	73	7	51
Total	100	1035	100	681
<i>P</i> < .000				
<b>c. YEARS 3&amp;4 Oral examinations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	14	145	9	61
Accurate	47	479	41	275
Inaccurate	7	67	4	27
Very Inaccurate	1	11	1	7
No Experience	32	324	46	309
Total	100	1026	100	679
<i>P</i> < .000				
<b>e. Years 3&amp;4: Student-selected component examinations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	10	102	6	38
Accurate	44	445	35	234
Inaccurate	7	68	4	29
Very Inaccurate	2	18	1	10
No Experience	37	374	54	359
Total	100	1007	100	670
<i>P</i> < .000				
<b>g. Years 3&amp;4: Case vignettes</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	23	231	16	106
Accurate	58	595	63	424
Inaccurate	5	46	4	26
Very Inaccurate	1	8	0	3
No Experience	14	138	16	110
Total	100	1018	100	669
<i>P</i> < .000				
<b>h. Years 3&amp;4: Problem-based learning</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Very Accurate	20	205	15	100
Accurate	55	558	58	390
Inaccurate	5	53	3	21

Very Inaccurate	2	16	1	9
No Experience	18	184	22	150
Total	100	1016	100	670

*P*<.000

**j. Years 3&4: Simulated (Standardized) Patients**

	Men		Women	
	%	N	%	N
Very Accurate	13	135	12	78
Accurate	48	485	43	285
Inaccurate	8	86	8	53
Very Inaccurate	4	41	2	12
No Experience	26	268	36	238
Total	100	1015	100	666

*P*<.000

**k. Years 3&4: Simulation models for clinical procedures**

	Men		Women	
	%	N	%	N
Very Accurate	13	130	9	60
Accurate	48	485	46	306
Inaccurate	9	92	7	44
Very Inaccurate	2	22	2	15
No Experience	28	283	36	241
Total	100	1012	100	666

*P*<.000

**m. Years 3&4: Objective structured clinical examinations (OSCE)**

	Men		Women	
	%	N	%	N
Very Accurate	8	84	6	40
Accurate	43	428	38	249
Inaccurate	9	92	6	40
Very Inaccurate	4	38	3	20
No Experience	36	360	47	313
Total	100	1002	100	662

*P*<.000

**n. Years 3&4: Portfolios**

	Men		Women	
	%	N	%	N
Very Accurate	6	60	3	17
Accurate	34	337	23	155

Inaccurate	9	89	7	49
Very Inaccurate	3	34	3	20
No Experience	48	485	64	425
Total	100	1005	100	666

*P* < .000

**p. Years 3&4: Longitudinal record of achievement**

	Men		Women	
	%	N	%	N
Very Accurate	7	66	3	21
Accurate	37	369	33	217
Inaccurate	10	103	6	43
Very Inaccurate	5	47	4	24
No Experience	42	420	54	361
Total	100	1005	100	666

*P* < .000

**q. Years 3&4: Computer examinations**

	Men		Women	
	%	N	%	N
Very Accurate	7	73	4	26
Accurate	43	425	35	234
Inaccurate	14	137	16	108
Very Inaccurate	10	96	10	64
No Experience	27	265	35	237
Total	100	996	100	669

*P* < .000

**r. Years 3&4: Essay examinations**

	Men		Women	
	%	N	%	N
Very Accurate	8	80	5	37
Accurate	40	404	32	217
Inaccurate	9	92	7	45
Very Inaccurate	4	36	3	17
No Experience	39	389	53	357
Total	100	1001	100	673

*P* < .000

**s. Years 3&4: Short-answer questions**

	Men		Women	
	%	N	%	N
Very Accurate	10	96	6	41

Accurate	45	445	39	259
Inaccurate	9	85	6	40
Very Inaccurate	2	22	2	11
No Experience	35	348	47	316
Total	100	996	100	667

*P<.000*

**t. Years 3&4: National Board shelf-examinations**

	Men		Women	
	%	N	%	N
Very Accurate	11	107	7	50
Accurate	47	472	38	257
Inaccurate	11	108	12	77
Very Inaccurate	5	45	5	32
No Experience	27	264	38	253
Total	100	996	100	669

*P<.000*

**x. Years 3&4: Post-rotation examinations**

	Men		Women	
	%	N	%	N
Very Accurate	9	78	5	28
Accurate	47	404	41	245
Inaccurate	21	177	26	154
Very Inaccurate	12	107	16	97
No Experience	11	95	12	70
Total	100	861	100	594

*P<.000*

**Table D-16a**  
**Summary Table for Question 47**

*Q47. Please indicate your perception of how accurate the following types of evaluation were in providing/assessing information about your knowledge of medicine and clinical competency.*

		Men	Women
Evaluation type		%	%
Years 1&2	Ratings	%	%
c. Oral examinations	VA+A	60	50
d. Student assigned lecture	VA+A	65	58
e. Student selected component examinations	VA+A	56	42

i. Case-based learning	VA+A	85	81
j. Simulated (Standardized) Patients	VA+A	74	75
m. Objective structured clinical examinations (OSCE)	VA+A	56	51
n. Portfolios	VA+A	39	27
o. Log books	VA+A	39	31
p. Longitudinal record of achievement	VA+A	43	34
q. Computer examinations	VA+A	51	41
r. Essay examinations	VA+A	52	45
s. Short-answer questions	VA+A	60	56
t. National Board shelf-examinations	VA+A	58	44
u. National Boards Part I	VA+A	73	66
v. National Boards Part II	VA+A	60	55
w. Digitalization of physical examination	VA+A	44	32
x. Post-rotation examinations	VA+A	47	36
<b>Years 3 &amp; 4</b>			
z. Attending evaluation of student at end of rotation	VA+A	62	56
a. Multiple-choice examinations	VA+A	59	54
c. Oral examinations	VA+A	61	49
e. Student-selected component examinations	VA+A	54	41
g. Case vignettes	VA+A	81	79
h. Problem-based learning	VA+A	75	73
j. Simulated (Standardized) Patients	VA+A	61	55
k. Simulation models for clinical procedures	VA+A	61	55
m. Objective structured clinical examinations (OSCE)	VA+A	51	44
n. Portfolios	VA+A	40	26
p. Longitudinal record of achievement	VA+A	43	36
q. Computer-based examinations	VA+A	50	39
r. Essay examinations	VA+A	48	38
s. Short-answer questions	VA+A	54	45
t. National Board shelf-examinations	VA+A	58	46
x. Post-rotation examinations	VA+A	56	46

\* Very Accurate and Accurate

<b>Table D-17</b>				
<b>Senior osteopathic medical students, 2003-04: sites to practice OPP, by gender</b>				
<i>Q51. I had the opportunity to practice OPP in:</i>				
<b>Item/site</b>				
<b>c. My ambulatory Non-Primary Care rotations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Strongly Agree	10	106	6	44
Agree	30	322	22	160

Disagree	39	409	47	339
Strongly Disagree	21	225	25	184
Total	100	1062	100	727

$P < .001$

<b>Table D-17a</b>			
<b>Summary Table for Question 51</b>			
<i>Q51. I had the opportunity to practice OPP in:</i>			
<b>Item/site</b>		<b>Men</b>	<b>Women</b>
c. My ambulatory Non-Primary Care rotations	Strongly agree + Agree	40	28

*Comments:* A higher percentage of men than women reported having had the opportunity to practice OPP in ambulatory non-primary care rotations.

<b>Table D-18</b>				
<b>Senior osteopathic medical students, 2003-04: when they had physician role models, by gender</b>				
<i>Q52. I had osteopathic physician role models in:</i>				
<b>Item/time</b>				
<b>a. My first 2 years in medical school</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Strongly Agree	44	465	51	374
Agree	45	477	43	313
Disagree	7	72	4	29
Strongly Disagree	5	50	2	13
Total	100	1064	100	729

$P < .000$

<b>d. My required ambulatory non-primary care rotations</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Strongly Agree	17	180	16	115
Agree	40	426	33	242
Disagree	29	307	35	253
Strongly Disagree	14	148	16	116
Total	100	1061	100	726

$P < .000$

<b>Table D-18a</b>			
<b>Summary Table for Question 52</b>			
<i>I had osteopathic physician role models in:</i>			
		<b>Men</b>	<b>Women</b>
<b>Time</b>	<b>Rating</b>	<b>%</b>	<b>%</b>
DO role models in first 2 years of medical school	Strongly agree + Agree	89	94
DO role models in required ambulatory non-primary care rotations	Strongly agree + Agree	57	49

*Comment:* More women reported having DO role models in first two years of medical school than men, while more men reported having DO role models in required ambulatory non-primary care rotations (reason may lie with prior question).

<b>Table D-19</b>				
<b>Senior osteopathic medical students, 2003-04: perceptions of distinguishing characteristics of osteopathic and allopathic physicians, by gender of students</b>				
<i>Q54. As you look back on you training to date, how well do you agree or disagree with the following statements regarding proposed distinguishing characteristics between osteopathic and allopathic physicians?</i>				
<b>Item/characteristic</b>				
<b>a. No distinction is apparent to me in the rapport with patients developed by Osteopathic and Allopathic physicians.</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Strongly Agree	26	275	20	147
Agrees	42	444	41	295
Disagree	27	286	31	226
Strongly Disagree	6	60	7	54
Total	100	1065	100	722

*P* < .000

<b>b. No distinction is apparent to me in the treatment approach with the patient.</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Strongly Agree	19	201	14	102

Agree	44	467	39	282
Disagree	33	350	40	290
Strongly Disagree	4	46	7	51
Total	100	1064	100	725

$P < .000$

<b>e. Osteopathic physicians held me to higher standards of performance than Allopathic physicians.</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Strongly Agree	7	77	5	34
Agree	20	215	17	126
Disagree	54	577	62	445
Strongly Disagree	18	192	16	116
Total	100	1061	100	721

$P < 0.010$

<b>Table D-19a Summary Table for Question 54</b>			
<i>Q54. As you look back on you training to date, how well do you agree or disagree with the following statements regarding proposed distinguishing characteristics between osteopathic and allopathic physicians?</i>			
<b>Distinguishing characteristics</b>			
	<b>Rating</b>	<b>Men</b>	<b>Women</b>
<b>a.</b> No distinction is apparent to me in the rapport with patients developed by Osteopathic and Allopathic physicians.	Strongly Agree + Agree	68	61
<b>b.</b> No distinction is apparent to me in the treatment approach with the patient.	Strongly Agree + Agree	63	53
<b>e.</b> Osteopathic physicians held me to higher standards of performance than Allopathic physicians.	Strongly Agree + Agree	28	22

*Comments:* A higher percentage of men seemed to see no distinction between DOs and MDs in patient rapport and treatment approach. A higher percentage of men feel DOs have higher standards of performance than MDs. Interestingly enough the other 3 items of this question, all showed significance ( $p < .05$ ); differences between percentage of men and women were small but in same direction with more men feeling DOs were better teachers than MDs and DOs were more rigorous in their work-up (although in both cases less than 30% agreed with the statement). Only in one question did more women choose ‘agree’ than men. The question is that the holistic approach distinguishes DOs from MDs.

**Table D-20**  
**Senior osteopathic medical students, 2003-04: perceptions of doctor-patient relationship, by gender**

*Q55. Below is a set of questions that address aspects of Doctor-Patient Interactions in a clinical encounter. Please indicate your agreement or disagreement with each statement.*

**Item/aspect**

<b>d. Discuss health issues in relation to family life</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Strongly Agree	25	270	30	221
Agree	64	686	65	471
Neither Agree or Disagree	9	101	4	32
Disagree	1	8	0	2
Strongly Disagree	0	4	0	1
Total	100	1069	100	727

*P*<.000

<b>g. Discuss your personal experiences, not including professional experience, with patients</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Strongly Agree	15	165	12	84
Agree	44	472	29	212
Neither Agree or Disagree	27	290	34	246
Disagree	10	110	19	140
Strongly Disagree	3	31	6	44
Total	100	1068	100	726

*P*<.000

<b>p. Delay prescribing medications (including over the counter medications) until trying non-pharmacological measures</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Strongly Agree	15	164	11	81
Agree	46	492	38	276
Neither Agree or Disagree	24	253	30	220
Disagree	13	136	18	132
Strongly Disagree	2	20	2	15
Total	100	1065	100	724

*P*<.000

<b>r. Use the patient's first name in the clinical encounter</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Strongly Agree	22	230	20	144
Agree	46	495	38	273
Neither Agree or Disagree	23	246	30	217
Disagree	8	80	11	77
Strongly Disagree	1	14	2	11
Total	100	1065	100	722

P<.000

<b>s. Have the patient use your first name during the clinical encounter</b>				
	<b>Men</b>		<b>Women</b>	
	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>
Strongly Agree	16	171	10	74
Agree	36	385	23	166
Neither Agree or Disagree	26	274	30	217
Disagree	17	182	27	197
Strongly Disagree	5	51	9	67
Total	100	1063	100	721

p<.000

<b>Table D-20a Summary Table for Question 55</b>			
<i>Q55. Below is a set of questions that address aspects of Doctor-Patient Interactions in a clinical encounter. Please indicate your agreement or disagreement with each statement.</i>			
<b>It is appropriate to:</b>	<b>Ratings</b>	<b>Men</b>	<b>Women</b>
		<b>%</b>	<b>%</b>
<b>d.</b> Discuss health issues in relation to family life	SA+A*	89	95
<b>g.</b> Discuss your personal experiences, not including professional experience, with patients	SA+A	60	41
<b>p.</b> Delay prescribing medications (including over the counter medications) until trying non-pharmacological measures	SA+A	62	49
<b>r.</b> Use the patient's first name in the clinical encounter	SA+A	68	58
<b>s.</b> Have the patient use your first name during the clinical encounter	SA+A	52	33

\*Strongly agree and Agree

*Comments:* A higher percentage of men than women thought it was appropriate to discuss personal experiences, delay prescribing medications, use a patient's first name, and use their own first name. A higher proportion of women thought it is appropriate to discuss health issues in relation to family life.

## Appendix E

May 27, 2004

«PRG\_DIR\_First» «PRG\_DIR\_LAST» «SUFFIX»  
«PRG\_ADDRESS»  
«PRG\_ADD\_2»  
«PRG\_ADD\_3»  
«CITY», «STATE» «ZIP»

Dear Dr. «PRG\_DIR\_LAST»:

You have been selected to participate in a survey of Residency Program Directors. The questionnaire that accompanies this letter was designed to examine, in some detail, your evaluation of medical education in general and residency programs in particular. We hope that you will take the time to fill it out and return it to us at your earliest convenience.

We have provided a postage-paid return envelope for you to use to mail your questionnaire back to us. In addition to your questionnaire, we have included questionnaire packets for the students in your program. Please distribute these packets to them as soon as possible. We ask that you do not discuss your questionnaire, or theirs, with any of the students. Full instructions and background information are included with their questionnaires.

The following page contains a list of the students in your program who should receive the questionnaire. If by some chance a student is no longer in your program please contact me at the number below or Paul Burton by email at burtonp1@msu.edu.

Your responses to the questionnaire will be kept confidential to the extent allowed by law. No individual responses will be reported, and all personal identifying information will be removed from the dataset. The survey should take about ten minutes to complete. Your participation in this study is completely voluntary; you can end your participation at any time without penalty, and you need answer only those questions that you choose to answer.

If you choose to complete and return this survey, that will constitute your informed consent. If you have questions about the study, you can contact me at 517-355-6672 ext. 171 or by e-mail at Nathaniel.Ehrlich@ssc.msu.edu. If you have questions or concerns about your rights as a research participant, you may contact, Peter Vasilenko, Ph.D., Chair of the Committee on Research Involving Human Subjects at 517-355-2180 or by email at UCRIHS@MSU.EDU.

Sincerely,



N. J. Ehrlich, Ph.D.  
Principal Investigator  
May 27, 2004

«FIRST\_NAME» «LAST\_NAME»  
«PRG\_ADDRESS»

«PRG\_ADD\_2»  
«PRG\_ADD\_3»  
«CITY», «STATE» «ZIP»

Dear Dr. «LAST\_NAME»:

You have been randomly selected to participate in a survey of second-year residents. The questionnaire was designed by the American Association of Colleges of Osteopathic Medicine (AACOM) to examine, in some detail, your evaluation of your medical education. Perhaps you recall taking a similar survey in your last year in medical school; this survey covers much of the same material, but takes into account the progress you have made since that time.

We understand that your time is precious and scarce, but the information you provide will help to assist the continuous improvement that's necessary for optimal education. As a token of appreciation for your effort, you will receive a payment of \$20 in return for your completed questionnaire. The survey should take about twenty minutes to complete. Your participation in this study is completely voluntary; you can end your participation at any time without penalty, and you need answer only those questions that you choose to answer.

Finally, let me assure you that whatever you say in the survey will be kept confidential to the extent permitted by law. Only grouped results will be reported, and all personal identifying information will be removed from the compiled results.

If you choose to complete and return this survey, that will constitute your informed consent. If you have questions about the study, you can contact me at 517-355-6672 ext. 171 or by e-mail at [Nathaniel.Ehrlich@ssc.msu.edu](mailto:Nathaniel.Ehrlich@ssc.msu.edu). If you have questions or concerns about your rights as a research participant, you may contact, Peter Vasilenko, Ph.D., Chair of the Committee on Research Involving Human Subjects at 517-355-2180 or by email at [UCRIHS@MSU.EDU](mailto:UCRIHS@MSU.EDU).

Sincerely,



N. J. Ehrlich, Ph.D.,  
Principal Investigator

June 30, 2004

«PRG\_DIR\_First» «PRG\_DIR\_LAST» «SUFFIX»  
«PRG\_ADDRESS»  
«PRG\_ADD\_2»  
«PRG\_ADD\_3»  
«CITY», «STATE» «ZIP»

Dear Dr. «PRG\_DIR\_LAST»:

About three weeks ago we sent you a packet of questionnaires designed by the American Association of Colleges of Osteopathic Medicine (AACOM) to examine, in some detail, the evaluation of your second-year residents' medical education. We have received your completed questionnaire, but we have not received a completed questionnaire for some of your students. Enclosed please find another questionnaire for those students who have not yet returned their questionnaire. We ask your cooperation in re-distributing these questionnaire packets to the student(s) as soon as possible. If by some chance a student is no longer in your program please contact me at the number below or Christina Bott by email at [bottch@msu.edu](mailto:bottch@msu.edu).

The questionnaire is a follow-up to one they filled out as fourth-year Medical students. It covers the changes in perspective, aim, and education that they have gone through since then. Their responses will be kept confidential to the extent allowed by law; all personal identification will be removed from the dataset once their responses have been entered, and only grouped, non-traceable results will be reported.

We ask that you do not discuss the questionnaire with your students. Complete materials and instructions for filling it out and mailing the completed questionnaire back to us are enclosed in each sealed packet.

Thank you, in advance, for your cooperation.

Sincerely,



N. J. Ehrlich, Ph.D.  
Principal Investigator

June 30, 2004

«FIRST\_NAME» «LAST\_NAME»  
«PRG\_ADDRESS»  
«PRG\_ADD\_2»  
«PRG\_ADD\_3»  
«CITY», «STATE» «ZIP»

Dear Dr. «LAST\_NAME»:

About three weeks ago we sent you a questionnaire designed by the American Association of Colleges of Osteopathic Medicine (AACOM) to examine, in some detail, your evaluation of your medical education. As of today, we have not received your completed questionnaire. Your responses to these questions are very important. The information will be used to improve the quality of education within your program. For your convenience, I have enclosed a second questionnaire for you to complete and return it in the postage paid envelope provided.

As a token of appreciation for your effort, you will receive a payment of \$20 in return for your completed questionnaire.
--

Your participation in this study is completely voluntary; you can end your participation at any time without penalty, and you need answer only those questions that you choose to answer. Let me assure you that whatever you say in the survey will be kept confidential to the extent permitted by law. Only grouped results will be reported, and all personal identifying information will be removed from the compiled results.

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Sincerely,



N. J. Ehrlich, Ph.D.,  
Principal Investigator

June 25, 2004

«Program\_Director» «PRG\_DIR\_LAST» «SUFFIX»  
«PRG\_ADDRESS»  
«PRG\_ADD\_2»  
«PRG\_ADD\_3»  
«CITY», «STATE» «ZIP»

Dear Dr. «PRG\_DIR\_LAST»:

About three weeks ago we sent you a packet of questionnaires designed by the American Association of Colleges of Osteopathic Medicine (AACOM) to examine, in some detail, the evaluation of your second-year residents' medical education. As of today, we have not received a completed questionnaire for some of your students. Enclosed please find another questionnaire for those students who have not yet returned their questionnaire. We ask your cooperation in re-distributing these questionnaire packets to the student(s) as soon as possible.

The questionnaire is a follow-up to one they filled out as fourth-year Medical students. It covers the changes in perspective, aim, and education that they have gone through since then. Their responses will be kept confidential to the extent allowed by law; all personal identification will be removed from the dataset once their responses have been entered, and only grouped, non-traceable results will be reported.

We ask that you do not discuss the questionnaire with your students. Complete materials and instructions for filling it out and mailing the completed questionnaire back to us are enclosed in each sealed packet.

Thank you, in advance, for your cooperation.

Sincerely,



N. J. Ehrlich, Ph.D.  
Principal Investigator

June 30, 2004

«PRG\_DIR\_First» «PRG\_DIR\_LAST» «SUFFIX»  
«PRG\_ADDRESS»  
«PRG\_ADD\_2»  
«PRG\_ADD\_3»  
«CITY», «STATE» «ZIP»

Dear Dr. «PRG\_DIR\_LAST»:

About three weeks ago, we sent you a questionnaire designed to examine, in some detail, your evaluation of medical education in general and residency programs in particular. As of today we have not received your completed questionnaire. Your responses to these questions are very important. For your convenience, I have enclosed another questionnaire for you to complete. Please take a few moments to fill it out and return it to us in the postage paid envelope provided.

Your responses to the questionnaire will be kept confidential to the extent allowed by law. No individual responses will be reported, and all personal identifying information will be removed from the dataset. The survey should take about ten minutes to complete. Your participation in this study is completely voluntary; you can end your participation at any time without penalty, and you need answer only those questions that you choose to answer.

If you choose to complete and return this survey, that will constitute your informed consent. If you have questions about the study, you can contact me at 517-355-6672 ext. 171 or by e-mail at [Nathaniel.Ehrlich@ssc.msu.edu](mailto:Nathaniel.Ehrlich@ssc.msu.edu). If you have questions or concerns about your rights as a research participant, you may contact, Peter Vasilenko, Ph.D., Chair of the Committee on Research Involving Human Subjects at 517-355-2180 or by email at [UCRIHS@MSU.EDU](mailto:UCRIHS@MSU.EDU).

Sincerely,



N. J. Ehrlich, Ph.D.  
Principal Investigator

June 25, 2004

«PRG\_DIR\_First» «PRG\_DIR\_LAST» «SUFFIX»  
«PRG\_ADDRESS»  
«PRG\_ADD\_2»  
«PRG\_ADD\_3»  
«CITY», «STATE» «ZIP»

Dear Dr. «PRG\_DIR\_LAST»:

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In addition to your questionnaire, we have included questionnaire packets for those students in your program who also have not yet returned a questionnaire. You will find their names on each envelope. Please distribute these packets to these students as soon as possible. We ask that you do not discuss your questionnaire, or theirs, with any of the students. Full instructions and background information are included with their questionnaires. If by some chance a student is no longer in your program please contact me at the number below or Christina Bott by email at [bottch@msu.edu](mailto:bottch@msu.edu).

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If you choose to complete and return this survey, that will constitute your informed consent. If you have questions about the study, you can contact me at 517-355-6672 ext. 171 or by e-mail at [Nathaniel.Ehrlich@ssc.msu.edu](mailto:Nathaniel.Ehrlich@ssc.msu.edu). If you have questions or concerns about your rights as a research participant, you may contact, Peter Vasilenko, Ph.D., Chair of the Committee on Research Involving Human Subjects at 517-355-2180 or by email at [UCRIHS@MSU.EDU](mailto:UCRIHS@MSU.EDU).

Sincerely,



N. J. Ehrlich, Ph.D.  
Principal Investigator

May 27, 2004

«Program\_Director» «PRG\_DIR\_LAST» «SUFFIX»  
«PRG\_ADDRESS»  
«PRG\_ADD\_2»  
«PRG\_ADD\_3»  
«CITY», «STATE» «ZIP»

Dear Dr. «PRG\_DIR\_LAST»:

Enclosed you will find a packet of questionnaires. The questionnaire was designed by the American Association of Colleges of Osteopathic Medicine (AACOM) to examine, in some detail, the evaluation of your second-year residents medical education.

The questionnaire is a follow-up to one they filled out as fourth-year Medical students. It covers the changes in perspective, aim, and education that they have gone through since then. Their responses will be kept confidential to the extent allowed by law; all personal identification will be removed from the dataset once their responses have been entered, and only grouped, non-traceable results will be reported. The students in your residency program who are listed on the following page have been selected as respondents. We ask your cooperation in distributing the questionnaire to each of them as soon as possible.

We ask that you do not discuss the questionnaire with your students. Complete materials and instructions for filling it out and mailing the completed questionnaire back to us are enclosed in each sealed packet.

Thank you, in advance, for your cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read "N. J. Ehrlich", written in a cursive style.

N. J. Ehrlich, Ph.D.  
Principal Investigator

# AACOM 2004 Survey

## Program Director Questionnaire

### Comprehensive Study of Osteopathic Graduate Medical Education



Conducted by the  
Office for Survey Research  
of the

#### **INSTITUTE FOR PUBLIC POLICY AND SOCIAL RESEARCH**

321 Berkey Hall  
Michigan State University  
East Lansing, MI 48824-1111

All responses to this questionnaire will be kept strictly confidential.  
Should you have any questions about the survey, please contact either  
Paul Burton or Christina Bott  
at (517) 355-6672

*You indicate your voluntary consent to participate in this study by completing and returning  
the questionnaire.*

*MSU is an affirmative action/Equal opportunity institution*

# Program Director Questionnaire

## Comprehensive Study of Osteopathic Graduate Medical Education

Program Name: \_\_\_\_\_

Program Director: \_\_\_\_\_

Degree: \_\_\_ D.O. \_\_\_ M.D. \_\_\_ Ph.D. \_\_\_ Other

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Graduated from \_\_\_\_\_ Year: \_\_\_\_\_

Post-Graduate Training	Completed	Certification Completed
------------------------	-----------	-------------------------

Internship: _____	_____	
-------------------	-------	--

Residency: _____	_____	_____
------------------	-------	-------

	_____	_____
--	-------	-------

	_____	_____
--	-------	-------

Fellowship: _____	_____	_____
-------------------	-------	-------

	_____	_____
--	-------	-------

**Previous Experience:**

**Years**

Trainer in specialty prior to becoming Program Director  1-5  6-10  more than 10  N/A or none

Assistant Program Director  1-5  6-10  more than 10  N/A or none

Associate Program Director  1-5  6-10  more than 10  N/A or none

Other \_\_\_\_\_  1-5  6-10  more than 10  N/A or none  
 (related to program)

**OPTI affiliation** (if applicable) \_\_\_\_\_

1. Which of the following best describes the **affiliation** of your residency program:
  - a. Community based - **no** university affiliation
  - b. Community based **and** university affiliation
  - c. University based
  - d. Other \_\_\_\_\_

2. Which statement best describes the **accreditation** of your residency program?
  - a. ACGME
  - b. AOA
  - c. Dual Accreditation (AOA/ACGME)
  - d. Other \_\_\_\_\_
  
3. Do you plan to acquire or maintain **dual accreditation** (AOA/ACGME) of your program in the next 3 years?
  - a. I do not plan to acquire dual accreditation
  - b. I plan to acquire dual accreditation
  - c. I do not plan to continue dual accreditation
  - d. I plan to continue dual accreditation
  
4. Please list the number of Interns and Residents you have this academic year, and the number that you are planning to have in your program through June 30, 2008.

<b>Level</b>	<b>2003-2004</b>	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b>	<b>2007-2008</b>
PGY1					
PGY2					
PGY3					
PGY4					
PGY5					
PGY6					
PGY7					
PGY8					

5. If residents in your program are eligible to sit for both Osteopathic and Allopathic specialty-certifying examinations, when do you perceive that residents decide upon which set of boards to take?
  - a. The resident makes the decision prior to acceptance into the training program.
  - b. The resident makes the decision during the program.
  - c. The resident makes the decision after the program is complete.
  - d. Not Applicable, AOA-accredited program only.
  
6. If residents in your program are eligible to sit for both Osteopathic and Allopathic specialty-certifying examinations, which one of the following statements best describes your program's policy?
  - a. The resident must sit for the Osteopathic Boards with the Allopathic Boards optional.
  - b. The resident must sit for the Allopathic Boards with the Osteopathic Boards optional.
  - c. The resident is required to sit for both certifying examinations.
  - d. Either certifying examination is acceptable in our program.
  - e. Not applicable, AOA-accredited only.

For each category of abilities described below, please rate the performance of your second year resident class. Circle the number corresponding to your judgment in each category.

Scale:	
1 = Substantially below average	4 = A little above average
2 = A little below average	5 = Substantially above average
3 = Average	N = Not observed

- |   |                    |
|---|--------------------|
| <p>7. <b>General medical knowledge</b> that includes the residents':</p> <ul style="list-style-type: none"> <li>• <i>Fund of basic science knowledge</i></li> <li>• <i>Fund of clinical knowledge</i></li> <li>• <i>Fund of psychosocial knowledge</i></li> </ul>   | <p>1 2 3 4 5 N</p> |
| <p>8. <b>Clinical problem solving</b> that includes the residents':</p> <ul style="list-style-type: none"> <li>• <i>Ability to generate appropriate hypotheses</i></li> <li>• <i>Ability to organize data effectively</i></li> </ul>  | <p>1 2 3 4 5 N</p> |
| <p>9. <b>Clinical Skills</b> that includes the residents':</p> <ul style="list-style-type: none"> <li>• <i>Ability to perform an appropriate age and gender-specific exam</i></li> <li>• <i>Ability to perform specialized exams appropriate to the clinical situation</i></li> <li>• <i>Ability to do procedures appropriate for level of training</i></li> </ul>  | <p>1 2 3 4 5 N</p> |
| <p>10. <b>Patient Management</b> that includes the residents':</p> <ul style="list-style-type: none"> <li>• <i>Ability to use medical terminology in an effective way</i></li> <li>• <i>Ability to use consultation and referrals appropriately</i></li> <li>• <i>Ability to actively use community support services</i></li> </ul>   | <p>1 2 3 4 5 N</p> |
| <p>11. <b>Professional Attributes</b> that includes the residents':</p> <ul style="list-style-type: none"> <li>• <i>Adherence to ethical behavior</i></li> <li>• <i>Consistent reliable and responsible behavior</i></li> <li>• <i>Willingness to carry a fair share of the total resident workload</i></li> <li>• <i>Consistent professional appearance</i></li> </ul>                                     | <p>1 2 3 4 5 N</p> |
| <p>12. <b>Attributes as a learner</b> that includes the residents':</p> <ul style="list-style-type: none"> <li>• <i>Response to advice and criticism from peers and teachers</i></li> <li>• <i>Ability to seek out opportunities for new learning</i></li> <li>• <i>Ability to manage stress and personal problems</i></li> </ul>   | <p>1 2 3 4 5 N</p> |
| <p>13. <b>Communication skills</b> that includes the residents':</p> <ul style="list-style-type: none"> <li>• <i>Ability to establish rapport with patient/families</i></li> <li>• <i>Ability to respond appropriately to patient's feelings</i></li> <li>• <i>Ability to interact effectively with other health professionals</i></li> <li>• <i>Ability to be understood by patients/family</i></li> </ul> | <p>1 2 3 4 5 N</p> |

14. **Written record** that includes the residents': 1 2 3 4 5 N
- *Ability to write legibly*
  - *Accuracy in their notes and written communication*
  - *Completes writing assignments in a timely fashion*
15. **Emergency Care** that includes the residents': 1 2 3 4 5 N
- *Ability to recognize and act appropriately on common emergency medical encounters*
  - *Ability to recognize and act appropriately on common emergency psychological encounters*
16. **Community member** that includes the residents': 1 2 3 4 5 N
- *Sensitivity to health issues in the society/community*
  - *Demonstration of respect for patients of diverse backgrounds*
17. **Osteopathic Principles and Practice** that includes the residents': 1 2 3 4 5 N
- *Ability to diagnose a structural problem*
  - *Ability to document a structural problem*
  - *Ability to treat a structural problem*
  - *Ability to integrate a structural examination into the overall clinical examination*
  - *Ability to integrate preventive measure into treatment and follow-up recommendations*
18. **Self-Awareness (please rate each item)**
- |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 1. Responsibility for own learning                              | 1 | 2 | 3 | 4 | 5 | N |
| 2. Reflect on one's own competency and limitations              | 1 | 2 | 3 | 4 | 5 | N |
| 3. Monitor ethical behavior of self and others                  | 1 | 2 | 3 | 4 | 5 | N |
| 4. Reflect with colleagues on success of group work             | 1 | 2 | 3 | 4 | 5 | N |
| 5. Identify and address patient, family, colleague perspectives | 1 | 2 | 3 | 4 | 5 | N |

19. Please indicate your level of agreement with the following statements:

<b>Program Quality</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
a. Sufficient faculty time is committed to the education of the house staff.					
b. The house staff has sufficient patient support services so that their time is focused on education.					
c. The program provides good formal teaching opportunities					
d. The program provides the house staff with a good balance between their educational needs and patient care					
e. Faculty incentives are necessary to increase the level of faculty participation					
f. Discretion over the budget is sufficient for me to meet my program goals.					
g. PDA/laptops are integrated into our educational program goals.					
h. The medical library is adequate to meet our program goals.					
i. The house staff lounges and on-call rooms meet the needs of our house staff.					
j. The house staff has adequate funding to provide them with relevant research opportunities.					
k. Faculty with research experience are available to mentor house staff on research projects.					
l. The house staff has adequate space to carry out their research studies.					
m. Resources to recruit quality house staff are adequate.					
n. House staff salaries and benefits are competitive.					
o. The program has been able to recruit prior house staff to senior staff positions.					
p. As program director, I am provided with adequate opportunities to develop my skills in resident/fellow education.					
q. There are professional opportunities for graduates of my program within 50 miles of our training site.					
r. The house staff must rotate to an out of hospital /clinic to meet AOA/ACGME requirements.					
s. The house staff rotates at out of hospital/clinics to enrich their educational experience.					
t. The program educates a sufficient number of medical students.					
u. Having medical students enhances the program and contributes to our ability to recruit high-level residents from preferred universities.					
v. The program has been successful in recruiting past medical students into residency slots.					

20. Over the next 5 years, the number of medical students in our program is likely to:

	D.O. students	M.D. students	Both
Increase the number of			
Decrease the number of			
Remain the same			

21. Over the next five years, I anticipate the size of my program will

	D.O. Residents	M.D. Residents	Both
Increase			
Decrease			
Remain the same			

22. As you reflect upon the process followed to secure your residents and factors that influenced your choice, how important do you think the following factors were in selecting the resident. Please use the following scale:

**1) not a factor      2) of little importance      3) important      4) essential**

<b>Factor</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
a. Resident initiated contact with the program				
b. Program initiated contact with the resident				
c. Rotated at the hospital, but not necessarily on your specialty				
d. Rotated at the hospital, on your specialty				
e. Expressed additional interest in activities outside of formal clinical training (e.g. journal club in specialty field, etc.)				
f. Visited your training site more than once.				
g. Followed up with personal letters to interviewers				
h. Had publications prior to application				
i. Secured letters of recommendation				
j. Provided USMLE Board Scores				
k. Provided COMLEX Board Scores				
l. Class rank				
m. Marital status				
n. Clinical management of patients as a student (PGY1/intern) on rotations not in your specialty				
o. Clinical management of patients as a student (PGY1/intern) on rotations in your specialty				
p. Personality match between program faculty and prospective resident				
q. Peer evaluations				
r. Gender				
s. Osteopathic training				
t. Plans to stay in area after residency				

u. Case presentation skills				
v. Computer skills				
w. Research skills or having participated in research activities without publications				
x. Other (please specify)				

23. How effective are the following strategies in recruiting residents to your program?  
**Please use the following scale:**

1 = never used 2 = not effective 3 = somewhat effective 4= very effective

Strategies	1	2	3	4
a. Visits to medical schools				
b. Special attention to rotating students				
c. Brochures				
d. Direct contact with inquiries				
e. Individual solicitation				
f. General solicitations				
g. Advertisements in medical journals				
h. Web-based advertisements				
i. Electronic follow-up on inquires				
j. Publications of faculty in peer reviewed journals				
k. Booths at medical meetings				
l. Full time recruiters				
m. Housing for rotating students				
n. Attention to spouse's needs				
o. Fringe benefit programs				
p. Loan repayment programs				
q. Insurance programs				
r. Curriculum design				
s. Geographic location				
t. Career counseling services				
u. Salary				
v. Medical Education Office				
w. Internship program				
x. Board Preparation courses				
y. Other (please specify)				

24. Describe the teaching activities you expect your resident to perform.

Audience	Expected to Teach	Encouraged to Teach
Medical Students		
Junior Residents		
Allied Health Personnel		

Medical Staff		
Patients		
General Public		

25. Does your program have a formalized instructional training program available to our residents?
- Yes
  - No
  - In the planning stage

26. Describe the funding sources for your residency program.

Source	Percent
CHS Reimbursement	
Research (grants, patents, etc.)	
Clinically Generated	
Endowments, gifts	
Hospital allocation	
Other	
TOTAL	100%

27. What percentage of your total funds is expended on activities or services directly related to your training program?
- 10-25%
  - 26-50%
  - 51-75%
  - 76-100%
  - Do not know

28. What percentage of your total funds generated or received is expended on training programs or services shared by other training programs?
- 10-25%
  - 26-50%
  - 51-75%
  - 76-100%
  - Do not know

29. What percentage of your total funds generated or received is not expended on your training program or a shared program?

- a. 10-25%
- b. 26-50%
- c. 51-75%
- d. 76-100%
- e. Do not know

30. Please choose the range which best represents your **DIRECT GRADUATE MEDICAL EDUCATION REIMBURSEMENT** per resident in your program.

- a. \$10,000 - \$20,000
- b. >\$20,000 - \$40,000
- c. >\$40,000 - \$80,000
- d. > \$80,000
- e. Do not know

31. Please choose the range which best represents your **MEDICARE UTILIZATION** percent.

- a. 15% - 30%
- b. >30% - 45%
- c. >45% - 60%
- d. > 60%
- e. Do not know

32. Please choose the range which best represents your **INDIRECT GRADUATE MEDICAL EDUCATION** Adjustment.

- a. \$25,000 - \$40,000 per resident
- b. >\$40,000 - \$60,000 per resident
- c. >\$60,000 - \$100,000 per resident
- d. > \$100,000
- e. Do not know

33. Please indicate the Number of Beds in your hospital.

34. If your program participates with an **Osteopathic Postgraduate Training Institution (OPTI)**, please indicate the quality of the service provided.

\_\_\_ We **do not** participate in an OPTI      OPTI name \_\_\_\_\_

<b>Service</b>	<b>Do Not Use this service</b>	<b>Very Dissatisfied</b>	<b>Dissatisfied</b>	<b>Satisfied</b>	<b>Very Satisfied</b>	<b>Not Offered</b>
Curriculum Design						
Curriculum Evaluation						
Competencies Development						
Resident Evaluation						
Designing and						

Analyzing Research Studies						
Faculty Development						
Financial Consultation						
Continuing Education						
Board Preparation Courses or materials						
Other (Please Specify)						

35. Please identify the patient and non-patient oriented outcome measures you use to evaluate your resident's progress in your program by indicating the importance you judge each measure to be. Please use the following scale:

*1) Do Not Use 2) not important but required by accrediting/certification bodies 3) important 4) very important 5) essential*

Outcome Measure	1	2	3	4	5
Patient Satisfaction Instrument					
Global Rating Scale					
Log Books					
Standardized Patients					
Objective Structured Clinical Examination					
Oral Examinations					
Written Examinations					
Performance on Simulations and Models					
Checklist Evaluation					
Self-Assessment Surveys					
Peer-Assessment Surveys					
Longitudinal Progress Reports for each Resident					
Tracking Dictation					
Tracking Attendance at meetings					
Timeliness of required reports or notes					
Educational Assessment of Teaching					
Portfolios					
Standardized Clinical Assessments					
Presentation Skills					
Publications					
Chart Review					
Personal Learning Plans					
Documented Literature Reviews					
Case Presentation Skills					
Paper Presentations					
Poster Presentations					
Board Certification (First Time Pass)					
Board Certification (Other than First Time Pass)					
Fellowship Acceptance					
Hospital/Clinical Quality Assurance Measures					

Other ( <i>Please Specify</i> )					

***Thank you for your time and effort in completing this report. We are interested in your opinion as to the direction your program in the next 5 years. Please describe any major projects or innovations you anticipate implementing in the near future. Please use additional sheets if necessary.***

# AACOM 2004 Survey

## Resident Questionnaire

### Comprehensive Study of Osteopathic Graduate Medical Education



Conducted by the  
Office for Survey Research  
of the

#### **INSTITUTE FOR PUBLIC POLICY AND SOCIAL RESEARCH**

321 Berkey Hall  
Michigan State University  
East Lansing, MI 48824-1111

All responses to this questionnaire will be kept strictly confidential.  
Should you have any questions about the survey, please contact either  
Paul Burton or Christina Bott  
at (517) 355-6672

*You indicate your voluntary consent to participate in this study by completing and returning  
the questionnaire.*

*MSU is an affirmative action/Equal opportunity institution*



**1. Dependents:**

**Including yourself**, how many dependents do you support financially:

1    2    3    4    5    6    7 or more

**2. Ethnic Background:** Indicate your ethnic identification for the categories below:

- |  |  |   |
|--|--|---|
| a. <input type="checkbox"/> Black, Non-Hispanic            | g. <input type="checkbox"/> Other Hispanic | m. <input type="checkbox"/> Japanese                        |
| b. <input type="checkbox"/> American Indian/Alaskan Native | h. <input type="checkbox"/> Chinese        | n. <input type="checkbox"/> Other Southeast Asian           |
| c. <input type="checkbox"/> White, Non-Hispanic            | i. <input type="checkbox"/> Filipino       | o. <input type="checkbox"/> Other Asian                     |
| d. <input type="checkbox"/> Mexican-American or Chicano    | j. <input type="checkbox"/> Hawaiian       | p. <input type="checkbox"/> Other Pacific Islander          |
| e. <input type="checkbox"/> Puerto Rican (Mainland)        | k. <input type="checkbox"/> Korean         | q. <input type="checkbox"/> Indian or Pakistani             |
| f. <input type="checkbox"/> Puerto Rican (Commonwealth)    | l. <input type="checkbox"/> Vietnamese     | r. <input type="checkbox"/> Multi-Ethnic                    |
|  |  | s. <input type="checkbox"/> Other, please specify:<br>_____ |

**3. Citizenship Country:** Please enter country of citizenship:  USA    Other, please specify \_\_\_\_\_  
If other, are you a permanent resident:  Yes    No

**4. State of Legal Residency:** Use 2 letter abbreviation (*or FO if not U.S. citizen or permanent resident*).

**5. Size of Home Town or Area:** Select what best describes your home town area from the following list:

- |   |  |
|---|--|
| a. <input type="checkbox"/> Major metropolitan area (1,000,000 or more) | e. <input type="checkbox"/> City or town (10,000 – 50,000) |
| b. <input type="checkbox"/> Metropolitan area (500,000 – 1,000,000)     | f. <input type="checkbox"/> City or town (2,500 – 10,000)  |
| c. <input type="checkbox"/> City (100,000 – 500,000)                    | g. <input type="checkbox"/> Area under 2,500               |
| d. <input type="checkbox"/> City (50,000 – 100,000)                     | h. <input type="checkbox"/> Other, please specify _____    |

**6. Expected Income:** What annual income do you expect to earn during:

- |   |                 |
|---|-----------------|
| a. First year of practice after your residency training | \$ _____, _____ |
| b. Fifth year of practice after your residency training | \$ _____, _____ |
| c. Tenth year of practice after your residency training | \$ _____, _____ |

**7. Long Range Plans:** **Select one item** from the list below which best describes your intended activity **four years after** your residency training:

- |  |   |
|--|---|
| a. <input type="checkbox"/> Enter government service (e.g., military, National Health Services Corps, Indian Health Service) | e. <input type="checkbox"/> Employed in group practice (salary, commission or percentage)                 |
| b. <input type="checkbox"/> Practice in an HMO   | f. <input type="checkbox"/> Employed in other type of private practice (salary, commission or percentage) |
| c. <input type="checkbox"/> Self-employed without partner  | g. <input type="checkbox"/> Other professional activity (e.g. teaching, research, administration)         |
| d. <input type="checkbox"/> Self-employed with partner(s)  | h. <input type="checkbox"/> Undecided or indefinite   |

8a. Which one of the following best describes the area where you plan to be employed or in practice after completion of your residency training? (*Choose only one*)

- |   |  |
|---|--|
| a. <input type="checkbox"/> Major metropolitan area (1,000,000 or more) | e. <input type="checkbox"/> City or town (10,000 – 50,000) |
| b. <input type="checkbox"/> Metropolitan area (500,000 – 1,000,000)     | f. <input type="checkbox"/> City or town (2,500 – 10,000)  |
| c. <input type="checkbox"/> City (100,000 – 500,000)                    | g. <input type="checkbox"/> Area under 2,500               |
| d. <input type="checkbox"/> City (50,000 – 100,000)                     | h. <input type="checkbox"/> Other, please specify _____    |

8b. Are you planning to practice in any underserved or physician manpower shortage areas?  Yes    No    Unsure













**SECTION F: Perceptions of the Profession**

34. Percentage of your training delivered by allopathic physicians (M.D.):

Less than 10%	10 – 25%	26- 50%	51- 75%	More than 75%

- a. During the first two years of medical school
- b. During your required clerkship in-hospital rotations
- c. During your required clerkship ambulatory non-primary care rotations
- d. During your required clerkship ambulatory primary care rotations
- e. During your clerkship electives
- f. During your post-doctoral program to date

35. As you look back on your training, how well do you agree or disagree with the following statements regarding distinguishing characteristics between osteopathic and allopathic physicians?

(1) Strongly Disagree    (2) Disagree    (3) Agree    (4) Strongly Agree

	1	2	3	4

- a. No distinction is apparent to me in the rapport with patients developed by osteopathic and allopathic physicians.
- b. No distinction is apparent to me in the treatment approach with the patient.
- c. The holistic approach distinguishes osteopathic physicians from the allopathic counterparts.
- d. Osteopathic physicians were better teachers than the allopathic physicians who taught me.
- e. Osteopathic physicians held me to a higher standard of performance than the allopathic physicians.
- f. Osteopathic physicians were more rigorous in their workup of patients than allopathic physicians.

36. As you reflect on the process followed to secure your post-doctoral position and factors that influenced your choice, how important do you think the following items were in having the program choose you? Please use the following scale:

(1) Not a Factor    (2) Of Little Importance    (3) Important    (4) Essential

	1	2	3	4

- a. You initiated contact with the program
- b. Program initiated contact with you
- c. Rotated at the hospital, but not necessarily in your chosen specialty
- d. Rotated at the hospital in your chosen specialty
- e. Expressed additional interest in activities outside of formal clinical training (e.g., journal club in specialty field, etc.)
- f. Visited prospective training site more than once
- g. Followed up with personal letters to interviewers
- h. Had publications prior to application
- i. Provided letters of recommendation



- t. Familiarity with the training site
- u. Recognition of the program by other health care personnel


39. As an applicant, how much pressure did you feel in having to offer your assurance of commitment to the residency programs you were considering?

(1) Very Pressured (2) Moderately Pressured (3) Somewhat Pressured (4) No Pressure at All (5) Did Not Participate

- a. AOA Match
- b. NRMP Match
- c. San Francisco Match
- d. Military Match

1	2	3	4	5

40. Upon completion of your post-graduate training, do you intend to obtain/maintain professional membership in the following: (Check all that apply)

- a.  AOA
- b.  AMA
- c.  State and local osteopathic associations
- d.  State and local allopathic associations
- e.  Osteopathic specialty societies
- f.  Allopathic specialty societies
- g.  Other (please specify): \_\_\_\_\_

41. Looking back on your training and education to date has there been an individual who has made a difference in how you look at medicine and how you value it as a profession? If there has been such an individual, please select the term which best describes this person. (Check as many as apply.)

- a.  An osteopathic physician
- b.  An allopathic physician
- c.  A patient
- d.  A peer resident
- e.  A medical student
- f.  A family member
- g.  A basic scientist
- h.  A medical school administrator
- i.  A counselor
- j.  A member of the clergy
- k.  Other (please specify): \_\_\_\_\_

**SECTION G: OTHER COMMENTS**

42. What was the single greatest **strength** of YOUR OSTEOPATHIC MEDICAL SCHOOL's **preclinical** curriculum?

43. What was the single greatest **weakness** of YOUR OSTEOPATHIC MEDICAL SCHOOL's **preclinical** curriculum?

44. What was the single greatest **strength** of YOUR OSTEOPATHIC MEDICAL SCHOOL's **clinical** curriculum?

45. What was the single greatest **weakness** of YOUR OSTEOPATHIC MEDICAL SCHOOL's **clinical** curriculum?

46. If you wish to make additional comment about your medical career, your education, and any aspect of your current like situation relevant to this study, or this survey, please add them here. **(Please use the back of this sheet and attach additional sheets if necessary.)**

## AACOM/AOA OME Study Deans' Questionnaire 2004

### Definitions

There are various definitions for curricular modeling and instructional formatting. For purposes of this study, the Papa/Harasym <sup>1</sup> and Rennie <sup>2</sup> definitions will be used. Instructional formats are from the Office of Educational Development at the University of North Carolina. <sup>3</sup>

CURRICULUM MODEL	DESCRIPTION
Discipline Based	Organizes knowledge, skills, and attitudes around disciplines. Content is usually under the direction of discrete departments. Basic science is the emphasis in the first two years. Clinical science is the emphasis in the last two years. <b>Primary teaching method is lecture.</b>
System Based	Organization of knowledge is around organ systems. Content is usually generated by topic committees. There is an emphasis on the basic sciences in the first year with introduction of clinical material. The emphasis on clinical material increases significantly in the second year. The third and fourth year emphasizes clinical sciences. <b>Primary teaching method is lecture with small groups.</b>
Problem Based	Organization of knowledge is around clinical problems. Content is usually generated by specialized committees under the guidance of the curriculum committee. Clinical and basic sciences are integrated within the context of clinical cases. <b>Primary teaching method is small groups.</b>
Clinical Presentation Based	Standard set of clinical presentations. Content is set by committee and supervised by Curriculum Committee. Integrated 50-50 within context of problem-specific schemata. <b>Primary teaching method is lecture and small groups.</b>
INSTRUCTIONAL FORMATS	COMMON CHARACTERISTICS
Lecture	Places responsibility on lecturer for presenting material to participants and controlling the group's progress. Fixed time. Specific topics covered. Outline of remarks or handout provided ahead of presentations. Handout usually hardcopy or electronic. Supplemental information available outside classroom (e.g. Library). Presenter has expertise in field. Q and A by students in real time or electronically. Generally large group audience.
Small Group - Learner Centered	Presence of a trained instructor or facilitator. Organization and supervision often developed by peers, not the instructor. Problem focused. Structured

Institution \_\_\_\_\_

	questions usually provided to assist student learning. Collaboration is encouraged. Computerized modules common resource. Q and A real time among participants or electronically mediated with faculty resources or computerized modules.
Small Group – Seminars	Requires trained instructor or facilitator. Small lectures provided on site by leader or “on-call” faculty either in person or electronically. Presentations usually given by participants on selected topics.
Small Group – Laboratory	Requires trained instructor or facilitator. Individualized or group participation in setting which has actual or simulated models to assist in learning. The models are the primary teaching aid.
Individualized Instruction	Responsibility on each person for progressing through prescribed materials or activities at own learning rate. Q and A may be “on-call” either face to face or electronically mediated.
Tutorial	Instructor interacts with each participant on an individual basis. The learner is generally required to do some reading or other preparation prior to dialogue with instructor.
Clerkships	Learner usually assists the efforts of an instructor, a practitioner, or a more advanced learner.
Learner-Initiated projects	Learner has complete responsibility (though assistance may be available). This is distinct from projects required as an assignment in a regular course.
Participation in scholarship and/or research	Learner participates in an ongoing enterprise as an autonomous individual or as a colleague in a research group.
<b>EVALUATION FORMATS</b>	
Multiple Choice Questions	A question with a choice of usually up to 5 possible responses. Generally, one correct answer. Can be true/false.
Extended Matching Items	Similar to multiple-choice questions but with more choices from which to choose.
Short Answer/Key Feature Questions	Questions that usually require a few sentences or key word to respond. The question usually contains a descriptive passage or key facts about a patient or a problem with spaces that the respondent is expected to fill in.
Constructed Response/Semi-structured/Modified Essay	Questions are preceded by a descriptive set of paragraphs built around a patient oriented clinical case. Questions follow in a sequential fashion. The questions may be multiple choice or short answer.
Essay questions	Usually asks the respondent to describe a condition, compare or contrast essential features of a problem. Topics range from clinical problems in general to specific patho-physiologic pathways, from ethical situations to prescriptive alternatives. Can also ask to analyze journal articles or stimulus materials. Expectation is for respondent to include as much relevant information in an

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	organized and logical response.
Portfolios, Log Books, and Record of Achievements	Collection of work done by student as an individual or group. Usually includes: patient presentations of clinical encounters, procedures completed with descriptions of what was done, assessments done by supervising personnel, projects done either by assignment or self-chosen, reports on clinical services experienced, essays on interesting cases with a discussion about a particular aspect of the case, record of cases presented in a problem-based format which shows learning points and progression, publications, abstracts, and vitae.
Practical Exams/Simulated Patients	Several variations. <b>Long</b> exams --- the examinee is asked to take a full structured history and do a complete physical exam. Observation of the history and physical examination usually takes place. There is a write up of the history and physical. Questions on the findings and treatment plans follow. Discussion and feedback on the examination itself is part of the experience. <b>Short</b> examinations --- the respondent examines a system or region of the patient with clinical signs. A report of the findings is made and questions asked about the condition.
Objective Structured Clinical Exams (OSCE)	Usually a number of stations with a task such as an examination, history taking or practical skill asked at a particular station. An examiner assesses the respondent using a checklist. There is usually a fixed time allotted for each station.
Oral Exams/Case Presentation	Questions asked by an individual of the respondent. Knowledge, organization, and integration of material are assessed. Feedback is given after presentation.

1. Papa FJ, DO, PhD, Harasym PH, PhD. Medical Curriculum Reform in North America, 1765 to the Present: A Cognitive Science Perspective. *Academic Medicine*. February 1999;74(2):154-164.
2. Rennie S. Tossing Salads Too: A users' guide to medical student assessment: a Booklet. 2003. Located at: Association for the Study of Medical Education, Edinburgh, Scotland.
3. Development OE. Choosing Instructional Formats [Web Page]. August 2001. Available at: <http://www.med.unc.edu/oed/eit/formats.htm>. Accessed February 16, 2004.

## Part I - Curriculum Structure and Management

- Some Colleges have a single track for their medical students while they are on campus, while other Colleges have more than one track. Using the definitions provided at the beginning of this document, please complete the following tables by indicating the curriculum **model(s)** you use and the percent of curriculum time using each **model** in years one and two of your curriculum.

Year I Options	Type of Curriculum Model Used
<i>(Name of Option)</i>	Discipline Based _____ %
	System Based _____ %
	Problem Based _____ %
	Clinical Presentation Based _____ %
<hr/>	
<i>(Name of Option)</i>	Discipline Based _____ %
	System Based _____ %
	Problem Based _____ %
	Clinical Presentation Based _____ %
<hr/>	
<i>(Name of Option)</i>	Discipline Based _____ %
	System Based _____ %
	Problem Based _____ %
	Clinical Presentation Based _____ %
<hr/>	
<i>(Name of Option)</i>	Discipline Based _____ %
	System Based _____ %
	Problem Based _____ %
	Clinical Presentation Based _____ %

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Year II Options	Type of Curriculum Model Used	
<i>(Name of Option)</i>	Discipline Based	____ %
	System Based	____ %
	Problem Based	____ %
	Clinical Presentation Based	____ %
<i>(Name of Option)</i>	Discipline Based	____ %
	System Based	____ %
	Problem Based	____ %
	Clinical Presentation Based	____ %
<i>(Name of Option)</i>	Discipline Based	____ %
	System Based	____ %
	Problem Based	____ %
	Clinical Presentation Based	____ %

2. Laboratory teaching has been traditional in many schools to aid in teaching on-campus courses in the basic sciences, behavioral sciences, and clinical skills. These domains cover instruction in Gross Anatomy, Microbiology, Pathology, Physical Examination Skills, Doctor Patient Communication, Surgical Techniques, and many others. Some Colleges have augmented or replaced traditional laboratory formats with computerized simulations and other teaching techniques. In some cases schools have eliminated the laboratory altogether. Please complete the following table to reflect the teaching techniques used by inserting the PERCENTAGE OF INSTRUCTIONAL TIME allocated to techniques used.

<b>Subject Areas</b>	<b>Lecture</b>	<b>Laboratory Large Group</b>	<b>Laboratory Small Group</b>	<b>Laboratory Individual</b>	<b>Computer Augmentation Large Group</b>	<b>Computer Augmentation Small Group</b>	<b>Computer Augmentation Individual</b>	<b>Other Techniques</b>
<b>Basic Science</b>								
Biochemistry								
Embryology								
Gross Anatomy (Prosection)								
Gross Anatomy (Dissection)								
Histology								
Immunology								
Microbiology								
Neuroscience								
Pathology								
Pharmacology								
Physiology								
Other (Specify)								
<b>Behavioral Science</b>								
Behavioral Medicine								
Ethics								
Law								
Doctor Patient Communication								
Other (Specify)								
<b>Clinical Science</b>								
Clinical Procedures								
Family Medicine								
Geriatrics								
Internal Medicine								
Nutrition								
OB/GYN								
OMM/OPP								
Pediatrics								
Physical/differential Diagnosis								
Preventive Medicine/Public Health								
Psychiatry								
Radiology								
Surgery								
Other (Specify)								

3. Assurance of exposure to and subsequent knowledge of basic science material are essential to the student's clinical diagnostic and decision-making skills. Please describe the process you use to determine the amount of curriculum instructional time you allocate to basic science instruction during years I and II. (E.g. curriculum committee, oversight committee, basic science/clinical science review committee, task force committees, faculty senate, dean's decision, etc.)

4. Some schools use clinical training sites that are under the direct supervision of personnel who are campus based or employed by the College. Other Colleges use clinical training sites that use community based faculty who are essentially volunteer faculty of the medical school, and the sites might be located in a state different from the medical school. Please describe the College's supervision and oversight (direct and indirect) of their clinical clerks while on rotation.

5. Determining the progress of students through a medical school curriculum often involves regular, periodic and even episodic evaluation information.

- a. Please indicate the evaluation formats you use to determine a student's readiness to progress through your curriculum and your degree of satisfaction with the assessment techniques. Using the definitions provided at the beginning of this document, please indicate your degree of satisfaction with the information formats you currently employ, using the following scale:

**1) Very satisfied      2) Satisfied      3) Dissatisfied      4) Very dissatisfied**

Evaluation Formats	Year 1 (Check all that apply)	Satisfaction Index				Year 2 (Check all that apply)	Satisfaction Index				Year 3 (Check all that apply)	Satisfaction Index				Year 4 (Check all that apply)	Satisfaction Index			
		1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4
Multiple Choice Examinations																				
Constructed Responses																				
Essay Examinations																				
Basic Science Laboratory Practical Examinations																				
Group Reports																				
Oral Examinations																				
Standardized Examinations (e.g. shelf-exams)																				
OSCE																				
Patient Write-Up																				
End of Rotation Examinations																				
Research Projects																				
Simulated Patients																				
Evaluation by live, non-simulated patients																				
Evaluation by Preceptors																				
Evaluation by Preceptor staff																				

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Evaluation Formats	Year 1 (Check all that apply)	Satisfaction Index				Year 2 (Check all that apply)	Satisfaction Index				Year 3 (Check all that apply)	Satisfaction Index				Year 4 (Check all that apply)	Satisfaction Index			
		1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4
Evaluation by other students on rotation																				
Evaluation by interns and/or residents																				
Complex I																				
Complex II																				
Complex PE																				
Satisfaction Surveys																				
Observational Check lists by physicians of student performance																				
Chart Review																				
Log Books																				
Portfolios																				
Computer Simulation Examinations																				
Student Evaluations of Rotations																				
Ethical Incident Reports																				
Attendance Records																				
Other:																				

b. Please identify the options you have relative to the student's progress through your curricula by placing a checkmark in the appropriate cell.

Year	<i>Allow the student to continue without interruption</i>	<i>Dismiss the student</i>	<i>Continue Curriculum only after successful remediation of unsuccessful performance</i>	<i>Place student on a specially constructed curriculum</i>	<i>Administrative leave for student with specific remedial completion tasks prior to readmission</i>	<i>Other (Please Specify)</i>
<b>1</b>						
<b>2</b>						
<b>3</b>						
<b>4</b>						

c. **Please attach documents or describe** the information you use to help you choose between the available options.

6. What information do you routinely review to insure that the basic science and clinical faculty in on-campus courses and those physicians who teach in ambulatory and hospital venues are qualified to instruct your students? (E.g. promotion and tenure documentation, departmental review, peer review, personal observation by Dean, publications, student evaluation, vita, attendance at faculty development seminars, attendance at national meetings, etc.)

7. Please describe the communication process (initiation, information processing, dissemination and follow-up) you use with **students** and the information you attempt to obtain from them relative to curriculum design, curriculum implementation and curriculum evaluation.

8. Please describe the communication process (initiation, information processing, dissemination and follow-up) you use with **community-based physicians** and the information you attempt to obtain from them relative to curriculum design, curriculum implementation and curriculum evaluation.

9. Please describe the communication process you use with **medical specialty societies** and the information you attempt to obtain from them relative to curriculum design, curriculum implementation and curriculum evaluation.

10. Please describe the communication process (initiation, information processing, dissemination and follow-up) you use with **internship/residency directors** and the information you attempt to obtain from them relative to curriculum design, curriculum implementation and curriculum evaluation.

11. Please describe the communication process (initiation, information processing, dissemination and follow-up) you use with **alumni** and the information you attempt to obtain from them relative to curriculum design, curriculum implementation, and curriculum evaluation.

12. A “continuum of learning” is a phrase that describes physician education today. Major components of this system are medical school, internship, residency and continuing education. Some medical schools see these components as separate and distinct from each other, although many times medical school personnel assist in each of these components. **If your medical school has looked at formally associating activities of years 3 and 4 with internship and residency programs (a seven-year curriculum) please describe the process you use and progress you have made.** If your college has not pursued such an association, please state as such below.

## Part II - **Organizational, Planning and Process Management**

13. From your perspective, of all information available to you, what are the **five** KEY performance indicators you regularly review to determine the success of your medical school? (E.g. Board scores, licensure passing rates, first choice of residency, primary care specialty choice by graduates, clinical revenue, student satisfaction surveys, faculty satisfaction surveys, in-state practice location, grant dollars, etc.)

14. How do you communicate your assessment of key findings to your other administrators, faculty, and students? (E.g. College Reports, AACOM survey, formal faculty presentations, departmental meetings, etc.)

15. Based upon your review of all information available to you, please describe the process by which you translate your assessment of your medical school's performance into priorities for improvement?

16. **Multiprofessional** (Multidisciplinary) education is defined as two or more professional **students** coming together in a teaching/learning situation to learn for whatever reason. **Interprofessional** (interdisciplinary) education is defined as two or more professional **students** learning from each other and about each other to improve collaboration and the quality of care. Most Colleges of Osteopathic Medicine reside on a campus with more than one educational program. It is often the case that students from other programs simultaneously share the teaching activities and other resources of the medical school. Many clinical training sites have more than Osteopathic medical students on a rotation at the same time (e.g. allopathic medicine, pharmaceutical sciences, podiatric medicine, nursing, Physician Assistance, Nurse Practitioner, etc.). If your school has either multiprofessional or interprofessional courses or rotations please identify the constituents of these groups.

Type of Group	Constituents
Multiprofessional	<input type="checkbox"/> Graduate degree students (M.S., Ph.D.) <input type="checkbox"/> Nursing (R.N.) <input type="checkbox"/> Nursing (N.P.) <input type="checkbox"/> Nursing (A.N.P.) <input type="checkbox"/> Podiatry <input type="checkbox"/> Dentistry (D.D.S.) <input type="checkbox"/> Allopathic medicine <input type="checkbox"/> Physician Assistants (P.A.) <input type="checkbox"/> Pharmacy (Pharm. D.) <input type="checkbox"/> Other (Please Specify)
Interprofessional	<input type="checkbox"/> Graduate degree students (M.S., Ph.D., MSW, etc.) <input type="checkbox"/> Nursing (R.N.) <input type="checkbox"/> Nursing (N.P.) <input type="checkbox"/> Nursing (A.N.P.) <input type="checkbox"/> Podiatry <input type="checkbox"/> Dental Science (D.D.S.) <input type="checkbox"/> Allopathic medicine (M.D.) <input type="checkbox"/> Physician Assistants (P.A.) <input type="checkbox"/> Pharmacy (Pharm. D.) <input type="checkbox"/> Other (Please Specify)

If your school does not utilize multiprofessional or interprofessional courses or rotations, please place a check mark below and continue on to question #22.

My school does not utilize multiprofessional or interprofessional courses or rotations.

If your curriculum has multiprofessional or interprofessional courses or rotations please complete the following table and answer the questions below using the following scale:

**1 Strongly Agree    2 Agree    3 Disagree    4 Strongly Disagree    5 Does Not Apply**

Question	1	2	3	4	5
17. The performance of our medical students is enhanced because of exposure to a multiprofessional educational learning encounter in our basic science courses.					
18. The performance of our medical students is enhanced because of exposure to a multiprofessional educational learning encounter in our behavioral science courses.					
19. The performance of our medical students is enhanced by exposure to a multiprofessional educational learning encounter in our clinical science <b>courses</b>					
20. The performance of our medical students is enhanced by exposure to interprofessional educational learning encounters on clinical <b>rotations</b> .					
21. Our college actively promotes multiprofessional and interprofessional educational learning encounters.					

Part III - **Finance**

22. The cost and structure of clerkships (rotations) vary by college. The costs may be administrative, resource based, or a combination of many factors decided upon by the College and the training site. Students, may bear additional costs such as housing, meals, transportation, etc. which are different for each College or rotation. Please indicate the percent of your College's total revenues that are allocated to the following activities, the actual dollar amounts where indicated, and your estimate of non-tuition costs to students for their rotations.

Please complete the following table:

<b>Activity 2003-2004</b>	<b>Percentage of Total Revenue</b>	<b>Amount in Dollars</b>	<b>Range (if known)</b>
<i>On-Campus Basic Science Faculty Salary (Full-time, part-time, and adjunct)</i>			
<i>On-Campus Clinical Science Faculty Salary (Full-time, part-time, and adjunct)</i>			
<i>Faculty Development</i>			
<i>Program Development and Supportive Services</i>			
<b>Year III Clinical Rotations</b>			
• <i>Average Direct Cost of Required Rotations per Student to College</i>			
• <i>Average Direct Cost of Selective Rotations per Student to College</i>			
• <i>Average Direct Cost of Elective Rotations per Student to College</i>			
• <i>Average Direct Cost of Required Rotations to Students (not including tuition costs)</i>			
• <i>Average Direct Cost of Selective Rotations to Students (not including tuition costs)</i>			
• <i>Average Direct Cost of Elective Rotations to Students (not including tuition costs)</i>			
<b>Year IV Clinical Rotations</b>			
• <i>Average Direct Cost of Required Rotations per Student to College</i>			
• <i>Average Direct Cost of Selective Rotations per Student to College</i>			
• <i>Average Direct Cost of Elective Rotations per Student to College</i>			
• <i>Average Direct Cost of Required Rotations to Students (not including tuition costs)</i>			
• <i>Average Direct Cost of Selective Rotations to Students (not including tuition costs)</i>			
• <i>Average Direct Cost of Elective Rotations to Students (not including tuition costs)</i>			

23. What measures of budgetary and financial performance, including measures of cost containment, does your College routinely collect?

In the AACOM **Annual Survey** you have already supplied details of the curriculum content at your medical school. Please indicate your permission to use the information you provided in that survey for our study. We will only report aggregate data.

I give permission to use the data from my medical school given to you in the Annual Survey

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
College of Osteopathic Medicine

***We would be interested in your reflection on osteopathic medical education. Please identify issues and problems you perceive to be important in the enterprise of medical education. Please use additional sheets as needed.***

***THANK YOU FOR YOUR TIME AND COOPERATION!***

# AMERICAN ASSOCIATION OF COLLEGES OF OSTEOPATHIC MEDICINE

## 2003–04 Academic Year Survey of Indebtedness and Career Plans

**TO THE STUDENTS:** Information concerning the debts of osteopathic medical students and their practice plans is needed to help guide policy concerning osteopathic medical education. Your answers are very important for this survey to present a true picture of the needs of osteopathic medical students and physicians, and to help formulate national policies on scholarships and loans. The information provided will also assist in designing curricula for all Colleges of Osteopathic Medicine. *All Data are CONFIDENTIAL. Information will only be used by AACOM and affiliated organizations in totals or averages.*

Please Print in Capital Letters.

Last Name		Suffix	
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First Name	Osteopathic College
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Middle Name		Expected Year of Graduation	2004 <input type="checkbox"/>	2005 <input type="checkbox"/>
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(or Maiden Name if Married Woman Using Husband's Name)

Social Security Number										Date of Birth					
------------------------	--	--	--	--	--	--	--	--	--	---------------	--	--	--	--	--

Sex: Male  Female  Marital Status: Married  Not Married

**1. Dependents:**

Including yourself, how many dependents do you support financially: 1  2  3  4  5  6  7 or more

**2. Ethnic Background:** Indicate your ethnic identification from the categories below:

- a.  Black, Non-Hispanic
- b.  American Indian/Alaskan Native
- c.  White, Non-Hispanic
- d.  Hispanic
- e.  Asian/Pacific Islander
- f.  Other, specify \_\_\_\_\_

**3. Citizenship Country:** Please enter country of citizenship.  USA  Other, please specify \_\_\_\_\_

**4. State of Legal Residency:** Use 2 letter abbreviations (or FO if not U.S. citizen or permanent resident).

**5. Size of Home Town or Area:** Select what best describes your home town area from the following list:

- a.  Major metropolitan area (1,000,000 or more)
- b.  Metropolitan area (500,000–1,000,000)
- c.  City (100,000–500,000)
- d.  City (50,000–100,000)
- e.  City or town (10,000–50,000)
- f.  City or town (2,500–10,000)
- g.  Area under 2,500
- h.  Other, specify \_\_\_\_\_

Do you consider your home town to be in a medically underserved area? Yes  No  Unsure

**6. Father's Education:** Select the **highest** level of education your father attained. Complete this item even if he is deceased.

- a.  Medicine (DO or MD)
- b.  Nursing
- c.  Other Health Profession
- d.  Law
- e.  Business
- f.  Engineering
- g.  Other Professional Degree
- h.  Other Graduate Degree
- i.  Some Graduate School
- j.  College Graduate
- k.  Some College
- l.  Technical School
- m.  High School Graduate
- n.  Some High School
- o.  Less than High School

**7. Mother's Education:** Select the **highest** level of education your mother attained. Complete this item even if she is deceased.

- a.  Medicine (DO or MD)
- b.  Nursing
- c.  Other Health Profession
- d.  Law
- e.  Business
- f.  Engineering
- g.  Other Professional Degree
- h.  Other Graduate Degree
- i.  Some Graduate School
- j.  College Graduate
- k.  Some College
- l.  Technical School
- m.  High School Graduate
- n.  Some High School
- o.  Less than High School

**8. Parents' Income:** Estimate your parents' combined income for the current year before taxes.

- a.  Less than \$10,000
- b.  \$10,000 – \$19,999
- c.  \$20,000 – \$29,999
- d.  \$30,000 – \$39,999
- e.  \$40,000 – \$49,999
- f.  \$50,000 – \$59,999
- g.  \$60,000 – \$69,999
- h.  \$70,000 – \$79,999
- i.  \$80,000 – \$89,999
- j.  \$90,000 – \$99,999
- k.  \$100,000 or more
- l.  Deceased/Unknown

**9. Financial Independence:** Do you consider yourself financially independent from your parents? Yes  No



**14. Estimate the percentage of total cost of your medical education that was paid by each of the following sources.**

**Please be sure the sum equals 100%.**

a. Loans (from items 11 & 12b)	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>				%	c. Your savings	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>				%	e. Parents	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>				%
b. Scholarships/grants (from item 13)	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>				%	d. Earnings (including spouse's)	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>				%	f. Other relatives	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>				%
						g. Other, specify	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>				%						

**15. Non-educational Debts You Incurred While in Medical School.**

Show the total amount of non-medical school debt, such as living expenses, that you incurred during medical school. **Do not include your home mortgage in this figure.** If none, enter zero.

\$ 

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 , 

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16. a. How many years do you expect to take to repay the indebtedness for your osteopathic education? 

--	--

 years

b. Do you anticipate participating in a student loan consolidation program for repayment? Yes  No  Undecided

**17. Expected Income. What annual income do you expect to earn (after expenses, before taxes) during:**

a. First year in practice after internship and residency?	\$	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>				,	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>			
b. Fifth year in practice after internship and residency?	\$	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>				,	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>			
c. Tenth year in practice after internship and residency?	\$	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>				,	<table border="1" style="width: 100%; height: 20px;"> <tr><td style="width: 33%;"></td><td style="width: 33%;"></td><td style="width: 33%;"></td></tr> </table>			

**18. What is your current household yearly income?**

- a.  less than \$10,000
- b.  \$10,001–\$25,000
- c.  \$25,001–\$50,000
- d.  greater than \$50,000

**19. Plans Upon Graduation.** Please indicate what type of osteopathic internship you plan to do. **(Choose only ONE.)**

- a.  Traditional rotating
- b.  Special emphasis. Indicate type:
 

1. <input type="checkbox"/> Anesthesiology	2. <input type="checkbox"/> Diagnostic Radiology	3. <input type="checkbox"/> Emergency Medicine
4. <input type="checkbox"/> Family Practice	5. <input type="checkbox"/> General Surgery	6. <input type="checkbox"/> Psychiatry
- c.  Specialty track. Indicate type:
 

1. <input type="checkbox"/> Internal Medicine	2. <input type="checkbox"/> Internal Med./Peds.	3. <input type="checkbox"/> OB/GYN
4. <input type="checkbox"/> Otolaryn./Facial Plastic Surg.	5. <input type="checkbox"/> Pediatrics	6. <input type="checkbox"/> Urological Surgery
- d.  Not planning osteopathic internship. Reason 1.  Allopathic residency
- e.  Undecided
- 2.  Other, specify \_\_\_\_\_

**20. a. Immediate Post-Internship Residency Plans:** Select the **one** item that best describes your plans immediately after internship, (or upon graduation if not planning an osteopathic internship).

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Pursue osteopathic residency               | 3. <input type="checkbox"/> Pursue AOA/AOGME dual approved residency   |
| 2. <input type="checkbox"/> Pursue allopathic residency (See item 20b) | 4. <input type="checkbox"/> Enter governmental service (e.g., military, NHS Corps, Indian Health Service, V.A., state/local health dept.) (See item 20b) |

If you are not doing a residency, please indicate your post-internship plans.

- |   |   |
|---|---|
| 5. <input type="checkbox"/> Practice in an HMO  | 9. <input type="checkbox"/> Employed in other type of private practice (salary, commission or percentage)       |
| 6. <input type="checkbox"/> Self-employed as D.O. without partner                       | 10. <input type="checkbox"/> Other professional activity (e.g., teaching, research, administration, fellowship) |
| 7. <input type="checkbox"/> Self-employed as D.O. with partner                          | 11. <input type="checkbox"/> Undecided or indefinite post-graduation/internship plans                           |
| 8. <input type="checkbox"/> Employed in group practice (salary, commission, percentage) |   |

**b. If you plan to pursue an allopathic or government service residency, please give all the reasons that apply to you.**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Desire specialty training not available in osteopathic program                    | 6. <input type="checkbox"/> Higher pay                                |
| 2. <input type="checkbox"/> Believe better training available in allopathic program                           | 7. <input type="checkbox"/> Military or government service obligation |
| 3. <input type="checkbox"/> Shorter training period   | 8. <input type="checkbox"/> Opens more career opportunities           |
| 4. <input type="checkbox"/> Preferred osteopathic residency not available in my preferred geographic location | 9. <input type="checkbox"/> Family considerations                     |
| 5. <input type="checkbox"/> Better chance of being accepted in allopathic program                             |   |

**21. Long-Range Plans:** Select **one** item from the list below which best describes your intended activity five years *after* internship and residency training.

- a.  Enter government service (*e.g.*, military, NHS Corps, Indian Health Service)
- b.  Practice in an HMO
- c.  Self-employed as D.O. without partner
- d.  Self-employed as D.O. with partner
- e.  Employed in group practice (salary, commission or percentage)
- f.  Employed in other type of private practice (salary, commission, percentage)
- g.  Other professional activity (*e.g.*, teaching, research, administration, fellowship)
- h.  Undecided or indefinite

**22. a. Area of Interest:** Select a specialty in which you are most likely to work or seek training. *Choose only ONE.*

- 1.  Family Practice
- 2.  Internal Medicine, General
- 3.  Internal Medicine, Subspecialty
- 4.  Neuromusculoskeletal Med. & Osteo. Man. Treatment
- 5.  Pediatrics, General
- 6.  Pediatrics, Subspecialty
- 7.  Allergy & Immunology
- 8.  Anesthesiology
- 9.  Critical Care
- 10.  Dermatology
- 11.  Emergency Medicine
- 12.  Geriatrics
- 13.  Medical Genetics
- 14.  Neurology including subspecialties
- 15.  Psychiatry including subspecialties
- 16.  Nuclear Medicine
- 17.  OB/GYN including subspecialties
- 18.  Ophthalmology
- 19.  Otolaryngology
- 20.  Pathology including subspecialties
- 21.  Physical Medicine & Rehabilitation Medicine
- 22.  Preventive Medicine including subspecialties
- 23.  Proctology
- 24.  Radiology (Diagnostic) including subsec.
- 25.  Sports Medicine
- 26.  Surgery, General
- 27.  Orthopedic Surgery
- 28.  Surgery, Subspecialty
- 29.  Colon & Rectal Surgery
- 30.  Facial Plastic Surgery
- 31.  Plastic/Reconstructive Surgery
- 32.  Neurological Surgery
- 33.  Thoracic Cardiovascular Surgery
- 34.  Vascular Surgery
- 35.  Urology/Urological Surgery
- 36.  Undecided or Indefinite

**b. Do you plan to be Board-certified in this specialty?** Yes  No  Unsure

**23. Please indicate the importance of each of the following factors affecting your specialty choice decision.** Use the scale below.

(1) Major Influence      (2) Strong Influence      (3) Moderate Influence      (4) Minor Influence      (5) No Influence/NA

	1	2	3	4	5
a. Intellectual content of the specialty (type of work, diagnostic problems, diversity) .....					
b. Like dealing with people (type of person, type of patient) more than techniques .....					
c. Prestige/income potential .....					
d. Lifestyle (predictable working hours, sufficient time for family) .....					
e. Like the emphasis on technical skills .....					
f. Role models ( <i>e.g.</i> , physicians in the specialty) .....					
g. Peer influence (encouragement from practicing physicians, faculty, or other students) .....					
h. Skills/abilities (possess the skills required for the specialty or its patient population) .....					
i. Debt level (level of debt, length of residency, high malpractice insurance premiums) .....					
j. Academic environment (courses/clerkships in the specialty area) .....					
k. Opportunity for research/creativity .....					
l. Desire for independence .....					
m. Previous experience .....					

**24. Answer only ONE item.** a. State (two-letter abbreviation) where you expect to locate after completion of internship and residency?

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- b.  Check if non-U.S.
- c.  Check if unknown/undecided

**25. a. Which one of the following best describes the kind of area where you plan to be employed or in practice after completion of internship or residency?**

- 1.  Major metropolitan area (1,000,000 or more)
- 2.  Metropolitan area (500,000 - 1,000,000)
- 3.  City (100,000 - 500,000)
- 4.  City (50,000 - 100,000)
- 5.  City or town (10,000 - 50,000)
- 6.  City or town (2,500 - 10,000)
- 7.  Area under 2,500
- 8.  Other, please specify \_\_\_\_\_
- 9.  Undecided or indefinite

**b. Are you planning to practice in any underserved or shortage areas?** Yes  No  Unsure



**29. Please indicate how satisfied you are with each of these aspects of your experience as a medical student.**

*(1) Very Satisfied    (2) Satisfied    (3) Neither Satisfied nor Dissatisfied    (4) Dissatisfied    (5) Very Dissatisfied*

	1	2	3	4	5		1	2	3	4	5
a. Being able to work with people .....						i. Doing work that is intellectually stimulating..					
b. Doing work involving science and research .....						j. Using medicine to change society.....					
c. Anticipating a comfortable income.....						k. Controllable lifestyle.....					
d. Opportunity to be helpful to others.....						l. A workload that is manageable.....					
e. Membership in a respected profession.....						m. Having adequate personnel resources.....					
f. Having interesting and intelligent colleagues.....						n. Your role in organizational decisions.....					
g. Being independent, relatively free of supervision ..						o. Relationships with non-physician personnel ..					
h. Attaining a position of leadership and authority.....											

**30. Please indicate whether you agree or disagree with the following statements about your first two years of medical education.** Use the scale below.

*(1) Strongly Agree    (2) Agree    (3) Disagree    (4) Strongly Disagree    (5) No Opinion*

	1	2	3	4	5
a. Basic and clinical science course objectives were made clear to students .....					
b. Basic science courses were sufficiently integrated .....					
c. Course objectives and examination content matched closely .....					
d. Course work adequately prepared students for clerkships .....					
e. The first two years of medical school were well organized .....					
f. Students were provided with timely feedback on performance .....					
g. There was adequate exposure to patient care during the first two years .....					
h. There was adequate preparation for COMLEX Level I .....					

**31. a. In what ways was your osteopathic medical school involved in your clerkship years? Please check all that apply.**

1.  COMLEX Level 2 preparation    2.  Distance learning    3.  E-mail    4.  Faculty visit    5.  Newsletter

**b. To what degree was your osteopathic medical school involved in your clerkship years?**

1.  Outstanding involvement    2.  Adequate involvement    3.  Some but inadequate involvement    4.  Not involved

**32. Please indicate whether you agree or disagree with the following statements about your last two years of medical education.** Use the scale below.

*(1) Strongly Agree    (2) Agree    (3) Disagree    (4) Strongly Disagree    (5) No Opinion*

	1	2	3	4	5		1	2	3	4	5
a. Clerkship objectives were made clear to students.....						h. Students were given appropriate role in .....					
b. Performance objectives were made clear to students..						patient care during clerkships					
c. Clerkships were well-organized.....						i. The diversity of patients and their health .....					
d. Testing was provided at the end of each clerkship.....						issues were appropriate					
e. Students were given timely feedback on .....						j. The number of in-patient experiences was ....					
performance in clerkships						appropriate					
f. Attending faculty were involved adequately in .....						k. Osteo. principles and practice (OPP) were ....					
teaching and evaluation						well-integrated into each clerkship					
g. Residents played too large a role in teaching .....						l. There was adequate preparation for .....					
and evaluation						COMLEX Level 2					

**33. Approximately how many hours per week have you worked in medicine-related activities during your senior year?**

hours

**34. Please estimate the percentage of time you devoted to the following activities during year 3:**  
**Please be sure the sum equals 100%.**

a. Inpatient care*	<input type="text"/>	%	d. Research	<input type="text"/>	%	g. Other (Please specify)	<input type="text"/>	%
b. Outpatient care	<input type="text"/>	%	e. Administration	<input type="text"/>	%	_____		
c. Extended/Long term care	<input type="text"/>	%	f. Medical teaching	<input type="text"/>	%			

\*Note: Inpatient care includes reading x-ray films and laboratory work.

**35. Please estimate the percentage of time you devoted to the following activities during year 4:**  
**Please be sure the sum equals 100%.**

a. Inpatient care*	<input type="text"/>	%	d. Research	<input type="text"/>	%	g. Other (Please specify)	<input type="text"/>	%
b. Outpatient care	<input type="text"/>	%	e. Administration	<input type="text"/>	%	_____		
c. Extended/Long term care	<input type="text"/>	%	f. Medical teaching	<input type="text"/>	%			

\*Note: Inpatient care includes reading x-ray films and laboratory work

**36. What percentage of the patients you helped care for were:**  
**Please be sure the sum equals 100%.**

a. White/Caucasian	<input type="text"/>	%	c. Hispanic	<input type="text"/>	%	e. Asian/Pacific Islander	<input type="text"/>	%
b. Black/African-American	<input type="text"/>	%	d. Native American/Alaskan Native	<input type="text"/>	%	f. Did Not Determine Ethnicity	<input type="text"/>	%

**37. Which statement best describes your preferences for the structure of your clinical years?**

- a.  I prefer to have the same physical location for all my 3<sup>rd</sup> and 4<sup>th</sup> year rotations.
- b.  I prefer to have the same physical location for all my 3<sup>rd</sup> year rotations, and the freedom to travel for my fourth year rotations.
- c.  I prefer to have the freedom to travel for both my 3<sup>rd</sup> and 4<sup>th</sup> year clinical rotations.

**38. In the past two years, have you:**

	YES	NO		YES	NO
a. Subscribed to a refereed journal? .....	<input type="text"/>	<input type="text"/>	g. Worked with a community group to ..... address a local health problem?	<input type="text"/>	<input type="text"/>
b. Requested a literature search from a library? .....	<input type="text"/>	<input type="text"/>	h. Gathered data on a health problem in your ..... community?	<input type="text"/>	<input type="text"/>
c. Contributed to or participated in a research study? .....	<input type="text"/>	<input type="text"/>	i. Provided non-paid expert testimony ..... (e.g., for a town council)?	<input type="text"/>	<input type="text"/>
d. Published an article in a refereed journal? .....	<input type="text"/>	<input type="text"/>	j. Volunteered your expertise to a ..... community organization?	<input type="text"/>	<input type="text"/>
e. Spoken to a community group (eg., Students, ..... Rotarians) about a health issue?	<input type="text"/>	<input type="text"/>			
f. Written/appeared in a health-related story in the ..... local media?	<input type="text"/>	<input type="text"/>			

**39. At this time, how satisfied are you that you selected osteopathic medicine as a career?**

- a.  Very satisfied
- b.  Satisfied
- c.  Mixed feelings
- d.  Dissatisfied
- e.  Very dissatisfied

**40. If given the opportunity to begin your medical education again, would you prefer to enroll in:**

- a.  The osteopathic medical school from which you are about to graduate.
- b.  Another osteopathic medical school
- c.  An allopathic medical school
- d.  I would not have gone to medical school at all

**41. If there has been an individual who has been an extremely positive influence on your medical education, please indicate that which best describes this individual. (Choose as many as apply).**

- a.  Osteopathic Physician
- b.  Allopathic Physician (M.D.)
- c.  Basic Scientist
- d.  Undergraduate Faculty Member
- e.  Friend
- f.  Family Member
- g.  Patient
- h.  Another Medical Student
- i.  Another Health Care Provider
- j.  Other (please describe) \_\_\_\_\_
- k.  None

**42. How confident are you in your abilities to do the following (whether or not you are actually doing it):**

*(1) Very Confident      (2) Confident      (3) Somewhat Apprehensive      (4) Very Apprehensive*

	1	2	3	4
a. Use the tools of epidemiology to understand the health needs of your community? .....				
b. Understand the community's perception of its health problems?.....				
c. Employ the full-range of community health services for your patients (e.g., home health care)? .....				
d. Locate the health resources available in your community when your patients need them?.....				
e. Know about health issues important to particular patient populations? .....				
f. Understand the health beliefs of your patients?.....				

**43. Using the following scale, please indicate how confident you are in your ability to perform the following examinations:**

*(1) Very Confident      (2) Confident      (3) Somewhat Apprehensive      (4) Very Apprehensive*

	1	2	3	4
a. General medical examination .....				
b. Well-baby examination .....				
c. Gynecological examination .....				
d. Routine prenatal examination .....				
e. Breast examination.....				
f. Sports participation examination .....				
g. Osteopathic structural examination.....				

**44. Using the following scale, please indicate how confident you are in your ability to work-up the following clinical presentations:**

*(1) Very Confident      (2) Confident      (3) Somewhat Apprehensive      (4) Very Apprehensive*

	1	2	3	4
a. Abdominal Pain.....				
b. Chest Pain.....				
c. Fever.....				
d. Headache.....				
e. Cough.....				
f. Back Symptoms.....				
g. Shortness of Breath.....				
h. Diabetes Mellitus.....				
i. Earache or Ear Infection.....				
j. Hypertension.....				

	1	2	3	4
k. Depression.....				
l. Nasal Congestion.....				
m. Sore Throat.....				
n. Skin Rash.....				
o. Vision Dysfunction.....				
p. Knee Symptoms.....				
q. Generalized Pain.....				
r. Dementia.....				
s. Generalized Muscle Weakness.....				
t. Integrate OPP in both diagnosis and treatment of the above presentations.....				

**45. Using the following scale, please indicate how confident you are in interpreting the following laboratory or diagnostic tests:**

*(1) Very Confident      (2) Confident      (3) Somewhat Apprehensive      (4) Very Apprehensive*

	1	2	3	4
a. Electrocardiogram.....				
b. Blood Pressure.....				
c. Cardiac Stress Test.....				
d. Exercise Prescription.....				
e. Tuberculin Skin Test.....				
f. Fetal Monitoring.....				
g. Lipid Profile.....				
h. Complete Blood Count.....				
i. Urinalysis.....				

	1	2	3	4
j. Prostatic-Specific Antigen.....				
k. Cervical/Urethral Swabs.....				
l. Hematocrit/Hemoglobin.....				
m. Pap Test.....				
n. Chest X-ray.....				
o. Mammogram.....				
p. Cardiac Profile.....				
q. Hepatitis Profile.....				

46. If you were to describe the **BEST clinical rotation** you experienced during your medical education, which of the following terms or phrases would you use?

(1) *Essential Component*      (2) *Very Important*      (3) *Important*      (4) *Somewhat Helpful*      (5) *Not a Factor*

	1	2	3	4	5		1	2	3	4	5
a. Clear goals and objectives .....						s. The support staff was friendly and supportive of my education .....					
b. Able to design my own goals and objectives .....						t. I had no weekend coverage duties .....					
c. The attending was able to address my personal concerns while on the rotation .....						u. I was expected to do weekend coverage during part or all of the rotation .....					
d. Timely feedback .....						v. The hours of coverage were set and we finished on time .....					
e. Osteopathic orientation .....						w. Food was provided .....					
f. Prepared me for examinations .....						x. Housing was provided .....					
g. Able to perform or participate in medical or surgical procedures .....						y. The use of technology was appropriate to the situation .....					
h. Able to participate in the diagnostic work-up of the patients .....						z. The attending seemed interested in my opinions .....					
i. Able to participate in the management of the patient .....						aa. I was treated with respect .....					
j. I was asked relevant and pertinent questions concerning the diagnosis, treatment options, management, and follow-up care of the patient .....						bb. I felt free to ask questions .....					
k. Rounds were conducted as scheduled .....						cc. I was able to sit down with the attending and discuss my progress on the rotation .....					
l. Able to work on a personal basis with the patient .....						dd. I was able to discuss my final evaluation on the rotation with the attending .....					
m. I was asked to read specific articles while on the rotation .....						ee. Evaluation was based on direct observation of the attending .....					
n. I was asked to report on reading assignments .....						ff. I was able to meet with the attending to discuss areas of concern outside of the clinical setting .....					
o. I was asked to participate in ancillary activities such as journal club .....						gg. I was able to live within a reasonable distance from the rotation site .....					
p. A broad range of pathology was presented .....						hh. The attending modeled excellent patient relationship skills .....					
q. There were other medical students on the same rotation .....						ii. The attending critically evaluated me during the rotation .....					
r. The attending was influential on hospital selection committees .....											



Using the following scale, please indicate your level of agreement with the following statements regarding Osteopathic Manipulative Treatment, Principles and Practice.

(1) Strongly Agree (2) Agree (3) Disagree (4) Strongly Disagree

48. I was well prepared in my training to diagnose structural problems

1	2	3	4

49. I was well prepared in my training to treat structural problems

1	2	3	4

50. I was well prepared in my training to document findings in a structural examination.

1	2	3	4

51. I had the opportunity to practice OPP in:

	1	2	3	4
a. my first two years in medical school.....				
b. my in-hospital rotations .....				
c. my ambulatory non-primary care rotations.....				
d. my ambulatory primary care rotations.....				

52. I had osteopathic physician role models in:

	1	2	3	4
a. my first two years in medical school.....				
b. my required in-hospital rotations .....				
c. my required ambulatory non-primary care rotations .....				
d. my required ambulatory primary care rotations.....				
e. my selectives/electives.....				

53. What percentage of your training was delivered by allopathic physicians

	<i>Less than 10%</i>	10-25%	26-50%	51-75%	<i>More than 75%</i>
a. During the first two years of medical school .....					
b. During your required in-hospital rotations .....					
c. During your required ambulatory non-primary care rotations.....					
d. During your required ambulatory primary care rotations? .....					
e. During your selectives/electives? .....					

54. As you look back on your training to date, how well do you agree or disagree with the following statements regarding proposed distinguishing characteristics between osteopathic and allopathic physicians?

(1) Strongly Agree (2) Agree (3) Disagree (4) Strongly Disagree

	1	2	3	4
a. No distinction is apparent to me in the <b>rapport</b> with patients developed by Osteopathic and Allopathic physicians.....				
b. No distinction is apparent to me in the <b>treatment approach</b> with the patient. ....				
c. The <b>holistic</b> approach distinguishes osteopathic physicians from their allopathic counterparts.....				
d. Osteopathic physicians were <b>better teachers</b> than the allopathic physicians who taught me. ....				
e. Osteopathic physicians held me to <b>higher standards of performance</b> than the allopathic physicians. ....				
f. Osteopathic physicians were <b>more rigorous in their work-up</b> of patients than the allopathic physicians. ....				

Below are a set of questions that address aspects of Doctor-Patient interactions in a clinical encounter. Please indicate your agreement or disagreement with each statement.

(1) Strongly Agree (2) Agree (3) Neither Agree or Disagree (4) Disagree (5) Strongly Disagree

**55. It is appropriate to:**

	1	2	3	4	5
a. Discuss preventive measures specific to the complaint.....					
b. Discuss general/unrelated health measures.....					
c. Discuss family/social issues unrelated to health.....					
d. Discuss health issues in relation to family life.....					
e. Discuss health issues in relation to work.....					
f. Discuss patient’s emotional state.....					
g. Discuss your personal experiences, not including professional experience, with patients.....					
h. Discuss how patients can improve their own condition.....					
i. Discuss the body’s self-healing ability or reassurance that condition will improve on its own.....					
j. Discuss musculoskeletal causes or consequences related to patient’s condition.....					
k. Discuss the literature or the scientific basis of treatment.....					
l. Discuss alternative modes of therapy patient may or could use.....					
m. Discuss the patient’s opinion on cause of problem.....					
n. Discuss the patient’s opinion about treatment.....					
o. Examine organ systems unrelated to the chief complaint.....					
p. Delay prescribing medications (including over the counter medications) until trying non-pharmacological measures.....					
q. Explain the causes of the problem or reasoning behind treatment.....					
r. Use the patient’s first name in the clinical encounter.....					
s. Have the patient use your first name during the clinical encounter.....					
t. Appropriately touch patients during the clinical encounter (NOT including Osteopathic Manipulation).....					
u. Ask “Anything else I can do for you?” or its equivalent during the clinical encounter?.....					
v. Ask “Do you have any questions?” or its equivalent in the clinical encounter?.....					
w. Conduct a review of systems including unrelated areas?.....					
x. Always include a review of the Musculoskeletal System?.....					
y. Recommend herb/nutritional/physical or other non-drug medications, not including Osteopathic Manipulative Treatment?.....					

**56. If you had the opportunity to sit for board certification in your chosen specialty would you choose osteopathic boards (AOA-recognized), allopathic boards (ABMS-recognized) or both?**

- a.  AOA Boards (osteopathic)
- b.  ABMS Boards (allopathic)
- c.  Both Boards
- d.  Other \_\_\_\_\_
- e.  Do not plan to sit for board certification

**57. If you selected ABMS-recognized or both boards, (See Item 56) what is the main reason for choosing the allopathic boards?**

- a.  ABMS-recognized boards are more widely recognized.
- b.  ABMS-recognized boards have more colleague acceptance.
- c.  ABMS-recognized boards carry more prestige.
- d.  Hospital privileges are more readily obtained with ABMS-recognized board certification.
- e.  Licenses are more readily obtained with ABMS-recognized board certification.
- f.  Other \_\_\_\_\_

