

## **2008 Grand Challenges Initiative**

This is a list of proposed grand challenges developed by synthesizing and editing the statements contributed via [www.aamc.org/academicmedicine](http://www.aamc.org/academicmedicine) or [editor@aamc.org](mailto:editor@aamc.org). This list will continue to expand and be refined during 2008 based on input from individuals, professional societies and organizations, and the *Academic Medicine* Editorial Board.

The views expressed in or implied by these “grand challenges” do not necessarily reflect the views of *Academic Medicine*, its editor-in-chief, or the Association of American Medical Colleges.

### **Taxonomy of Proposed Grand Challenges**

- I. Education Policy and Practice**
  - A. Education of Students Before Medical School
  - B. Education of Medical Students
    - 1. Admissions
    - 2. Cost of Medical Education
    - 3. Curriculum and Training
  - C. Education of Residents, Postdoctoral Clinical Fellows, and Postdoctoral Research Fellows
  - D. Education of Physicians and Scientists
  
- II. Health and Science Policy**
  - A. Physician Workforce
  - B. Healthcare Policy
  - C. Science Policy
  - D. Cancer Policy
  
- III. Institutional Policy, Management, and Values**
  - A. Faculty
    - 1. Tenure and Promotions
    - 2. Gender and Diversity Issues
  - B. Cross-cutting Institutional Issues
  - C. Global Community
  
- IV. Research Practice**
  
- V. Clinical Practice**
  - A. Electronic Health Record
  - B. Evaluation

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## *Proposed Grand Challenges*

### **I. Education Policy and Practice**

#### **A. Education of Students Before Medical School**

**Improve K-12 education, emphasizing critical thinking and problem solving rather than knowledge accumulation.**

#### **B. Education of Medical Students**

##### **1. Admissions**

**Select students with the optimal emotional and personal qualities to become successful physicians.**

##### **2. Cost of Medical Education**

**Develop a rationale and a set of guidelines for allocating a fixed sum of scholarship money between merit-based and need-based awards for medical students.**

**Decrease the cost of medical education for medical students** so that new doctors are not burdened with debt and so that the physician workforce is diverse, consisting of doctors from many socioeconomic groups.

**Develop solutions for financing medical education**, considering faculty salaries, medical student tuition, Medicare pass-throughs, and GME payments.

##### **3. Curriculum and Training**

**Use adult learning principles in the education of medical students;** i.e., create a learner-centered environment.

**Identify and share best practices in medical education around the world;** i.e., examine and understand models of medical education used in other countries to share best practices and acknowledge increased globalization.

**Teach health care delivery systems and policy to medical students** so that as future physicians, they can advocate for their patients and work for health care reform.

**Train medical students to think critically.** Focus more on physician metacognition and intuition to avoid physician errors in diagnosis.

**Use discoveries to make decisions.** Use data to think, teach, and learn critically and to improve both teaching and clinical practice(s).

**Reconsider the traditional four-year curriculum** in the face of ever-increasing scientific discovery and knowledge.

**Harness technology to make learning more meaningful.**

**Design a curriculum that prepares students for practice in the 21<sup>st</sup> century,** incorporating the economic, social, geographic, cultural, racial / ethnic, environmental, and educational challenges patients face as they address their health.

**Encourage students to be more independent; teachers to be more dispensable.**

**Define, reorganize, and present the body of knowledge that must be learned by medical students** so that it is meaningful and clinically pertinent and so that it inspires skill development, self-direction, and life-long learning.

**Continually adapt curricula to meet changing forces, demands, and needs** without massive transformations.

**Allow patients and their families to help conceptualize, teach, and evaluate curricula,** so that medical students better learn the required patient-centered knowledge, skills, values, and attitudes.

**Identify opportunities for interlacing the education of health professionals (RNs, PAs, CRNPs, etc.) well before they meet in a live and demanding environment,** allowing them to develop as teams, so that each constituent has a better understanding of the others' needs.

**Develop reliable and practical methods of assessing individual student competencies.**

**Refine our understanding of “critical thinking” and “critical reasoning” in order to develop these skills more fully in medical students.**

**Create an infrastructure that will allow educators to track students through residency training and medical practice in order to obtain longitudinal outcomes of educational interventions.**

### **C. Education of Residents, Postdoctoral Clinical Fellows, and Postdoctoral Research Fellows**

**Teach health care delivery systems and policy to residents**, so that as future physicians, they can advocate for their patients and work for health care reform.

**Promote patient ownership in residents** even in the 80-hour work week where patient turnover is high.

**Treat residents respectfully**, not as just warm bodies with licenses.

### **D. Education of Physicians and Scientists**

**Reformat CME so that it is more centralized, focuses on physicians’ needs, and can be the agent to improve quality at an academic medical center.** CME should not be wholly conference-based.

**Sharpen, elevate, and redefine the skills and knowledge needed by physicians considering the available technology, the amount of information known by patients, and the skills provided by nurses and allied health care workers.**

**Train faculty in the Socratic method to teach reasoning skills in medicine** to students in order to promote self-awareness and so that students can apply and validate medical information. Rely not wholly on inquiry-based, small group, active learning.

**Teach health care delivery systems and policy to physicians**, so they can advocate for their patients and work for health care reform.

**Train physicians to integrate sciences basic to medicine (e.g., genetics and biochemistry) with cultural anthropology and social psychology.**

**Create leadership development opportunities** beyond one-week seminars, so that the preeminent scholars and clinicians who become the leaders of complex health organizations have the skills necessary to confront the challenges in academic medicine and to uphold the public's trust.

## II. Health and Science Policy

### A. Physician Workforce

**Develop accurate, meaningful, and useful measures of health care workforce supply and demand.**

**Decide how big (or small) the physician workforce should be** and then decide how to work toward that ideal size.

**Improve the attractiveness of primary care (as opposed to specialties) to ensure an adequate physician workforce** for our aging society.

**Address the impact of increasing medical school enrollment without increasing GME funding.**

### B. Health Care Policy

**Propose and promote a government-run, single-payer system for medical reimbursement.**

**Examine health care systems around the world,** so U.S. health care can compete in terms of both cost and overall patient care.

**Align incentives so that they favor high volume "sickcare" over comprehensive medical care.**

### C. Science Policy

**Focus scholarship and research on long-term, big issues.** Be proactive—not reactive.

### D. Cancer Policy

**Expand antibody-targeted cancer cell chemotherapy to as many cancers** that respond to chemotherapeutics and targeted antibody approaches as possible, especially since the precedent has been established.

**Increase use of biomarkers to detect cancer at earlier stages.** Biomarkers can be monitored through blood samples and can detect changes in mass of critical cells.

## III. Institutional Policy, Management, and Values

### A. Faculty

**Establish effective mentoring at all levels,** so that the best individuals are retained in academic medicine and research, thus improving and facilitating the translation of discovery to clinical care and student learning.

**Recruit, train, and retain outstanding faculty** despite educational debt, research grants, the lure of private practice, and the great pressure to produce revenues from patient/clinical care.

**Give junior faculty protected time to pursue academic initiatives.**

**Consider how to retain excellent faculty when academic medicine requires more work with significantly less pay.**

**Find a way to teach and be academically productive despite billing and tightening financial constraints.**

**Improve the career/life balance of jobs in medicine and academic medicine to attract a diversity of students who strive for and desire this equilibrium.**

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**Move to a model of “Professional educators” for medical school faculty who do the bulk of the teaching.**

### **1. Tenure and Promotion**

**Open academic tenure and promotion and leadership to as diverse a pool as possible** in order to expand teaching, research, and clinical care at AHCs.

**Choose the best leaders** for deanships and department chairs. **Hold these leaders to high standards; require leadership development and evaluation** by deans, peers, and reports.

**Examine and revise the role of medical school faculty, especially regarding the tenure system, in a changing world** of dual-income families, increased numbers of women attending medical school, fewer opportunities for research grants, and more pressure to produce revenue through clinical care.

**Acknowledge and appreciate the difficult balance between research productivity and teaching excellence**, especially in lab-intensive courses, and especially for tenure and promotions.

### **2. Gender and Diversity**

**Attract, retain, and advance women and minorities as MD and PhD faculty and leaders of AMCs.** Create new models for retaining diverse talent.

**Support women in medicine and in academic medicine**, especially those who want to do more than clinical work and move beyond the rank of assistant professor. Give women equal starting offers and equal institutional support.

**Allow a way for more women with children to remain in academics.**

## **B. Cross-cutting Institutional Issues**

**Integrate disciplines within academic medicine** both to foster cooperation among departments and physicians, nurses, allied health providers, psychologists, and social

workers and to improve patient care while decreasing unnecessary competition and patient costs.

**Manage the tension between the scientific and professionalism paradigms in patient care, teaching, and research.** Assimilate, reconcile, and merge the traditional social, professional aspects of medicine and the recent emerging scientific elements of medicine.

**Define a sustainable care team model** in the face of the competing priorities of patient care, education, research, budgeting, and ACGME rules, including resident work hour restrictions.

**Decrease bureaucracy** so time and attention can be given to scholarship.

**Support the educational missions of departments and schools** (despite decreasing funding and decreasing appreciation) to ensure future generations of health care providers.

**Consider the institutions' responsibilities to their graduates and to the physicians practicing in their communities.** Consider taking responsibility for physicians' post-graduation performances.

## C. Global Community

**Create equity of information** among medical educators in developed and developing nations.

## IV. Research Practice

**Conduct research independently of industry sponsorship.**

**Continue to fund research** despite (1) declining federal and state sources, (2) increasing clinical revenues, and (3) decreasing American interest (as evidenced by fewer tax dollar allocations).

**Increase the number of publications on gay issues in the scholarly literature** by recruiting appropriate reviewers and recognizing the relevance of gay issues to medicine.

**Develop an infrastructure that supports multi-institutional medical education research** to allow for studies that are able to answer meaningful questions about the efficacy of various educational techniques.

## V. Clinical Practice

**Develop principles and practice protocols for transplanting complex organs,** especially considering immuno-tolerance of the new articles without immuno-suppression.

**Set guidelines that allow physicians to prescribe treatments that may not be evidence-based, but are rational.** Physicians must document and take responsibility for their prescribed treatments.

**Develop rational guidelines to balance an evidence-based medicine approach with sound physician judgment for clinical practice decisions not currently supported by evidence.** Treatment should be based on the long- and short-term benefits for the patient—not on prescribing advertised medications, not on stringent adherence to the few cases used in clinical trials, and not on the easily accessible information and samples provided by pharmaceutical companies.

**Allow academicians and researchers to be a resource for clinical care givers** to improve quality of care and to improve reimbursement of scholars.

**Balance quality, efficiency, accountability, autonomy, and safety.**

**Intensify academic-industrial collaboration to continue to improve and develop glucose monitors and insulin pumps** for managing diabetes, decreasing diabetic complications, and improving quality of life.

**Make diagnoses based on communication with the patient and critical thinking,** rather than technology and test results.

### A. Electronic health record

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**Create a way to protect patient privacy of electronic health record.**

**Create a way for physicians to have any-place, any-time access to a patient's e-patient record**, which should be patient-owned and controlled, rather than recreate it, especially if and when patients move.

**Determine the ethics of the electronic patient record.**

**Set standards for all the various electronic medical records (EMRs)**, so that important, pertinent information can be accessed even through disparate systems and brands and so information can be extrapolated for large epidemiological studies.

## **B. Evaluation**

**Create a system for assessing clinical performance in a way that is accurate, unbiased, and reliable**—that does not depend on surveys of either allegiant patients or subordinate colleagues.