Partners HealthCare System
Strategic Planning for Physician Education and Training

Recommendations of the Work Groups

Curriculum Work Group
Faculty Work Group
Trainee Work Group

May 2007

Contents:

Executive Summary

This report represents the outcomes of three work groups commissioned by the Steering Committee to develop recommendations to enable the GME 2015 vision, as articulated in the report *Envisioning GME 2015 at Partners* (July 17, 2006).

Overarching Strategic Direction: Develop an innovative educational enterprise that will position Partners at the vanguard of physician education, consistent with its position in clinical care and research.

Underlying Assumption: Patient care will continue to be at the core of the trainee experience. However, in the future, education and service will be rebalanced and the patient care interface will be more efficient, resulting in trainees and faculty having more time for teaching and learning.

In addition to the recommendations outlined below, the Steering Committee will continue to assume responsibility for two important aspects of GME planning: adjusting the balance between patient care and education; and redefining the educational infrastructure.

Each recommendation is linked to a specific component of the GME 2015 vision:

Vision Component 1: Teaching will be supported and rewarded as a valued career path, so that excellent teachers will choose to be involved in clinical education and engage meaningfully with trainees.

- ***Recommendation A:*** Provide appropriate compensation for teaching and education (compatible with the recently formulated HMS model for UME).
- ***Recommendation B:*** Support the recommendations of the HMS Task Force for Promotions, while also advocating for promoting a highly select group of exceptional clinician teachers beyond assistant professor, without a minimum requirement for published scholarship.
- ***Recommendation C:*** Provide program directors with the time, resources, compensation, and rewards to support them in sustaining high-quality GME programs, and to ensure that the most qualified individuals fill these roles.

Vision Component 2: The highest quality teaching and mentoring will be provided throughout all Partners institutions.

- ***Recommendation A:*** Develop and implement a Partners-wide faculty educational skills development program, focused on improving teaching effectiveness.
- ***Recommendation B:*** Include mentoring in faculty evaluations as part of the teaching portfolio (as recommended by the HMS Task Force), and develop and implement a training program for mentors.

Vision Component 3: A Partners-wide framework for curriculum development will provide common components of the curriculum centrally and support programs in developing and updating individual curricula that address the competencies needed for clinical excellence.

- ***Recommendation A:*** Identify those components of curriculum that would benefit from development and/or delivery across PHS or across counterpart (sub) specialty programs. "Build" or "buy" selectively in order to provide appropriate materials/tools/curricular topic-based modules in a variety of media.
- ***Recommendation B:*** Provide staff with specialized expertise to support individual and multiple programs in developing customized competency-focused curricula, tools and systems for teaching.
- ***Recommendation C:*** Build Partners-wide capacity for education performance improvement by strengthening the ability to assess the effectiveness of individuals and programs.

Vision Component 4: Trainees will have opportunities to individualize their training and achieve "value added" beyond excellence as a clinician.

- ***Recommendation A:*** Create virtual "centers of expertise" to facilitate trainee experience in selected thematic areas that span the various specialties (such as humanitarian/global medicine, translational research, or health care administration) by providing mentoring, materials, external contacts and elective experiences and (in some cases) opportunities to pursue an additional degree in a related field.
- ***Recommendation B:*** Offer periods of extended training to accommodate non-accredited training in the focus area.
- ***Recommendation C:*** Identify a specific liaison to facilitate joint clinical training (across boundaries of defined (sub) specialties), coordinated across Partners.

Vision Component 5: Trainee "quality of life" will be enhanced via improvements in tangible benefits and support, as well as easy access to information.

- ***Recommendation A:*** Create and staff the Office of Resident/Fellow Support and Advocacy (ORFSA) as a centralized information resource for trainees.
- ***Recommendation B:*** Consider the following areas for expanded support of trainees:
    - Institutional support for trainee housing.
    - Help with debt management, retirement planning, and other financial planning issues through enhanced information and financial support.
    - Increased access to high quality, affordable childcare for trainees.
    - Enhanced transportation benefits, such as increased hours and more destinations for the shuttle service and increased use of taxi vouchers.
- ***Recommendation C:*** Develop and implement ways to provide increased flexibility to trainees in scheduling and develop opportunities for part-time training where possible.

Vision Component 6: Technology—including both simulation and integrated IS systems—will be leveraged to support education, clinical skills assessment, research, and patient care, and to optimize clinical efficiency across PHS institutions.

- ***Recommendation A:*** Fund and provide access to a multi-institution system of simulation education, so that trainees can achieve capability in some specifically defined skills before performing them on patients and can continue to develop/demonstrate competency throughout their training.
- ***Recommendation B****:* Fully integrate the needs of Partners education activities into all Information Systems planning, and utilize technology to streamline trainee workflows, strengthening both patient care and education.
- ***Recommendation C:*** Develop a comprehensive education web site to provide a virtual presence for the expanded education activities and connect the various elements.

Vision Component 7: Partners will facilitate research on physician education and become a leader in the science of education.

- ***Recommendation:*** Develop a research "core" focused on physician education to support individual projects (and, particularly, pilot projects described below), cultivate collaborations, advise regarding funding opportunities, and link to additional resources.

Key Implementation Strategy*: Utilize pilot projects related to the interface of physician education and patient care as a mechanism to foster innovation and assess the impact of new ideas.*

- ***Recommendation:*** Jump-start educational innovation by sponsoring highly visible and generalizable program-based pilot projects, measuring impact, and publishing results.

Introduction

This report represents the outcomes of three work groups commissioned by the Steering Committee to develop recommendations for moving toward the GME 2015 vision, as articulated in the report *Envisioning GME 2015 at Partners* (July 17, 2006).

Each work group had a specific charge and met five to six times over a six-month period to develop recommendations. The curriculum group, co-chaired by Drs. Larry Friedman and Ron Walls, addressed questions relating to the curriculum framework, research and innovation, individualizing education, technology, and simulation. The faculty group, co-chaired by Drs. Andy Warshaw and Beverly Woo, considered faculty compensation and promotion, as well as faculty teaching skills development. The trainee group, co-chaired by Drs. Harry Rubash and Barbara Weissman, addressed ways to enhance tangible benefits for trainees, mentoring, and flexibility in training. (*Please see Appendix for a list of Steering Committee and work group members*.)

The recommendations focus on the initial steps of what will be an iterative effort; recommended timelines reflect this. The resources needed to achieve the full vision of GME 2015 will be substantial and identified over time. Implementing initial recommendations should make it possible to formulate detailed plans and associated budget implications by March 2008 for work in 2009 and beyond. Importantly, these recommendations provide a basis to transition to a staff-driven process, with input from committees and task forces as implementation progresses.

Now that the initial recommendations have been identified, two significant topics remain to be developed. The Steering Committee will continue to work on these areas:

- *Adjusting the balance between patient care and education.* This underlying concept will have an impact across Partners institutions. As stated in *Envisioning GME 2015 at Partners*, "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." (*To be addressed by January 2008*)
- *Redefining the educational infrastructure*. The organization and governance of the new and expanded educational programs and activities must be addressed. Some responsibilities will fall naturally in the realm of departments or programs, while others will best be addressed at the institution level, and still others at the Partners level. While these questions are being addressed, the Partners Chief Academic Officer will assume responsibility for initial implementation of recommendations. (*To be addressed by Fall 2007*)

Strategic Direction: Develop an innovative educational enterprise that will position Partners at the vanguard of physician education, consistent with its position in clinical care and research.

The GME 2015 visioning process acknowledged the interdependencies and synergy among Partners' missions in patient care, research, and education, and identified the need for a stronger emphasis on training and education, supported by sufficient additional resources.

Creating an innovative and highly successful educational enterprise will require Partners to invest significantly in education from a number of perspectives, to:

- *Enhance faculty compensation and promotion systems*
- *Support changes in the patient care model*
- *Develop teaching and assessment tools*
- *Individualize the trainee experience*
- *Further strengthen technology across the system, including simulation*
- *Expand tangible benefits for trainees*
- *Provide appropriate venues for educational activities*
- *Ensure sufficient time for teaching and learning.*

Funding for innovative pilot projects designed to address real needs in education and patient care will be important investments.

Assumption

The recommendations in this report rest on the following fundamental element of the vision for GME in 2015, endorsed at an earlier stage of the planning process:

Patient care will continue to be at the core of the trainee experience. However, in the future, education and service will be rebalanced and the patient care interface will be more efficient, resulting in trainees and faculty having more time for teaching and learning.

The current phase of planning does not address organizational changes at the patient care/education interface, which will be necessary to ensure sufficient time for education. As noted above, the Steering Committee will continue planning in this area, including identifying initiatives to "create" time for teaching and learning such as:

- Improving efficiency through new technology applications, including an integrated information systems infrastructure to better support education, enhance clinical efficiency, and reduce "scut."
- Strategically increasing staff and utilizing new staffing models, which should simultaneously enhance patient care.
- Developing new ways to orchestrate care delivery and trainee involvement in patient care, including a greater emphasis on team-based care.

Planning will be informed by:

- Time and motion studies to identify opportunities for "reengineering." *(Currently underway in targeted areas.)*
- Engaging program directors and chiefs in sharing successful strategies and generating new ideas through a survey (*in process*).
- Developing pilot programs aimed at improving the quality and efficiency of both education and patient care. (*See Pilot Projects recommendation in this report.)*

Vision Components and Recommendations

VISION COMPONENT 1: Teaching will be supported and rewarded as a valued career path, so that excellent teachers will choose to be involved in clinical education and engage meaningfully with trainees.

Recommendation A: **Provide appropriate compensation for teaching and education (compatible with the recently formulated HMS model for UME).**

- **A common set of guidelines** should apply across Partners and provide the framework for explicit, department-specific compensation models. These guidelines should be reviewed, revised as needed, and ratified by leadership.
  - **Compensation should be provided for teaching time and other significant contributions to education.**
  - **Institutional or system-wide funds should be made available to support faculty at a standard hourly rate** equivalent to the rate set by HMS for UME teaching.
  - **Departments should establish and fund specialty-specific rates** above the minimum to address the opportunity cost of lost clinical productivity.
- **Each department should develop a draft Teaching Compensation Model** that defines:
  - The list of formal teaching, mentoring, and other education-related activities for which compensation will be provided, and the time commitment that will be remunerated for each activity.
  - Those circumstances where teaching will <u>not</u> be remunerated either because increased clinical productivity associated with teaching confers sufficient additional compensation, or residents provide a substantial "in kind" benefit to the faculty – such as assistance in the O.R. or inpatient coverage for which faculty would otherwise have to hire other personnel.
  - The hourly compensation for teaching.
  - Criteria for assignment of faculty to specific teaching/education roles.

Recommendation B: **Support the recommendations of the HMS Task Force for Promotions, while also advocating for promoting a highly select group of exceptional clinician teachers beyond assistant professor, without a minimum requirement for published scholarship.**

The Partners faculty work group generally supports the plan emerging from the HMS Task Force on Promotion Criteria for Clinician Teachers and Clinical Investigators, and appreciates the effort to honor the role of the educator and broaden the definition of scholarship. However, the work group also recommends that a mechanism be put in place (which may or may not be a separate track) for the promotion of outstanding clinician teachers, based on the objective documentation of their teaching impact and excellence, without the requirement for publication.

This new promotion track for clinician teachers might lead to such levels as an associate professor of clinical medicine, associate professor of clinical surgery, etc. This recommendation does *not* intend in any way to divert the majority of physicians from the HMS focus on academic scholarship as a requirement for promotion. Instead, this recommendation is designed to recognize through promotion the role of outstanding clinician teachers who contribute so much to our GME programs and our patients.

Recommendation C: **Provide program directors with the time, resources, compensation, and rewards to support them in sustaining high-quality GME programs, and to ensure that the most qualified individuals fill these roles.**

- **Compensate program directors/associate directors at a level commensurate with their clinical or research activities**.
- **Determine compensation according to the amount of "protected" time (percent effort) needed to fulfill program director responsibilities.**
- **Recognize and value the program director's contributions through the promotion process.**
- **Ensure that every program director has a written job description** that addresses both departmental and institutional aspects of the role.
- **Provide expanded training for the program directors.**
- **Establish a formal evaluation process for program directors.**
- **Ensure that formal processes for program director selection and appointment are followed.**
- **Provide program directors with sufficient administrative support**. In order to achieve this, smaller programs may need to share common resources (including personnel).
- **Clearly define and support the GME program coordinator role** with expanded centralized training and support.

VISION COMPONENT 2: The highest quality teaching and mentoring will be provided throughout all Partners institutions.

Recommendation A: **Develop and implement a Partners-wide faculty educational skills development program, focused on improving teaching effectiveness.**

Create a strong multifaceted faculty educational skills development program focused on teaching and linked to existing and future faculty development efforts within PHS and the HMS Academy. The program should be sufficiently flexible to address the varying needs of teachers who are in different phases of their careers (i.e. residents, fellows, junior faculty, and senior faculty). In addition, different programs should be made available according to an individual's level of commitment to teaching—i.e. "core" teaching faculty would be expected to engage in more intensive programs than occasional teachers. Completion of these programs

might be linked to teaching assignments. Impact of these programs on participants' teaching evaluations should be assessed.

A comprehensive model to develop faculty teaching and mentoring skills should include both Partners-wide and program-specific content and delivery systems, and should address skills for all types of clinical teaching (formal/lecturing, informal/bedside, procedural, etc.).

To build the essential "backbone" of this comprehensive model, Partners will need to:

- **Develop a group of faculty focused on enhancing the quality of teaching and mentoring.** Some of these should be educators specifically hired for this purpose (MD or non-MD) and others would be clinician teachers supported for part of their time for this purpose.
- **Develop content to cover the full set of faculty needs,** including improving the quality of teaching, evaluating trainee progress, and giving effective feedback. The program should also provide content to help faculty become highly effective mentors.
- **Incorporate a range of approaches and tools,** such as in-person courses, peer or expert observation and instruction, technology-assisted programs, and self-study modules.
- **Establish expectations for physicians with significant teaching responsibilities** regarding their continued development of competencies as educators; regularly measure success in achieving those expectations.
- **Establish incentives for faculty to improve their teaching** (e.g., through continuing education credits).
- **Develop and implement specific methods for evaluating the quality of teaching at the individual, program and system levels. Use the data from regular evaluations to:**
  - Measure the impact of programs to strengthen teaching over time. (Some survey data has been collected from trainees annually since 2003.)
  - Guide individuals toward appropriate faculty development activities and toward teaching activities for which they are well suited.
  - Ensure that physicians with teaching responsibilities are continuing to develop competencies as educators and are meeting specific benchmarks.
  - Establish and utilize incentives and rewards for high quality teaching, as applicable.

First steps should include:

- Engage an individual to accomplish the following:
  - Perform a needs assessment to understand what types of faculty educational skills development programs will be of highest value to physician educators.
  - Compile an inventory of resources available within Partners and Harvard, including the Academy Center for Teaching and Learning at Harvard Medical School, Harvard School of Education, Harvard Business School, and the Harvard Macy Institute, as well as Partners department-specific faculty development courses; consider opportunities for collaboration.
  - Conduct a survey of outside resources, including courses, computer-based modules, etc.

- Identify "best practices" gleaned from this comprehensive assessment and describe a comprehensive, "state of the art" faculty educational development program for Partners, including an annual teaching skills development program for incoming junior faculty. Include recommendations to "buy" vs. "build" those components/resources that are not available within Partners or Harvard.

***Recommendation B*: Include mentoring in faculty evaluations as part of the teaching portfolio (as recommended by the HMS Task Force), and develop and implement a training program for mentors.**

- Conduct a needs assessment related to mentoring of trainees at PHS.
- Develop PHS principles for mentoring, which should be endorsed by department chairs.
- Develop a mentoring module for faculty, including selected readings, guidelines for effective mentoring of residents and fellows, and a small-group interactive seminar.
- Provide training initially to one mentoring liaison from each GME program.
- Develop a document that provides information to trainees on how to find a mentor and how to make the most of a mentoring relationship.
- Develop and circulate a list of faculty willing to serve as mentors to trainees in different specialties.

VISION COMPONENT 3: A Partners-wide framework for curriculum development will provide common components of the curriculum centrally and support programs in developing and updating individual curricula that address the competencies needed for clinical excellence.

***Recommendation A:* Identify those components of curriculum that would benefit from development and/or delivery across PHS or across counterpart (sub) specialty programs. "Build" or "buy" selectively in order to provide appropriate materials/tools/curricular topic-based modules in a variety of media.** Technology-based delivery systems should be employed to ensure the most accessible and flexible tools possible.

***Recommendation B:* Provide staff with specialized expertise to support individual and multiple programs in developing customized competency-focused curricula, tools and systems for teaching.**

***Recommendation C:* Build Partners-wide capacity for education performance improvement by strengthening the ability to assess the effectiveness of individuals and programs.**

VISION COMPONENT 4: Trainees will have opportunities to individualize their training and achieve "value added" beyond excellence as a clinician.

This can be implemented in a number of ways, including developing a "minor" emphasis to complement the "major" core specialty training.

Recommendation A: **Create virtual "centers of expertise" to facilitate trainee experience in selected thematic areas that span the various specialties (such as humanitarian/global medicine, translational research, or health care administration) by providing mentoring, materials, external contacts and elective experiences and (in some cases) opportunities to pursue an additional degree in a related field.**

- **Development of Centers of Expertise:** These virtual centers would exist as interdepartmental and interdisciplinary entities, and each would be accessible to trainees from all departments. Focus areas might include: humanitarian/global medicine (including international health and caring for marginalized populations), patient care quality and safety, medical education, public health and preventive medicine, health care administration, and biomedical research (clinical/translational or laboratory based). Trainees would access the "centers of expertise" through their program director or chair.

  Each center would involve a cadre of faculty who would:
  - Be available as designated mentors to residents/fellows in different specialties with interest in the area.
  - Develop and periodically update a written curriculum that describes basic knowledge and experiences and provides a robust introduction to the area.
  - Compile and periodically update materials to support the curriculum (e.g., journal reprints, textbook readings, computer-based learning modules, etc.).
  - Design modular elective experiences, and arrange for these as requested.
  - Provide a longitudinal seminar series (e.g., 4-6 per year); sessions could incorporate presentations, discussion groups, guest speakers, journal club, etc.
  - Compile information about grant funding opportunities and identifying, where possible, prospects for philanthropy.

  Opportunities for trainees might include:
  - Scheduled elective time spent in a clinical or other practical experience. (The availability of elective time will vary substantially between programs.)
  - Participation in a longitudinal seminar series.
  - Periodic meetings with an assigned faculty mentor.
  - Self-study using the prepared curriculum and educational materials.
  - Meetings with outside faculty or practitioners in the field, as recommended by the mentor.

Other elements of individualizing training include:

- **Offer the opportunity to pursue an additional degree in a related field.** PHS should explore the possibility of facilitated routes for matriculation in related

degree programs at Harvard University, which might include masters in education, business, public policy or others. In addition, initial discussions regarding possible integration of PhD education with GME should be continued.

- **Support/fund Partners Humanitarian Programs for trainees.** Programs such as the Humanitarian Studies Initiative for Residents (HSIR) provide value to residents and to PHS. Residents could apply for grants from PHS to fund travel to areas with health crises or local humanitarian activities during their elective time or between residency and fellowship, providing valuable experience and enhancing PHS' global reputation. Efforts should also be made to facilitate access to existing programs, such as the Schweitzer Fellowships.

Recommendation B: **Offer periods of extended training to accommodate non-accredited training in the focus area.**

Extension of the GME program or an approved leave from the accredited program could be arranged on a case-by-case basis. This may be particularly desirable for trainees in programs with little or no elective time. (Some programs, such as general surgery, encourage trainees to spend 1-2 years added in the middle of the residency period focusing on research. This structure might be applied to activities other than traditional lab research.) Such extensions can have significant financial implications and may be dependent upon funding being available through the target activity, the trainee's GME program, a center of expertise, or through application to a Partners fund that might be established for this purpose. The additional time could be spent in the activities listed above and/or in a related degree program.

Recommendation C: **Identify a specific liaison to facilitate joint clinical training (across boundaries of defined (sub) specialties), coordinated across Partners.**

Partners should build on a successful, though limited, track record of supporting joint training. One member of the Partners GME team should be designated as a liaison to facilitate joint clinical training for interested trainees, providing coordination between the relevant program directors and advice on RRC/ABMS approval, funding issues, etc.

VISION COMPONENT 5: Trainee "quality of life" will be enhanced via improvements in tangible benefits and support, as well as easy access to information.

Recommendation A: **Create and staff the Office of Resident/Fellow Support and Advocacy (ORFSA) as a centralized information resource for trainees.**

ORFSA would be a centralized resource for trainees, providing information and support in a dedicated, trainee-focused office to address their needs. Acting as a single "portal" for trainees, ORFSA would provide information in a variety of realms. In some areas ORFSA staff might provide in-depth information and services – for issues around housing, benefits, licensure, debt management (including help with documentation, certification forms, and overall management of the requirements of multiple lenders), retirement planning, childcare options, etc. In other areas, such as individualized education, ORFSA staff would play a clearinghouse role, referring trainees to the appropriate sources of information within PHS. As a central trainee resource, ORFSA would be aware of the breadth and depth of trainee needs and be positioned to help trainees find answers to their questions. The office would also advocate for trainee needs within PHS and bring trainee issues to the attention of leadership.

Recommendation B: **Consider the following areas for expanded support of trainees: housing, financial planning, childcare, and transportation.**

- **Housing**: The limited availability and high cost of appropriate housing is often cited as a factor in trainees' choosing institutions other than PHS hospitals for their residency or fellowship. Partners leadership should consider the following:
  - Expand the lease guarantee program through increased promotion among landlords. (*Short term*)
  - Improve communication to trainees about the lease guarantee program and other housing options (ORFSA). (*Short term*)
  - Provide a moving allowance/housing stipend for trainees ($2000-$3000/person is recommended, based on the practice at some other institutions). (*Short term*)
  - Explore and try to enhance access to Harvard-owned housing; advertise whatever is available through ORFSA. (*Short term*)
  - Explore ways to partner with developers to provide quality housing for trainees at below-market prices. (*Medium term*)
  - Buy/rent/build apartments and provide high quality, subsidized housing for trainees. (*Medium/long term*)

- **Financial Planning**: Partners leadership should consider the following:
  - Provide trainees with counseling and advice on their options for debt and loan management and retirement planning through ORFSA. (*Short term*)
  - Explore the possibility of Partners offering stipends, loan forgiveness, deferment, or other options to assist trainees. PHS should be prepared to assist trainees with these issues; the Benefits Office and others with expertise in this area are in the best position to recommend specific actions.) (*Short term*)

- Explore establishing a system-wide program with a central pool of funds to help trainees with unusual financial need or crisis. (*Short term*)

- **Childcare**: Ways this might be addressed include:
  - Enhance communication about childcare options so that trainees are aware of all available options. (*Short term*)
  - Increase the number of available slots by exploring other Harvard childcare facilities (such as the Business School) and external childcare centers (*Short term*) and by increasing the size of PHS full time childcare centers. (*Medium term*)
  - Explore ways to subsidize Partners childcare for trainees and others. (*Short term*)
  - Include on-site childcare facilities in any trainee housing that is purchased or built. (*Long term*)

- **Transportation**: Consider enhanced transportation benefits, such as increased hours and more destinations for shuttle service and increased use of taxi vouchers. (*Short term*)

Recommendation C: **Develop and implement ways to provide increased flexibility to trainees in scheduling and develop opportunities for part-time training where possible.**

Trainee needs for flexibility range from day-to-day situations to family/medical leave to longer-term programmatic leaves. The following were identified as the most critical needs (with the understanding that more work is needed to prioritize these goals and assess the financial implications):

- Adequate coverage must be provided in case of illness or absence, short and long term; this may require "redundancy" in staffing to avoid overloading people. (Coverage models may be incorporated into a pilot project.)
- Flexibility to adapt training schedules and trainee responsibilities to accommodate individual's needs for remediation should be ensured.
- Part-time residencies should be offered (may be part of a pilot project).
- Parental (and other) leave policies must be explicit and the need to extend the duration of training to "make up" leave time should be clearly addressed and funded.

VISION COMPONENT 6: Technology—including both simulation and integrated IS systems—will be leveraged to support education, clinical skills assessment, research, and patient care, and to optimize clinical efficiency across PHS institutions.

Recommendation A: **Fund and provide access to a multi-institution system of simulation education, so that trainees can achieve capability in some specifically defined skills before performing them on patients and can continue to develop/demonstrate competency throughout their training.**

- These simulation laboratories should be comprehensive and include the capability for mechanical/procedural simulation, cognitive (situation) simulations, and simulation related to teamwork.
- Each program or department should identify a faculty liaison who will become a simulation expert and serve as a resource for his/her discipline; an overall GME simulation coordinator should be identified.
- Every trainee should go through an orientation program in a simulation laboratory for practice and/or assessment of certain skills, including the procedures specific to his/her (sub) specialty.
- Use of simulation should be integrated into the curriculum where it adds value as a teaching and/or assessment tool.
- Throughout their training, residents and fellows should have access to the simulation laboratory to perfect competencies and learn new techniques.
- The simulation lab will be used in the evaluative process to assess cognitive, procedural and teamwork-related competencies.

Recommendation B: **Fully integrate the needs of Partners education activities into all Information Systems planning, and utilize technology to streamline trainee workflows, strengthening both patient care and education.**

Technology is a critical enabler in streamlining clinical work to improve efficiency and satisfaction for trainees and other caregivers, while enhancing patient care and safety. As decisions are made about investments in technology, opportunities for enhancing education and optimizing the clinical efficiency of trainees must be heard and incorporated in the same way as clinical and research perspectives. Specific individuals in leadership positions on various task forces and committees need to be charged with representing education in the process.

Recommendation C: **Develop a comprehensive education web site to provide a virtual presence for the expanded education activities and connect the various elements.**

A robust website that can inform both faculty and trainees is an essential communications tool that underlies and supports all of the recommendations. A comprehensive education website will respond both to the ongoing need to provide information about programs and services, and to the need for enhanced communications in a number of areas.

VISION COMPONENT 7: Partners will facilitate research on physician education and become a leader in the science of education.

Recommendation: **Develop a research "core" focused on physician education to support individual projects (and, particularly, pilot projects described below), cultivate collaborations, advise regarding funding opportunities, and link to additional resources.**

An educational research core will facilitate faculty scholarship and promotion and inform PHS' own work in education redesign and innovation at the interface of education and patient care. Essential elements include:

- **Expertise in study design and statistics** available to assist with individual research projects and to offer periodic workshops for new investigators pursuing education-related research.
- **Assignment of responsibility for** tracking projects and their progress, and bringing together faculty with similar interests for potential collaboration (across specialties and hospitals); conducting baseline literature searches and tracking and disseminating publications relating to ongoing PHS education research; and maintaining a current inventory of relevant grant opportunities, external RFPs, and foundations interested in education research and/or physician training.
- **Initiation of a monthly physician education journal club and quarterly inter-specialty grand round** should be undertaken as an activity of the research "core."
- **Support for planning and analysis of pilot projects,** as discussed in the Pilot Projects section of this report.

Key Implementation Strategy

KEY IMPLEMENTATION STRATEGY: Utilize pilot projects related to the interface of physician education and patient care as a mechanism to foster innovation and assess the impact of new ideas.

***Recommendation*: Jump-start educational innovation by sponsoring highly visible and generalizable program-based pilot projects, measuring impact, and publishing results.**

- **A manageable number of "inaugural" projects should be undertaken,** designed to identify and implement innovations that will improve the educational experience of trainees while maintaining or enhancing patient care and safety.
- **An RFP process should be utilized** to encourage the development of pilot projects that will implement certain aspects of the GME 2015 vision (as below), and provide results that can be generalized to other programs and specialties.
- **PHS should link an educational consultant or specialist to each pilot** to work closely with the program leaders.
- **The focus of each pilot should relate to specific goals** identified through the strategic planning process.
- **Projects selected as pilots must be adaptable** to other residency or fellowship programs, if successful.
- **Measurable outcomes**, such as impact on trainee's clinical skills and quality of patient care, will be essential.
- **A research component** should be included as part of the RFP process.
- **Programs sponsoring pilots should be expected to demonstrate commitment** by contributing resources and designating faculty to play lead roles in pilot projects.
- **New pilots should be initiated each year, enabling the hospitals to become "laboratories"** for creative approaches to education and patient care—and positioning PHS as an innovator.

- **Pilot projects should address a range of issues**. Examples include:

    - Utilization of multidisciplinary, team-based clinical care and education.
    - Eliminating excess clerical activities related to patient flow ("scut") relative to time spent with patients.
    - Methods to integrate simulation, and other advanced technologies such as web-based studies, into the attainment of required competencies.
    - Methods to improve the mentoring/teaching bond between senior staff physicians and trainees (which might include embedding a "Master Clinician" into a department or service).
    - Methods to integrate the teaching and tracking of core competencies into the daily flow of patient care.
    - Methods to link/track educational goals to individualized patient experiences through information system innovation.

- Integrating library resources and others into morning reports/rounds to enhance patient care and learning.
- Innovative interdisciplinary/multidisciplinary programs that address unmet societal needs.
- Implementing multidisciplinary M&M or case conferences.
- Development of more effective feedback tools and systems that could provide ongoing feedback to trainees with continuous quality improvement.
- Staffing models to increase use of ancillary personnel to assist in non-medical aspects of care.
- The impact of part-time residencies on departments and career development.

- **Encourage incorporation of scholarship into pilot initiatives.** The pilots are expected to become mechanisms for ongoing research into educational effectiveness and the impact of various changes on patient care and education. The publication and dissemination of results will reinforce PHS as a leader in educational research and innovation.

- **Infrastructure to support pilot initiatives should be established**, along with oversight to ensure that they are linked across the hospitals and disciplines and have the broad support they require.

- **The overall effort might be phased, as follows:**
  - **Phase one**: Four to six pilot projects should be funded in year one. These might assess reengineering across an entire program, or focus on a specific initiative within a larger program**.** Analysis of year one pilots may extend into year two.
  - **Phase two:** Additional pilots should be conducted, some building on the results of the first pilots, and others tackling new areas. More staff may be needed to support growth. Phase two will extend from year two to year four.
  - **Phase three:** The third phase should focus on assessing what has been learned and accomplished, and how the results may be applied across other programs.

Appendix

Members of the Steering Committee, 2006-2007

Daniel K. Podolsky, MD, Partners Chief Academic Officer (Co-Chair)
Debra F. Weinstein, MD, Partners Vice President for Graduate Medical Education (Co-Chair)

Jonathan F. Borus, MD; Chairman of Psychiatry, Brigham and Women's/Faulkner Hospitals
Gary Gottlieb, MD/MBA President, BWH
Andrea E. Reid, MD, MPH, Program Director, MGH Gastroenterology Fellowship Program
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
Warren Zapol, MD, Chair, MGH Education Committee (and Chair, Anesthesia, MGH)

Members of GME Work Groups, 2006-2007

Curriculum Work Group
Lawrence S. Friedman, MD, Chair, Department of Medicine, NWH (Co-Chair)
Ron Walls, MD, Chairman, Emergency Medicine, BWH (Co-Chair)

Stan Ashley, MD, Vice Chairman, Department of Surgery, BWH
Eugene Beresin, MD, Residency Program Director, Child and Adolescent Psychiatry, MGH
Lori Berkowitz, MD, Residency Program Director, OB/GYN, MGH/BWH
Beverly Biller, MD, Fellowship Program Director, Endocrine, Diabetes & Metabolism, MGH
Steve Black-Schaffer, MD, Residency Program Director, Department of Pathology, MGH
Matthew Carty, MD, Surgical Resident, Plastic & Reconstructive Surgery, BWH
James Gordon, MD, Director, Simulation Education for HMS; Emergency Medicine MGH
Ravi Karra, MD, MSH, Medical Resident, Department of Medicine, BWH
Joel Katz, MD, Residency Program Director, Department of Medicine, BWH
Mireya Nadal-Vicens, MD, Psychiatry Resident, Department of Psychiatry, MGH
Marty Samuels, MD, Chairman, Department of Neurology, BWH
Emmett Schmidt, MD, PhD, Residency Program Director, Department of Pediatrics, MGH
Jo Shapiro, MD, Senior Associate Director, Partners GME and Chief, Division of Otolaryngology, BWH
Wayne Trebbin, MD, Residency Program Director, Department of Medicine, NSMC

Faculty Work Group
Andrew L. Warshaw, MD, Chief of Surgery, MGH (Co-Chair)
Beverly Woo, MD, Primary Care Internal Medicine, BWH (Co-Chair)

Barbara Bierer, MD, Senior Vice President of Research, BWH
Susan Block, MD, Chief of Psychosocial Oncology & Palliative Care, DFCI
Steve Feske, MD, Program Director (Combined), Department of Neurology, BWH
Michael Gimbrone, MD, Chair, Department of Pathology, BWH
Steve Goldfinger, MD, Senior Faculty, Gastroenterology Unit, MGH
Mitchel B. Harris, MD, Faculty, Department of Orthopaedic Surgery, BWH
Pardon Kenney, MD, Chief of Surgery, Faulkner Hospital
Theresa McLoud, MD, Associate Chair, Department of Radiology and Program Director, MGH
Isaac Schiff, MD, Senior Faculty, Department of OB/GYN, MGH
Nancy Tarbell, MD, Director, Center for Faculty Development/Office of Women's Careers, MGH
George Thibault, MD, Partners Vice President for Clinical Affairs
Maria Troulis, DMD, Program Director, MGH Department of Oral Maxillofacial Surgery

Trainee Work Group
Harry E. Rubash, MD, Chief of Orthopaedic Surgery, MGH (Co-Chair)
Barbara Weissman, MD, Faculty, Department of Radiology, BWH (Co-Chair)

Robert L. Barbieri, MD, Chief, Department of OB./GYN, BWH
John P. Co, MD, MPH, Associate Director, Partners GME
Zara Cooper, MD, Surgical Resident, Department of Surgery, BWH
Daniel F. Dedrick, MD, Director, Residency Training, Anesthesiology, Perioperative & Pain Medicine, BWH
Charles M. Ferguson, MD, Director, Residency Training, Department of Surgery, MGH
Andrew Jawa, MD, Orthopaedic Resident, Department of Orthopaedic Surgery, MGH
Bruce David Levy, MD, Faculty, Pulmonary Division, BWH
Eric Nadel, MD, Director, Residency Training, Emergency Services, MGH/BWH
Carol C. Nadelson, MD, Office of Women's Careers, BWH
Andrew D. Norden, MD, Fellow in Neuro-Oncology, MGH
Andrea E. Reid, MD, Director, Fellowship Training, Gastroenterology, MGH
Kathy M. Sanders, MD, Director, Residency Training, Department of Psychiatry, MGH
Emily L. Senecal, MD, Faculty, Emergency Services, MGH
Shawn Vanner, Program Manager, Partners GME
Andrew Wang, MD, Resident, Radiation Oncology, combined program
Ilse Wiechers, MD, Psychiatry Resident, MGH/McLean Adult Psychiatry Program
Field F. Willingham, MD, GI Fellow, MGH

Consultants, Cambridge Concord Associates
Jane A. Fisher
Elaine C. Kuttner
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