

## Redesigning Training for Internal Medicine

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The American College of Physicians supports the need for reform throughout the continuum of training in internal medicine. Today's internists must have the necessary knowledge, skills, and attitudes to meet the challenges of an expanding body of medical knowledge and a rapidly evolving system of health care delivery. Suggested priorities for undergraduate medical education include redesigning curricular experiences to afford students earlier and more exposure to career opportunities in internal medicine, improving ambulatory education, exposing students to outstanding faculty role models in internal medicine, and incorporating educational experiences during the fourth year that optimize its value and relevance to the student's future career plans in internal medicine. Internal medicine residency training should remain a 3-year experience,

with a component of core education common to all trainees and a component of customized training in the third year targeted toward the resident's career goals. Residency programs should be designed around educational rather than institutional service needs. The ambulatory component of training requires substantial reform in its structure, sites, content, and timing. Team-based models should be used both for patient care and for flexibility in design of residency training. Better faculty models must be developed that build on the concept of a "core faculty," improve the rewards for teaching faculty, and provide appropriate faculty development focusing on a necessary set of educator competencies.

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As the single largest group of physicians, internists represent the backbone of the health care system. They not only diagnose and treat diseases of adults but also coordinate health care and play a critical role in preventing disease and promoting health and well-being. Internists practice in a variety of settings, ranging from outpatient offices and clinics to inpatient acute care hospitals to long-term care facilities. Their expertise and scopes of practice extend from a broad base of internal medicine (encompassing all organ systems) to highly specialized clinical areas. In addition to direct patient care, internists are also involved in many other types and combinations of activities, including teaching, research, administration, and health care policy.

Over several years, educational leaders in internal medicine have become increasingly concerned about whether current residency training is appropriately designed to train internists for these varied roles and for practice in the 21st century (1-5). Optimizing training in the context of the current health care system is important for trainees, for patients, and for the well-being and attractiveness of internal medicine. Reform of residency training must ensure the following: 1) the quality and relevance of the educational experience and the associated satisfaction of trainees with that experience, 2) the effectiveness of the educational process in facilitating residents' acquisition of competencies needed to provide the best possible patient care, and 3) the ability of internists to understand and adapt to changes in the rapidly evolving system of health care delivery and to remain current with the expanding body of medical knowledge.

This paper synthesizes 2 American College of Physician (ACP) position papers on redesign of training, each of which was based on a combination of literature review and

expert opinion. Both position papers were written by staff and members of the ACP's Education Committee, with input from the ACP Council of Associates and the Council of Student Members, and were approved by ACP's Education Committee and Board of Regents. Recommendations were made by consensus, with agreement to concentrate on the high-priority issues related to training.

Several factors support the need to redesign training in internal medicine. **Tables 1 and 2** summarize these concerns, together with related goals and proposals for training redesign. In addition, concern exists about the declining numbers of residents entering general internal medicine careers. Analysis of data from residents completing the Resident Survey during the Internal Medicine In-Training Examination showed that the proportion of third-year residents (PGY3) intending to pursue generalist careers decreased from 54% to 27% over the 5-year period from 1998 to 2003 (6). Although this decline undoubtedly can be attributed to many reasons unrelated to training, it is likely that stress during residency training, inadequate ambulatory medicine experiences, and the exposure of medical students and junior residents to unhappy supervising resi-

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**Table 1. Redesign of Undergraduate Medical Education**

Goals for Training Redesign	Current Concerns about Undergraduate Training in Internal Medicine
Expose students early and throughout the curriculum to the breadth of career possibilities in internal medicine.	Students often choose their career courses without being exposed to the variety of options encompassed by a career in internal medicine.
Provide ambulatory experiences in well-functioning practice environments.	Suboptimal ambulatory training experiences can dissuade students from entering internal medicine.
Expose students to enthusiastic role models in internal medicine.	Students often have inadequate contact with, and mentorship by, satisfied internal medicine practitioners and faculty.
Optimize the use of nonrequired clinical time, especially during year 4 of medical school, to allow students to revisit the pathophysiology of disease, translate knowledge into best practice, develop critical analytic skills, and prepare for residency training.	The fourth year of medical school is not systematically planned to optimize educational opportunities for students entering internal medicine.

dents and discouraged faculty are turning some students away from general internal medicine (7–10).

**SPECIFIC RECOMMENDATIONS FOR REDESIGN OF TRAINING**

**Undergraduate Medical Education**

Although a detailed discussion of the overall structure and curriculum of medical school is beyond the scope of this paper, we believe that a critical examination of the medical school experience is warranted, including consideration of potential modifications throughout the 4 years that might simultaneously increase the appeal of internal medicine to undecided students and improve the preparatory training for students already planning careers in internal medicine.

Because initial decisions about specialty choice are made during medical school, it is critical that the educational program in internal medicine for medical students be as robust as possible. Starting even during the first year of medical school, students need to be exposed to the many career possibilities and types of activities encompassed by the discipline of internal medicine. To relieve the curricu-

lum “gridlock” in undergraduate medical education and allow time for such exposure, premedical requirements should be reevaluated with an eye toward decompressing the first year of medical school. Flexible time should be available in the third year for students who are uncertain about future plans to explore specialty choices and further experience the intellectual challenges and personal satisfactions that come from a career in internal medicine. Training, particularly in the ambulatory setting, should occur in well-functioning practice environments that demonstrate patient-centered, service-oriented approaches and have organizational structures to deliver and document the highest quality of patient care and safety.

Students must be exposed to enthusiastic role models—both faculty (academic and volunteer) and residents from both inpatient and outpatient settings—who are positive about their own careers in internal medicine. Although students are largely taught by internal medicine faculty during the preclinical years, these faculty often do not transmit enthusiasm and zeal for the field of internal medicine or professional satisfaction with their own careers. It is particularly critical that faculty and residents

**Table 2. Redesign of Graduate Training in Internal Medicine**

Goals for Training Redesign	Current Concerns about Graduate Training in Internal Medicine
Retain 3 y of internal medicine residency training with a core component common to all internal medicine residents and customized training directed toward the trainee’s specific career goals.	The traditional 3-y residency training model does not typically address specific needs related to the trainee’s ultimate career plans.
Design residency experiences based on the educational needs and well-being of the trainee, ideally integrated with the service needs of the institution.	Factors other than the quality of resident education, particularly the service needs of the training institution, are driving the design of current training.
Develop better models of ambulatory training that improve the quality of ambulatory education, avoid conflicts with inpatient responsibilities, and convey the joys and satisfactions of the longitudinal care of adult patients.	Ambulatory experiences are typically a lower priority than inpatient experiences and are often neither well-designed nor appealing.
Use team-based approaches to optimize patient care and the design of training programs.	Particularly in the ambulatory setting, residents are often not incorporated into health care teams, which would improve the quality of patient care and allow greater flexibility in resident scheduling.
Allow faculty time for teaching and adopt substantive faculty recognition for teaching, complemented by faculty development focusing on a defined knowledge and skill set in teaching and evaluation.	Faculty involvement in the education and career development of residents has been compromised by conflicting productivity expectations, an inadequate reward system, and lack of training in educational methods.
Place the highest value during residency training on professionalism and on a culture that sets the expectation for a lifelong commitment to learning, self-reflection, and quality improvement.	The highly publicized failure of physicians to deliver recommended, evidence-based care could be considered at least in part the result of current training models.

who teach students during the third-year clerkship in internal medicine be enthusiastic role models. Students must see not only residents and junior faculty just out of residency, but also senior faculty and master clinicians who practice internal medicine with confidence, competence, and professional pride. Other faculty-related issues are discussed in more detail in the section on graduate medical education, but the recommendations mentioned there apply equally to faculty involvement in medical student education.

Students who have decided to pursue residency training in internal medicine should have additional well-designed curricular experiences that complement the required clinical clerkships and address ultimate career needs. We propose that high-quality experiences late in the third year or in the fourth year in each of the following areas would be particularly valuable both to students entering internal medicine residencies and to uncommitted medical students:

1. *Revisiting pathophysiology and mechanisms of disease.*

After completing their internal medicine clerkship or clerkships, students should revisit the scientific (molecular and pathophysiologic) underpinnings of clinical medicine through a block or longitudinal learning experience that links current science and pathophysiology with clinical medicine. Bridging science with clinical medicine after students have had clinical experiences serves to reinforce both areas—the science makes more sense in the appropriate clinical context, and it greatly amplifies the student's understanding of disease processes.

2. *Translating knowledge into best practice.* Given the current concern about the quality of health care, students should receive “translational education,” defined as education that helps a student or resident translate medical knowledge into high-quality patient care. This includes an understanding of effective and efficient systems of delivery of care, the value of a team-based approach, measuring and improving quality of care, and patient safety. Students should actively apply this knowledge through participation in efforts to measure and improve the quality of care.

3. *Developing analytic and interpretive skills.* Students should develop the critical analytic, interpretive, and clinical decision-making skills that are important for understanding the medical literature and applying the new information with which they will be presented throughout their careers. Again, an ideal time to learn (or reinforce) these skills is after students have been introduced to clinical medicine in their clerkships. Developing confidence in these analytic and interpretive skills fosters a commitment to, and prepares a student for, lifelong learning and self-improvement.

4. *Preparing for residency training.* Although many medical schools currently require subinternships, we believe that every student should have at least one high-intensity, preridency clinical experience that will develop the skill set necessary for a successful residency. This will allow

the student after graduation to concentrate quickly on learning internal medicine rather than the logistic skills of internship.

### Graduate Medical Education

Underlying these proposals for training redesign is the recognition that being a good internist requires much more than just a satisfactory knowledge base in internal medicine. The Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Medical Specialties have adopted a broader set of 6 general competencies that extend well beyond medical knowledge. We fully support the need for residency programs to train physicians and for boards to evaluate candidates for certification on the basis of all 6 competencies (11). We further recognize that actual physician practice performance and the quality of delivered care provide the substrates for evaluating the competencies of patient care, communication, professionalism, systems-based practice, and practice-based learning and improvement.

1. *Defining the design model for residency training.* Because of the broad, experience-based curriculum necessary for all internists, no matter what their eventual scopes of practice, the duration of the internal medicine training period should not be less than the current 3 years. Conversely, lengthening the period of training might have a negative impact on recruitment of medical students into internal medicine and should be avoided. We recognize that a concern about the overall duration of specialty and subspecialty training has led to a proposal to shorten residency training before residents enter fellowship training (12–14). However, we believe that shortening internal medicine residency training will negatively affect the subspecialist clinician's ability to care for patients with complex or multisystem clinical problems. Rather, we propose that the total training time for the clinician subspecialist be shortened by eliminating the research component of fellowship training. On the other hand, subspecialists clearly intending to become physician–scientists should be encouraged to use the research pathway of the American Board of Internal Medicine, which would allow the future physician–scientist to shorten clinical training in exchange for more extensive research training, including a PhD degree.

Within the 3-year model, residency training should include approximately 2 years of “core” training and 1 year of customized experiences tailored to the ultimate career goals of the trainees. The “core” curriculum should focus on the knowledge and skills that are relevant to all internists, independent of their ultimate scopes of practice or areas of clinical concentration. Given the need for all internists to understand the continuum of care and the clinical problems posed by chronic and complex illness, this core period should also be more balanced between inpatient and outpatient experiences.

During the third (that is, customized) year, future hos-

pitalists would spend a larger proportion of the year in hospital-based experiences, whereas future ambulatory care specialists would spend a larger proportion in high-quality, well-functioning ambulatory practice settings (both general medicine and subspecialty practices). Many individuals will eventually choose to continue practicing in both inpatient and outpatient settings, and their third year should balance both types of experiences. Future subspecialists should have experiences that are different from but will complement their ultimate subspecialty training. In addition, such skills as learning how best to serve as a consultant can be taught effectively on a medical consultation service and are appropriate for all subspecialists, as well as for prospective generalists who plan to care for inpatients.

2. *Integrating educational and service needs.* Service needs of the training institution rather than the educational needs of the trainee have often driven the design of residency training programs (4). These service needs may be translated into excessive resident workloads or patient care responsibilities that do not contribute to the resident's education or career development. Institutions must acknowledge that not all service needs can be provided by residents, and that the primary determinant of residency training design should be the educational needs of the trainee, not the service needs of the institution. Ideally, residency training should integrate these potentially conflicting needs, aiming for the best combination of responsible patient care, quality of training, and well-being and satisfaction of the trainee.

Excessive resident workloads, typically driven by service needs and reflected in excess duty hours or excess patient loads, have adverse effects on many aspects of the trainees' development—their ability to provide the best care for patients, their availability and opportunities for learning, their physical and mental well-being, and their satisfaction with work. Residency training programs, program directors, and the Residency Review Committee for Internal Medicine (RRC-IM) must be attuned to recognizing excessive workloads and must develop creative solutions that best meet the educational needs of trainees (15, 16). Since most patients have increasingly complex illnesses and decreasing lengths of stay, particular attention should be paid to monitoring and defining the appropriate patient census per resident. Solutions do exist, particularly through use of hospitalists and nonteaching services, or by integrating midlevel practitioners (such as nurse practitioners and physicians' assistants) into the health care team on teaching services. However, implementation requires a commitment from academic departments and hospital administration to provide the necessary resources.

3. *Enhancing ambulatory training.* At present, residency training in most internal medicine programs is still based largely in the inpatient setting. Since ambulatory training experiences frequently take place in teaching clinics with many dysfunctional components, trainees are immersed in frustrating practice models that discourage

rather than excite them. It must be recognized that managing patients with multiple, complex problems in the ambulatory setting requires information technology and a prepared staff of assistants of the same caliber as that available in hospital settings.

When possible, residents should have experience in ambulatory practices that use advanced technology and innovative techniques to ensure that high-quality patient care is provided in patient-centered, cost-effective, efficient ways. Examples include practices with electronic health records, open access or Web-based scheduling, appropriate use of midlevel providers, and monitoring of the quality of care they provide. Also, during ambulatory training, residents should learn about important financial aspects of practice, including proper coding and documentation.

Currently, ambulatory responsibilities often compete with simultaneous inpatient responsibilities for trainees' time and commitment. A resident in a longitudinal weekly outpatient session is frequently preoccupied with problems on the inpatient service and may view the outpatient time as a distraction from what is considered a higher inpatient priority. As a result, residents often do not enjoy or value their longitudinal outpatient experience. In contrast, trainees usually like outpatient block experiences, during which the resident does not have a conflict with inpatient responsibilities.

Therefore, we propose that the "core" period of training should ideally be redesigned in a way that accomplishes the following:

a. Provides longitudinal ambulatory experiences that are independent of inpatient responsibilities (for example, through frequent block rotations rather than typical half-day clinics appended to inpatient rotations) and occur in model, well-functioning ambulatory practices. These block rotations should include subspecialty as well as general medical sessions and should provide opportunities in a variety of care settings (for example, community-based practice and inner-city practice).

b. Places increased (or perhaps even equal) emphasis (in terms of training time and responsibility) on ambulatory training relative to inpatient training.

We encourage individual training programs to develop creative ways to achieve the preceding goals. One such model replaces problematic longitudinal outpatient experiences (for example, the weekly clinic during an inpatient rotation) with block rotations of 2 to 4 weeks' duration that alternate 1:1 or 1:2 between ambulatory and inpatient experiences throughout the period of "core" training. The outpatient block experiences should be spaced closely enough so that the resident can follow patients longitudinally during the frequent block experiences, rather than in a weekly clinic. This model also allows residents to manage episodes of acute illness in the ambulatory setting in a manner closer to what occurs in real practice.

4. *Utilizing team-based care.* Training models must incorporate team-based care, in part because this is the model

that is increasingly being used in health care, and in part because it offers more flexibility for redesign of training (17). The term “team-based care” refers not only to the incorporation of nonphysician health professionals (such as nurses, midlevel providers, social workers, and case managers) but also to the teaming up of trainees (and even faculty). For example, a relatively simple model in which trainees work as teams involves pairing of residents, so that one member of a pair is providing inpatient care while the other member provides care for ambulatory patients. When appended to the example of alternating inpatient and outpatient block rotations previously outlined, this model allows the trainee in the ambulatory setting to cover his or her partner’s ambulatory patients as needed while the partner is in the inpatient setting.

5. *Developing faculty models.* New models for teaching, faculty recognition, and faculty development are critical to the success of training redesign. Such models must recognize the following:

a. The need for a specialized group of clinician educators (a “core faculty”) who are provided sufficient time; financial remuneration; academic status; and institutional recognition for teaching, evaluating, supervising, and mentoring trainees.

b. The need to establish a set of general competencies for clinician educators, analogous to the set of 6 general competencies for trainees that have been established by the ACGME. These competencies for faculty relate not only to the knowledge and skills inherent to their particular discipline but also to the critical competencies of an educator, including teaching, evaluating, mentoring, and role-modeling (18).

c. The need for faculty development of these clinician educators, so that they can achieve competency in all the core areas defined in item 5b.

d. The need for faculty who are well versed in areas relating to health care delivery and health care policy that are relevant to the practicing physician. These include the importance of the multidisciplinary team-based approach to inpatient and long-term care, care models for chronic disease, patient safety, and pay for performance.

6. *Stressing professionalism.* Training programs in internal medicine should embrace the set of professional responsibilities outlined by the Charter on Medical Professionalism (19). This recognizes the importance of the core values and ethical standards that trainees should acquire, above and beyond the ACGME-defined general competencies. These values are best established through a culture that permeates training in internal medicine and is transmitted through the teaching and role-modeling provided by peers (trainee to trainee) and by supervisors (faculty to trainee). Examples of these core values include commitments to 1) delivery of patient-centered, culturally sensitive, evidence-based care; 2) development of effective physician–patient partnerships; 3) lifelong learning; 4) self-evaluation and self-reflection, with the intent of improving performance

and quality of care; and 5) social activism for the best interests of patients.

At the same time, residency training should acknowledge and accept the cultural and generational differences between current trainees and faculty (20). As trainees struggle to prioritize physician well-being and life balance with the essential core values of internal medicine, they must be assured that well-being and balance in life are valid concerns that do not negate the attainment of the highest professional standards.

In proposing specific recommendations for redesigning training, we emphasize that the success of reform efforts should be measured by objective documentation of improvement in the quality and quantity of internists as a result of these new models of training. Such outcomes would logically include the effects on the quality of patient care, trainee ability to meet competency requirements, and trainee satisfaction. The RRC-IM has already stated its interest in evolving from a process-based to an outcomes-based accreditation; that evolution should continue and should be encouraged (11). Process regulations should not constrain innovative approaches that will improve the overall outcomes of training.

## IMPLEMENTING REFORM IN INTERNAL MEDICINE TRAINING

Implementing the changes advocated in this paper requires a collaborative effort and the support of a multitude of stakeholders in internal medicine training, including the Alliance for Academic Internal Medicine and 4 of its constituent organizations (Association of Professors of Medicine, Association of Program Directors in Internal Medicine, Clerkship Directors in Internal Medicine, and Association of Specialty Professors), American Board of Internal Medicine, ACP, RRC-IM, Society of General Internal Medicine, and Society of Hospital Medicine. These organizations have been engaged in ongoing discussions and multiorganizational workgroups and meetings that have resulted in substantial momentum for the redesign effort.

Nevertheless, the ability to achieve effective reform in medical education often depends on a variety of local factors in the specific training environment. As a result, individual initiatives for reform may not necessarily be generalizable to a wide variety of institutions. The RRC-IM is attempting to spur the local development of innovative proposals for residency training through its new Educational Innovation Project (21). Projects approved through this program will provide annual progress reports to the education community so that effective innovations can be assessed for broader applicability beyond the local institution. In presenting specific recommendations, we do not intend to be overly prescriptive or preclude innovative solutions from individual programs. Rather, we encourage such creativity, with the hope that successful innovations at

a local level may become more broadly applicable to other training programs.

This paper does not address solutions to workforce issues or the distribution of career choice within internal medicine. Nevertheless, its emphasis on reform of ambulatory education is based on the concern that a diminishing supply of ambulatory internal medicine specialists will progressively have a major negative impact on patient care (7, 22). We recognize that the quality of ambulatory education during training is just one of many determinants of ultimate career choice and that attracting trainees to an ambulatory internal medicine career will also require other changes in the organization and financing of ambulatory care.

Specifically, initiatives to redesign internal medicine training must be accompanied by a repair of health care's dysfunctional payment system and by adjustments in the allocation of educational funds (5, 23). Currently, rapidly escalating medical student debt and the significant disparity in reimbursement between cognitive and procedure-based specialties often drive medical students to base career choices on financial needs rather than on personal interests and on patient and societal needs (24). In addition, to offset the associated costs, enhancing ambulatory education will require a corresponding increase in funding for ambulatory practices and their participating faculty.

The ultimate goal of training physicians is to meet the health care needs of patients and society. This should be done through trainee experiences that set the stage for a satisfying professional career over several decades. Not only does the field of medicine evolve, but physicians often evolve in terms of their interests, their need for professional rejuvenation, and their personal priorities. The recommendations in this paper are all designed to meet patients' needs, either directly or indirectly through their effects on internists' training and satisfaction and thus on the quality of care they provide. We are hopeful that the profession will embrace educational reform, not only for the welfare of the physician, but ultimately for the benefit of patients.

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