

***Revising the Internal Medicine Program Requirements Using Scenario Planning***  
**Internal Medicine 2035 Executive Summary**  
**May 2018**

**Overview**

Every 10 years, Review Committees are required to review their specialty requirements to determine whether they need revision. The ACGME Board of Directors charged the Review Committee for Internal Medicine to pilot a new process for this required revision. This new process, scenario-based strategic planning, required the Committee and the internal medicine community to rigorously and creatively think about what the specialty will look like in the future (recognizing that the future is marked with significant uncertainty) prior to making its revisions.

***What is scenario planning?***

Scenario-based strategic planning is a technique by which organizations develop and test their readiness for the future using a range of alternative futures or scenarios. In this case, these scenarios are detailed, systematically-developed descriptions of operating environments that the US medical profession might face over the next 20-25 years or more. This is a technique for managing uncertainty, risk, and opportunity. It yields a strong strategic framework for understanding future needs and a practical basis for immediate action. The intent is not to predict what the future will be and then build a master plan, but rather to ask what the future might hold and identify actions that can be taken today that are most likely to be valuable regardless of how the future turns out. As a result, the technique relies far more on expert judgment and less on quantitative trend forecasts.

***What has taken place so far?***

In 2013, the Board of Directors engaged in its own scenario planning using four widely varied, plausible, internally consistent scenarios describing the range for the future context for health care delivery. The scenarios were:

- *Free Markets Unchained* (a world dominated by libertarian public policies)
- *BoomDoogle* (a world where Baby Boomers are in charge)
- *There's an App for That, Too?* (a world where most people's health is tracked via wearable/embeddable sensors)
- *Cloudburst* (a world where cyberattacks have disabled the Internet)

Those same scenarios were then used again during two Internal Medicine 2035 (IM2035) workshops in 2017.

- 52 participants representing the internal medicine community, other specialties (family medicine, pediatrics, and surgery), and related fields, including nursing, population health, simulation, informatics, and artificial intelligence attended a workshop in June. The focus of that workshop was to provide the Review Committee with insight regarding *what the practice of internal medicine could look like in each of the four different scenarios*.

- 20 of those participants joined the 24 members of the Review Committee at a second workshop in September, which focused on providing feedback on *what is necessary for preparing the internist and the specialty for the challenges and opportunities of the future*. (Appendix A lists all who participated in the June and September workshops).

Below is a summary of the results of those workshops—general insights about the practice of medicine in the future, followed by key insights about the internist in 2035 that worked well and were viable regardless of scenario, and finally recommendations for what residency programs should do to prepare the internal medicine resident to practice in 2035. The Review Committee will use this information as it considers the current Program Requirements and begins the major revision process.

### ***General insights about the practice of medicine in the future***

- The “commoditization” of health care services will continue and accelerate. It will include increasingly standardized (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 former specialized procedures that can be rigorously standardized or automated.
- Economic and technology factors are likely to blur distinct responsibilities and delineations between generalists and subspecialists, as well as among members of interprofessional teams.
- There will be pressure on the vocation of medicine to de-professionalize in an effort 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 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 (e.g., job stress, lifestyle choices) and exacerbate the tendency for medicine to be subject to public policy interventions.

### ***Key insights about the internist in 2035***

- The health care system will become less reactive, more proactive, and concerned with prevention in terms of population health management and chronic and acute care for individual patients.
  - Non-emergency patients, upon entry into the health system, will often receive algorithm-based treatment (either by a medical information system that might include embedded sensors or by non-physician care team members).
  - The concept of “entry” into the medical system is a misnomer, since it implies an old-fashioned “batch” process, like office visits. Significant portions of the population will always be in the health care system in the sense that their wearable/embedded sensors are tracking their health, communicating with central data/diagnostic systems, and possibly providing established therapies automatically. Others will visit “big box” retail outlets or clinics for quick sensor checks. However, some patients will require expert care that goes beyond the capabilities of the algorithms and protocols. This high-value care will be delivered collaboratively by a “master clinician” within an interprofessional team.
- Some internists will pursue careers as “Master Clinicians.”
  - The patient’s first encounter with the health care system will rarely be with the Master Clinician. Typically, the Master Clinician will be the complex problem solver who sees the patient after initial screening and treatment attempts from automated systems or non-physician care team members have failed.
  - Master Clinicians will be “enhanced general internists” who have gained significant subspecialty education in residency and maintained or developed those skills through lifelong learning.
  - The Master Clinician’s medical knowledge will be supplemented, enhanced, and validated by real-time AI support systems. Deep medical knowledge will become less of a defining characteristic for the Master Clinician than clinical skills, breadth of clinical experience, and problem-solving ability.
  - Along with relevant patient care and medical knowledge competencies, Master Clinicians will need to be competent in the following areas:
    - Leadership and collaborative leadership

- Team dynamics and change management
  - Business of medicine
  - Population and patient data applications
  - Data management science
  - Communication skills that include working with and explaining complex data
  - Health care ethics
  - Emotional intelligence
  - Personal and team well-being
  - Cost-conscious care
- Internists (Master Clinicians and subspecialists) will practice in either the inpatient or ambulatory setting within interprofessional care teams that have breadth of expertise beyond medicine, while specific patient care teams are dynamic and responsive to patient needs.
  - Internists will deliver care regularly under conditions of no physical contact with patients.
  - Internists will deliver patient-centered care in a system driven by economic pressures and algorithm-derived, protocol-driven diagnoses. This will include understanding patient needs within a managed population health context, aligning team expertise to patient needs, understanding the social determinants of health, and practicing value-based care delivery by evaluating therapies and associated costs.
  - Internists will undergo continuous faculty development, particularly as generalist and subspecialty distinctions and responsibilities shift, and AI-based knowledge systems support immediate access to medical information and diagnoses. Internists in hospitals and community clinics will need to educate each other and their residents.

***What residency programs should do to prepare internal medicine residents to practice in 2035***

- The Program Requirements will need to be flexible to allow programs to individualize residents' experience, depending on interests and post-residency plans.
  - Requirements and programs will need to ensure that those residents who want more subspecialty experiences can have it. Residents will have more subspecialty experiences as the delineation between general medicine and subspecialty education and training blurs, general internists take on some current subspecialty responsibilities, AI-based knowledge systems support immediate access to medical information, and residents pursue Master Clinician positions.
  - Requirements and programs will need to allow residents interested in crossing medicine with traditionally non-clinical/non-medicine areas (like public policy, business administration, and law) the option of doing so.
  - Requirements and programs will need to allow residents interested primarily in either an inpatient/hospital or an outpatient/ambulatory setting to have significant portions of their education occur in that setting during residency.

- New subspecialties will develop, some in response to technological advancements (bio-sensor stress or tech-related anxieties/disorders), others in response to global changes (climate-change medicine), and programs will need to allow residents to pursue such options.
- Programs will need to ensure that internal medicine residents can extract the maximum amount of learning from all clinical experiences knowing that internists will typically have little regular contact with patients whose care needs are “within the protocols.” Residents will need to learn an entirely new approach to medicine and to maintaining their skills in a system in which they see fewer patients, but in which those they do see are far sicker or present with problems that are more complex. They will need to develop superb diagnostic and clinical skills usually developed through breadth of experience in a system designed to keep patients away from them.
- Programs will need to prepare residents to become well-informed consumers of data management science and AI-based analyses and decisions. Residents will need to develop expertise with advanced data management systems and be able to integrate systems-derived decisions and diagnoses into team-based clinical care, but also to critically evaluate the decisions and be able to identify those that are wrong or misleading.
- Programs will need to ensure that residents have educational experiences and develop competency with the physician literacies mentioned earlier. Specifically:
  - Leadership and collaborative leadership training
  - Team dynamics and change management
  - Business of medicine
  - Population and patient data applications
  - Data management science
  - Effective communication skills that include working with/explaining complex data
  - Health care ethics
  - Emotional intelligence
  - Personal and team well-being
  - Cost-conscious care
- Programs will need to teach residents that interprofessional, team-based care is the foundation of care delivery, and that internists are the interprofessional team’s complex problem solvers, sometimes leading the team, sometimes engaging in collaborative leadership opportunities.
- Programs will need to emphasize population health, particularly in the context of prevention.
- Programs will need to reinforce the importance of patient-centered care in the face of economic pressures, protocol-driven diagnoses (both algorithm-based and non-physician), and situations where physicians have limited or no physical contact with patients. The patient-doctor relationship of the future will be more virtual than actual, and residents will need to develop new communication competencies.

## Appendix A: List of Participants of the June and September 2017 IM2035 Workshops

<b>Eva Aagaard, MD ++</b> , Washington University School of Medicine in St. Louis
<b>Jennifer Adams, MD +</b> , NYU School of Medicine
<b>Neera Ahuja, MD +</b> , Stanford University School of Medicine
<b>Richard Alweis, MD ++</b> , Rochester Regional Health
<b>M. Hayes Baker, MD +</b> , Magnolia Regional Health Center
<b>Eileen Barrett, MD +</b> , University of New Mexico
<b>Robert Benz, MD *</b> , Lankenau Medical Center, Review Committee member
<b>Alexander Billioux, MD +</b> , Johns Hopkins University School of Medicine
<b>Pierre Bou-Khalil, MD +</b> , American University of Beirut
<b>Craig Brater, MD +</b> , Indiana University School of Medicine
<b>Diane Bronstein-Wayne, MD +</b> , Northwestern University Feinberg School of Medicine
<b>Dona Susie Buchter, MD +</b> , Emory University School of Medicine
<b>John Buckley, MD ++</b> , Indiana University School of Medicine
<b>Roger Bush, MD ++</b> , Neighborcare Health
<b>Christian Cable, MD, MHPE *</b> , Scott & White Medical Center, Review Committee Chair
<b>Kathy Chappell, PhD, RN +</b> , American Nurses Credentialing Center
<b>Saima Chaudhry, MD +</b> , Memorial Healthcare System
<b>Davoren Chick, MD *</b> , American College of Physicians, ex-officio Review Committee member
<b>E. Benjamin Clyburn, MD ++</b> , Medical University of South Carolina College of Medicine
<b>Alan Dalkin, MD *</b> , University of Virginia, Review Committee member
<b>Antigone Dempsey Med +</b> , American Board of Internal Medicine, infectious disease board member
<b>Andrew Dentino, MD *</b> , University of Texas Rio Grande Valley School of Medicine, Review Committee member
<b>Sanjay Desai, MD *</b> , Johns Hopkins University School of Medicine, Review Committee member
<b>Sima Desai, MD *</b> , Oregon Health & Science University, Review Committee member
<b>Jessica Deslauriers, MD *</b> , Yale University, Review Committee resident member
<b>Maria D'Oliveira +</b> , Harvard Medical School, Brigham and Women's Hospital
<b>J. Christopher Farmer, MD ++</b> , Mayo Clinic, Rochester
<b>Oren Fix, MD *</b> , Swedish Medical Center, Review Committee member
<b>Christin Giordano, MD *</b> , Vanderbilt University, Review Committee resident member
<b>James Herdegen, MD *</b> , Rush University
<b>Paul Grundy, MD, MPH +</b> , HealthTeamWorks
<b>David Han, MD ++</b> , Penn State Children's Hospital (Hershey)
<b>William Hersh, MD +</b> , Oregon Health & Science University
<b>Stacy Higgins, MD +</b> , Emory University School of Medicine
<b>Susan Hingle, MD +</b> , Southern Illinois University School of Medicine
<b>Eric Kasowski, DVM, MD, MPH +</b> , Centers for Disease Control and Prevention
<b>Russell Kolarik, MD *</b> , University of South Carolina School of Medicine, Review Committee member
<b>Thomas Lall, MD ++</b> , Atlanta Medical Center

<b>Susan Lane, MD ++</b> , Stoney Brook Medicine
<b>Ana Maria Lopez, MD, MPH ++</b> , University of Utah School of Medicine
<b>Monica Lypson, MD *</b> , Department of VA Affairs Central Office, Review Committee member
<b>Maria Maldonado, MD ++</b> , Danbury Hospital
<b>Brian Mandell, MD *</b> , Cleveland Clinic, Review Committee Vice Chair
<b>Leah Marcotte, MD ++</b> , Iora Health, Seattle, Washington
<b>Candice Mateja, DO ++</b> , University of South Florida Morsani College of Medicine
<b>John McConville, MD ++</b> , University of Chicago Medical Center
<b>Furman McDonald, MD *</b> , American Board of Internal Medicine, ex-officio Review Committee member
<b>Graham McMahon, MD ++</b> , Accreditation Council for Continuing Medical Education
<b>Neil Mehta, MD ++</b> , Cleveland Clinic
<b>Curtis Mirkes, DO ++</b> , Scott and White Memorial Hospital
<b>Elaine Muchmore, MD *</b> , University of California, San Diego, Review Committee member
<b>Tina Moen, PharmD +</b> , IBM Watson Health
<b>Richard Murray, MD ++</b> , formerly at Merck & Co, Inc.
<b>Donald Nelinson, PhD *</b> , American College of Osteopathic Internists, ex-officio Review Committee member
<b>Cheryl O'Malley, MD *</b> , University of Arizona, Review Committee member
<b>Amy Oxentenko, MD *</b> , Mayo Clinic, Rochester, Review Committee member
<b>Jill Patton, DO *</b> , Advocate Lutheran General Hospital, Review Committee member
<b>Kristen Patton, MD *</b> , University of Washington Medical Center, Review Committee member
<b>David Pizzimenti, DO *</b> , Magnolia Regional Health Center, Review Committee member
<b>Stacy Potts, MD +</b> , University of Massachusetts
<b>David Rodgers, EdD ++</b> , Penn State Health Milton S. Hershey Medical Center
<b>Ilene Rosen, MD ++</b> , University of Pennsylvania Health System
<b>Joshua Safer, MD +</b> , Icahn School of Medicine at Mount Sinai
<b>William Salyers, Jr., MD, MPH +</b> , University of Kansas School of Medicine
<b>Nitin Seam, MD +</b> , National Institutes of Health
<b>Samuel Snyder, DO *</b> , Nova Southeastern University, Review Committee member
<b>Jacqueline Stocking, PhD *</b> , UC Davis Health System, Review Committee public member
<b>David Sweet, MD *</b> , Summa Health System/NEOMED, Review Committee member
<b>Sara Swenson, MD +</b> , Sutter Health Medical Foundation
<b>Blaine Takesue, MD +</b> , Regenstrief Institute, Inc.
<b>Dominick Tamaro, MD +</b> , Warren Alpert Medical School of Brown University
<b>M.N. Walsh, MD +</b> , St. Vincent Heart Center of Indianapolis
<b>Eric Warm, MD +</b> , University of Cincinnati Health
<b>Terri Weaver, PhD, RN +</b> , University of Illinois Chicago
<b>Steven Weinberger, MD +</b> , formerly of the American College of Physicians

+ attended June workshop  
 \* attended September workshop  
 ++ attended June and September workshops