The Alliance for Continuing Education in the Health Professions

THE ALLIANCE QUALITY IMPROVEMENT EDUCATION INITIATIVE

The Quality Improvement Education (QIE) Roadmap: A Pathway to Our Future

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January 12, 2015

TABLE OF CONTENTS

I. A Note From the Roadmap Authors: Key Questions Answered

Why the QIE initiative?

The national healthcare landscape is undergoing a transformation at every level. Although the movement from fee-for-service to a more quality-based model has been underway for many years, these efforts have gained momentum following the outline of the Triple Aim by the Institute of Healthcare Improvement (IHI) and the subsequent development of the National Quality Strategy, Aims, and Priorities by the United States (US) Department of Health and Human Services (HHS).[1-2]

Understanding these initiatives and their impact on clinicians—and aligning efforts to these national mandates—is critical for those who educate healthcare professionals, including those within the continuing education (CE) community. Equally important, professionals who are involved in healthcare quality improvement (QI), but not immersed in CE, must understand the skills and resources that those in the CE community can bring to this transformation.

In addition to these "mega trends" influencing the delivery systems and community/public efforts to improve health and decrease costs, we have seen a progressive evolution of our understanding on how CE can effectively and efficiently contribute to these efforts. The evolution of CE from didactic lectures to more practice-based models started many years ago, but is now moving more rapidly. Research findings from a wide variety of experts from the American Association of Medical Colleges, the Society for Academic CME, the Association for Hospital Medical Education, and many others support this evolution, having demonstrated that lecture alone does not result in behavioral and system changes that are required to improve care.[3] Multiple reports from the Institute of Medicine (IOM) have further articulated the issues and the need for change, as has the ACCME's report "A Bridge to Quality."[4-7] Finally, regulatory bodies are also starting to require more practice relevancy in required CE, such as Maintenance of Certification programs by the American Board of Medical Specialties, Maintenance of Licensure programs by state medical societies and the Federation of State Medical Boards, and similar requirements by The Joint Commission. Hence, there has been an increased awareness of and movement toward explicitly designing, developing, and reporting on CE with quality outcomes as the guiding force.

Thus, the Alliance for Continuing Education in the Health Professions ("the Alliance") has initiated this Quality Improvement Education (QIE) initiative.

What is QIE?

For the purposes of the initiative that is described and set into motion with this Roadmap, QIE is defined as the incorporation and integration of educators and educational tools, techniques, and resources into QI efforts across the healthcare-delivery and community-health sectors.

What is the QIE initiative, where will the roadmap take us, and who is involved?

Designed for members of the Alliance and non-members who are engaged in QI and CE, the Roadmap outlines critical steps that are necessary to facilitate the integration of educators and educational tools, techniques, and resource into healthcare QI efforts.

With the launch of this Roadmap, the Alliance sets into motion a 10- to 15-year strategic initiative that will require dedicated financial support and the engagement of many constituencies (individual members, specialty societies, health systems, medical boards, policy makers, state and federal government healthcare bodies, payers, etc.).

We believe the Roadmap and the QIE initiative have relevance to every Alliance member, and we hope that every member will engage in this initiative in the ways we have outlined below.

It is critical to recognize that this report is not an effort to develop a set of tools or guidelines to help facilitate the development of *individual* QIE efforts in the organizations in which members work. Rather, the Roadmap serves as a foundation to advance the field and facilitate the development of resources for QIE stakeholders to use in the future.

The planning for the development of one such resource is already underway. Early in the development of the QIE initiative, the Alliance QIE leadership identified a lack of consistent methodology for designing, delivering, and reporting the results of QIE efforts among educators heavily involved in QIE initiatives. Therefore, a key component of the next phase of this QIE initiative will be to fill this gap by developing a framework and tool for Alliance members engaged in QIE. In addition to being a vital resource, this consistent framework allows the impact of various educational formats and designs to be compared, and data to be aggregated across educational interventions to evaluate the collective effect of QI education.

When fully implemented, the QIE initiative will:

- Build bridges between CE professionals and a broader set of stakeholders
- Create resources for members to measure and communicate the impact of education
- Increase the relevance of CE and CE professionals within QI initiatives in “learning healthcare organizations”

What does the QIE initiative mean to alliance members?

From this report, it is our hope that educators who are—or who plan to be—involved in CE within the framework of QI will:

- Develop a greater awareness of the mandates for increased emphasis on QI and the relationship between QI and CE
- Become more active participants in and advocates for the overall integration of education and QI by becoming involved in efforts to fulfill the recommendations outlined in this Roadmap
- Continue to develop their competencies and skills by accessing the learning resources found at the end of this report, as well as other resources that will be developed in future phases of the QIE initiative
- Begin to develop institutional frameworks using a standards-based format for conceptualizing, reporting outcomes on, and demonstrating the value of the integration of education in QI efforts.

II. Laying the Foundation

Healthcare professionals, consumers, and those who provide education for healthcare professionals continue to face challenges related to the development and support of a care team that is prepared to provide high-quality, cost-effective, patient-centered care. A significant body of literature supports this gap, including one report illustrating that despite significant financial investments in graduate-level training programs ($15 billion in physician training alone in 2012), the resulting workforce remains inadequate relative to the size of the need, not-optimally prepared to provide clinical care where most care is delivered (outside of hospitals), and physician-centric despite a healthcare environment that is increasingly moving away from care delivered by physicians alone.[4] If graduate-level education programs cannot optimally prepare the healthcare workforce, the majority of the responsibility to do so falls on clinicians themselves and the CE system, including organizations like the Alliance, that supports their efforts—and this is but one example that affects a single healthcare-related sector. The education of healthcare professionals, which is currently siloed, is evolving and being framed in part by the inter-professional education (IPE) spearheaded by the IOM.

The foundations of QI in the current healthcare climate can be found in the IOM reports *To Err Is Human* and *Crossing the Quality Chasm*.[5,6] Arguably today more than ever, healthcare is focused on quality rather than quantity. This is evidenced by IHI's Triple Aim, the National Quality Strategy (or NQS, which is led by the HHS' Agency for Healthcare Research and Quality [AHRQ] developed as part of the Affordable Care Act [ACA]), and the 6 National Quality Priorities that support the NQS.[8,9] Table 1 outlines the key tenets of the National Quality Priorities, the Triple Aim, and the NQS and provides a resource for additional information.

Table 1. Key Components of the National Quality Priorities, the Triple Aim, and the NQS

HHS' National Quality Priorities www.ahrq.gov/workingforquality/about.htm#priorities	**IHI's Triple Aim** www.IHI.org	**HHS' NQS** www.ahrq.gov/workingforquality/
Safety	Improving the patient experience of care (including quality and satisfaction)	Making care safer by reducing harm caused in the delivery of care
Person- and family-centered care		Ensuring that each person and family are engaged as partners in their care
Communication and care coordination		Promoting effective communication and coordination of care
Best practices for healthy living	Improving the health of populations	Promoting the most-effective prevention and treatment practices for the leading causes of mortality, starting with cardiovascular disease
Effective prevention and treatment of illness		Working with communities to promote wide use of best practices to enable healthy living
Affordable care	Reducing the per capita cost of healthcare	Making quality care more affordable for individuals, families, employers, and governments by developing and spreading new healthcare delivery models

The Alliance's vision, in alignment with its strategic commitments, is that:

> ***CE, educators, and associated tools, techniques, and resources will be integrated into healthcare system and community QI initiatives to maintain and improve health in the context of HHS' NQS and IHI's Triple Aim.***

Therefore, the Alliance—recognizing that its mission is to help members contribute to driving measurable improvements in healthcare delivery and health—authorized the development of the QIE initiative Roadmap guided by QIE stakeholders both within and beyond the Alliance membership and overseen by the authors of this report. The development the strategic integration of education into the new healthcare ecosystem described in this document has involved a time-intensive and iterative process described in detail in Appendix I. This process will not end with the present version of this Roadmap. Rather, the goals and specific steps outlined in this report will be reviewed and updated as needed in response to progress and changes within the healthcare environment.

The Roadmap provides direction for the transformation of applicable CE to quality-focused education (depicted in Appendix V). Importantly, this transformational shift is not all-inclusive, and there remains an important role for knowledge-based CE.

This report makes recommendations for advancing the integration of education, educators, and their tools, techniques, and resources into QI. There are a total of 23 recommendations; 7 general recommendations and 16 recommendations which are categorized by the 10 "Building Blocks" adopted as part of this initiative to help identify areas that require further consideration as the QIE initiative progresses. By nature, these Building Blocks are interrelated. Each building block has a long-term, focused objective and specific recommendations for a path to achieve the objective. Furthermore, the Building Blocks are connected with the ultimate drivers of QI: the IHI Triple Aim, the NQS, and the NQS Priorities, as illustrated in Figure 1 and Table 2.[1,2,8,9] Again, it is critical to emphasize that the interconnected nature of the Building Blocks does not allow for discrete classification and, therefore, Table 2 should be interpreted solely as one potential representation of the linkage between the Building Blocks of this Roadmap and the broader principals currently driving the national QI movement.

Figure 1. The Building Blocks and National Drivers of QIE: An Illustrative View

Table 2. Alignment of the QIE Roadmap Building Blocks, Triple Aim, and NQS Priorities

Alliance QIE Building Blocks	**HHS' National Quality Priorities** www.ahrq.gov/workingforquality/about.htm#priorities	**IHI's Triple Aim** www.IHI.org	**NQS** www.ahrq.gov/workingforquality/
Professional competency Professional development Environmental scanning and information dissemination Models of financial support Policy and ethics	Safety	Improving the patient experience of care (including quality and satisfaction)	Making care safer by reducing harm caused in the delivery of care
	Person- and family-centered care		Ensuring that each person and family are engaged as partners in their care
	Communication and care coordination		Promoting effective communication and coordination of care
Quality metrics Accountability mechanisms Building and using evidence	Best practices for healthy living	Improving the health of populations	Promoting the most-effective prevention and treatment practices for the leading causes of mortality, starting with cardiovascular disease
	Effective prevention and treatment of illness		Working with communities to promote wide use of best practices to enable healthy living
	Affordable care	Reducing the per capita cost of healthcare	Making quality care more affordable for individuals, families, employers, and governments by developing and spreading new healthcare delivery models
Expediting mechanisms: Nomenclature and its adoption Health IT			

III. Overarching Recommendations

The following 7 recommendations are critical to the successful integration of QI and education and the subsequent design and execution of QIE activities that align with the NQS, National Quality Priorities, and the Triple Aim[1,2,8,9]:

O1. Develop collaborative and organizational partnerships that are interprofessional and involve all healthcare stakeholders, particularly those engaged in QI and QIE

O2. Support the development of educational programs for patients, families, and other healthcare consumers that focus on QI and QIE and lead to positive change in knowledge, behavioral change, and system redesign to improve patient outcomes

O3. Develop and distribute resources for each of the 10 building blocks to CE professionals and develop a clear communication plan about the availability of those resources

O4. Develop a living bibliography of resources, building on the learning resources within this Roadmap report, and make available to Alliance members to support QIE efforts

O5. Create and deploy a communication plan about the Roadmap and its ongoing implementation to Alliance members and the broader community of QI stakeholders

O6. Develop a tool that incorporates the fundamental components of CE and standard metrics in order to foster a uniform method for designing and implementing QI initiatives, facilitate the sharing of best practices, and create a database of the components of QIE efforts

O7. Define performance metrics for the QIE initiative, evaluate the implementation of recommendations, and create a structure to coordinate implementation efforts.

In each of the following 10 building blocks, a consistent plan is outlined to:

- Conduct an inventory and analyze the status of each building block
- Identify the gaps and relevance to the QIE initiative
- Take steps in partnership to fill those gaps
- Develop tools and resources for members and others to facilitate the implementation and progress toward achieving the vision of QIE.

IV. QIE Building Blocks and Recommendations

Building Block 1: Nomenclature and Its Adoption

Building Block 1 Objective:
All professionals engaged in QI activities will use a common set of terms and definitions to describe concepts in QI activity design, execution, and outcomes, specifically those terms related to the educational component of QI.

Building Block 1 Relevance:
The terms that CEhp professionals use to communicate in the current environment must make sense in the language of QI, be operational in the context of QIE planning and reporting/research, and be versatile enough for the nomenclature to achieve long-term sustainability among stakeholders in relevant fields. The opposite of this must also be true; that is, QI professionals must be able to communicate effectively with education professionals.

The focus of this building block is on terminology that can be used to define progress and explain QI needs. However, before the lexicon can be defined, the impact of terminology on the unique environment of each stakeholder group must be considered. Strategic collaboration is needed to develop a realistic, applicable, flexible, and unified lexicon that connects provider and consumer needs for education and improvement on quality measures within the systems in which they work/receive care. Considering the range of stakeholders who might use a unified "nomenclature for QI," we must carefully deliberate and select both commonly and rarely used terms.

ACEhp, as "the voice for CE in the health professions" and "the professional home for health professionals in [CE]," takes on the roles of "curator" of existing materials and "convener" of relevant stakeholders to facilitate the collaborative work needed to develop the QIE lexicon. ACEhp will organize a strategy by which each stakeholder group will take ownership and facilitate review, editing, and ultimately adoption by their respective organizations. The goal is to have a single set of "concepts," "terms," and "definitions" that relate to QI and healthcare quality. It is important that these efforts also include a careful evaluation of abbreviations or other shortened notations to reduce the inherent confusion they can cause.

After the nomenclature is developed, interventions to improve the use of the agreed-upon terminology must reach all stakeholders, including frontline clinicians, educational providers, and QI professionals. Thus, "adoption" is a critical part of this building block's title, which outlines and describes the operational use of the nomenclature across professional building blocks. To test whether the nomenclature is properly aligned with both QI expectations and clinicians' educational needs, case studies will examine whether CEhp professionals can operationalize the nomenclature in CE planning and report results using the nomenclature, such that QI professionals understand the findings in terms of the Standards for Quality Reporting Excellence (SQUIRE) best-practice tool for reporting QI research.[10] We anticipate that this lexicon will undergo regular review and revision to accommodate the changing healthcare environment.

Building Block 1 Recommendation:

1.1 Conduct an inventory of initiatives that define nomenclature related to professional development, QI, and QIE. Identify missing, overlapping, and redundant terms and create a list of necessary terms that would be used as part of a unified QIE lexicon. Conduct this inventory collaboratively with other groups currently making similar efforts (National Library of Medicine, Society for Academic Continuing Medical Education, MedBiquitous) and carry out implementation testing of the draft lexicon with various stakeholders.

Building Block 2: Environmental Scanning and Information Dissemination

Building Block 2 Objective:
In collaboration with similarly focused organizations, ACEhp will develop a process of disseminating the latest relevant key organizational activities and reports, as well as literature and trends—both internal and external—related to QIE and related initiatives and will develop and distribute educational and other resources around new findings intended to expedite the utilization of new knowledge and support strategic decision making.

Building Block 2 Relevance:
Educators, QI planners, QI supporters, and others need resources that facilitate the timely identification of new and vital information that could be integrated into a CE program to help optimize healthcare system performance. This building block involves the use of a systematic model (eg, the Innovation Model) to identify the levers necessary for healthcare organizations and systems to achieve a greater purpose/vision (ie, the NQS and the Triple Aim). An "environmental scanning" process and thematic analyses of relevant resources will be used to suggest CE content for this building block. In addition to providing evolving CE content in a manner that would optimize its use by healthcare providers and educators, it is also critical to apply evaluation strategies that will help stakeholders understand how well the content and its delivery method are received and implemented by learners.

Building Block 2 Recommendation:

2.1 Conduct an environmental strength, weaknesses, opportunities, and threats (SWOT) analysis and oversee the ongoing tracking of organizational activities, reports, and literature focused on QIE. Filter the information gained through these processes and circulate it through various dissemination vehicles such as Websites, publications, conferences, and other organizational activities so that it may be used in planning and execution of QIE activities.

Building Block 3: Professional Competency

Building Block 3 Objective:
QIE professionals will be guided by a consensus set of knowledge, skills, and abilities that reflect the foundational proficiencies and professionalism charters that relate to all QIE efforts, are applicable to patient care, and are representative of the entire healthcare team.

Building Block 3 Relevance:
The focus on quality in healthcare, which drives the need for QIE initiatives, requires highly skilled professionals involved in the planning and execution of those activities. The recommendations pertaining to this building block will define core competencies of QIE professionals and help to develop a compendium of resources to assist in achieving these competencies. More specifically, this building block is responsible for (1) creating an inventory of published competencies relevant to practitioners in the QIE space, (2) identifying commonalities among the competencies as well as potential competency gaps, and (3) proposing competencies specifically relevant to QIE professionals. From the standpoint of ACEhp, this is an important opportunity to review current competencies, integrate newly identified Alliance competencies with QIE competencies, and develop useful educational resources for Alliance members and other practitioners in the QIE environment. Importantly, this building block defines the need for all QIE professionals to have access to curated resources, which will assist them in achieving these competencies.

Building Block 3 Recommendation:

3.1 Conduct an inventory of professionalism charters and competency requirements for healthcare professionals, with a focus on QIE, to be carried out in collaboration with other stakeholder organization. Use a systematic analysis to identify gaps and commonalities among the professionalism charters and competencies and create modifications and refinements as needed.

Building Block 4: Professional Development

Building Block 4 Objective:

QIE professionals specifically involved in the development, execution, or support of QIE will have access to professional development opportunities related to the planning, implementation, and evaluation of QI and QIE so that they have the tools needed to develop the competencies defined within the *Professional Competency* building block and enhance their competency.

Building Block 4 Relevance:

This building block focuses on strategies, tools, certifications, and other mechanisms to enable individuals working in QIE to develop the knowledge and skills defined in the *Professional Competency* building block. Educational content/curricula must be based on the expected outcome, that is, the competency or set of competencies defined. This will also involve mapping competencies to specific professions and roles in QIE and appropriate curricula. The goal is to ensure that those involved in QIE are competent in their respective roles. It is envisioned that the definition and refinement of *Professional Development* will entail an iterative process with the *Professional Competency* building block to ensure not only that the identified competencies map to specific outcomes or professional behaviors but also that these competencies can be assessed through a variety of mechanisms.

Building Block 4 Recommendations:

4.1 Create and provide professional development programs/activities that would include self-assessment tools based on newly articulated core competency requirements (from *Professional Competency* Building Block).

4.2 Inform and educate QI and frontline healthcare professionals on the skills of professional educators and on how those skills can be applied as QI interventions.

Building Block 5: Quality Metrics

Building Block 5 Objective:

QIE professionals will have a better understanding of and an increased confidence in using the existing quality and performance metrics applicable to QIE activities, including sources of and access to metrics, and will be able to identify methods for measuring the impact of the educational component of QIE.

Building Block 5 Relevance:

Many validated sets of quality measures have been developed, including but not limited to those from the American Medical Association Physician Consortium for Performance Improvement, National Committee for Quality Assurance (HEDIS), Joint Commission (ORYX), National Quality Forum, and Centers for Medicare and Medicaid Services (CMS). It is imperative that QIE planners understand how the measures established by these organizations are used across multiple healthcare settings in order to be able to select relevant metrics and thereby serve as equal partners with QI counterparts when collaboratively planning interventions.

It is reasonable to expect that the outcome of a project that integrates education and QI interventions would be superior to the outcome of a QI-only project, although this has not been demonstrated within the literature. Nor do we know how a QIE intervention would compare to the outcomes of a QI-only initiative, under what conditions a QIE initiative may be superior, or what aspects of improvement can be attributed to the education. The development of metrics that allow for these questions to be answered can help develop the value proposition for the integration of education into QI work and provide recommendations for when and under what circumstances such integration is likely to be effective.

Building Block 5 Recommendations:

5.1 Create an inventory that outlines where and how to access sets of quality and performance metrics and organizations that develop, endorse, and house quality and performance metrics that can be used in QIE initiatives. Develop learning resources to facilitate the professional development of educators on existing quality metrics and sources, the relevance of these metrics to QIE, the strengths and weaknesses of current measure sets, and the utility of these metrics in different clinical environments.

5.2 Develop metrics focused on evaluating the incorporation of educational offerings into QI interventions.

Building Block 6: Health Information Technology

Building Block 6 Objective:

Those involved in QIE will have a working knowledge of health information technology (HIT) and be able to discuss information technology (IT) requisites necessary to support both QI and learning, share best practices, and harness HIT tools for effective QIE.

Building Block 6 Relevance:

QIE planners must use the data generated by QI initiatives in concert with HIT to conduct analyses of care and respond to identified gaps with educational activities. Thus, it is imperative that educators have a working knowledge of HIT. With the increasing implementation of electronic health record (EHR) systems and federal initiatives such as the CMS's meaningful use initiative, which "provide(s) financial incentives for the meaningful use of certified EHR technology to improve patient care," individual clinicians and their workplaces are relying heavily on HIT for the deployment of QI strategies.[11] From the perspective of many clinicians, QI and its input and output—EHR checklists, dashboards, chart audits—are additional challenges that complicate the provision of healthcare today.

HIT, however, extends far beyond the EHR, and QIE professionals must remain abreast of mandates for the deployment of HIT and the intersection of those mandates with QIE efforts. For example, under the American Recovery and Reinvestment Act of 2009, with the Health Information Technology for Economic and Clinical Health (HITECH) Act, a health information infrastructure is being built out, with the meaningful use requirements and product certification program, and incentivized by CMS bonus payment programs. These efforts are ongoing and are focused functionally on data collection, registry development, patient engagement efforts, quality measure reporting, and the health information exchange. These efforts are all supplemented by the creation of data warehouses, the big data movement, and healthcare analytics. QIE professionals must be knowledgeable about all of these developments.

A critical component of understanding the HIT landscape for QIE professionals is an exploration of the IT implications and requirements to support the deployment of education tools and techniques, the carrying out and scaling of QI efforts within organizations, and the sharing of best practices within and across organizations and settings.

Building Block 6 Recommendation:

6.1 Conduct an inventory of the most relevant components and changes in HIT infrastructure that support data collection, aggregation, performance-gap analysis, and reporting, with a focus on performance measurement and improvement as well as innovative approaches to supporting QI teaching, learning, and best-practice sharing. Educate CE providers about the use of these tools and align these activities with those described by efforts conducted under the *Professional Development* Building Block.

Building Block 7: Accountability Mechanisms

Building Block 7 Objective:

QIE stakeholders will be prepared to design and execute QIE activities that align with accountability requirements (including licensure, credentialing, CE, certification, accreditation, regulatory, and reimbursement systems) for various providers and healthcare organizations so that these initiatives will not serve to detract from such required programs.

Building Block 7 Relevance:

Accountability mechanisms should not inhibit or be an obstacle to innovation, particularly as it relates to QIE. The goal of this building block is to identify how accountability requirements for various providers and healthcare delivery systems—including licensure, credentialing, CE, certification, accreditation, regulatory, and reimbursement systems—are integrated into QIE. Information from the *Nomenclature* building block can be used to broadly define QI education and classify how QI and education are used in the systems mentioned above.

This building block will explore the value of QI and education to the goals and products of organizations and institutions that incorporate them into their operations. Additionally, this building block will identify other areas where QI and education could be added or modified to improve their value and outcome. Finally, this building block will explore the relevance and application of nonaccredited education in QIE efforts.

Building Block 7 Recommendation:

7.1 Conduct an inventory of accountability requirements and organizations for healthcare professionals and teams—including but not limited to licensure, credentialing, CE, certification, accreditation, regulatory, and reimbursement systems —and evaluate these accountability mechanisms as they pertain to QIE. Conduct this inventory in collaboration with relevant organizations, and explore modifications to these systems as needed to account for QIE. Provide Alliance members with tools and resources for understanding how to best align education and QI initiatives with accountability mechanisms and systems.

Building Block 8: Models of Financial Support

Building Block 8 Objective:

QIE professionals will have the skills, methods, and tools that will enable them to detail a substantial return on investment for QIE and cost-effective strategies to sustain QIE in various healthcare environments. QIE professionals will be able to facilitate conversations between budget leaders to demonstrate a connection between QIE and the bottom line. Additionally, in the future, QIE professionals will have multiple funding options available for support of QIE activities.

Building Block 8 Relevance:
The QI space should present an opportunity as it relates to financial support; however, this is often not the case. This building block focuses on the ways in which QI and CE are currently funded, the ways in which quality and safety performance are tied to reimbursement, and the costs of these efforts in various environments. The recommendations within this building block outline the need for efforts that identify cost-effective strategies to sustain QI, CE, and QIE in various healthcare environments so that educators can demonstrate a return on investment. This sphere will include the consideration of effective ways to leverage QI and CE agendas to meet emerging needs of clinicians, administrators, nonclinical staff, patients, and caregivers. This should include the development of econometric models and tools that provide feedback to institutions and organizations about the overall value of QIE. The role of professional curricula and education and the nature of idealized "QI teams" should also be considered.

Building Block 8 Recommendations:

8.1 Develop an inventory of funding sources that are available to support QIE efforts and resources to help QIE professionals competitively seek those funds.

8.2 Explore various value propositions for different parts of the QIE enterprise and describe the impact of QIE on organizational budgets; create business case studies that include numbers related to project budgets, costs, and profits that will help QIE professionals in various environments demonstrate the financial value of QIE initiatives.

8.3 Develop tools for educational and QI professionals as well as their organizations' accounting leadership to demonstrate the cost-benefit ratio of QIE (eg, score cards that tie QIE to outcomes). Increase educational research and communication of QIE outcomes in order to increase the demonstration of effective CE in QIE and expand the funding mechanisms and sustainability of QIE.

8.4 Explore and support the development of new financing models to support incorporating education into QI programs.

Building Block 9: Policy and Ethics

Building Block 9 Objective:
QIE professionals will respond to institutional, organizational, and public ethical and policy-related issues and concerns (eg, informed consent, Institutional Review Board [IRB], Health Insurance Portability and Accountability Act [HIPAA], transparency, conflict of interest) when planning and executing QIE activities.

Building Block 9 Relevance:
A host of questions and opinions related to the ethical and policy-related issues are a part of QI initiatives and the integration of education into QI. Examples of the real-world barriers include questions about the distinctions between research, QI, and education and how they relate to the expedited review or IRB exemption, issues raised concerning patient privacy (eg, protected health information) with regard to QIE (eg, biometric data), provider privacy (eg, discoverability of proficiency data and malpractice litigation vs. "peer review" protection), industry-based funding earmarked for specific therapeutic areas, variations in the management of conflict of interest, the imbalance between quality care and cost of care, and healthcare practices that conflict with cultural issues. The purpose of this building block is to create a consensus-based set of statements that effectively communicate the appropriateness of integrating education-based QI into relevant institutional, organizational, and public policies focused on improving healthcare, healthcare delivery, and health.

Building Block 9 Recommendation:

9.1 Inventory existing public and private policy and ethical issues that relate to the QIE initiative and explore the correlation of QIE with these policies and statements to align with QIE initiatives. In

response to this inventory, develop new and revise existing policies as necessary and take steps to advocate on behalf of those policies. Create resource materials, guidance, and other tools to assist Alliance members, educators, and all other QI stakeholders in complying with relevant policies and statements, including those related to the deployment of educational programs.

Building Block 10: Building and Using the Evidence

Building Block 10 Objective:
QIE professionals will contribute to and use a base of evidence related to the rationale for and effectiveness of QIE in order to support the development and execution of future effective QIE initiatives.

Building Block 10 Relevance:
Many professionals in the QIE space have substantial experience in QI or education, but not both, and competencies may form boundaries for QIE. This gap is highlighted in the ACEhp membership survey discussed within the introduction section. Effective professional development in QIE will require that professionals stay abreast of evidence describing effective QIE and be able to use this evidence as rationale for the development of future initiatives. The utilization of evidence is a key component of this building block.

The purposes of this building block are to (1) support further development of the theoretical underpinnings and evidence base supporting QIE and (2) facilitate the translation of that evidence base into practice.

Building Block 10 Recommendations:

10.1 Conduct a review to create a research agenda related to the education component of a QI intervention and the linkages between educational interventions and QI project results.
10.2 Take steps to foster support from public-sector groups (eg, Patient Centered Outcomes Research Institute, AHRQ, Carnegie Advancement of Teaching) in addition to other funding groups (eg, industry) to support this research agenda.
10.3 Develop and maintain various tool kits (eg, an annotated bibliography of studies) that catalog the QIE evidence base and provide case examples of the integration of education with QI.
10.4 Develop tools that assist the Alliance membership in understanding what research is, how to conduct it, how to seek funding, how to translate and apply research outcomes, and how to integrate a standardized tool into QIE planning, execution, and outcomes reporting.

V. Planning and Reporting on QIE Activities

Educators who design, develop, and report on QIE efforts are employing a wide array of methodologies, often based on common educational theories and principles such as conceptual framework from Moore and colleagues but with modifications that reflect the unique nature of QIE.[12] The result is a compendium of programs and reporting with variations that restrict the effective evaluation of strengths in design and formats for closing identified gaps. Importantly, the differences in current practice also inhibit the ability to aggregate data across educational interventions to assess the collective impact of CE in QI initiatives on care quality locally, regionally, and nationally.

As the science of QI in healthcare advances, and as the Alliance seeks to be a driver in that advancement, the importance of sharing accomplishments through the published literature increases. It is against this backdrop that a group of stakeholders from a variety of disciplines created the SQUIRE publication guidelines, or SQUIRE statement. The SQUIRE guidelines consist of a list of 19 items that authors need to consider when writing articles that describe formal studies of QI. Most of the items in the list are common to all scientific reporting, but virtually all have been modified to reflect the unique nature of healthcare improvement work.[13] The essential sections of SQUIRE include a background and local problem, a planned description of the intervention, metrics, ethical issues, results, challenges and barriers, and financial implications.

The vision for initiatives stemming from this QIE Roadmap related to planning and reporting on QIE initiatives are 2-fold. Specifically the Alliance seeks to:

1. Showcase QIE case studies focused on interventions that integrate education and education professionals into QI project planning and implementation, and
2. Create standards to be used to develop a common database that collates reports on QIE efforts with specific focus on the education interventions utilized, the quality metrics addressed, the gaps in quality goals vs. baseline metrics, and the results of baseline vs. post-intervention changes.

The goal of this work is to highlight best practices and connect educators with other important healthcare system stakeholders, including those involved in QI, as well as to resurrect a long-standing Alliance desire to help members use a consistent format for developing programs and reporting their effect. Doing so will also allow for the development of meta-analyses with the power to demonstrate education's value across the entire educational community.

At the onset of the Roadmap initiative, the Alliance issued a call for QIE case studies for presentation at the September 2014 Alliance Quality Symposium (see Appendix VI for the call for case studies). Respondents to the call used an adapted version of the SQUIRE tool to submit their initiatives. This pilot project was very informative and highlighted the need for further revisions to the SQUIRE tool (as well a need for better education about the tool) in order to fulfill the vision for a mechanism for collecting data in a standardized method. The second phase of Alliance work related to the QIE initiative will include the development of a modified version of SQUIRE that will include the elements of education that are critically important when planning QIE, such as measures of motivation, teaching styles to be included, and learning theories used.

VI. Demonstrate and Improve

The Alliance QIE Initiative is an effort to demonstrate and support the value of education in the new healthcare ecosystem. In the near term, QIE will foster the insertion of educators, education tools, and techniques into QI activities across the US healthcare delivery system and community, with measurable improvements in quality metrics and health. The QIE initiative is currently supported though grants from life science companies and a leading healthcare education portal. Over time, backing will be garnered from third-party payers, healthcare systems, foundations, and federal and state agencies such as the CMS and/or AHRQ.

A critical component of the Alliance vision for the QIE initiative includes a detailed communication strategy designed to generate awareness of this work, obtain feedback throughout the entire initiative, and inspire discussions that will ultimately serve to improve the framework of all future QIE activities.

In short, the Alliance has instituted a process to integrate CE into the "DNA" of healthcare systems, thereby accelerating the alignment of current healthcare with the NQS, the NQS priorities, and IHI's Triple Aim.[1,2,6] The Alliance seeks to conduct this work in collaboration with others within the broad and expanding QIE stakeholder group.

VII. Acknowledgments

We thank the following individuals for their efforts in support of this initiative: Mazi Rasulnia, PhD, and Christine Amorosi, RN, for critical assistance at the groundbreaking stages of this initiative and members of the Med-IQ team, Alison Bennett, Sara Miller, MS, Catherine Mullaney, MHA, and Lisa R. Rinehart, MS, ELS, for their project management expertise, writing assistance, communication support, and editorial services. This first phase of the QIE effort was funded by unrestricted independent grants from AbbVie, Genentech, Medscape, Novo Nordisk Inc., and medical sponsorship from Astellas, and Takeda Pharmaceuticals.

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Appendix I. Developing the Roadmap : The Participants and the Process

This initiative is overseen by Alliance co-leads Destry Sulkes, MD, MBA, (Alliance Board President), and Jack Kues, PhD, CCMEP, (Board President, Foundation for CEhp), as well as Louis Diamond, MD, the QIE Advisory Panel and Report Chair.

The Roadmap initiative is also guided by an advisory panel (Appendix II) composed of key health system stakeholders. The advisory panel provides direction and advice for all aspects of the project, including the following: the vision for the initiative; the development of the 10 "Building Blocks"; the focus, specific objective, and recommendations for each building block; participation in all Alliance Roadmap–related educational events; and extensive reviews and edits to the Roadmap. Importantly, the advisory panel helps to "bring the outside in" with healthcare leaders from key organizations necessary to provide insights and context to QIE. The initial members of the advisory panel provide representation from the following organizations: American Board of Medical Specialties, Accreditation Council for Pharmacy Education, American Nurses Credentialing Center, Patient Advocacy, American Hospital Association, Institute for Healthcare Improvement, Health Information Management Systems Society, academic centers, and interprofessional education companies.

The commentary group (Appendix III) was identified to provide feedback on the QIE vision and initial strategy laid out by the QIE Roadmap leadership as well to explore the potential for future collaborative efforts to address the Roadmap recommendations in subsequent phases of the QIE initiative. Members of this group were interviewed by telephone by QIE Roadmap leadership.

The key content of the Roadmap initiative rests in the 10 identified Building Blocks and 16 recommendations for action contained therein. These Building Blocks have been defined and refined through an iterative process of reviews and edits, which include feedback from the Alliance membership at two specific junctures during the Fall Alliance Quality Symposium and through the call for comments issued in October 2014. The iterative review process also included several cycles of edits by advisory-panel and building-block leaders.

Appendix II. QIE Advisory Panel

Christine Bechtel, MA
President, Bechtel Health Advisory Group

John R. Combes, MD
Senior Vice President, American Hospital Association

Rita Munley Gallagher, PhD, RN
Nursing and Healthcare Consultant

Tom Granatir
Senior VP, Health Policy and External Relations, American Board of Medical Specialties

Jack Kues PhD, CCMEP
Associate Dean for CPD University of Cincinnati

Kathleen Moreo, RN-BC, BSN, BHSA, CCM, Cm, CDMS
President and CEO, PRIME Education Inc.

Lloyd Myers, RPh
President, CECity, Inc.

Joan Straumanis, PhD
Higher Education Consultant

Chitra Subramaniam, PhD
Assistant Dean & Director, Duke Continuing Medical Education

Jane A. Taylor, EdD
Improvement Advisor, Institute for Healthcare Improvement

Appendix III. Commentary Group

**Inclusion in the commentary group does not represent an institutionnel endorsement*

Name	Title	Organization
Danielle Y. Andrews		CMS Center for Clinical Standards & Quality
Chisara Asomugha, MD, MSPH	Senior Technical Advisor/Medical Officer	CMS Center for Clinical Standards & Quality
Anne Beal, MD, MPH	Chief Patient Officer	Sanofi
Georges C. Benjamin, MD	Executive Director	American Public Health Association
David Blumenthal, MD, MPP	President	The Commonwealth Fund
Christine K. Cassel, MD	President and CEO	National Quality Forum
Carolyn M. Clancy, MD	Interim Under Secretary for Health	Department of Veterans Affairs
Patrick Conway, MD, MSc	Deputy Administrator for Innovation & Quality, CMS Chief Medical Officer	CMS
Dave Davis, MD	Senior Director, Continuing Education and Performance Improvement	Association of American Medical Colleges
Richard Hawkins, MD	Vice President, Medical Education Programs	American Medical Association
Doug Henley, MD	Executive Vice President & Chief Executive Officer	American Academy of Family Physicians
Norman Kahn, Jr., MD	Executive Vice President & Chief Executive Officer	Council of Medical Specialty Societies
Charles N. Kahn III	President and Chief Executive Officer	Federation of American Hospitals
JoAnn W. Klinedinst, MEd	Vice President, Professional Development	Healthcare Information and Management Systems Society
Shari Ling, MD	Deputy Chief Medical Officer	CMS Center for Clinical Standards & Quality
Brian Mittman, PhD	Senior Advisor	Veterans Affairs Center for Implementation Practice and Research Support; Kaiser Permanente Southern California
Furman McDonald, MD, MPH	Vice President, Graduate Medical Education	American Board of Internal Medicine
Ana Pujols McKee, MD	Executive Vice President & Chief Medical Officer	The Joint Commission
Margaret E O'Kane	President	National Committee for Quality Assurance
Murray Kopelow, MD, MS(Comm)	President and Chief Executive Officer	Accreditation Council for Continuing Medical Education

Nancy Nielsen, MD, PhD	Past President	American Medical Association
David William Price, MD	Director, Multi-Specialty Portfolio Approval Program	American Board of Medical Specialties
Pesha Rubinstein, MPH	Director of Education	American Medical Informatics Association
Lewis Sandy, MD	Senior Vice President, Clinical Advancement	United Healthcare Group
Stephen C. Schoenbaum, MD, MPH	Special Advisor to the President	Josiah Macy Jr Foundation
Carolyn Simpkins, MD, PhD	Clinical Director and General Manager, North America	British Medical Journal Publishing Group
Diane Seibert	Program Director, Family Nurse Practitioner Program	Uniformed Services University of the Health Sciences
Valerie Smothers	Deputy Director	MedBiquitous
Pamela Thompson, MS, RN	Senior Vice President, Nursing & Chief Executive Officer	American Organization of Nurse Executives
Margaret VanAmringe, MHS	Executive Vice President, Public Policy and Government Relations	The Joint Commission
Prathibha Varkey, MD	President Elect	American College of Medical Quality
Steven Weinberger, MD	Executive Vice President and Chief Executive Officer	American College of Physicians
Jean Moody Williams	Director, Quality Improvement Group	CMS Center for Clinical Standards & Quality
Nancy Wilson, MD, MPH	Senior Advisor to the Director	Agency for Healthcare Research and Quality
Jeff Williamson, MEd	Vice President, Education and Academic Affairs	American Medical Informatics Association

Appendix IV. QIE Roadmap Building Block Leaders

Nomenclature and Its Adoption
Sandra Haas Binford, MA Ed
CME Outfitters
Kathleen Geissel, PharmD, CCMEP
Medscape

Environmental Scanning and Information Dissemination
Jan Pringle, PhD
University of Pittsburgh School of Medicine

Professional Competencies
Laura Lee Hall, PhD
American College of Physicians

Professional Development
Lois Colburn
University of Nebraska Medical Center

Quality Metrics
Marianna Shershneva, MD, PhD
University of Wisconsin School of Medicine and Public Health; and CME Enterprise

Health IT
Julie White, MS
Boston University School of Medicine

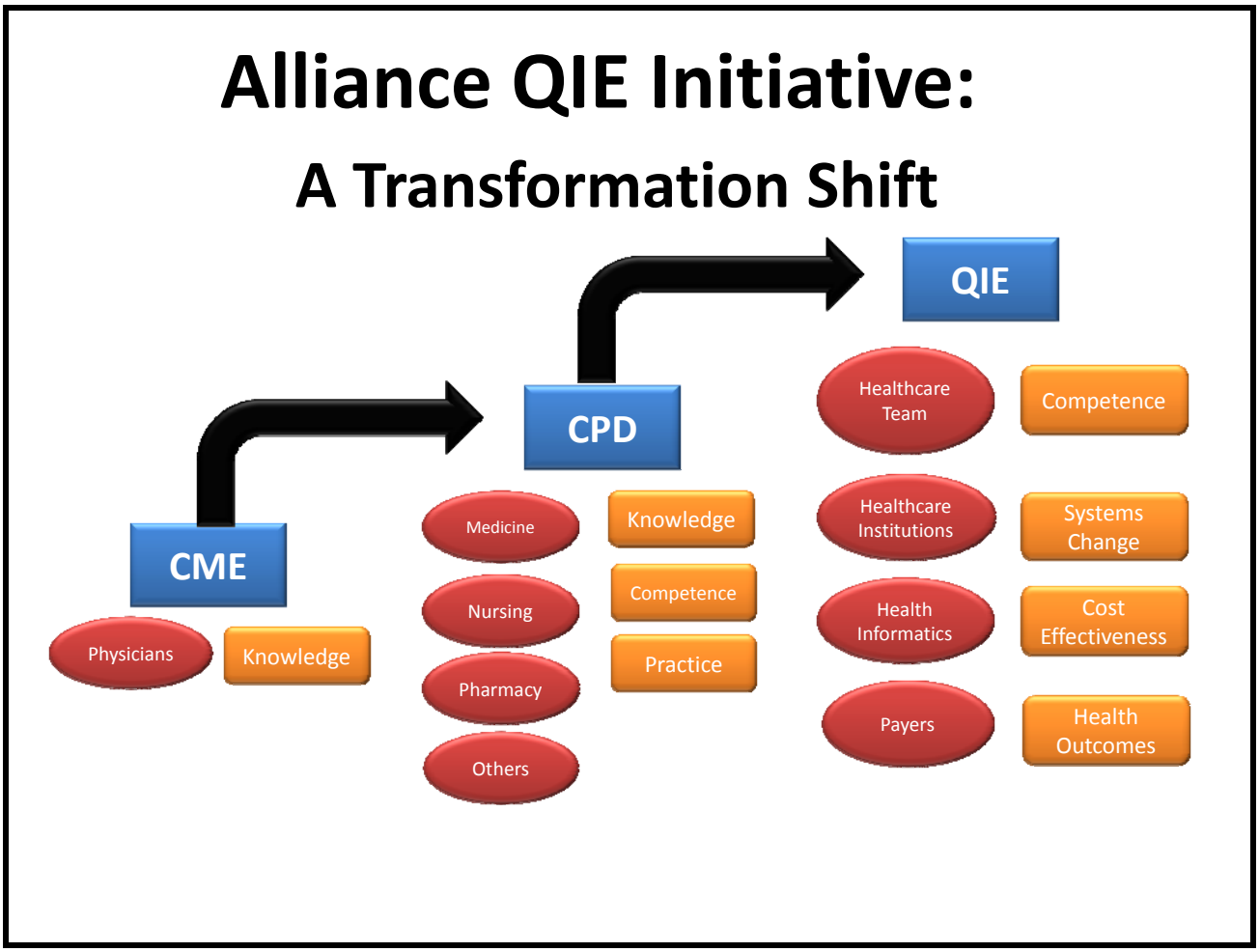
Accountability Mechanisms
Todd Dorman, MD
Johns Hopkins University School of Medicine

Models of Support
Chris Goeschel, ScD, MPA, MPS, RN
MedStar Health

Policy and Ethics
Bob Birnbaum, MD, PhD
Partners Healthcare/Massachusetts General Hospital/Harvard Medical School

Building and Using the Evidence
Curtis A. Olson, PhD
Geisel School of Medicine at Dartmouth

Appendix V. Alliance QIE Initiative: A Transformation Shift



Appendix VI. Call for Case Studies and SQUIRE Tool

July 11, 2014

Dear Dr._____,

Thank you for your organization's willingness to share a quality-improvement case study to support the Alliance's Quality Improvement Education (QIE) initiative. Enclosed is the **Call for QIE Case Study** submission form for accredited organizations. The QIE advisory panel has recommended the use of the SQUIRE methodology [Standards for Quality Improvement Reporting Excellence] for submission and supports its use in the following areas:

- *"The SQUIRE guidelines help authors write excellent, usable articles about quality improvement/ performance improvement in healthcare so that their findings can be easily discovered and widely disseminated, thus spreading improvement work to a broader population."*
- *The following journals support the SQUIRE guidelines: American Journal of Nursing, Annals of Internal Medicine, British Medical Journal, Canadian Journal of Diabetes, Implementation Science, Joint Commission Journal on Quality and Patient Safety, Journal of General Internal Medicine, Journal of Nursing Care Quality, and Quality & Safety in Health Care.*

Please complete the attached submission form and release form by August 15th for review and consideration by the QIE advisory panel for inclusion in the QIE Roadmap report. All case study accredited organizations will be recognized in the QIE Roadmap report, as well as on our Website, and a select number will be asked to present at the Alliance Quality Symposium in Baltimore, MD, September 23 to 25, 2014.

For your background purposes, enclosed is a link of Publication Guidelines for Improvement Studies in Health Care: Evolution of the SQUIRE Project and a second link to the HIMSS Case Study.

http://iienet.org/uploadedFiles/IIE/Community/Technical_Societies_and_Divisions/SHS/SQUIRE%20-%20Guidelines%20for%20Publishing%20Quality%20Improvement.pdf

http://www.himss.org/files/HIMSSorg/content/files/Code%20161%20Case%20Studies%20of%20Health%20IT%20Support.pdf

Should you have further questions, please contact Christine Amorosi at camorosi@acehp.org or at 301-683-8129.

Sincerely,

Robin R. King, CAE

SQUIRE Methodology Instructions for Case Study Submissions

	Step a.	Step b.	Step c.	Step d.
1. Title	a. Indicates the article concerns the improvement of quality (broadly defined to include the safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity of care)	b. States the specific aim of the intervention	Select one of the 6 national quality strategies that best fits your study	
2. Background knowledge	Provides a brief non-selective summary of current knowledge of the care problem being addressed and characteristics of organizations in which it occurs. Also, provide a brief profile of your organization.			
3. Identified problem	Describes the nature and severity of the specific identified problem or system dysfunction that was addressed. This should address the actual system, patient, or process problem and not a description of the organization itself.			
4. Intended improvement	a. Describes the specific aim (changes/ improvements in care processes and patient outcomes of the proposed intervention. Relate	b. Specifies who (champions, supporters) and what (events, observations) triggered the decision to make changes and why		

	to the specific NPSG or NPP goal that has been specified.	now (timing)		
5. Planning the intervention	a. Describes the intervention and its component parts in sufficient detail that others could reproduce it	b. Indicated main factors that contributed to choice of the specific intervention (for example, analysis of causes of dysfunction; matching relevant improvement experience of others with the local situation)	c. Outlines initial plans for how the intervention was to be implemented; for example, what was to be done (initial steps; functions to be accomplished by those steps; how tests of change would be used to modify intervention) and by whom (intended roles, qualifications, and training of staff)	d. Specifies the study method used (for example, "a qualitative study," or "a randomized cluster trial")
6. Solution	a. Describe the ways in which the solution was used in delivering the intervention. 1. Describes the overall type of electronic record or other technology used 2. Describes the use of features such as e-prescribing, clinical decision support, documentation tools, flow sheets, and data presentations	b. Describes the use of standards in managing and reporting data, decision support, messaging, and information exchange	c. Identifies data elements used in documenting, improving, and measuring performance	d. Clearly define educational intervention; ie, enduring material, Webinars providing credit

7a. Outcomes: nature of setting and improvement intervention	a. Characterizes relevant elements of setting or settings (for example, geography, physical resources, organizational culture, history of change efforts) and structure and patterns of care (for example, staffing leadership) that provided context for the intervention	b. Explains the actual course of the intervention (for example, sequence of steps, events, or phases; type and number of participants at key points), preferably using a timeline diagram or flowchart	c. Documents degree of success in implementing intervention components	d. Describes how and why the initial plan evolved and the most important lessons learned from that evolution, particularly the effects of international feedback from tests of change. Describe any relevant story regarding these lessons learned.
7b. Outcomes: change in process of care and patient outcomes associated with the intervention	a. Presents data on changes observed in the care delivery process. What is reported must be based on actual outcomes not on planned or expected outcomes.	b. Presents data on changes observed in measures of patient outcome (for example, morbidity, mortality, function, patient/staff satisfaction, service utilization cost, care disparities)	c. Presents evidence regarding the strength of association between observed changes/improvements and intervention components/context factors	d. Includes summary of missing data for intervention and outcomes
8. Barriers encountered	Describes barriers encountered and specifically how they were addressed and/or overcome			
9. Challenges faced	a. Describes challenges with communication between project leaders and/or members	b. Selection process	c. Communication with vendor	d. How/where implemented?
10. Summary	a. Summarizes the most important successes and difficulties in	b. Highlights the study's particular strengths	c. Highlights specific lessons that can be helpful to other similar projects	

	implementing intervention components and the main changes observed in care delivery and clinical outcomes			
11. Interpretation	a. Explores possible reasons for differences between observed and expected outcomes	b. Draws inferences consistent with the strength of the data about causal mechanisms and size of observed changes, paying particular attention to components of the intervention and context factors that were important for the effectiveness of the intervention	c. Suggests steps that might be modified to improve future performance	d. Reviews issues of opportunity cost and actual financial cost of the intervention
12. Conclusions	a. Considers overall practical usefulness of the intervention	b. Suggests implications of this report for further studies of improvement interventions	c. Suggests specific steps others can take from what was learned from this project	
13. Financial consideration	a. Describes funding sources, if any, and role of funding organization in design, implementation, interpretation, and publication of study	b. Describes any cost savings and/or return on investment analysis, if undertaken		

Appendix VII. The QIE Roadmap Recommendations

Building Block 1: Nomenclature and Its Adoption

Building Block 1 Objective:
All professionals engaged in QI activities will use a common set of terms and definitions to describe concepts in QI activity design, execution, and outcomes, specifically those terms related to the educational component of QI.

Building Block 1 Recommendation:

1.1 Conduct an inventory of initiatives that define nomenclature related to professional development, QI, and QIE. Identify missing, overlapping, and redundant terms and create a list of necessary terms that would be used as part of a unified QIE lexicon. Conduct this inventory collaboratively with other groups currently making similar efforts (National Library of Medicine, Society for Academic Continuing Medical Education, MedBiquitous) and carry out implementation testing of the draft lexicon with various stakeholders.

Building Block 2: Environmental Scanning and Information Dissemination

Building Block 2 Objective:
In collaboration with similarly focused organizations, ACEhp will develop a process of disseminating the latest relevant key organizational activities and reports, as well as literature and trends—both internal and external—related to QIE and related initiatives and will develop and distribute educational and other resources around new findings intended to expedite the utilization of new knowledge and support strategic decision making.

Building Block 2 Recommendation:

2.1 Conduct an environmental strength, weaknesses, opportunities, and threats (SWOT) analysis and oversee the ongoing tracking of organizational activities, reports, and literature focused on QIE. Filter the information gained through these processes and circulate it through various dissemination vehicles such as Websites, publications, conferences, and other organizational activities so that it may be used in planning and execution of QIE activities.

Building Block 3: Professional Competency

Building Block 3 Objective:
QIE professionals will be guided by a consensus set of knowledge, skills, and abilities that reflect the foundational proficiencies and professionalism charters that relate to all QIE efforts, are applicable to patient care, and are representative of the entire healthcare team.

Building Block 3 Recommendation:

3.1 Conduct an inventory of professionalism charters and competency requirements for healthcare professionals, with a focus on QIE, to be carried out in collaboration with other stakeholder organization. Use a systematic analysis to identify gaps and commonalities among the professionalism charters and competencies and create modifications and refinements as needed.

Building Block 4: Professional Development

Building Block 4 Objective:
QIE professionals specifically involved in the development, execution, or support of QIE will have access to professional development opportunities related to the planning, implementation, and evaluation of QI and QIE so that they have the tools needed to develop the competencies defined within the *Professional Competency* building block and enhance their competency.

Building Block 4 Recommendations:

4.1 Create and provide professional development programs/activities that would include self-assessment tools based on newly articulated core competency requirements (from *Professional Competency* Building Block).

4.2 Inform and educate QI and frontline healthcare professionals on the skills of professional educators and on how those skills can be applied as QI interventions.

Building Block 5: Quality Metrics

Building Block 5 Objective:
QIE professionals will have a better understanding of and an increased confidence in using the existing quality and performance metrics applicable to QIE activities, including sources of and access to metrics, and will be able to identify methods for measuring the impact of the educational component of QIE.

Building Block 5 Recommendations:

5.1 Create an inventory that outlines where and how to access sets of quality and performance metrics and organizations that develop, endorse, and house quality and performance metrics that can be used in QIE initiatives. Develop learning resources to facilitate the professional development of educators on existing quality metrics and sources, the relevance of these metrics to QIE, the strengths and weaknesses of current measure sets, and the utility of these metrics in different clinical environments.

5.2 Develop metrics focused on evaluating the incorporation of educational offerings into QI interventions.

Building Block 6: Health Information Technology

Building Block 6 Objective:
Those involved in QIE will have a working knowledge of health information technology (HIT) and be able to discuss information technology (IT) requisites necessary to support both QI and learning, share best practices, and harness HIT tools for effective QIE.

Building Block 6 Recommendation:

6.1 Conduct an inventory of the most relevant components and changes in HIT infrastructure that support data collection, aggregation, performance-gap analysis, and reporting, with a focus on performance measurement and improvement as well as innovative approaches to supporting QI teaching, learning, and best-practice sharing. Educate CE providers about the use of these tools and align these activities with those described by efforts conducted under the *Professional Development* Building Block.

Building Block 7: Accountability Mechanisms

Building Block 7 Objective:
QIE stakeholders will be prepared to design and execute QIE activities that align with accountability requirements (including licensure, credentialing, CE, certification, accreditation, regulatory, and reimbursement systems) for various providers and healthcare organizations so that these initiatives will not serve to detract from such required programs.

Building Block 7 Recommendation:

7.1 Conduct an inventory of accountability requirements and organizations for healthcare professionals and teams—including but not limited to licensure, credentialing, CE, certification, accreditation, regulatory, and reimbursement systems —and evaluate these accountability mechanisms as they pertain to QIE. Conduct this inventory in collaboration with relevant organizations, and explore modifications to these systems as needed to account for QIE. Provide Alliance members with tools and resources for understanding how to best align education and QI initiatives with accountability mechanisms and systems.

Building Block 8: Models of Financial Support

Building Block 8 Objective:
QIE professionals will have the skills, methods, and tools that will enable them to detail a substantial return on investment for QIE and cost-effective strategies to sustain QIE in various healthcare environments. QIE professionals will be able to facilitate conversations between budget leaders to demonstrate a connection between QIE and the bottom line. Additionally, in the future, QIE professionals will have multiple funding options available for support of QIE activities.

Building Block 8 Recommendations:

8.1 Develop an inventory of funding sources that are available to support QIE efforts and resources to help QIE professionals competitively seek those funds.

8.2 Explore various value propositions for different parts of the QIE enterprise and describe the impact of QIE on organizational budgets; create business case studies that include numbers related to project budgets, costs, and profits that will help QIE professionals in various environments demonstrate the financial value of QIE initiatives.

8.3 Develop tools for educational and QI professionals as well as their organizations' accounting leadership to demonstrate the cost-benefit ratio of QIE (eg, score cards that tie QIE to outcomes). Increase educational research and communication of QIE outcomes in order to increase the demonstration of effective CE in QIE and expand the funding mechanisms and sustainability of QIE.

8.4 Explore and support the development of new financing models to support incorporating education into QI programs.

Building Block 9: Policy and Ethics

Building Block 9 Objective:
QIE professionals will respond to institutional, organizational, and public ethical and policy-related issues and concerns (eg, informed consent, Institutional Review Board [IRB], Health Insurance Portability and Accountability Act [HIPAA], transparency, conflict of interest) when planning and executing QIE activities.

Building Block 9 Recommendation:

9.1 Inventory existing public and private policy and ethical issues that relate to the QIE initiative and explore the correlation of QIE with these policies and statements to align with QIE initiatives. In response to this inventory, develop new and revise existing policies as necessary and take steps to advocate on behalf of those policies. Create resource materials, guidance, and other tools to assist Alliance members, educators, and all other QI stakeholders in complying with relevant policies and statements, including those related to the deployment of educational programs.

Building Block 10: Building and Using the Evidence

Building Block 10 Objective:

QIE professionals will contribute to and use a base of evidence related to the rationale for and effectiveness of QIE in order to support the development and execution of future effective QIE initiatives.

Building Block 10 Recommendations:

10.1 Conduct a review to create a research agenda related to the education component of a QI intervention and the linkages between educational interventions and QI project results.

10.2 Take steps to foster support from public-sector groups (eg, Patient Centered Outcomes Research Institute, AHRQ, Carnegie Advancement of Teaching) in addition to other funding groups (eg, industry) to support this research agenda.

10.3 Develop and maintain various tool kits (eg, an annotated bibliography of studies) that catalog the QIE evidence base and provide case examples of the integration of education with QI.

10.4 Develop tools that assist the Alliance membership in understanding what research is, how to conduct it, how to seek funding, how to translate and apply research outcomes, and how to integrate a standardized tool into QIE planning, execution, and outcomes reporting.

Appendix VIII: Learning Resources

General

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