Envisioning GME 2015 at Partners

Submitted by the GME 2015 Task Force
with input from the May 31 Partners Retreat

July 17, 2006

Contents

Introduction 1

Approach to Planning 2

The Case for Change 3

Envisioning GME 2015 at Partners 7

- Physician Education and Training Mission 8
- Optimizing Teaching and Learning at Partners: Focus on Faculty 11
- Optimizing the Educational Experience at Partners: Focus on Trainees 15
- Optimizing Teaching and Learning: Focus on Curriculum and Methods for Teaching and Evaluation 18
- The Interface Between Education and Patient Care 22
- Coordination and Infrastructure 28
- Creating an Integrated GME-UME Education Culture 31

Appendix: GME 2015 Task Force

Introduction

The Partners HealthCare System and, in particular, its academic medical centers, Brigham and Women's Hospital (BWH) and Massachusetts General Hospital (MGH), enjoy world renown for providing excellent patient care, cutting edge research, and premier medical education. As a leader in its field, Partners is well aware of the importance of constantly striving to improve in all three of these areas, including optimizing the education and training of future physicians.

Partners recognizes that changes in health care delivery, technology, and the demographics and expectations of physicians and patients present significant challenges to the current models for physician education. Over time, these evolving trends will make it increasingly difficult to enhance or even to maintain the quality of graduate medical education (GME). Partners has thus committed to evaluate its approach to physician education and take bold steps as may be necessary to ensure its continued leadership and success in the future.

In this context, Partners has undertaken a strategic planning process for its physician education programs. The scope of this process includes graduate medical education (residency and fellowship programs), the interface between graduate and undergraduate medical education (UME), and the implementation of hospital-based components of Harvard Medical School's new curriculum. A principal goal of this project is to describe the desired future for GME in 2015 and to develop a series of actionable recommendations for short term (2-3 year) and long-term initiatives aimed at implementing that vision.

It should be noted that this vision was created from the perspective of optimizing physician education at Partners, and was, by design, focused principally on graduate medical education. As specific implementation plans are developed, they will need to take into account the breadth of the multifaceted mission of the constituent institutions and the need to allocate resources to benefit the whole.

This paper outlines the approach to planning, presents the case for change, and describes an "emerging vision" for GME in 2015. Achieving this vision will require a significant culture shift and a strong, consistent focus on education and teaching. Substantial resources and the steadfast support of hospital and Partners leadership will also be necessary. Achieving this vision will allow us to sustain and enhance physician education at Partners—the rewards of which will be enjoyed for years to come.

Approach to Planning

The planning process was initiated by Partners senior leadership and has proceeded with broad involvement of faculty, trainees, and administrators throughout Partners. This involvement has taken a variety of forms, including approximately seventy individual interviews with Chiefs and other leaders from Partners, the hospitals, and Harvard Medical School; focus groups of residents, fellows, and junior faculty at both MGH and BWH; and a Partners-wide survey of faculty, residents and fellows that generated 870 responses. This work culminated in a Partners-wide planning retreat, involving over 120 leaders from throughout Partners, on May 31, 2006. The information from all of these sources informed the process and the resulting vision.

The work has been overseen by a **Steering Committee**, led by Daniel K. Podolsky, MD, Partners Chief Academic Officer, and Debra F. Weinstein, MD, Partners Vice President for Graduate Medical Education. Steering Committee members are Gary Gottlieb, MD/MBA President, BWH; Allison C. Rimm, MGH Vice President for Strategic Planning and Information Management; Frederick Schoen, MD/PhD, Chair, BWH Education Committee (and Vice Chair, Pathology, BWH); Jo Shapiro, MD, Partners Associate Director for Graduate Medical Education (and Division Chief, Otolaryngology, BWH); Peter Slavin, MD, President, MGH; George Thibault, MD, Partners Vice President of Clinical Affairs (and Director, HMS Academy of Medical Educators); Samuel O. Thier, MD, Professor of Medicine and Professor of Health Care Policy, Harvard Medical School, MGH; Kate Walsh, COO, BWH; and Warren Zapol, MD, Chair, MGH Education Committee (and Chair, Anesthesia, MGH).

The Steering Committee commissioned the **GME 2015 Task Force** with the charge to develop "a preliminary ten-year vision for physician education at Partners, focusing principally on GME and its interface with undergraduate medical education (UME) and patient care delivery." The Task Force was co-chaired by Jonathan F. Borus, MD, Chair of the Brigham and Women's/ Faulkner Hospitals Department of Psychiatry, and Andrea Reid, MD, MPH, Program Director, MGH Gastroenterology Fellowship. This twenty-person Task Force represented a diversity of roles and perspectives from throughout Partners (***see Appendix for list of Task Force members***). Members reviewed and discussed extensive background materials and the results of the interviews, focus groups, and survey to develop a preliminary vision for the future. The Task Force met five times in the course of the project and Task Force members played leadership roles at the May 31 retreat.

Cambridge Concord Associates (CCA) provided project consultation. A consulting firm with extensive experience in strategic planning and governance assessment and design for medical organizations, institutions of higher education, and other health and education related not-for-profits, CCA worked closely with the Steering Committee and the Task Force throughout the process and was also responsible for the interviews, focus groups, and survey analysis.

This paper represents the results of the work to date and is presented to the Steering Committee to use as they identify the specific next steps required to achieve the desired future for the education of physicians at Partners.

The Case for Change

Partners is a global leader in health care and physician education; GME positions at Partners' hospitals are sought after and highly regarded. This planning process was undertaken to allow Partners to creatively adjust and evolve its GME programs to ensure that they are positioned to stay ahead of trends and changes. The future leaders of health care will be those organizations that anticipate environmental trends, challenges and advances, and develop innovative approaches to ensure that the health care needs of the future are met.

The process of envisioning GME at Partners in 2015 incorporated an understanding of current and impending changes and challenges facing health care and GME so that Partners physician education programs could be designed prospectively, in a strategic and innovative way.

In planning for the future, Partners has significant **strengths** upon which to build. These include:

- Excellence in research, clinical education and patient care;
- High quality people at all levels throughout Partners;
- A culture and tradition that values teaching and learning;
- The resources, structure, institutional relationships, and reputation needed to be an aggressive change leader;
- A strong relationship with Harvard Medical School;
- Financial health;
- A large and diverse population of patients representing a broad spectrum of clinical medicine.

Partners must harness and leverage these assets to respond to new challenges from the changing context of health care, including those described below.

Medical practice and health care delivery are being impacted—and will likely be transformed—by the fields of genomics and regenerative medicine, minimally-invasive technologies, large-scale epidemiologic studies, and other rapidly evolving areas of research. Closer collaboration between traditionally "siloed" medical specialties has become critical, as has the role of cross-specialty and interdisciplinary teams. People working at the interface of clinical practice and research, including those doing translational work, are essential. Trainees in all specialties will need to learn to work in the era of "personalized medicine," where genomics will allow physicians to identify disease susceptibility, pursue early diagnosis and develop individualized treatment (i.e. "the right drug for a particular tumor in a specific patient"). Physicians will be increasingly dependent upon tools for accessing new information and on a commitment to lifelong learning. In addition, the increasing proportion of care delivered in the ambulatory setting will have a significant impact on the training needs of young physicians.

The **public health** agenda must continue to address disparities in access to healthcare and challenges of caring for the un- or underinsured while also tackling new threats, such as bioterrorism or the increased likelihood that a local outbreak of infectious disease becomes a worldwide pandemic in an age where global travel is commonplace. The healthcare needs of the public will change in other significant ways as the U.S. population increases in age and ethnic diversity.

Patients are better informed and have higher expectations of their physicians and of the healthcare system overall. With easy access to medical information on the Internet, and confronted by direct-to-consumer advertising, patients want more detailed communication from physicians and a more active role in decision making. They expect rapid incorporation of new knowledge into practice, easy and prompt access to their physicians, and seamless communication between healthcare providers. Better-informed patients are likely to continue to drive increased utilization and costs. Patient satisfaction data is increasingly used to inform the operational decisions of healthcare institutions.

Patient safety and quality have become a major focus of health care reform, impacting both health care delivery and training. Training in the principles and practice of patient safety will be expected of all physicians. Many physicians are concerned that the patient safety imperative of supervision, taken to the extreme, could deny physician trainees the experience of autonomous decision-making (appropriate to their level of training), which is necessary preparation for independent practice.

Advances in technology provide both new tools and ever-increasing expectations. With a constantly growing information base easily available to residents and faculty, there is a need to ensure that learning is both in time and in-depth. Advances such as simulation provide new teaching/evaluation tools and the expectation that leading academic medical centers will make full use of them. On the administrative side, technology offers the potential for reducing the administrative burden and improving communications, leading to higher quality and more efficient patient care. Global communication systems provide new opportunities for bringing healthcare to populations previously without access. In addition to aiding patients, "telemedicine" can enhance physician education by exposing doctors to patients with diseases not encountered locally. However, harnessing the full advantage of new technologies will be expensive and time consuming.

Time pressures are changing the trainee experience and creating new demands on both trainees and faculty, thus exacerbating the tension between education and service. The combination of increasing clinical loads, rising inpatient acuity, and significant restrictions on residents' work hours, can result in insufficient time for residents to spend with patients and insufficient time for other educational opportunities. Shorter hospital stays and an increase in outpatient services affect trainees' ability to follow a patient's course and can lead to a loss of longitudinal experience. The fast pace of rotations sets up a challenging dynamic that favors breadth rather than depth of learning and limits trainees' ability to acclimate to routines and get to know the faculty in any one area. Time pressures on faculty make it more difficult for many to devote time to teaching and to provide meaningful evaluation and feedback for trainees.

Physician demographics are changing and lifestyle choices are increasingly impacting career decisions. Medical school graduates are increasingly attracted to "controllable lifestyle" specialties and are considering the balance between personal and professional life when choosing training programs and determining career paths. GME programs must address trainees' expectations for more control over their lives and their desire to pursue both personal and professional interests. As growing numbers of women enter medicine, and as parenting expectations and responsibilities change for both women and men, there is a need to adapt training models to meet the needs of families. There will be growing demand for trainees and faculty to leave and re-enter the workforce, for illness or other reasons, without feeling devalued in the physician culture.

Regulation of healthcare delivery and physician education is expanding dramatically. Requirements related to patient privacy, billing and reimbursement, physician credentialing and recertification, and supervision of trainees place new demands and constraints on the system. Accreditation standards for GME involve increasingly tighter restrictions on duty hours, fulfillment of specific curricular elements and documentation of competence in clearly defined areas. Increasing regulation by ACGME, JCAHO, ABMS, state medical boards, CMS, and other groups also adds substantially to the burden of documentation.

Internal productivity pressures also impact physician education and training. Demands for faster "through-put" to accommodate greater clinical volume decrease the time available for both resident and faculty teaching and learning, and increase the requirement for GME programs to accommodate hospital "service needs."

A critical internal challenge is the **need to ensure that teaching is appropriately rewarded and recognized within Partners**. In the current system, where all attending physicians are expected to teach, explicit rewards for teaching are minimal. In some cases teaching may actually hinder one's ability to be promoted and result in lower compensation because of lost clinical productivity. Most faculty feel that teaching is not sufficiently recognized or valued in the Harvard/Partners system. With increasing demands on time and ongoing fiscal pressure, the current difficulty in recruiting talented faculty to teach is likely to worsen.

A vision for physician education at Partners in 2015 is necessary to guide further planning in a way that addresses current and expected challenges. "Business as usual" or reactive change will be insufficient to ensure that Partners maintains and enhances its position as a leader in physician education and training. This vision utilizes the strengths of the organization to address the challenges posed by the external and internal environments. It is a bold vision that will demand substantial resources and infrastructure support. The result, however, will solidify Partners as a global leader that is truly fulfilling all parts of the mission of excellence in patient care, research, and physician education.

Because of BWH's and MGH's international standing in the academic medicine community, changes made—or even contemplated—at Partners will attract broad interest. As Partners works to define, develop and implement new models for physician education, the organization has a responsibility to assess the impact of changes and to issue public reports.

Envisioning GME 2015 at Partners

As members of the GME 2015 Task Force considered the results of the information gathered and deliberated about the expected future environment for medical education, they began to identify common themes and potential opportunities for change. Their emphasis was on identifying major areas in which systemic change could move Partners to a new level of excellence in physician education.

Seven principal focus areas have been identified as critical to an emerging vision for physician education at Partners in 2015:

- Physician Education and Training Mission
- Optimizing Teaching and Learning at Partners: Focus on Faculty
- Optimizing the Educational Experience at Partners: Focus on Trainees
- Optimizing Teaching and Learning: Focus on Curriculum and Methods for Teaching and Evaluation
- The Interface Between Education and Patient Care
- Coordination and Infrastructure
- Creating an Integrated GME-UME Culture

This paper describes the desired future in 2015 for each of these focus areas. For each area, the significant proposed changes are highlighted, followed by an in-depth description of the situation and nature of the proposed changes.

Notes:

1) Generally throughout this report "Partners" refers to the Partners hospitals, where the BWH and MGH serve as the principal sponsors of GME for the health system.
2) "Trainee" refers to both residents and fellows, who comprise the population of GME trainees at Partners.

Physician Education and Training Mission

Major points include:

- Clinical excellence will be the primary goal of GME and the principal focus of residency training.
- All GME trainees will be encouraged to identify an area of "added value" (e.g. expertise in clinical or basic research, clinical teaching, health care administration, or public or community health) during their education at Partners. Attainment of this "added value" will be encouraged for residents and expected of fellows.
- Fellowship training will be distinguished from residency training by increased opportunities to delve deeply into research, teaching, clinical practice, or other areas according to individual career goals.
- All career paths within medicine will be honored and supported. Partners will be known for preparing its trainees for leadership roles and for multiple paths to success.
- Partners will reinforce its commitment to training a diverse population of physicians.
- To support these diverse career paths, Partners will need to identify new funding mechanisms in addition to the more traditional research fellowships that are essential to Partners education.
- Academic scholarship and an appreciation of the essential role of research and discovery in medicine will continue to be part of the core of graduate medical education.

Clearly defining the purpose of physician education at Partners sets the stage for the other components of the educational vision. Such clarity will inform decisions about the size and mix of (sub) specialty programs, the selection of residents and fellows, the design of individual training programs, and the content of the core curriculum as well as other Partners-wide educational initiatives.

Partners will be recognized for excellence in clinical and research education and training in 2015 and it will be known as a place where leaders are developed. Partners will recruit physicians interested in all aspects of medicine and a broad spectrum of medical careers. It will also reinforce its commitment to recruiting and retaining a racially and ethnically diverse population of physicians, strengthening its efforts over time to achieve sufficient impact.

Clinical excellence will be at the heart of Partners GME training in all areas. Complementing this clinical excellence will be the opportunity for every Partners trainee to develop some "added value" to contribute beyond overall clinical expertise. The "added value" might be, for example, expertise in clinical or basic research, clinical

teaching, health care administration or public or community health. Attainment of this "added value" will be encouraged for residents and expected of fellows.

The core residency curriculum in each department will emphasize clinical training, while a variety of electives and other educational opportunities will allow trainees to pursue "added value." At the resident level, all clinical trainees will embrace the essential role of scientific investigation in advancing patient care and will be able to interpret and apply the results of relevant biomedical research. Some, but not all, Partners residents will devote substantial time and effort toward basic or clinical research. Individual departments may choose to define the role of research in residency at different levels, reflecting ACGME requirements and the department's mission and resources. In some programs research time will be elective, while in others it may be considered an essential part of core training.

Partners will continue to reinforce its institutional commitment to the importance of scholarly pursuits, broadly viewed, at every level of training. Excellent research training will continue to be a hallmark of Partners GME, particularly at the fellowship level, where most trainees have the opportunity to further specialize and develop research expertise. The concept of "added value" will be a critical element of fellowships. Fellowship training will be understood as a time for further personal definition and specialization. Fellows will complement their clinical subspecialty training with a deep focus on research, physician education, or specialized elements of advanced practice. If one-year clinical fellowship programs lack sufficient time to nurture an individual focus, one or more additional years of training should be made available wherever possible.

There will be an increasing need to develop clinical and physician educator paths within the Partners fellowship programs, and new funding mechanisms will need to be identified in addition to the more traditional research fellowships that are essential to Partners education. Regardless of the focus, fellows' work should position them to generate and/or disseminate new knowledge that will advance their chosen field.

All career paths within medicine will be open to Partners trainees, and all will be valued. The selection processes for Partners' GME programs will reflect this value and support diverse career paths. Basic scientists, clinical investigators, clinician educators, administrators, and practicing clinicians in primary care or subspecialty medicine will be sought after and nurtured in the Partners training programs. No Partners trainee will feel that s/he is making a lesser choice if s/he does not pursue an academic research career.

Partners will continue to promote academic scholarship and aspects of discovery in all career paths—indeed, this will be a distinguishing feature of GME at Partners. Combined with the emphasis on clinical excellence and added value, promotion of scholarship and discovery will position Partners to produce excellent physicians who also will have the capacity to provide something more to the larger community (e.g. expertise in clinical or basic research, clinical teaching, health care administration, or public/community health). Partners will be known for preparing its trainees for leadership roles and for fostering multiple paths to success.

Optimizing Teaching and Learning at Partners: Focus on Faculty

Major Points include:

- A physician educator career path will be developed and supported to attract and retain the best teachers and allow them to focus on teaching.
- A combination of core teaching faculty and physicians who teach part time while emphasizing other pursuits will provide the optimum balance and varied exposure for trainees.
- Some staff physicians may not participate formally in teaching residents or fellows in the future.
- Assignment of specific teaching responsibilities will reflect the interest and abilities of individual faculty members.
- Recruitment of department and division leadership, as well as faculty for roles that involve teaching, will explicitly include an evaluation of candidates' teaching abilities and interest in education.
- Faculty development opportunities will be significantly expanded and enhanced to ensure that faculty have the training and tools they need to be effective teachers.
- Training, assessment, and support systems will be put in place to support teachers and Program Directors and to ensure that teaching is of the highest quality.
- Reward and recognition systems will be enhanced to acknowledge the legitimate career path of physician educators and to ensure that people choosing this path are rewarded appropriately. A basic tenet will be that any substantial contribution to teaching will be compensated at a fair rate.
- Program Directors will have a clear career trajectory and appropriate recognition and rewards.
- Program Directors and teaching faculty will have access to enhanced educational space and sufficient technological and administrative support.

The quality of teaching will be optimized by a system that facilitates the development of excellent teaching skills; provides attractive incentives and rewards—as well as appropriate recognition—for teaching; and engages the best and most committed teachers to provide the majority of the teaching.

There will be many different ways in which to engage in teaching. Clinical teaching through the delivery of patient care, such as surgeons working one-on-one with trainees in the operating rooms, internists supervising care on an inpatient service, or pediatricians precepting in the clinic, will continue to be a critical element of training. Lecturing on core topics or leading case-based seminars are other examples of valuable teaching contributions. Development of curricula or teaching materials also represents essential educational activities.

The level of teaching commitment will fall into three categories. Physician educators will pursue teaching as their major career emphasis; they will fill "core" teaching and educational roles that require a high level of teaching expertise and, often, a substantial time commitment in order to provide sufficient continuity for trainees. Physician educators will have a decreased clinical load in order to protect time for teaching. Other teaching faculty, who are engaged principally in clinical practice or research, will have more limited, "part-time" participation in teaching. A third group of staff physicians may have no role in teaching of residents and fellows, but may teach in other venues or instead contribute to one or both of the other Partners missions.

The combination of core teaching faculty and faculty who teach part-time will provide a balanced way to address educational needs. The core faculty concept has the benefits of improving the quality and consistency of teaching, enhancing continuity between faculty and trainees, and providing quality role models of physician educators. This concept will also help to enhance the satisfaction of faculty physicians by better aligning their interests and activities. Supplementing core faculty with faculty who teach part-time will ensure that trainees are exposed to a diversity of teachers, reflecting different practice and teaching styles and representing a variety of career interests as potential role models. This arrangement also preserves the opportunity for a large number of faculty to participate in teaching and helps to ensure that the huge volume of teaching responsibilities can be fulfilled. It must be noted, however, that teaching will no longer be an assumed activity for all faculty, and that some form of selection will occur.

The assignment of specific teaching responsibilities will reflect the interest and abilities (based on valid evaluative data) of individual faculty members. In addition, recruitment and retention of key department/division leaders and teaching faculty will also explicitly include an assessment of candidates' teaching abilities and interest in physician education. Identifying teaching as an important skill will help to elevate Partners' education mission and, over time, should help improve the overall quality of education.

An important premise of this approach to physician education is that one has to be a good teacher to teach and that unqualified teachers will not be tolerated any more than poor clinicians are tolerated. Although some people are natural teachers, most require help in learning how to be effective teachers in a clinical setting. Therefore, systems will be developed to teach faculty, residents, fellows, and others how to teach and to provide ongoing, meaningful evaluation of teachers.

Faculty development will be expanded in collaboration with HMS, both to address teaching skills and to ensure that faculty maintain up-to-date knowledge and skills through continuing medical education. Particular attention will be paid to junior faculty to ensure that they have development opportunities, mentors, and time to develop their skills and to teach. In addition, Partners will develop ways to bring faculty together for peer mentoring and problem solving to help them grow as educators.

Faculty will be recognized and rewarded adequately for their teaching and mentoring; compensation for each type of teaching activity will be defined within departments, and

any substantial contribution to teaching will be compensated at a fair rate. Compensation for teaching will take into account whether the teaching activity enhances the faculty member's clinical productivity (e.g., through trainee participation in patient care) or reduces it. There will also be greater academic recognition of a redefined physician educator career path. With a recognized career path, clinical teaching will achieve a greater level of prestige and appreciation than currently afforded within the Partners/HMS culture.

Enhanced financial rewards for teaching will have a significant impact on Partners budget, and it is essential that funds be allocated specifically for teaching in the budget process. This financial commitment will need to be coordinated at all levels—Partners, hospitals, programs, and departments. Compensation systems may need to be overhauled to reflect changing educational needs; for example, it may be appropriate to offer sabbaticals to teachers to help them advance their teaching abilities and develop new approaches to training.

Teaching faculty will be evaluated regularly and rigorously to support promotion at Harvard Medical School under the HMS Clinician Teacher criteria and in order to ensure excellence in teaching. Because of the nature of this career path, publication will be less important for advancement as a physician educator than it is for an investigator. However, documented positive impact on students and education will be required and systems will be developed to measure this impact. Reward and recognition systems will be coordinated with the HMS to ensure equity between undergraduate teaching and GME teaching. Mentoring, feedback and support programs will be put in place to strengthen faculty.

Program Directors will play an essential role in designing, implementing, and ensuring the quality of Partners GME programs. As appropriate incentives and rewards for teaching faculty are clarified, the role of the GME Program Director will also be strengthened. In 2015, Program Directors will have a clear career trajectory, with recognition and rewards for the administrative/leadership aspects of their roles, as well as for their teaching. The essentials of the Program Director role will be codified in a system-wide job description (one for accredited and another for non-accredited programs), with a detailed program-specific appendix developed by the appointing Chair. Program Directors will be evaluated regularly by their Chairs and by GME leadership, with useful feedback provided**.** Program Directors will be assured the resources necessary to accomplish their responsibilities, including a competitive salary related to an explicit percent effort, adequate support staff, and access to faculty leadership development opportunities.

Successful teaching will also require a sufficient education infrastructure, including dedicated educational space in the hospitals for didactic learning, for clinical teaching in the context of patient care (whether in the hospital or ambulatory setting), and for simulation. Appropriate technological and administrative support will also be needed to allow clinician educators and Program Directors to fulfill their roles.

The vision outlined above represents a significant cultural shift for Partners. Strong, consistent focus on education will be needed to change the culture to place greater value on teaching in both the hospitals and the medical school. Changing the culture is more than providing rewards, recognition, role models, and support. It will also need to address the tension between teaching roles and service needs in order to ensure that both patient care and teaching can be pursued with excellence. This cultural change will require the full support of leadership at all levels.

Optimizing the Educational Experience at Partners: Focus on Trainees

Major points include:

- Ensuring adequate resources for education and trainees is essential to providing a quality education.
- The Partners GME experience will be designed to provide academically rigorous training that will also allow trainees to participate in other important aspects of their lives.
- Partners will strive to build flexibility and redundancy or other buffers into the care delivery system and GME programs to permit reasonable accommodation of the personal and professional needs of trainees.
- Expanded use of technology will increase the efficiency of care delivery and of learning, and thus improve the quality of life of trainees.
- Mentoring will play a key role in supporting trainees.
- To support Partners' increased emphasis on education, trainees will need specific training to develop their teaching and mentoring skills.
- Tangible benefits, including parental leave policies and flexible childcare programs, retirement benefits, debt management, housing support, and access to counseling resources, will be increased.

Partners will distinguish itself as a place where trainees can concurrently learn medicine with academic rigor and also succeed in the other important parts of their lives (e.g. marriage, parenting, defining their own career niche, etc.). Future trainees will have more control over their lives and the flexibility to pursue both personal and professional interests. The ACGME's work hour limits (anticipated to remain and strengthen) will support this flexibility; in addition, trainee expectations and their selection of GME programs will influence programs to provide maximum flexibility.

Partners will continue to be committed to the long-term success of its trainees and will enhance its ability to address both professional and personal issues. It is expected that Partners will find ways to incorporate flexibility and redundancy or other buffers into the care delivery system and GME programs in order to accommodate trainees' personal circumstances (e.g., illness, childbirth) and to allow for professional enrichment (e.g. elective programs, research, international work).

Part-time residencies and fellowships will be made available where possible. One approach may be for two trainees to share a full-time position; another may be to allow a trainee to take a break in training to pursue other interests. Although the model may differ from department to department depending on training requirements, the goal will be to create increased flexibility for all residents. Should proposed changes conflict with ACGME requirements, Partners will work with ACGME toward ensuring appropriate opportunities for flexibility, which might included recommending revision of current requirements.

Increased efficiency in patient care, administrative activities, and education will also contribute to an improved quality of life for trainees (and faculty). Providing state-of-the-art clinical support technology and standardizing in-patient medical records and clinical data management systems across Partners could streamline administrative tasks and protect time for learning. Likewise, ongoing assessment and improvement of workflow will help to optimize trainees' efficiency.

Partners must also provide sufficient resources to facilitate education at all levels—i.e. for residents and fellows, medical students, and faculty. Investments in technology will be critical to supporting future educational requirements; trainees will need technological tools ranging from simulators to hand-held communication devices with wireless Internet access, as well as access to new tools as they are developed. It is also essential that trainees have sufficient and appropriate educational space to support learning in groups and independently, both in patient care areas and in other areas outfitted specifically for educational purposes.

Even with an improved infrastructure and better efficiency, it will remain challenging to provide trainees with an appropriately balanced work load so that they are able to reflect on their patient care experiences, assimilate new information, and integrate new knowledge, skills, and behaviors into their developing expertise. This is discussed in greater detail in the section entitled "Interface Between Education and Patient Care."

Mentoring—both formal and informal—will play a larger role in supporting residents, giving them the opportunity for one-on-one advice and guidance from senior colleagues. While the concept of mentoring has various interpretations, key elements for GME might include providing each trainee access to a designated faculty advisor (playing a non-evaluative role), rather than expecting him/her to seek someone out; bringing trainees and faculty together in informal settings to stimulate natural pairings that can develop into mentoring relationships; and providing faculty with mentorship training. In 2015, no trainee will lack the faculty guidance needed to develop a successful career in whatever pathway s/he selects. Each training program will be expected to develop and sustain vigorous initiatives for intradepartmental advising and mentorship, as well as to foster interdepartmental connections that will assist trainees in achieving their professional goals.

In 2015, today's trainees will be the teachers of residents and fellows, and in their current roles they are already teachers of medical students and patients. The recommendations in the Faculty section of this document that focus on faculty development and recognition and reward of teaching are therefore equally relevant for trainees. As residents and fellows are expected to take on increasing responsibility for teaching, they need opportunities to develop and enhance their teaching skills and to receive appropriate feedback and recognition of their teaching activities.

A greater number of tangible benefits will also be offered to trainees to enhance their quality of life, both on-the-job and during their personal time. These benefits will

strengthen Partners' ability to recruit the best and the brightest. Examples of benefits that Partners might enhance or initiate include:

- Explicit parental leave policies and flexible childcare options to enable trainees to better balance their professional and family responsibilities.
- Retirement benefits to allow trainees to begin planning for the future while still in training.
- Defined housing support (critically important for recruiting residents and retaining them during fellowship and beyond).
- Debt management assistance (including the possibility of debt relief) and financial counseling.
- Counseling resources to help residents and fellows address personal and professional needs.

For-profit businesses have extensive experience in addressing issues related to quality of life and workplace flexibility, and Partners will take advantage of what others have learned as it addresses these areas.

Optimizing Teaching and Learning: Focus on Curriculum and Methods for Teaching and Evaluation

Major points include:

- GME programs will be curriculum driven and the design of their curricula will be based on the competencies needed for excellence in clinical practice.
- The curriculum will reinforce the importance of trainee involvement in patient care delivery and will also strive to reduce trainee participation in non-educational, repetitive aspects of patient care delivery (i.e. "scut") to ensure a high quality learning experience and rebalance the relationship between education and "service."
- Every program will have a written curriculum defining "core" vs. elective content and experiences.
- There will be an increase in centralized curriculum development and teaching for core topics, including new emphases on preventive medicine and patient safety.
- Specialties will collaborate across hospitals on both the development and delivery of the specialty-specific curricula.
- Cross-specialty and interdisciplinary education (i.e. training together and training each other across the health professions) will be expanded.
- Partners will increase collaboration with HMS and across Harvard University to develop and utilize expertise in the science of education.
- Curricula will be delivered via a variety of educational approaches, with choices informed by research on how adults learn.
- The use of simulation will be expanded in many areas of physician education and evaluation.
- There will be a greater emphasis on individualized learning.
- Improved methods for evaluating trainees and providing remediation will be developed and utilized.
- Expanded, formal evaluation of GME programs will be used for continuous quality improvement.
- Partners faculty will be leaders in educational research and curriculum development.

The cornerstones of this component of the vision are: GME programs will be curriculum driven and their curricula will be designed based on the competencies needed for clinical practice and the related ACGME-defined core competencies; and the practice elements and other experiences included in each training program will be deliberately selected in order to fulfill curricular goals, recognizing that the curricula will be implemented in the context of the health care delivery system. Trainees will continue to be integrally involved in the activities of patient care delivery, since such experience is essential in preparing fine clinicians. However, certain controls will be put on the trainee/service interface to allow for a richer and more appropriately focused educational experience. The relationship

between education and service will be rebalanced to preserve sufficient patient care experience and cultivate professionalism while eliminating some of the time consuming, repetitive, non-educational work (i.e. "scut") that consumes valuable time and thus eclipses other educational experiences. In addition, the clinical volume assigned to both teaching faculty and trainees needs to be carefully monitored (See "The Interface Between Education and Patient Care" section of this document.)

Every program will have a written curriculum. These curricula will incorporate components required by ACGME (for accredited programs) and/or by certifying boards, in order to ensure board eligibility of graduates. The curricula will define which content and activities are "core" parts of the GME program and thus required of all trainees, and which are elective.

All trainees will be expected to understand the role of research in patient care and the important bench-to-bedside connections, including how research findings are implemented in a patient care setting. Elective learning opportunities may include basic or clinical research training, specialized/advanced clinical experiences, training in topics/disciplines related to medicine, or teaching.

There will be an increase in centralized curriculum development and teaching for core topics that are relevant across specialties, such as patient safety, interpreting the medical literature, doctor-patient communication, professionalism, and ethical and legal issues. The areas of patient safety and health promotion/disease prevention will receive greater emphasis in the curriculum. The delineation between what is taught centrally and what is taught in specialty areas will be clarified, with two approaches followed in parallel: expanding the availability of centrally-taught core curricula (with the Partners House Staff Core Curriculum Retreat as one model); and developing teaching modules that can be customized and delivered by individual departments/programs. Partners faculty will participate in the development of curricula, which will serve as a scholarly contribution and support academic promotions.

Specialty-specific curricular components will be clearly delineated and will continue as the purview of individual departments and training programs. Specialties will collaborate across hospitals on both the development and the delivery of the curriculum. For example (as now modeled by those GME programs integrated across Partners), didactic lectures might be provided to trainees at each Partners institution via teleconferencing. This will allow for more efficient use of faculty time (each lecture being given once, rather than twice) and for selection of the best faculty member for each topic from a larger pool. In addition, opportunities will be sought to combine teaching resources and integrate training experiences across health care disciplines, such as joint seminars for medical and nursing students. Such initiatives will build on current models of interdisciplinary conferences, care, and research.

Curricula will be modified as educational needs and national requirements change, based on an ongoing critical appraisal. Updates will incorporate changes in biomedical science, medical practice, and pedagogy, informed by research.

Partners will increase collaboration with Harvard Medical School and Harvard University, and identify other appropriate resources, to utilize and develop expertise in the science of education. GME curricula will be developed taking into account both UME and CME, with the goal of creating life-long learners and providing longitudinal connections to trainees throughout their careers.

Curricula will be delivered via a variety of educational approaches, including experiential learning, didactic teaching, simulation, and self-study. The choices about approaches and tools for delivering the curriculum will be guided by the latest information about how adults learn. Practical considerations will also influence how different subject matter is taught and learned. For example, curriculum relating to common conditions may be most effectively taught at the bedside (i.e., experiential learning) while the evaluation and treatment of rare diseases might be taught more effectively through didactics or simulation. Some redundancy in the vehicles for conveying the curriculum will help to accommodate differences in individual learning style and preference, as well as variability in access to these experiences. For example, the treatment of community-acquired pneumonia might be learned via direct patient care, selected reading materials, didactic lecture and an interactive computer-based module.

The use of simulation will be expanded in many areas of physician education. In addition to serving as a proxy for "experiential" learning about rare conditions not reliably encountered in the clinical setting, simulation will be essential in allowing trainees to develop practical technical/procedural skills without risk to patients and gain repetitive experience in cognitive skills needed for rapid-response situations. Simulation will be particularly important in honing teamwork skills, in enhancing patient safety, and in the evaluation of competencies in individuals. It is anticipated that simulation technologies will require a considerable expenditure of resources and space by Partners and its hospitals. In addition, Partners will commit to pursue the study and advancement of simulation as a tool for training, education, and assessment.

There will be a greater emphasis on individualized learning. Each program will provide a menu of elective opportunities and advising to guide trainees toward an individual program that addresses their own career aspirations and educational needs**.** New elective opportunities will be created and made available to residents and fellows across traditional departmental boundaries. These electives might include international experience, community service, quality improvement projects, health care administration, faculty development (training as a teacher), and others. Disease-based rather than specialty-based training will be an evolving emphasis in many areas. Technology will support individualized learning through on-line courses and other materials, which allow trainees to shape the elective part of their education according to specific interests, needs, and schedule. Computer-based education will also facilitate integration of assessment tools.

Improved evaluation of trainees, supported by validated evaluation tools, will be a critical element of training. Such evaluation methods will be used to identify any weaknesses in a

trainee, both to maximize patient safety and to optimize the success of the individual trainee through effective intervention; to document competency, especially for determining advancement and graduation; to guide career advice; and to allow evaluators to convey accurate information in letters of reference. Evaluation tools will include: standardized testing, such as current national "in-service" examinations; direct evaluation of clinical skills by faculty, such as the "OSCE" (objective structured clinical examination) now required of some programs by the ACGME; appropriate and comprehensive evaluations (such as evaluations involving teachers, patients, and other members of the health care team,); assessments using simulation; and module-specific computer-based testing. It is expected that some Partners faculty will participate in the development and validation of new evaluation tools, working with Harvard Medical School and other educational resources as appropriate.

Advancement of trainees will be based on documented achievement of specified competencies. Significant effort will be directed toward defining necessary competencies at a (sub) specialty/program level, selecting appropriate evaluation methodologies (based on research), and training faculty and others in how to evaluate competency. Specific methods will be assembled, developed, and utilized to remediate trainees who fall short of required competencies.

Evaluation of trainees will be complemented by an expanded, formal evaluation of each GME program's success in delivering excellent education. The evaluation of programs will involve internal reviews (building on the current, ACGME-required process); accreditation site visits; analysis of aggregated in-training and certification examination results; assessment of success in recruitment, including recruitment of underrepresented minorities; and surveys of residents and faculty.

Aspects of each program to be evaluated will include the curriculum, quality of teaching and advising, accessibility of faculty for teaching, mentoring, and supervision, utilization of various educational tools and approaches (especially the volume and mix of clinical experiences), compliance with regulatory requirements, adequacy of infrastructure, etc. The results of GME program evaluations will be utilized for continued quality improvement.

This proposed approach to curriculum can only succeed in the context of a strong physician educator career path, as discussed in the Faculty section of this document. Strong faculty leadership will be required to develop and implement the changes in both core and peripheral curriculum. A system-wide research agenda in this area will be necessary for Partners to maximize synergy and cooperation among interested faculty within Partners and across HMS and to increase the likelihood of success in attracting internal and external funding.

The Interface Between Education and Patient Care

Major points include:

- Partners will provide a competency-based GME training program designed to address the educational needs of trainees and measured against a predetermined set of outcomes.
- Meaningful involvement in patient care will remain the lynchpin of GME.
- Although many hospital service requirements will be met in the course of education, the GME training programs will not be required to fulfill all hospital service needs.
- Some clinical and administrative tasks, as defined at the program or clinical service/department level, may be reallocated from residents/fellows to other personnel.
- Partners will expand alternative ways to care for patients, including employing hospitalists, physician assistants, and nurse practitioners to complement or in lieu of residents.
- Coverage by residents/fellows may not be provided on all services or guaranteed for all attending physicians.
- Residents will have progressive levels of responsibility for patient care so that when they complete their training they will be fully prepared to provide independent care.
- Staffing for patient care delivery will be designed to align with the GME curriculum in terms of volume and diversity of patient care encounters appropriate for trainees.
- Increases in efficiency through a combination of staffing changes, technology, and streamlined systems may reduce the amount of work that needs to be reassigned.
- Patient safety requirements will be met by providing sufficient faculty supervision and clinical “back-up” support.

The Task Force believes that the activities of today’s GME trainees are determined, to a greater degree than is appropriate, by the service demands of the hospital rather than by the educational needs of the trainees. Certainly the current approach does provide important advantages—making residents and fellows essential to the success of the institution, providing them with varied and robust clinical experience and appropriate role models in their chosen areas of training, and ensuring that trainees have meaningful responsibility for patient care. However, assigning a very high volume of clinical activities to trainees often precludes their learning effectively from the patients at hand because they lack sufficient time to read, reflect, and participate in didactics. Also, the largely unselected mix of patients/clinical material may not optimally address the full scope and depth of trainees’ educational needs. There is a need to **rebalance** the missions of education and patient care, recognizing that patient care must be optimized,

but also assuring that residents' training is not compromised. As ways to improve education are defined and implemented, they must reflect this critical context.

The Task Force recognized that several competing and related interests are at play as physicians are educated. They identified the varying needs of different groups involved in GME so that the emerging vision could be designed to ensure that the needs are appropriately addressed and balanced.

The interface between patient care and education must provide residents and fellows with:

- Meaningful responsibility for sufficient (but not excessive) numbers of patients representing an appropriate variety of conditions.
- Increasing clinical responsibility and independence as they progress through training and achieve competence.
- Experience in various care settings, including sufficient emphasis on ambulatory care.
- Exposure to the spectrum of responsibilities they will face as attending physicians.
- Support to provide the highest level of humanistic patient care.
- Opportunities to work with other caregivers on interdisciplinary teams.
- Sufficient continuity of patient care to understand the continuum of care, appreciate the course of illness and response to therapy, and develop effective therapeutic relationships with patients.
- Meaningful contact with qualified faculty who provide teaching and supervision.
- Sufficient access to faculty who will serve as role models and/or mentors.
- Readily available clinical "back-up" when needed, as when a trainee becomes ill on duty or encounters an unusually high clinical volume or acuity.
- Bounded clinical responsibilities, to ensure protected time for other types of learning (e.g. through didactics, self-study, and simulation) and appropriate work hours
- Opportunities to demonstrate all aspects of clinical competence, including professionalism.

Attending physicians need:

- The ability to segregate their responsibilities so that they can focus on a selected and realistic combination of activities that reflect their own interests and skills.
- Confidence that their hospitalized patients are receiving the best possible care.
- The opportunity to communicate with residents about new and emerging research, technologies, and treatments, as the academic paradigm of multi-directional learning is an important part of the Partners culture.

Patients need:

- Skilled, available, and consistent caregivers with high levels of expertise
- Sufficient continuity to have relationships with caregivers
- Professional caregivers who will put the patient's interest above their own
- Institutional systems that protect their safety

Hospitals need to serve individual patients as well as communities, optimize quality and safety of care, recruit and retain caregivers and other personnel, maintain facilities, manage daily operations, and sustain financial health—all amidst greater patient volume and throughput.

As explained in the curriculum section of this document, the educational needs of the trainees, based on the knowledge, skills and behavior necessary for successful practice, will drive the 2015 GME curriculum. Within that curriculum, meaningful and diverse involvement in patient care will remain the anchor of resident and fellow education. As curriculum is redesigned, a critical element will be to define clear goals and objectives for every level of training, so that it is clear what competencies a trainee should master at specific points in his or her career. It is crucial to define what it means to be a competent physician in terms of knowledge, skills, and behavior. This redesign may require restructuring patient care teams to reduce redundancy and focus on desired outcomes. It may also be appropriate to divide the work differently so that at any particular time some trainees are concentrating on doing the work, while others are more focused on teaching and learning.

It is important to acknowledge the dynamic tension that exists between the educational needs of trainees and the service needs of the hospitals. Although many hospital service requirements will be met in the course of education, the GME training programs will not be required to fulfill <u>all</u> hospital service needs. Education and training will be concentrated around patients, teachers, and care settings selected to ensure that the trainee develops the required competencies, rather than automatically including all patients and all attendings or addressing the hospitals' most urgent care delivery needs.

Residents and Fellows will remain involved in a mix of clinical activities similar to what they pursue currently (e.g., admission and supervision of hospital patients, overnight call, technical interventions, performance and interpretation of diagnostic procedures, dictation of discharge summaries, and communication with referring physicians), although the proportion of these activities may change. Understanding the breadth and depth of care delivery and having sufficient experience in a spectrum of care-related activities (such as discharge planning, specimen preparation, etc.) will continue to be an important element of GME. Training will cultivate the aspect of professionalism that leads a physician to place a patient's interests above one's own.

Certain clinical or administrative activities will be shifted away from the trainees either because they lack educational value or because the volume of a given task far exceeds the volume necessary to gain the expected clinical competence. Since time is limited, inappropriate or unnecessary activities limit access to other, essential experiences. Shifting responsibilities of individual trainees on a daily basis in order to maximize

educational value is impractical and difficult to accomplish: therefore the GME programs must be designed in a way that structurally excludes most non-educational tasks and ensures an appropriate--not excessive--volume of educationally relevant clinical and administrative activities.

Toward this end, the staffing for patient care delivery will be structured on each ambulatory and inpatient service in a way that aligns with the volume of resident or fellow participation appropriate to fulfill curricular needs. The volume of specific patient care activities involving trainees (specific operations, admissions for specific diagnoses, clinic visits, etc.) will be planned according to two key factors:

- Volume requirements for individual certification or program accreditation
- Average volume of experience needed for *individual competency*, multiplied by the number of trainees. (It is assumed that some trainees will require more experience than others to achieve competency, and the system for allocating specific clinical opportunities will need to accommodate this.)

The basic premise is that learning, and therefore the assignment of specific activities, should be curriculum driven. The examples below may illustrate this point.

- Gastroenterology has determined that trainees must perform at least 140 colonoscopies in order to become competent endoscopists. In some programs fellows may do far more of these procedures, taking time away from other essential educational activities. The goal is to provide each trainee with enough colonoscopy experience to become competent, while also ensuring sufficient balance and breadth of education in other areas. In order to achieve this, training programs must ensure that the volume allocated to the training program is based on the average caseload per trainee needed for achieving competence. Planning for patient care delivery should provide for additional cases being handled without fellow involvement.

- Some Pediatrics residents might spend up to half of their time in intensive care settings, based on service needs in those areas. However, this is well beyond the threshold required for competency and restricts the time spent in other important areas of Pediatrics and/or the time available for elective rotations. In this case the program should determine and implement the educationally appropriate duration of intensive care training and the department will need to plan for alternative systems of care if insufficient resident ICU coverage results.

This paradigm shift has major implications for Partners in terms of patient care, operations, culture, and finances. To move in this direction, Partners will need to expand alternative ways to care for patients, since trainees are likely to be involved with a smaller proportion of patient care overall. In doing this, Partners will utilize its prior experience with alternative systems of inpatient care, such as the MGH “Cardiac Access Service,” the former BWH “Short Stay Unit,” and multiple services employing hospitalists, moonlighting trainees, physician assistants or nurse practitioners to

complement or in lieu of residents. In addition, Partners will seek to learn from other institutions regarding alternative ways to care for patients.

Plans for reallocating tasks to other providers will be developed and implemented at the department (or division) level. Shifting of activities may involve nurse practitioners or physician assistants, attending physicians, and clinical support staff. The need for physician extenders and additional attendings (including hospitalists) will increase. However, improving clinical and administrative efficiency through a combination of staffing changes, technology, and streamlined systems may reduce the amount of work that needs to be reassigned to other personnel. Additional efficiency may be gained in areas designated as "non-teaching" services, both through the more stable assignment of personnel (in contrast to the frequent rotation of trainees) and because providing teaching often slows the delivery of care. (For example, a staff radiologist can interpret and report 100 chest films more quickly than s/he can "over-read," correct, and teach a resident with the same set of films.)

Staff physicians will adapt their expectations to the reality that not all attending physicians or patient care services will be involved in resident/fellow training or benefit from resident/fellow coverage. With appropriate compensation for teaching, as detailed elsewhere in this report, resident coverage will no longer be necessary as 'payback' to attendings for the clinical productivity lost because of teaching. Nevertheless, this change—an essential element of ensuring that the GME curriculum is driven by the educational needs of trainees—will involve a major cultural change for some departments/services and their physicians.

Patient care delivery models will be sufficiently flexible to accommodate changes in competency requirements and practice standards over time. These models will reflect the increased proportion of ambulatory training likely to be necessary in several specialties to best prepare trainees for clinical practice. The need for additional clinic-based training sites may be met through greater collaboration between the Partners academic medical centers and community hospitals.

Planning efforts will reflect the likelihood that the volume of patient care demands placed upon the hospitals and staff physicians will continue to grow. Although Partners may establish systems and resources to support reassignment of certain patient care activities away from residents and fellows, this will be balanced against the need to ensure that trainees learn the entire spectrum of patient care requirements. The impact of shifting certain responsibilities among personnel will need to be assessed, in terms of both patient care and the impact on teaching and learning. Particular attention will be necessary to protect junior faculty from an adverse impact stemming from these changes.

It may be appropriate in some areas to increase the size of certain residency and/or fellowship programs. However, an increase in program size should not be pursued as a solution to hospital service needs unless enlarging the program will maintain and/or enhance the quality of education; expanded training in the (sub) specialty at Partners is

otherwise warranted; and sufficient resources to support training program expansion are ensured.

Patient safety requirements will be met by providing sufficient faculty supervision and by assuring that "back-up" physicians are readily available to assist residents and fellows when needed (as when the trainee feels ill or cannot handle the patient acuity or volume). Education requirements will be met by encouraging trainees to make independent judgments and providing them with increasing, graded responsibility for patient care so that when they complete their training they will be fully prepared to provide independent care. Faculty will be trained to gauge the appropriate level of supervision to support residents in making the transition to independence. Defining the appropriate level of independence for trainees as they demonstrate increasing competency and ensuring that the trainees' experiences provide enough autonomy to prepare them for independence are of critical importance to patient care.

Achieving the appropriate balance between education and service needs, while ensuring that patient care needs are met in all situations, is a major challenge facing Partners and all academic health centers. Within Partners, there is a need to increase the emphasis on education and invest in GME so that the education mission may be fulfilled along with the patient care and research missions.

Coordination and Infrastructure

Major points include:

- Education will be represented at the highest levels of resource allocation and decision making at each AMC and at Partners to ensure a strong voice for education, as already exists for clinical and research priorities.
- In acknowledgement of the importance of education as part of Partners mission, budgets at all levels—Partners, hospitals, departments, and programs—will include explicit funding for teaching and education (as for clinical programs and research).
- Partners and its constituent hospitals will increase their allocation of resources for physician education and training, through both the budget process and expanded development efforts targeted at education.
- Resource allocations and decisions will reflect the realities of Partners tri-partite mission and the needs of education, research, and clinical care.
- Partners will need to invest in its education infrastructure, including dedicated space for education, simulation, and significant investments in technology overall.
- Support for faculty development will be increased and coordinated with HMS.
- Dedicated personnel will lead and advocate for education, and the GME committee structure will be reevaluated and strengthened.
- Collaboration with HMS, across Partners hospitals, and with community hospitals will increase, enhancing integration and supporting specific needs such as an increased emphasis on training for ambulatory care.
- Coordination of education activities will also address the continuum of UME-GME-CME.

The education vision outlined in this document will require considerable resources, a substantial infrastructure for education, and significant coordination across the Partners system. In addressing coordination and infrastructure, it must be acknowledged that Partners is committed to supporting a tri-partite mission—education, research, and clinical care. As strategic planning for education proceeds, it will be necessary to assimilate this vision with fiscal realities, research needs, and patient care imperatives to enhance the whole to the greatest extent possible.

High level representation of the education mission should be ensured at BWH and MGH, as well as across Partners: a strong, senior-level voice for the needs of education and training must be integrated into all key decision-making and resource allocation groups across the Partners system.

Partners and its constituent hospitals will need to increase their allocation of resources for physician education and training. The hospitals will provide greater support for

education directly through their budgets. This increase in support may require sacrifices in investments in capital, science, clinical programs, or community benefits. In addition, new funding streams, including philanthropy, will be sought to support such activities as GME curriculum development, faculty development, information technology, educational facilities and research on medical education. Appropriate collaborations with industry may also be explored in order to expand the resources available for education.

To fulfill this vision, Partners will need to invest in its educational infrastructure. Dedicated space and facilities for education—both didactic and experiential—will need to be expanded and enhanced to ensure that they remain cutting edge. Technology, a major theme running through this report, will require continued investments over time in order to optimize the design and delivery of education, as well as patient care.

An ideal anchor of the infrastructure for education would be physical "Centers for Clinical Education" at MGH and BWH. These centers would include high-tech teaching and assessment tools (such as simulation and computer-based modules) as a shared resource. Simulation is expected to become a centerpiece of the Centers for Clinical Education. These Centers would provide a locus for faculty development efforts and for interdisciplinary education. They would help to encourage collaboration and cultivate a sense of community among program leaders, faculty and trainees. In addition, the Centers for Clinical Education would support a culture of lifelong learning by making educational resources easily accessible to all types and levels of clinicians.

The fulfillment of this vision will require dedicated personnel to support graduate and undergraduate medical education based at each of the academic medical centers. Partners' medical education leadership will work closely together and with HMS-based educational leadership to share best practices across the system, coordinate creation of core/common curricula and foster innovation. Partners and hospital GME Committees should be reevaluated and possibly reorganized in order to optimally support new efforts while also fulfilling ongoing responsibilities regarding accreditation and operational matters. Opportunities to streamline administrative functions and eliminate unnecessary work will be sought. Medical education leadership will have an effective voice in advocating for resources for education throughout Partners.

Program Directors will be invested with sufficient authority to ensure that the curricular plan is honored. They will also be supported by explicit (written) job descriptions, protected time, adequate staffing and appropriate salary. Program director activities will be recognized for academic promotion.

There will be increased collaboration in physician education across the Partners hospitals, including elective rotations, joint development of curriculum and, where practical, shared physical and electronic infrastructure. There will also be greater opportunity to use community hospital sites to implement an expansion in ambulatory training; the expected continued growth in outpatient services will make use of community hospital sites essential for future physician education.

Coordination of education activities will also address the continuum of UME – GME – CME. Opportunities for sharing resources will be utilized maximally, such as by inviting GME trainees to attend appropriate CME courses. The implementation of hospital-based portions of the redesigned HMS curriculum will attempt to optimize the interactions between medical students, residents and fellows, while avoiding potential conflicts around patient care responsibilities and faculty teaching time.

Creating an Integrated GME-UME Education Culture

Although the focus of the Task Force was to envision GME in 2015, and little time was spent addressing undergraduate medical education (UME), GME is part of an educational continuum that includes both UME and continuing medical education (CME). Many of the solutions envisioned in this report will benefit all levels of physician education. As specific changes in GME are identified and implemented, they will be coordinated with UME to move toward a common vision and integrated system of physician education.

Medical education will be most effective when there is continuity of training from UME to GME, and when faculty embrace the education mission at all levels. In order to appropriately value education, Partners and HMS will need to free up time and resources to pay educators and provide them with the support they need to be effective teachers. It is also essential that all learners—students, trainees, and faculty —are positioned and supported for success.

There are many opportunities for cooperation and collaboration between GME and UME. One significant opportunity is to develop coordinated reward, recognition, and payment systems for faculty across both GME and UME. As demands on teachers increase there may be competition for a limited resource—the clinician educator. This tension will need to be addressed to avoid unhealthy competition and to ensure that both programs can thrive. New infrastructure and educational spaces should also be developed in close collaboration so that space is not redundant but can be used for all levels of education and training.

Overall, the needs of UME and GME seem to be growing closer together, and the differences between UME and GME are not as substantial as they may have been in the past. There is a need to further integrate the two programs and work together to build a culture that values teaching, learning, patient care, and professionalism. The students and trainees of today will be the faculty of 2015, and it is essential that both UME and GME, both HMS and Partners, work together to best prepare them for this future.

Appendix
Partners GME 2015 Task Force

Co Chairs

Jonathan F. Borus, MD; Chairman of Psychiatry, Brigham and Women's/Faulkner Hospitals

Andrea E. Reid, MD, MPH, Program Director, MGH Gastroenterology Fellowship Program

Members

Stanley W. Ashley, MD, Program Director, BWH Surgery Residency

Keith H. Baker, MD, Program Director, MGH Anesthesia Residency

Lori R. Berkowitz, MD, Program Director, Partners OB/GYN Residency

Stephen B. Calderwood, MD, Associate Chief of Medicine for Education, MGH; Co-Chair HMS Principal Clinical Year Design Group

Lawrence S. Friedman, MD, Chairman, Dept. of Medicine, Newton Wellesley Hospital

James A. Gordon, MD, Director, Simulation Education for HMS; Emergency Medicine MGH

Matina Horner, Ph.D. Trustee Member, Partners Education Committee; Honorary Trustee, MGH

Joseph Loscalzo, MD, Chairman of Medicine, BWH

Andrew Norden, MD, Chief Resident, Partners Neurology

Harry E. Rubash, MD, Chief of Orthopaedics, MGH

Martin A. Samuels, MD, Chairman of Neurology, BWH

Emmett V. Schmidt, MD, PhD., Program Director, MGH Pediatric Residency

Emily Senecal, MD, Chief Resident, Partners Emergency Medicine

Andrew L. Warshaw, MD, Chief of Surgery, MGH

Beverly Woo, MD, Primary Care Internal Medicine, BWH

Steven C. Wright, MD, Chairman of Medicine, Faulkner Hospital

Ex Officio

John Co, MD/MPH, Partners Associate Director, GME

Jo Shapiro, MD, Partners Senior Associate Director for GME; Chief of Otolaryngology, BWH

Debra F. Weinstein, MD, Partners Vice President/Director for Graduate Medical Education

Project Consultants

Jane A. Fisher, Principal, Cambridge Concord Associates

Elaine C. Kuttner, Principal, Cambridge Concord Associates