The Manpower Crisis in Academic Radiology: Don’t Kill the Milk Cow for Meat

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There is a manpower crisis in academic radiology departments. These departments cannot sustain their academic missions from clinical revenues alone. Salaries can’t be competitive with private practice, and the recruitment and retention of faculty members are compromised. The education of medical students, residents, and fellows and the clinical and basic research that sustains the specialty suffers. There is no simple remedy; academic departments need philanthropy from industry and private practice, more support from the government and the schools of medicine, and more efficient clinical practices. The future of our specialty is truly at stake. Academic departments are responsible for the great majority of training and technical innovation in the specialty. If academic departments cannot sustain their academic missions, the specialty of diagnostic radiology will certainly suffer.

Key Words: Academic radiology, manpower

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Those of us who practice in academic medical centers know that academic radiology is in trouble. Although we are training bright residents on state-of-the-art equipment using innovative imaging techniques, there is increasingly a serious lack of manpower. When they finish their residencies, these residents typically choose to enter private practice, either before or after subspecialty fellowships. Many faculty members who have practiced in academic settings are choosing to leave and join private practice groups. The recruitment of new faculty members is difficult, and the clinical and teaching workload increases for those remaining. Acutely, these are problems for academic radiologists, but because most of the trainees and nearly all innovations that emerge in our specialty derive from academic radiology departments, eventually, these issues will affect all radiologists. In this discussion, I will try to point out some of the causes of this crisis and suggest possible solutions.

The shortage of faculty members was highlighted by a survey of academic chairs performed in 2001. One hundred six of 124 departments responded and reported approximately 600 openings, at an average of 5.5 vacancies per program. Most in demand were specialists in neuroradiology and abdominal imaging (84.5 openings each), vascular and interventional radiology (78 vacancies), and mammography (69.5 vacancies) (Table 1). Many departments were also seeking general radiologists [1].

Radiologists choose academic practice because they enjoy it and feel they have an aptitude for the type of work, because they desire to subspecialize, and because they believe in the value of research and their own skills to perform research. The choice of private practice, on the other hand, tends to be driven by family obligations. Personal income and the amount of leisure time are significantly more important to those who choose private practice than to those who choose academic practice [2].

There are many reasons that faculty members are choosing to leave academic radiology at a time when the field of radiology itself is flourishing. These include, for most, an ever-increasing clinical workload that allows less time for research and for teaching medical students and residents, the disparity between private practice and academic income, the lack of control that many feel over their practices, and an inability to satisfy what are seen as conflicting missions of an academic department. These conflicting missions are personified by a dean who asks the faculty to do more research, get more grants, and do more teaching (all parameters by which a medical school is evaluated) and by a department chair who, under pressure from the other clinical departments, urges the faculty to do more cases and perform them with a quicker turnaround time so that clinical revenue is enhanced.

Figures 1 and 2 give graphic examples of the increasing workloads in academic departments as measured in work relative value units (RVUs) per faculty member. Figure 1 shows that both invasive and noninvasive RVUs increased dramatically between 1996 and 2001. Figure 2 shows that work RVUs have also increased relative to the RVUs performed in private practice. In 1996, academic faculty members performed about half of the RVUs of private practice clinicians; by 2001, that had risen to 75%[3].

Increasing clinical workloads come at a time when more timely service (24 × 7 × 365) is being demanded by clinicians and patients and at a time that sees a need for the closer
supervision of residents because of governmental regulations and the current malpractice climate. These conflicting demands require even more faculty members than in the past to do the clinical work, but there are fewer available. The clinical work clearly has had an impact on the academic productivity of academic faculty members. As reported in Academic Radiology, 521 faculty members from 188 institutions returned a survey distributed by Hunter et al. [4] in 2000. Sixty-four percent of these faculty members had clinical responsibilities five days a week; 28% reported that they had no nonclinical time. Sixty-eight percent of the respondents indicated that they were “less productive” than they had been five years previously. The effect of increased clinical workloads on research was also noted by Eschelman et al. [5], who looked at 33 full-time clinical faculty members at two time periods (1994-1995, 1995-1996) and noted an inverse relationship between RVUs and academic productivity, as measured by peer-reviewed articles, published abstracts, and presentations at meetings. It is interesting that in their sample, age, rank, and the number of administrative jobs had no relationship to productivity.

No data exist to judge the effect of increasing clinical workloads on the teaching of residents and medical students. Anecdotally, residents I spoke to at the ACR’s 2001 annual meeting talked about the decreasing amount of time their faculty members spend actively teaching. Some reported that fellows rather than faculty members now presented didactic conferences. The teaching of medical students—the radiologists and referring clinicians of tomorrow—also seems to have suffered in many institutions from the increasing clinical demands on faculty members.

Why does private practice seem so appealing to both finishing radiology residents and junior faculty members? Although the lifestyle is appealing to many, the predominant answer seems to be the disparity of income between private practice and academic medicine. A common statement is, “If I’m going to work as hard as those in private practice, I might as well be paid like them.” Part of the appeal of this greater income is due to the increased indebtedness of medical students. Eighty-two percent of medical students now have some indebtedness to repay for their education. The average debt of these students, including debt for both college and premedical education and medical school, increased from just over $13,000 in 1979 to $117,471 in 2002 (Fig. 3). This indebtedness is higher for those who attend private medical schools than for those who attend public schools. More than 60% of those who graduate from private medical schools have indebtedness greater than $100,000, and of those, 10% have debts greater than $200,000 (Fig. 4).

The appeal of increased income to repay this debt is great. Medical Group Management Association data show that the median income in 2000 for academic noninvasive radiologists was $200,000, whereas noninvasive private practice radiologists had a median income of $300,000. The median income of academic invasive radiologists was approximately $200,000; private practice invasive radiologists had a median income of $350,000 (Fig. 5).

There are many reasons that salaries are lower for those in academic radiology. Less clinical work is performed, and there is higher overhead (including in most centers a “dean’s tax” and more academic support personnel). The cases tend to be more complex, and there generally is more indigent care provided than in private practice. Teaching is poorly reimbursed or not paid for at all. Research funding is highly competitive and usually pays less than the real cost of the salaries of radiologists. Reviewing cases with residents takes time, decreasing productivity. Most academic departments are rigidly subspecialized, and thus the faculty is less able to cross-cover, necessitating more personnel (both faculty members and support staff) to provide clinical coverage.

It’s interesting to note that these are not issues just for academic radiology. In an article in JAMA in 2000 titled “The Perilous State of Academic Medicine,” Pardes [8] noted, while discussing decreasing numbers of faculty, “Despite scientific progress and popular support, academic medicine is in serious danger.” Faculty losses were worse in highly compensated specialties (including cardiothoracic surgery, anesthesiology, and radiology), where the salary differentials between academic and private practices were greatest, and were less of a problem in other specialties such as pediatrics, internal medicine, and family practice, where the private practice compensation was less.

Can the crisis be mitigated? There is no easy solution that will fix all of the problems. A true solution will take changes by academic departments and medical schools, industry, government, and private practice radiologists. The following are some possible ideas; I am certain that others have different, perhaps better approaches.

Academic departments will need to change in a number of ways. The academic enterprise must be revitalized. There must be a culture change in academic departments so that research and teaching are truly valued as much as clinical productivity. But where will the dollars and manpower to affect this change come from? Academic faculty members need to look at the private practice model and find ways to increase their efficiency. More generalists could help the coverage issues, but this has tended to be an unpopular solution in academic departments, at least partially because referring physicians have grown accustomed to, and thus demand, subspecialty exper-

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<th>Department</th>
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<tr>
<td>Neuroradiology</td>
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<td>Abdominal imaging</td>
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<td>Vascular/interventional</td>
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<td>Mammography</td>
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<td>Ultrasound</td>
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Based on a survey distributed to chairs of academic radiology departments.
An increased use of paraprofessionals, such as radiology assistants or nurse practitioners, could help do many of the mundane activities that take faculty members’ time. A conversion to picture archiving and communications systems and voice recognition, once the trauma of the conversion is over, should help to increase efficiency. New faculty members could be recruited from groups such as international graduates, retired private practice radiologists, and those who only want to work part-time. However, these newly recruited faculty members must be truly valued and treated as peers by the chair and other faculty members so that they can be retained. Increasing the number of residents as much as possible within residency review committee guidelines for numbers of examinations per resident and the faculty-to-resident ratio and as allowed under hospital capitation levels based on federal guidelines and training reimbursement might help by a trickle-down effect; if there are more radiologists, there might be more who choose to practice in academic centers. The increased financial support of the academic mission by the medical school administration and the hospital would certainly help.

Industry has certainly been supported by clinical research in academic departments that has shown the utility and effectiveness of new modalities. In turn, industry could increase its investment in the research and teaching programs of the academic medical centers.

There are several governmental initiatives that could help...
ease the burden of academic medical centers by increasing the number of residency positions. An increase in the number of funded resident slots in specialties with workforce shortages would be a partial solution. Because academic medical centers bear a disproportionate burden of indigent care, new initiatives to help pay for this care would help. Another help for academic medical centers would be to change the reimbursement by generic Current Procedural Terminology codes to reimbursement more completely on the basis of work value units. As an example, such a change would help compensate a department for the increased time (and thus work) to interpret a computed tomography scan of a hospitalized inpatient with diffuse metastases and multiple prior examinations compared with that of a generally healthy outpatient with vague abdominal pain.

Another group that must aid the academic departments may be the most controversial: private practice. Private practice groups daily benefit from the academic departments who do the research (today’s research is tomorrow’s practice) and teach the residents and fellows who will become their partners (today’s residents are tomorrow’s partners!). These practices need to invest in their own future by investing in academic radiology. This could be done in a variety of ways. Private practices could use some of their days off to help local academic departments with clinical work. Alumni and local groups could donate money to academic departments. Some groups are already sponsoring fellowship positions; resident positions could also be sponsored as a way to increase the number of residents without exceeding the cap in an institution. In 2001, the ACR Task Force on Financial Support for Fellowship Training, chaired by Neil Messinger, MD, presented its recommendations to the ACR Council. One of these noted, “The Task Force believes that the potential to increase and/or maintain critical disciplines within our specialty by supporting fellowships, which are not traditionally funded, is a worthwhile and responsible commitment by the ACR leadership and its members” [9].

In conclusion, the basic reason that there is a manpower crisis in academic radiology departments is that these departments cannot sustain the academic mission from clinical revenues alone. Salaries can’t be competitive with those of private practice, and the recruitment and retention of faculty members are compromised. The education of medical students, residents, and fellows and the clinical and basic research that sustains the specialty suffers. There is no simple remedy; academic departments need philanthropy from industry and private practice, more support from the government and schools of medicine, and more efficient clinical practices. Help is needed! The future of our specialty is truly at stake, for if academic departments cannot sustain their academic missions, what will happen to the research that will determine tomorrow’s practice and to the education of the medical students, residents, and fellows who will be tomorrow’s clinicians and radiology partners? The specialty of radiology must be aware of these problems and find solutions to them: we can’t kill the milk cow for meat!

REFERENCES