Internal Medicine 2035: Preparing the Future Generation of Internists

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Residency education should prepare physicians for practice. While no one would intentionally design a residency program otherwise, planning program requirements to meet this aim is difficult. Substantial changes in program requirements take years to establish. With the rapid changes in health care, program requirements that are appropriate in 2020 will be out of date by the time that the residents trained entirely under those requirements graduate.

The Accreditation Council for Graduate Medical Education (ACGME) Review Committee for Internal Medicine (RC-IM) engaged in a scenario-based strategic planning exercise to develop insights for the development of requirements for the education of internal medicine (IM) residents to prepare them for practice in 2035 and beyond. The major changes being proposed will have the potential to change the practice of competency-based medical education (CBME) and the process by which residency education undergoes continuous improvement, including a "Learning Accreditation System" as an endstate that could apply to all ACGME-accredited programs.

Current Context

In the 1980s, the internist was a physician with a broad medical knowledge base, solidified by competencies gained after graduation. Today, internists, as well as many other physicians across disciplines, have experienced a reduction in time spent with patients, a loss of engagement and sense of agency professionally, and are increasingly affected by burnout.

The mission of the ACGME is to improve health care and population health by assessing and advancing the quality of resident physicians' education through accreditation.[1] We educate residents who successfully meet their programs' requirements, achieve the necessary training milestones, and are successful at board certification. However, the prevalence of burnout indicates that they do not have the skills to find joy, meaning, and purpose in their professional lives with current practice constraints.

The Internist in 2035

To prepare the next generation of physicians to provide excellent care to patients and the public, the ACGME created 4 distinct "alternative futures" for participants in a scenario-based strategic planning exercise. These 4 scenarios were based on the Alternative Futures Scenario Planning undertaken by the ACGME Board of Directors in 2013–2014.[2] The scenarios were "lived in" by the RC-IM prior to revising the IM program requirements. A summary of the general insights about the practice of medicine in the future are provided in BOX 1.[3]

The RC-IM sought to articulate a vision of the internist who will meet future needs, while preserving our core values and evolving to master the ability to meet the requirements of the patients and populations we serve. We summarized these values and aspirations in a preamble that defines what we aspire to see in our graduates, our colleagues, and ourselves (BOX 2). The preamble serves as the introduction to the new program requirements for IM.

CBME in 2035

The residents in IM will embark on a 36-month journey through clinical and nonclinical experiences. Progress will be assessed using the milestones system. This model assists the program director and faculty in deciding when medicine can be practiced independently and by whom. However, completion of residency will still be predicated on "dwell time." It is recognized that some residents may be "ready for independent practice" months before completing residency, while others may require longer than 36 months. With increasing complexity of tomorrow's

DOI: http://dx.doi.org/10.4300/JGME-D-20-00794.1

Editor's Note: The ACGME News and Views section of JGME *includes data reports, updates, and perspectives from the ACGME and its review committees. The decision to publish the article is made by the ACGME.*

BOX 1 General Insights About the Future Practice of Medicine in 2035 Summit

- The "commoditization" of health care services will continue and accelerate. This will include increasingly price-driven services when the patient first seeks care, and shifting responsibilities and risks among health professionals in interprofessional team-based care. It will also affect specialized procedures that can be rigorously standardized and/or automated.
- Economic and technology factors are likely to blur distinct responsibilities and delineations between generalists and subspecialists, as well as among other members of interprofessional teams.
- There will be pressure on the vocation of medicine to deprofessionalize in order to increase efficiency and practice value-based medicine.
- There will be a need for increased flexibility and process efficiency across the continuum of medical education, especially within graduate medical education.
- Patients will be shouldering more risk in terms of cost sharing, but also in terms of increasing personal responsibility for following therapy guidelines, and in some cases, for lifestyle choices.
- Education, generally, will become modularized (competency-based rather than time-based) and divided into more discrete educational units that can be individualized, easily completed, and updated.
- Significant disparities (from poverty, geography, technology, culture) in access to care will remain unresolved no matter the strength of the economy or the depth of the social contract.
- Information and knowledge networks, supported by artificial intelligence (AI), will disrupt and redefine patient care practice and business models. The ubiquity of information from competing sources will raise significant challenges to the verification and veracity of information.
- The combination of "big data" and AI will have a profound effect on how expertise is employed across many professions. Since automated data and analysis systems will provide answers to many issues, the true expert will be called upon only to solve the most complex issues, or those requiring judgment, experience, or fine distinctions of ethics after other approaches have failed.
- The ubiquity of data from wearable/embedded sensors will accelerate the social and political tendencies to "medicalize" societal problems (eg, job stress, lifestyle choices) and exacerbate the tendency for medicine to be subject to public policy interventions.

BOX 2 Preamble to the New Internal Medicine Program Requirements

Internists are specialists who care for adult patients through comprehensive, clinical problem solving. They integrate the history, physical examination, and all available data to deliver, direct, and coordinate care across varied clinical settings in person and remotely through telemedicine. Internists are diagnosticians who manage the care of patients who present with undifferentiated, complex illnesses and comorbidities; promote health and health equity in communities; collaborate with colleagues; and lead, mentor, and serve multidisciplinary teams. Internists integrate care across organ systems and disease processes throughout the adult lifespan. They are expert communicators, creative and adaptable to the changing needs of patients and the health care environment. They advocate for their patients within the health care system to achieve the patient's and family's care goals. Internists embrace lifelong learning and the privilege and responsibility of educating patients, populations, and other health professionals. The discipline is characterized by a compassionate, cognitive, scholarly, relationship-oriented approach to comprehensive patient care.

The successful, fulfilled internist maintains this core function and these core values. Internists find meaning and purpose in caring for individual patients with increased efficiency through well-functioning teams, and are equipped and trained to manage change effectively and lead those teams. They understand and manage the business of medicine to optimize cost-conscious care for their patients. They apply data management science to population and patient applications and help solve the clinical problems of their patients and their community. Internists communicate fluently and are able to educate and clearly explain complex data and concepts to all audiences, especially patients. They collaborate with patients to implement health care ethics in all aspects of their care. Internists display emotional intelligence in their relationships with colleagues, team members, and patients, maximizing both their own and their teams' well-being. They are dedicated professionals who have the knowledge, skills, and attitudes to effectively use all available resources, and bring intellectual curiosity and human warmth to their patients and community.

needs, and with significant overlap between the competencies of internists and subspecialists, we must develop novel ways to move to a truly competency-based model that meets the needs of our graduates and patients.

CBME does not equate to time variability.[4] For example, a program using CBME to offer "nonstandard" rotations could provide a focused ambulatory primary care experience or an enhanced addiction medicine experience, allowing residents to better serve patients in their chosen practice areas after graduation. CBME might also allow a final year of IM residency to overlap with a year of geriatrics fellowship. This can lead to more focused skill development in a chosen field with less time in clinical areas that one may not need in future practice. Current evidence-based models exist for dual-credit experiences such as combined IM/pediatrics training, or gastroenterology and transplant hepatology,[5] and the ABIM Research Pathway, which allows IM residents to enter fellowships after completion of 2 years of residency.[6] The path to the CBME in 2035 will address the best use of curricular time, aimed at local population needs and the professional goals of each resident. This same model could be applied not only to IM and its subspecialties, but also as a means to optimize resident and fellow education across

disciplines. It could also potentially serve as a bridge to link undergraduate medical education to GME, increasing the value of a targeted education that provides sufficient breadth and depth to the learner and avoids curricular time that does not later serve the trainee in practice.

Using Advancing Innovations in Residency Education (AIRE) to Get Us There

Major changes to IM residency are needed to achieve true CBME, such as many of the outcomes highlighted by the scenario-based strategic planning executive summary and the internist described in the preamble. Program leaders in 2020 may not have the resources to support such changes. Therefore, changes will require careful evaluation to determine efficacy of any plan and unintended consequences. To accomplish the goals of CBME in 2035, we must use the strengths of the IM education community. We must design studies to chart the path, and learn from them, and refine education to produce the physicians required in the future. Fortunately, we have precedent. In 2004, the ACGME developed the Educational Innovation Project (EIP) collaborative between the IM-RC and the Alliance for Academic Internal Medicine.[7] Accreditation flexibility was provided to 21 programs to allow them to test new ideas.[8,9] Outcomes from the EIP informed the structure of the Next Accreditation System (NAS).[9,10] In addition, outcomes from the EIP serve as a tool to inform a pilot program called AIRE that has dual aims of allowing the exploration of novel approaches and pathways in GME, and enhancing educational and clinical outcomes through innovative structure and processes in resident and fellow education.[11] The RC-IM considers the AIRE mechanism critical for the goal of advancing to CBME. For instance, the RC-IM would be interested in pursuing a pilot looking at the feasibility of co-certification in IM-hospice and palliative medicine or IM-geriatrics in 3 years instead of 4 years. This may reduce the barrier created by length of training for these much-needed subspecialties.

Becoming a Learning Accreditation System

Informed by pilots such as EIP, the NAS has provided GME programs with the flexibility to innovate and progress toward CBME. However, multiple other aspects of residency education have to be addressed before we can truly become what we would like to call a learning accreditation system (LAS). The recent past and the present state of IM have presented many challenges, and undoubtedly there are future challenges, some of which will be completely new. Change is here and it is accelerating. We will need many tools now and into the future, some of which we will need to create ourselves, but as an accrediting organization and as a community of program leaders, we will most fundamentally need the agility to adapt and evolve to the educational needs of our trainees, both in the IM community and in the larger community of medical educators.

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