Aligning GME with quality and patient safety: A national initiative

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Abstract:
Despite the obvious impact of interns and residents on healthcare quality and patient safety in teaching hospitals, little has been done to incorporate quality and safety improvement efforts in graduate medical education. Physician training in quality and safety improvement would benefit immediate patient care and also help propagate the techniques of systemic improvement. In 2006, The Alliance for Independent Academic Medical Centers (AIAMC), a national membership organization, launched a multi-year, multi-organization national initiative to investigate and develop programs that link GME with quality and patient safety. With the initial pilot phase of the initiative now concluded, participating programs have documented their experience and results in a series of papers for this special section. In this article, the authors describe the process and overall outcomes of the initiative, and introduce the results of specific program participants.
In the wake of the Institute of Medicine’s (IOM’s) groundbreaking reports on patient safety\(^1\).\(^2\).\(^3\), nearly all healthcare organizations have taken measures to improve patient outcomes. One tangible manifestation of that commitment is the widespread participation in the Institute for Healthcare Improvement’s (IHI’s) various safety programs, including its “5 Million Lives” campaign, launched in 2006.\(^4\)

A number of organizations have drawn the obvious connection between the education and training of physicians and the quality and safety of healthcare.\(^5\).\(^6\).\(^7\).\(^8\) However, teaching hospitals have not taken full advantage of their graduate medical education (GME) programs or their talented trainees in their efforts to improve patient outcomes. In particular, teaching hospitals do not consistently align GME programs and curriculum to their quality and safety efforts—a gap that is apparent in their organizational designs, strategic plans, and clinical operations. Without explicit strategic alignment, teaching hospitals cannot fully leverage their GME commitments in the service of patient safety; residents do not learn quality-improvement skills that will be critical to their professional identity and career development; and patients lose the benefits that would come from a more unified approach.

Despite the extensive discourse on quality improvement and patient safety over the past decade, however, there has been no national-level systematic and focused effort to define, deploy, and disseminate approaches that link organizational efforts to improve quality and patient safety with graduate medical education. Consequently, in 2006, the Alliance of Independent Academic Medical Centers (AIAMC), a national membership organization of sixty major academic medical centers and health systems committed to
quality patient care, medical education, and research, proposed a program to establish “a new national network—with a fully developed supporting infrastructure—to advance patient care through GME, resulting in increased recognition and resource allocation for GME programs.”

The initiative was conceived as a three-year program to:

- Catalogue successful initiatives and best practices of AIAMC members and desired member institutions.
- Provide tools and resources for participants to share learning.
- Ensure the required project management support for the initiative.
- Involve the upper management of participating institutions.
- Develop collaborative relationships with IHI and other institutions active in quality improvement and patient safety.
- Synthesize and consolidate the approaches to quality improvement and patient safety offered by a number of relevant organizations, in particular IHI and IOM, as well as the Accreditation Council for Graduate Medical Education (ACGME), the Association of American Medical Colleges (AAMC), the Joint Commission, the Association of Academic Health Centers (AAHC), the Centers for Medicare and Medicaid Services (CMS), and state boards of medicine, and the Malcolm Baldrige National Quality Award criteria.
- Develop a publication strategy and draft articles reporting the results of the National Initiative.

The initiative began with an 18-month pilot program to explore mechanisms and identify best practices for integrating the two missions—improving patient care and graduate medical education. Thirty-three groups from 20 AIAMC-member teaching hospitals in the United States were selected to participate.

IHI and ACGME were key supporters of the initiative, and provided senior staff to serve as advisors. AIAMC also asked The Bard Group, a healthcare consulting firm (which subsequently became a part of Navigant Consulting, Inc.), to facilitate the project.

We viewed this as an opportunity to develop strategic alignment between organizational mission and goals; individual and system-based practice; and physician education, training, and practice.

In this article, we describe the organization, goals, and process for the pilot phase of the initiative. Papers based on the experiences of individual participating organizations follow.
Background

In 1999, the same year that the IOM issued its groundbreaking report, *To Err is Human: Building a Safer Health System*, the ACGME launched its “Outcomes Project”, intended to increase the focus in medical training on the results of patient care. Two of the six core competencies it established for physician trainees linked GME specifically with quality and patient safety—“Systems-based practice” and “Practice-based learning and improvement.” By declaring these to be “core competencies,” the ACGME extended the definition of physician competence beyond the care of individual patients to the systems of care in which doctors learn and will ultimately practice. ACGME’s new standards were developed at the same time that the IOM was producing its initial report, but as none of the members of the Committee on the Quality of Healthcare in America was an official member of ACGME’s leadership, it appears that each body came to its conclusions independently. This underscores how widespread the concern with patient safety and the education of physicians had become among healthcare leaders.

Following the release of its two seminal reports on patient safety, the IOM issued a third, *Health professions education: A bridge to quality*, which explicitly linked education to quality improvement. In it, the authors identified five core competencies for all health care professionals: patient-centered care, interdisciplinary teams, evidence-based practice, quality improvement, and informatics. They recommended that: “[The Department of Health and Human Services] and leading foundations should support an interdisciplinary effort focused on developing a common language, with the ultimate aim of achieving consensus across the health professions on a core set of competencies
that includes patient-centered care, interdisciplinary teams, evidence-based practice, quality improvement, and informatics.\textsuperscript{12} In recommending the development of such a common language and consensus, the report provides evidence that such a consensus had not yet been reached.

Following the first IOM report, the Council on Graduate Medical Education (COGME) met with the National Advisory Council on Nurse Education and Practice (NACNEP) and issued a joint report, \textit{Collaborative Education to Ensure Patient Safety}.\textsuperscript{8} Its recommendations were based on the following findings:

- **Finding One:** Patient safety cannot be accomplished without interdisciplinary practice approaches.

- **Finding Two:** Patient safety gains are unlikely to be achieved at a satisfactory pace in the absence of revolutionary approaches.

- **Finding Three:** Current system discontinuities need to be confronted towards the aim of building a true, safety-oriented system of care.

- **Finding Four:** A significant cultural change in medicine and nursing is required to achieve the needed gains in patient safety.\textsuperscript{13}

The report cited one critical factor: “Safety depends upon implementation of a unified interdisciplinary system that addresses the realities of practice and patient care. Education and practice methods must stress interdisciplinary team approaches.”\textsuperscript{13} The meeting also produced a series of principles, including this: “Patient safety gains require
revolutionary changes in the education and training of physicians and nurses and in their practice approaches to patient care.”

Thus, within a year of the first IOM report, COGME had explicitly linked improvements in patient safety practices with the education and training of health professionals. The report, however, went further and called for “certification and accreditation processes [that] should include specific requirements and criteria for interdisciplinary programs to promote patient safety in practice, professional education, graduate training, and continuous education. Team and collaboration skills, conflict resolution, training in continuous quality improvement, medical error prevention, and ethics should be included in all programs.”

The report set the stage both for including systematic quality improvement in medical education and for making standards for specialty certification and credentialing more explicit and rigorous.

The AAMC, in a series of reports issued between 2001 and 2004, contributed a new framework to the dialogue that links graduate education and patient outcomes. In these reports, the AAMC acknowledged, “As medical error is an inescapable reality in medical practice, it should be an explicit part of the curriculum of all GME programs. Residents need to be taught, through didactics and faculty role modeling, what to do when things go badly.”

More importantly, the AAMC declared that GME programs could serve a strategic role in organizational efforts to improve patient safety. The 2003 report on patient safety and GME observed, “We believe that graduate medical education can make significant improvements in patient safety by building it into the GME curriculum, involving residents in analyzing medical systems and making system
improvements.”18 With this statement, AAMC recognized that graduate education is responsible not only for the individual physician’s actions on behalf of individual patients, but for the systems of care that produce patient outcomes. The report calls for expanding focus in medical education from the individual practitioner’s response “when things go badly” to designing safety into those systems. AAMC also called for “…special attention [to] be given to systems supporting patient safety: communication among faculty, staff, and residents; information transfer at hand-off; order entry and communication of diagnostic results; simulation to teach basic skills without risk to patients; and a general culture of safety that is passed on to residents as part of their education.”19

In its 2001 policy guidance on GME, AAMC assigned responsibility to institutional governance and leadership for accomplishing this expanded vision of graduate medical education. According to the policy, “Institutional sponsors of GME should exercise strong, centralized oversight for all of the GME programs…Authorize a single individual at a sufficiently high level in the organization to take overall responsibility for the quality of all GME programs, and for ensuring that the interests of the GME mission are well represented within the institution’s top leadership…The institution’s governing board should have explicit mechanisms for monitoring the institution’s GME activities, and for assuring itself that the institution is fulfilling its responsibilities to serve the interests of patients, residents, and the public.”20 This newfound clarity on accountability—a designated institutional official reporting at the highest level of the organization with
effective oversight by the Trustees — established a structural organizational framework for aligning GME with patient safety and quality of care.

In 1995, The Commonwealth Fund created a task force on the future of academic health centers (AHCs) which generated a series of reports. Training Tomorrow’s Doctors: The Medical Education Mission of Academic Health Centers, in 2002, called for putting “the continuous improvement of medical education among their highest priorities” and recommended that “AHCs should continue to reform medical education to prepare young physicians for the changing demands of medical practice in the 21st century.”

The Task Force on Academic Health Centers’ final report, Envisioning the Future of Academic Health Centers, offered perspectives and recommendations culled from its seven-year study. On education, the task force found that, “The curricula of AHCs should dramatically increase emphasis on lifelong learning, teamwork, continuous improvement, and measurement of clinical performance in addition to command of biomedical information and culturally competent care.” It recommended extending the scope of clinical care beyond biomedical science and individual practice to include system-based performance: “AHCs should act decisively to improve the safety, quality, and efficiency of the services they provide as part of a process of continual improvement in their performance.” In its findings on research, the task force linked the pursuit of organizational improvement to all three traditional missions of the AHC—
patient care, physician training, and research. “AHCs should give higher priority and recognition to new and traditionally undersupported areas of biomedical science, including...public health related research...management science...and health services research.” Historically, a faculty member’s commitment to quality improvement or patient safety has not been the kind of research that has advanced academic appointments and prestige; rather, it has been seen as an extension of management. By stating the case for organizational and systems research as a part of the mission of medical training and worthy of academic recognition, the task force gave it a new validity.

David Blumenthal, the task force’s executive director, writing with Timothy Ferris in Academic Medicine in 2006, suggested that gaining recognition for quality improvement and patient safety research would be easier if its empirical basis were better founded and communicated—an agenda that might naturally fall to academic centers. “AMCs and their personnel are well suited to the tasks of scientifically based innovation and should be the source of new information for the nation on how best to keep patients safe...Some AMCs may find safety and quality more appealing if they are presented in the context of improving overall organizational performance.” Blumenthal and Ferris also emphasize the importance of organizational culture. “As pressures for AMCs to improve safety and quality increase, it may be necessary for leaders to begin a conscious effort to reconcile the academic culture with the organizational requirements for improving patient safety and quality of care.”
Culture is manifest in organizational design, forums and functionality, information flow and decisions, priorities and resources, processes and participants. It is not uncommon to find gaps between the goals and priorities for GME at a hospital and the overall goals and priorities of the organization as a whole, finding them silos rather than nodes. To fully integrate safety and quality improvement into the academic medical milieu requires a broadening of the definition of “academic,” with implications for everyday practice, promotion and tenure, and space and funding.

In *The Ethics of Using QI Methods to Improve Health Care Quality and Safety*, authors Mary Ann Baily, Melissa Bottrell, Joanne Lynn, and Bruce Jennings focused both on expanding the research agenda to include quality improvement (QI) and on professional and organizational obligations generated by such research. The monograph is the product of a two-year Hastings Center project to assess the use of quality improvement methodology in healthcare. Unlike those used in traditional medical research, the protocols and practices of quality improvement are still being developed and evolving rapidly. In addition, the sponsors of quality improvement research—such as the Agency for Healthcare Research and Quality (AHRQ) (which funded the project that led to the report) and the IHI are not the traditional sponsors of clinical research, such as the National Institutes for Health (NIH). Consequently, “QI practitioners need ongoing guidance on appropriate methodological standards in order to meet the ethical requirement that QI activities be properly structured to achieve their goals.” Baily and her co-authors recommend that “…organizations of health professionals…should inform members about their professional obligation to improve quality. They should also
identify the basic QI skills their members should have…Leaders of professional education should press for greater emphasis on the obligations of health professionals toward the quality of care and the development of QI skills in educational curricula.”32

I. Origins and purpose of the National Initiative

Members of the Alliance of Independent Academic Medical Centers regard medical education and research as strategic assets in providing patient-centered care; operate independently of medical school ownership or governance while maintaining major medical school affiliations; care for a patient population that mirrors their local communities; and provide teaching and research that is innovative, applicable to practice, and community-responsive. In 2006 the AIAMC’s Board formalized the organization’s interests and commitments in a new strategic plan which defined the AIAMC’s mission, vision, and strategy:

- **Mission:** “To assist members in achieving the highest standards of patient care through the integration of innovative medical education and research into their clinical missions.”
- **Vision:** “AIAMC is an essential national resource for developing and sharing best practices in medical education and research in support of patient care.”
- **Strategy:** “To form a National Initiative to demonstrate how graduate medical education can serve as a driver to improve patient safety.”33

A member organization, HealthPartners, an integrated delivery system in Minnesota, expressed interest in supporting AIAMC’s strategy to form a National Initiative.
HealthPartners saw the Initiative as a platform for shaping and advancing its own expressed commitment to linking emerging quality and safety initiatives with residents’ education. Through its Institute for Medical Education HealthPartners provided funding to conduct a series of national meetings as part of the National Initiative.

AIAMC member organizations presented a natural laboratory for conducting the National Initiative. To identify potential participants in the Initiative, the AIAMC requested proposals from its members that 1) defined their interest in participation and 2) identified initiatives within their organizations where GME training programs had been linked to quality, patient safety, or cost-effectiveness of care. The responding twenty-two organizations became the participants in the National Initiative, a year-long pilot collaborative in which each organization designed and implemented at least one improvement project that integrated GME and patient quality and safety activities.³⁴

The AIAMC Board also committed to study the impact of the Initiative, not assuming that a pilot would be definitive.³⁵ Consequently, it developed a hypothesis that teaching hospitals and their executive, clinical, and academic leaders could improve alignment of patient care and GME through the design and conduct of a linked project within the format of a national collaborative. This paper presents on the process, methods, tools, and experience of the first formal effort to integrate the missions of patient care and graduate medical education.

II. Structure, process, and methods
The AIAMC’s National Initiative was designed as a multi-institutional collaborative among participating organizations, using guidelines for quality improvement collaboratives laid out in John Ovretveit’s landmark article, *Quality Collaboratives: Lessons from research*[^36] and refined over the years by IHI and others. The initiative adopted essential features of this model, including three main objectives:

- Accelerate development of a team improvement project
- Support successful completion of a project
- Provide leadership, project management, infrastructure, tools, models, and readings to support successful completion of a project

A fourth objective was specific to the initiative:

- Provide insights into organizational structure, function, and culture in support of better alignment of GME with programs to improve the quality and safety of patient care

To define and guide the work, AIAMC’s Board appointed a nine-member Steering Committee, consisting of AIAMC’s Executive Director, four members of its board, and four members who serve their organizations as executives, academic leaders, or quality professionals. The Steering Committee, including the AIAMC’s Executive Director, became the organizing force and central driver of the initiative.
The main work of the initiative was carried out in five work groups of four or five organizations. The work groups served as peer groups for monthly calls and for the work within each day-long national meeting.

The Steering Committee recognized that the National Initiative would intersect with other national-level programs and therefore established key alliances with IHI and ACGME. Senior staff from these organizations participated in each of the national meetings.

To design and facilitate the initiative, the AIAMC Board engaged The Bard Group, a national consulting firm with expertise in clinical and medical education strategy as well as patient safety and quality improvement.

Goal-setting
Prior to the official launch of the program the Steering Committee met to review the participants' proposals and refine its purpose, goals, and process. The committee defined the initiative as a multi-year process, with the first year and a half serving as the pilot period. The committee had high ambitions for the initiative, expressed in its statement of mission, vision, and goals.  

Mission:

- The mission of the National Initiative is to improve quality of care, patient safety and GME among participating organizations through leadership and integration of GME in quality improvement and patient safety initiatives.
Vision:

- The National Initiative will be a landmark contribution to patient care and GME by establishing a new national network—with a fully developed supporting infrastructure—to advance patient care through GME, resulting in increased recognition and resource allocation for GME programs.

Long-term goals:

- It has become unthinkable not to fully engage faculty and residents in quality improvement and patient safety initiatives.
- The Joint Commission and CMS have adopted results from the National Initiative as standards and best practices.
- Physician education has been reoriented toward outcomes and teams.
- Metrics have been fully defined on the impact of integrating GME with quality improvement and patient safety initiatives.

For the pilot period, the Steering Committee set the following short-term goals:

- Identify and share best practices—models that work to “hardwire” faculty and residents into quality improvement
- Develop mechanisms of support for and communication among participants
- Improve the understanding of the intersection of GME and quality improvement and patient safety
- Integrate board and senior management interests into the National Initiative
- Accelerate the 5 Million Lives Campaign at member institutions
The Steering Committee agreed that participants would report the results and learnings from the pilot period in a series of papers for publication in a peer-reviewed journal. The first of these papers appear in this special section.

Process

The process of the national initiative was structured around four national work meetings in four different cities, followed by a fifth meeting to review the results and plan subsequent activities. The process leading up to each meeting is illustrated in Figure 1 and described below.

1. **Steering Committee direction**: The Steering Committee met monthly by conference call to provide oversight and set the purpose, objectives, and detailed agenda of each national meeting. It assigned activities to the participating organizations and the AIAMC leading up to each national meeting, including project work to be carried out within each participating organization, infrastructure development by the AIAMC, and identification and recruitment of national experts for each meeting. The Steering Committee conducted monthly conference calls with work group leaders, assessed work group progress and meeting outcomes, followed up with participating organizations when indicated, and reached out to external constituents.

2. **Project identification**: The National Initiative used IHI’s 5 Million Lives campaign as the backbone for linking residents with improvements in patient care because all the participating organizations had already enrolled in the campaign as part of their overall commitment to improving patient safety. Significant organizational
resources were already earmarked for the campaign, which would help support the National Initiative as well. The Steering Committee asked participants to choose one of the campaign’s 12 “interventions” as the basis for their projects. The projects and their intervention areas are listed in Table 1.

Some organizations had their projects already well underway when the National Initiative began, and others began new projects for the purpose of joining the initiative.

3. *Work Group formation*: Once participants selected their project interventions, these were used to assign the organizations into work groups. The groups, with two to five member organizations, served as the peer group for monthly calls and for the national meetings. The five work groups were:

- **WG1**: Hand-offs—Electronic Medical Record
- **WG2**: Hand-offs—Shift-to-shift
- **WG3**: Hand-offs—Inpatient-to-outpatient
- **WG4**: Infection control—MRSA and Central Line
- **WG5**: Medication safety

In addition, there was one project, carried out by a resident that consisted of the design, distribution, and analysis of a survey of residents on their attitudes toward, and the impact of, quality improvement and patient safety as part of their education.
4. **Work Group activities:** Work groups in each participating organization received specific assignments to be completed before each national meeting. Assignments included scripted stakeholder interviews; review of corporate documents and reports; relevant readings; and the design, implementation and documentation of projects linking GME to quality and safety initiatives within their organizations.

The five work groups met via conference call each month to review progress, share experiences, and review the materials and agendas that the Steering Committee had developed for the month. The National Initiative provided each group with tools and templates to guide their work and capture progress and results.

5. **Development of supporting resources:** The AIAMC had a limited infrastructure and budget to support the National Initiative. However, within its resources, the AIAMC built a password-protected web site that served as the central repository for contact information, a comprehensive literature review that was under development by participants, meeting documentation, links to allied organizations, and shared project documents. The AIAMC also committed considerable time and effort to supporting the activities of the work groups by distributing agendas, keeping meeting records, developing monthly summary reports, and coordinating activities throughout the process. AIAMC staff also secured sites and provided event planning for all national meetings.

6. **National meetings:** Each meeting included presentations by national speakers and participants on relevant topics that were carefully choreographed in a developmental
sequence; case presentations by participants; and workshop sessions where participants exchanged ideas, reviewed progress, and learned from each other. Each meeting concluded with the launch of the next activities.

Every activity, including the meetings and conference calls, was designed to facilitate cross-institutional peer collaboration, enhance group learning, and build shared purpose and group identification.

**Meeting 1**

*Focus: Establishing the purpose, intended outcomes, and organizational context of the initiative.*

- **Pre-work:** Participants were asked to review their organization’s vision, strategic plan, goals, and the table of organization, and then interview executives using an interview guide. The findings from these interviews were used to enhance participants’ understanding of their organizations’ strategic and operating plans and their ability to articulate the rationale for their projects in terms of the strategic benefit to their organizations.

- **Internal speakers:** Two members of the National Initiative presented examples of the successful engagement of residents into organizational efforts to improve quality and patient safety. These presentations were discussed to identify critical success factors.
• External speaker: There was a presentation of IHI’s 5 Million Lives Campaign and a video presentation by Donald Berwick, MD, MPH, IHI’s president.

• This foundational meeting was designed to build a common understanding of the rationale for the National Initiative and its intended outcomes. The Steering Committee presented its vision for the National Initiative and the link to the IHI 5 Million Lives campaign. Participants contributed and refined objectives for the work.
Meeting 2

Focus: Forming topical interest groups and defining metrics to measure project outcomes.

- Pre-work: Participants identified ongoing IHI projects within their organizations and the extent to which GME was engaged and contributing to these initiatives. Based on evaluation criteria provided by the Steering Committee, participants identified one or more potential projects that would integrate GME with quality improvement and patient safety initiatives. They developed project definitions, also based on a tool provided to them, and identified potential measures of process and project outcomes.

- Internal speakers: A panel of Chief Quality Officers presented their perspective on integrating GME with safety and performance improvement. They also highlighted the need to build an educational infrastructure within their organizations to integrate quality and safety into GME programs. Representatives from two participating organizations presented successful quality improvement and patient safety projects in which residents played important roles.

- External Speakers: J. Gavin Cotter, MD (resident) and Kathy Kirkland, MD (preceptor) of the Leadership Preventive Medicine Residency at Dartmouth Medical School presented a successful resident project on a hand hygiene campaign and the lessons learned about defining clear, simple, and specific clinical and educational metrics.

- Five interest groups were formed around project focus and themes.
Participants refined their project metrics and began to develop project work plans.

Participants continued to exchange learning about their organizations’ quality and safety priorities, structures, accountabilities and about integrating GME.

Meeting 3

*Focus: Clarifying end products of the National Initiative and defining project metrics.*

- **Pre-work:** Participants reconnected with their CEOs and discussed the progress and status of the Initiative overall and their individual projects. These meetings also served to reinforce the longer-term purpose of closely aligning GME with the hospitals’ commitment to excellence in patient care. Participants prepared brief status reports on their projects. They identified challenges to implementation, discussed the process and project outcome measures they had selected, and described how close their projects would come to implementation by the planned conclusion of the pilot phase in March of 2008.

- **Internal Speakers:** A panel of program directors presented their perspectives on integrating patient safety and quality improvement into GME programs. They identified how the program director’s role and qualifications would need to change to accommodate this commitment. Two initiative participants presented measures they had developed to document the process and project outcomes of their initiative projects. A resident participant introduced a survey of residents designed to gauge their perspectives on being involved in quality improvement and patient safety initiatives.
• External Speakers: Eugene Nelson, DrS, MPH, Director of Quality Education, Measurement, and Research at Dartmouth Hitchcock Medical Center discussed macro- and micro- perspectives on measuring quality and tying patient safety and quality improvement to core competencies. Doris Quinn, PhD, Director, Improvement Education and Measurement, and John Bingham, MHA, Vice President, Performance Improvement and Chief Quality Officer, M.D. Anderson Cancer Center, presented “The Matrix”, a tool to link outcomes of care to the ACGME competencies.

• The Steering Committee reviewed the initiative’s specific end products and the format in which participants should submit their project reports.

• Participants worked in groups to refine the project measures and work plans they had developed.

Meeting 4

Focus: Sharing and celebrating the accomplishments of the National Initiative, sustaining the commitment to completing its work, and establishing the future of the initiative.

• Pre-work: Based on detailed outlines and formats provided by the Steering Committee, participants developed final project documents, including a self-evaluation of progress made; prepared project posters that were exhibited during the meeting; developed poster abstracts that were included in a binder distributed during the meeting; and completed a survey of “GME Infrastructure” at their respective organizations.
• Internal Speakers: James Conway, of IHI, and Paul Gardent, of ACGME, whose organizations were AIAMC’s strategic allies in the initiative, presented their perspectives on the significance of the project.

• External speakers: Rosemary Temple, RN, CQIA, Quality and Patient Safety Project Manager at Virginia Mason Medical Center, discussed project management principles and securing project management support to complete projects. Barbara Joyce, PhD, Director of Instructional Design, Henry Ford Hospital, discussed leading and sustaining projects through engagement of senior leadership, program directors, residents, and key stakeholders.

• Participants reflected on their participation in the National Initiative, commented on its benefits for their organizations and themselves, discussed improvements to the process they might make, and shared what they had learned so far about leading such initiatives.
III. Process outcomes

Since this was the first national collaborative dedicated to integrating graduate medical education with patient safety and quality improvement, there were no existing benchmarks for what could be achieved. The AIAMC organizers had no reference points for weighing such questions as: How many participants would likely continue this initiative to its conclusion? What level of project completion could be expected from participants? What level of satisfaction among participants would suggest an effective process? Would participants’ projects prompt broader changes in infrastructure and support within their organizations?

The National Initiative has provided some preliminary data for future research on these questions. Most of the participants did stick with the program through the end of the pilot phase, although the institutions differed greatly in how far along their individual projects were at the end of the pilot period. Most participants were satisfied with the progress they had made, though most reported that they did not accomplish as much as they had set out to do. The initiative also found that some institutions made or planned infrastructure improvements on the basis of their projects.

To generate these findings, the initiative analyzed participation records; required participants to write a self-evaluation; and compiled inventories of resources and activities that were used to integrate GME with patient safety and quality improvement.

Participation and retention
Twenty organizations participated in the National Initiative and continued for the full 12 months of the process. Eighteen of them initiated and carried out projects to integrate GME with quality improvement and patient safety initiatives within their organizations.

**Completion of projects**

Participants made varying degrees of progress on their projects. Nine out of 18 considered their projects more than 50% complete after 12 months, including 5 that reported projects 75%–100% complete. Seven out of the 18 rated their projects less than 50% complete. Table 2 breaks this out by the project type.

**Satisfaction with progress**

The majority of participants were satisfied with the progress they had made, but most said they were not able to accomplish as much as they had set out to do. Those who rated their projects as more substantially complete tended to be more satisfied.
IV. Discussion: Learning from the National Initiative

The activities of the National Initiative were recorded in the minutes of Steering Committee meetings and monthly work group calls, and in the records of each national meeting. These records document the challenges that participants encountered; their experiences in overcoming obstacles; and unexpected side benefits from participating in the initiative.

The importance of organizational context and priorities

At the executive level, chief medical, quality, and nursing officers often lack knowledge and expertise in graduate medical education and are focused on their own portfolios. They do not typically have the resources (data gathering, analytics, IT support, and other infrastructure) needed to support GME innovations unless these programs explicitly fulfill organizational strategy and priorities. They are also focused on daily operations and ongoing initiatives and do not have the ability to work within typical resident teaching and practice schedules. Thus, it is easy for ongoing QI and patient safety work to take place in parallel to, rather than integrated with, the work of academic leaders and residents in practice.

This initiative revealed that not only were executive, clinical, and operational leaders open to exploring a more strategic alignment with academic leaders and residents to improve quality and patient safety; they were eager to do so. Given the opportunity, organizations that did not have such an alignment swiftly embraced the idea, and took
steps to develop programs, either during the National Initiative or afterwards.

Organizations recognize the value of integrating patient safety and quality improvement in medical education, and in this project as well as elsewhere, have demonstrated the will to develop it.

**Improving quality and safety through GME**

We discovered that many organizations develop and implement their quality and safety strategy in parallel to, not aligned with, their academic strategy and resources. We also discovered that residents, as new professionals, want to learn and provide care in the most contemporary ways, so they are avid learners. As young professionals who closely manage care, they are in a position to identify system problems and propose solutions that improve patient outcomes as part of developing their professional identity and pride. Their enthusiasm can help propagate approaches to improvement swiftly among faculty and staff.

The results of the National Initiative strongly suggest that improving care through GME and other academic commitments should begin with the hospital’s routine strategic planning, goal-setting, and budgeting processes, integrating the training process with the quality improvement at the level of both strategy and budget. Every performance improvement or patient safety initiative should include residents as key participants. Steps as simple as scheduling meetings for times when residents and faculty can attend can go a long way toward bringing them into the process.
It is equally important to establish measurements and goals that track both improvements in care and academic outcomes. This may require modifying the data the institution already collects, as well as generating new reports that reflect the academic, as well as quality improvement, goals and measures.

**Improving GME through quality and safety initiatives**

Within the academic leadership, we identified challenges that must be addressed, especially the evolving role and responsibilities of GME program directors. As expected, program directors are focused on compliance with new and evolving ACGME and Residency Review Committee requirements. Many said they were “overwhelmed” by the ongoing operational and curricular work and the attendant documentation that is now required. They recognize the value of better aligning GME with quality and patient safety, as this focus enables them to address several ACGME Core Competencies. However, many said they did not have the time, expertise, knowledge, or skills needed; and therefore, they were less willing to be made accountable for quality and patient safety on top of their other responsibilities.

A preliminary survey conducted through the National Initiative suggests that residents themselves vary in their awareness and understanding of quality improvement and patient safety methods. This variability led to different levels of interest in, and commitment to, seeing system-level concepts and experiences included in their training programs. In most cases, resident attitudes reflected their level of exposure to the
concepts; which in turn usually reflected the emphasis, or lack thereof, on systemic quality improvement in their programs or teaching hospitals.

Like their program directors, residents are also already overwhelmed by the requirements of their medical education—attempting to learn the traditional elements of individual patient care in their specialties within revised time limits (“duty hours”)—even without the added demands of contributing to system-level improvement. However, we found that effective training modules and faculty mentoring fostered enthusiasm and commitment. One of the outside speakers, a resident looking back at his patient safety experience, called it “a defining experience that had a profound impact on [his] professional identity.” He and others in the National Initiative experienced both personal benefits and professional growth through their participation.

**Learning about the process of integrating GME with quality and safety**

The National Initiative demonstrated that with the proper tools, reference materials, infrastructure support, and professional mentoring in a collaborative peer environment, it is possible to integrate the ACGME Core Competencies with organizational efforts to improve quality and patient safety. Trainees and the patients they serve both benefit from an organizational commitment to align clinical and academic resources in the strategic plan and in operations. While most quality departments are small, and faculty and academic leaders are stretched, there is tremendous potential leverage and scalability in engaging residents in organizational efforts to improve patient outcomes at both an individual and an organizational level.
V. Conclusion

Our review of the literature and our assessment of the National Initiative’s participants reveal a tremendous opportunity for residents as individuals and GME programs in general to contribute to better patient and organizational outcomes. The public, competitive, and moral imperative to provide the highest levels of quality and safety requires every organizational asset to work together, even where collaboration has not been compelling or successful in the past.

The results of the AIAMC National Initiative clearly demonstrate organizational recognition of, and interest in, integrating GME and the work of residents in patient safety and quality improvement programs. They also show that residents, once exposed to the national conversations on quality and patient safety, become committed and avid learners and proponents of system improvement as an aspect of patient care; and that although program directors and GME “designated institutional officials” face challenges in meeting new regulations and requirements, integrating quality improvement with GME can provide opportunities to address those requirements. Finally, the initiative proved that when healthcare organizations recognize the contribution residents and their instructors can make to improving quality and safety, and better align and integrate GME into strategy and budgeting, they can more fully realize the strategic and competitive value of their academic programs.
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Legends for Figures 1, 2, and 3.

Figure 1:

The AIAMC’s National Initiative to integrate graduate medical education with hospital patient safety and quality improvement programs divided participants into five work groups, who took direction from, and reported back to, a steering committee. In addition, the steering committee convened five national meetings for the work groups to share their results more generally.

Figure 2:

Most of the participants in the National Initiative did not finish the projects they had chosen by the end of the pilot phase, but half the 18 participants did assess that their projects were 50% or more complete.

Figure 3:

The majority of participants expressed satisfaction with the progress they had made, with those reporting high levels of completion more satisfied than others. Most said they were not able to accomplish as much as they had set out to do.