

to the issue of "today." The second agenda is to look ahead. Some of you have addressed both together.

Shatz. We seem to be making an assumption that we as allergists practicing appropriate care could not be cost-effective.

Platts-Mills. I think there is another assumption: that the state of managed care will stay the same as it is now. Many allergists working in managed care settings are primary care physicians for allergy, and they are very happy about it.

Sheffer. We have two discussions: a practical "what's going on now" discussion and the training aspect, the aspect of the future.

Platts-Mills. Assuming that we know what will happen to the management of allergy inside managed care at this time is wrong. What is central is that we have to take care of the whole patient.

Wasserman. We should be the care givers for the patients with the immunologic diseases and the masqueraders in synonymous diseases. The other caveat I would add is that when you have seen one managed care organization, you have seen only one managed care organization.

Anderson. I would like to talk again about critical mass and missed opportunities. There is a problem. If you become too big, then you are vulnerable to all the pressures. However, if you stay too small, then you cannot cover all of the markets; I am also talking about at the academic center and the community level. We cannot even compete in most academic centers for the resources that are there. In the community if you are not there, those patients that you call your own will be going to another specialist.

Bloch. I think we suffer partly from a lack of information. We do not know whether it is really true that under managed care and capitated care so many of the patients currently cared for by physicians we refer to as "practicing allergists" will not see these physicians anymore. Is it

correct that, in general, the patient with mild and moderate asthma and those with allergic rhinitis are being short-stopped before seeing allergists? My impression is that that is, in fact, the case. The organizations are distributing manuals and guidelines under which primary care providers are to care for patients with mild and moderately severe asthma. Therefore as practicing allergists we will see far fewer patients in the future. Our experience is that we have had a 50% reduction in the number of patients coming to our clinics because managed care "short-stops" them. So we have to look forward in the future to training a far different type of physician than that trained in the past. We need to radically restructure our specialty. So far I have heard one component of what that restructured specialty training may require, namely, providing our future trainees with the ability to deliver advanced clinical care to patients with complex medical problems.

Anderson. I want to make a point about the disease. The information and the tools to treat asthma effectively are and have been out there. In our own institution we have done surveys in a way that leads me to believe that we cannot take care of all the asthma out there. We estimate that about 14% of all the visits for asthma actually go to a specialist. I think that the public has a high respect for our services; so even if the busy primary care physician does not want to refer the patient, with enough pressure, either direct or indirect, the patient is referred. We are very busy, and one of the things we sell is time.

Wasserman. Another aspect of referral volume is how committed the primary care physician is to a disease infrequently seen. Because 10% to 12% of what a primary care giver sees is upper respiratory tract complaints, they may become pretty good at managing chronic rhinitis, but they will never be very good at managing disorders that they might see twice a year and that we might see every day.

Board requirements versus National Institutes of Health requirements

Stephen I. Wasserman, MD, K. Frank Austen, MD, and
Richard F. Lockey, MD

Increasingly there is a conflict between the subspecialty requirements for the clinical discipline of allergy and the requirements for success as a National Institutes of Health (NIH)-funded investigator. It is not the NIH requirements that are crucial, but rather what it takes to become an NIH-funded physician/scientist.

TRAINING REQUIREMENTS FOR THE AMERICAN BOARD OF ALLERGY VERSUS TRAINING REQUIREMENTS FOR NIH TRAINING GRANTS

The special requirements for residency or fellowship training in allergy and immunology adopted in July 1992 require a graduate program

in allergy and immunology to offer 2 years of full time training, including a core curriculum in allergy and immunology, cross-training in pediatrics and internal medicine of at least 6 months, and a research experience equivalent to 25% of that time in a 2-year program. On-call periods should be no more than 80 hours per week averaged over 4 weeks, and at least 1 full day out of 7 should be free of hospital duties. The clinical program must include interaction with patients with hypersensitivity diseases and primary and secondary immunodeficiency diseases, and time in the allergy and immunology laboratory where the principles, techniques, and interpretation of tests of humoral immunity, cellular immunity, and host defense can be mastered. Allergy and immunology residents are counted in the resident bed ratios used to obtain Medicare direct medical education and indirect medical education funds for hospitals. Presently resident activity in ambulatory settings is not counted unless these settings are entirely owned and operated by the parent hospital. The issues faced by many training program directors include the following: (1) the balance between the "at least 25%" requirement for both clinical activities and research activities, depending on the focus of the program, and (2) the cross-training requirements. Cross-training requires at least 6 months of at least 1 day per week exposure, comprising a minimum of 5% of the residents' time during the 2-year program. In addition, if block time rotations are used to satisfy the cross-training requirement, longitudinal follow-up clinics need to be incorporated with inpatient crossover responsibility.

However, the reality of current clinical training in allergy and immunology is that to be a fully qualified physician capable of dealing with the clinical issues, 25% clinical time over 2 years is generally deemed to be inadequate. Even in the busiest practices, 25% time for 2 years is barely sufficient to encompass the traditional allergic diseases. Moreover, the opportunity to see patients with a wide variety of hypersensitivity disorders, including vasculitis, the rheumatic disorders (often in competition, if not in collaboration, with the rheumatology division of the institution), and the ability to have a thorough experience in the immunology laboratory necessitates a far greater commitment than 25% of the 2-year period. In addition, funding realities are such that it is extremely difficult to support fellows in training during the clinical portion of their program from clinical revenues unless substantial time is spent in clinical activities. The research component of the training program is not described in the special require-

ments, but the reality is that clinical research is the part of the program most likely to be funded, and the funding for such research is often pharmaceutically derived. However, funding from this source is not easy to generate, nor is it sufficient to cover most of the trainee's clinical time.

RESEARCH TRAINING

Training in biomedical research has traditionally been funded through a variety of mechanisms, but primarily through the NIH. Although the Residency Review Committee (RRC) for Allergy and Immunology suggests that 25% time must be devoted to research, it is clear that to become a competitive investigator, trainees should devote at least 2 and preferably 3 years to nearly full-time research. Success rates in obtaining subsequent RO1 funding from the NIH are significantly greater for individuals who have had at least 2 years of basic biomedical investigative training and are vastly improved if further training has been received. In addition, the development of health services research, medical epidemiology, and outcomes studies have raised the level of expertise required to compete successfully for research support in these "nonbench" science areas of clinical investigation. Many institutions have developed course work as well as research training programs in these new areas of investigation, and it is clear that to be competitive for funding through extramural sources for this type of research will require such backgrounds in the future. Current requirements to receive NIH National Research Service Awards include a commitment to participate in full-time research. This full-time commitment has been variably interpreted, but means at least 75% and generally 80% or greater commitment to research. Thus even in the most committed allergy and immunology training programs, with major opportunities at the laboratory bench, it is difficult to fund fellows through NIH training awards and meet the minimum clinical commitment of the RRC. In addition, current postdoctoral stipends have a maximum of \$32,300 per year, which in most cases is substantially less than F1 through F3 positions in clinical training, thus necessitating supplements for those trying to combine their research experience with clinical training. Just as clinical commitment requires an intensity of devotion and attention, so too does basic biomedical research. It is difficult to combine clinical activities with research activities because of the conflicting time demands and the unpredictability of clinical care, combined with the time-consuming nature of

modern biomedical investigation. This is often further complicated simply by the geographic separation of the laboratory from the clinic. Allergy and immunology is an outpatient discipline, and the clinics in which it is undertaken may be at some distance from the research laboratory. Many allergy and immunology fellows, particularly those without a strong scientific background or an MD/PhD, receive research training through a physician scientist award. This 5-year award requires intense commitment to both course work and basic biomedical research for at least 2 years before the research project. Thus the training program director and the trainee need to identify funding for 2 to 3 more years of essentially full-time activity at the research bench or in a public health academic unit (e.g., public health and epidemiology) capable of providing education sufficient to meet the demands of the trainee and funding agencies. Without such fundamental training, the trainee will not be competitive for independent funding.

Although these issues focus only on a small fraction of those physicians seeking a career in allergy and immunology, the academic credibility and base of any subspecialty play an essential role in its overall appreciation and progress. The academic programs within medical schools and teaching hospitals focused on allergy, and related clinical issues are substantially less in number than for any other subspecialty that is recognized as part of adult medicine or internal medicine. Thus the stature of the discipline is already handicapped relative to other subspecialties both in recruiting future generations of academically focused physicians/scientists and in achieving recognition by those who may ultimately determine the degree to which patients are referred for expert care. The most important aspect of the current discussion relating to subspecialty training in allergy and immunology is the vision of how this discipline will be practiced in the immediate and ongoing future. Irrespective of the changes in the subspecialty dictated by a "market system," the strengthening of its academic underpinnings is absolutely essential to future practitioners as well as to their patients.

In summary, consideration needs to be given to the following issues:

1. New means of funding fellowships need to be determined.
2. It will be difficult to maintain the current number of training programs and the current number of trainees; a critical mass of trainees must

be identified below which the specialty cannot endure.

3. The American Board of Allergy and Immunology (ABAI) and the RRC must allow for diversity in training because the specific structure of the training programs is and will continue to be subject to the influence of local forces.
4. Individual programs should be designated as either clinical, academic-clinical, or academic-basic.
5. Clinical and laboratory immunology will be much more difficult to maintain with the current market forces impacting on medical centers. It may be necessary to change clinical and laboratory immunology to clinical immunology and expect laboratory competency to be demonstrated in the research laboratories rather than through clinical immunology laboratories.

BOARD REQUIREMENTS VERSUS NIH REQUIREMENTS: DISCUSSION

Wasserman. Some schools have begun the experiment of developing guidelines, or prerequisites, to train in specialties. UCLA, for example, has decided that the only people who will get subspecialty training in medicine will be those who also hold a doctorate or the equivalent. The committee on the subspecialty of internal medicine for the American Board of Internal Medicine (ABIM) tried to define what the pathways were for specialty trained individuals and came up with the following three: (1) the fundamental physician investigator or essentially, the basic scientist; (2) the clinical investigator trained in medical epidemiology, biostatistics, health services research, decision analysis, etc.; and (3) the clinician educator/clinician communicator or what we currently call the practitioner-teacher. In this scheme the specialist would be more restrictive and devote more time to teaching other health care professionals, either communicating about the care of a particular patient or discussing the management of certain disease entities with nurse practitioners, primary care physicians, and ancillary health personnel. The thought was that once defined, the federal government would determine the specific numbers and guarantee funding. Obviously, that is not going to happen, but at least the discussion was approached.

Rich. For a number of years, since the initial development of the pediatric subspecialties, there have been "informally prearranged" programs to sit for the subspecialty boards. The purpose is to restrict subspecialty training to pediatricians who will be engaged in academic medicine and investigation. It has been fairly effective in keeping the number of pediatric subspecialists at a fairly low level in the sense that most pediatricians are generalists. Recently this idea was considered for the subspecialties of internal medicine. Regardless of how allergy and immunology training is actually deliv-

ered in the future, the fact is that there are some major efforts by the parent board to try to control the training of subspecialists by making the program more arduous, more demanding, and less accessible to the person less interested in teaching and/or research.

Austen. What I want to find out is whether those of you laying down the rules for board requirements of the ABAI can create enough flexibility without having specific tracks. We need 3 years of postdoctoral experience to develop a trainee with "state-of-the-art" laboratory skills, a capacity to design and critique his or her own experiments, and an investigative area that can be distinguished from that of his or her mentor. After that such a trainee needs at least 2 more years of "protected time" to develop a novel program and to achieve competitive NIH funding at the level of a FIRST Award. In this 3-year training approach, we can meet, within reason, the RRC requirements and simultaneously achieve the goal of career development for academia using the NIH training grant mechanism. We have come up with this formula because we do not want to be at the mercy of institutional funding. There are only minimal, if any, practice dollars and progressively fewer, if any, institutional dollars.

Lichtenstein. How many of the fellows in training today are funded by NIH training grants?

Wasserman. The surveys that have been done suggest that the vast majority of fellows in training are funded through clinical revenues. Allergy and immunology receives fewer dollars for training from the hospitals than most other subspecialties do.

Shearer. It is 18% federal grants, 50% hospital based, and the rest is divided between moonlighting and private grant support. So the majority is still through institutional resources now.

Lichtenstein. When I was on the National Institute of Allergy and Infectious Diseases (NIAID) council, I learned that with an institutional training grant, 20% of the graduates went into research, and with individual grants, 75% went into research. Therefore the NIAID has started to cut the institutional training grants. Individual training grants will be the way of the future.

Austen. Again, our own very positive experience is different. For individuals without a PhD or extensive prior laboratory experience, the training grant mechanism is outstanding. We can accept house officers without laboratory experience and seek future direct support. The training grant is generally optimal for MD postdoctoral fellows, because the position is funded and time is provided for the trainee and his or her mentor to define a program for which to seek individual support. The interval for that step can be from 1 to 3 years depending on the trainee.

Wasserman. The "short track" or clinical investigator pathway shortens the length of time before the individual goes into the laboratory: so there are 2 years of medicine training and then 2 to 3 years of laboratory-based training in an affiliated department of medicine

with concomitant specialty training. However, funding those years is very difficult unless the department has a source of funds.

Austen. What are some other solutions?

Lockey. First, flexibility is important. We need to have the RRC and the ABAI not pin everybody into a corner. There must be a tremendous breadth of what they find acceptable as long as it is a quality program within a given institution. Second, what we pay trainees is regulated by our institution. We need to supplement up to what is comparable for their year of residency.

Wasserman. Let me put a solution on the table. All of organized American medicine needs to push for guaranteed graduate medical education (GME) payments from an all payer tax. Everybody who reaps the benefits from medical care should pay. Right now, for example, when individuals from Medicare choose managed care, the government, through the managed care organizations, pays 95% of the average cost of caring for an individual in that county. That rate includes both direct and indirect medical education adjustments. However, none of the money in the capitation rate is required to go for education. Thus education money is being diverted to support the capitation rate. That needs to be changed.

Rosenwasser. I see this as a two-pronged problem. The major problem in the basic training of our entire specialty involves getting a core of academic people who generate new knowledge at the bench or the bedside. We have a lot of problems in this area. We need to find a way to normalize the process of supporting people when they get to the critical third, fourth, and fifth year of a laboratory experience and beyond. Maybe R29, KO8, and the old KO7 awards should be reinstituted. The second issue is how we train clinicians and how we recruit them to the specialty. At our institutions, we are thinking about significantly cutting back on subspecialty training, even though we have a very good program. The number of patients per postdoctoral fellow has really shrunk at our institution. Thus we will now concentrate on the first pathway, the academic track. My feeling is that as physicians learn in that track, there will be those who elect to be clinician researchers and clinician educators.

Lichtenstein. One problem is that there are too many expectations. If you are going to go academic via RO1 awards, training will take at least 5 years. However, we can pay with a training grant for only 3 years.

Shearer. Perhaps it would be good to see what we are really producing. Whom are we training in these subspecialty programs? Aside from the training programs represented at this table, the national statistics indicate that in the past several years 45% of subspecialty training slots in pediatrics are occupied by international medical graduate students (IMGS). With that as a background, where are we going with our subspecialty programs? At the ABIM level, the pass rate for IMGs is 40% versus 85% for Canadian/U.S. medical graduates.

So when we are talking about funding for physicians, we need to look at the whole picture. I do not know what the corresponding percentage is in internal medicine, but I suspect it is close to 50%.

Platts-Mills. Can I raise a red herring, which is called the MD/PhD program? In England the normal course is to become a physician, specialize, and then do a PhD. This process has been subverted by the MD/PhD program, which has an astonishingly poor success rate at training clinician/scientists. We could use that money much more effectively by taking new MDs and letting them then do a PhD, but in return, paying a significant part of the individual's debt with dollars that would have been spent through the MD/PhD program.

Anderson. It is now projected that there will be an oversupply of primary care doctors and specialty doctors, and that will affect all of our futures.

Kaliner. I think that any expectation of relief from the federal government with regard to medical education is unlikely. We need to be looking down the road to declining Medicare support for medical education and to no federal relief whatsoever in an environment that does not care about anything but the bottom line. That means that it is the medical people themselves who have to take the responsibility for funding graduate medical education.

Wasserman. I do not disagree, but the problem with that is, where are the sources of funds? The funds to most medical schools come from three basic sources: (1) clinical revenue, which includes Medicare; (2) research support, mostly from the NIH but also from other sources; and (3) direct medical school revenue (from tuition or state money), all of which are under great pressure.

Kaliner. You cannot anticipate increased revenues from those other sources. The only people who care about graduate medical education are the doctors. So we need to look to our specialty societies and to our own practitioners to create the pool of money.

Bloch. The source of money that we should look to is in owning the health maintenance organizations (HMOs). HMOs are now funneling 20% of the health care dollar into other activities. If we do not capture back a part of that 20%, I don't see where else we are going to receive funds for education. Is that totally impossible? Not really. Some of us have already done it. I think we have to look to those model institutions that have captured and become HMOs themselves. That is the way to get the money back into medicine.

Anderson. Henry Ford Hospital is a privately owned institution, part of a network called Henry Ford Health Systems. Not only do we have the hospital with specialists and primary care physicians, but we have the network. We also started our own HMO, which now has 450,000 subscribers. So we're an insurance company too.

All of our fellows are treated as residents. However, there would be pressure on our institution if Medicare dollars are cut. I think the government would cut the specialty but not the primary care training.

Wasserman. Paying only for certain specialties is already being discussed. The problem with setting up HMOs to be competitive is that most medical schools are the least cost competitive part of their community.

Hilman. I sit as the RRC chairman for Allergy and Immunology. The mandate is that we can accredit only for 2 years. We are going to find it impossible to defend the flexibility that we have had in the past. Who will fund these programs? What kind of jobs will be available for our trainees? Exactly whom are we training? We are going to have to come out with a clear and objective definition of how we judge programs. That was one of the reasons why the Accreditation Council on Graduate Medical Education did not want to take on the business of deciding numbers. They have to balance fair trade and quality and come up with something that will be defensible. My suggestion is that we need to train our allergists/immunologists to interface and educate our primary care physicians, emergency room physicians, etc.

Schatz. You could look at the programs that maintain accreditation but have not had a fellow (or resident) in the past 2 or 3 years. Second, look at the pass rate of the fellows on the certification examination. If none of the graduates passed in the last 5 years, that says something about programs. Maybe those are criteria that one could incorporate rather than these somewhat artificial percentages: 50% doing this, 50% doing that.

Bloch. In internal medicine the new special requirements have been in effect since July 1994. These new special requirements define, for the first time, a maximum length of training, which is precisely 2 years for endocrinology, diabetes and metabolism, geriatric medicine, hematology, infectious disease, medical oncology, nephrology, pulmonary disease, and rheumatology and 3 years for cardiovascular disease and for the combined programs in pulmonary disease and critical care medicine. There no longer is the option of extending one's program, although an additional 12-month period is possible if the program determines that more lengthy training is required to meet special requirements.

Austen. These trainees are not becoming younger. We need to put together a sensible program for career development that includes clinical issues and ultimately NIH issues. The proposed irrational RRC requirements mean the end of any academic component for the discipline.

Wasserman. The ABAI is also working on these issues. The ABIM Committee on Internal Medicine developed a 10-criteria quality measure including pass rate and relevant other specialties available in the institution.