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Maximizing impact of faculty development through purposeful design: Lessons from a quality and safety education academy

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INTRODUCTION

Over the past two decades, the National Academy of Medicine, Accreditation Council for Graduate Medical Education (ACGME), and the Association of American Medical Colleges (AAMC) have all called for integrating quality improvement and patient safety (QIPS) curricula into medical training.[1–3] Efforts have been slow, impeded by the limited number of trained QIPS educators and the requirement to include undergraduate, graduate, continuing, and interprofessional medical education.[4] There are different styles of train-the-trainer programs for workforce development, and similarly, different strategies for faculty development have been employed for QIPS.[5]

Many early programs focused on content delivery—the core knowledge and QIPS skills (e.g., safety science, QI tools, and methods).[6,7] National organizations such as the Institute for Healthcare Improvement focused on improving healthcare delivery.[8] Other societies have provided QIPS educational content alongside opportunities to see how peers have taught the material.[9,10] A second approach has been for institutions to invite experts into their organizations to teach a specific QIPS curriculum component.[6] A well-known example is TeamSTEPPS® where master trainers are instructed on how to teach teamwork skills.[11]

In 2012, the Quality and Safety Educators Academy (QSEA) offered a third approach. We designed a 2.5 day conference to "train-the-trainers" in core QIPS content alongside skills in curriculum design, mentorship of learners, and dissemination of scholarship, including a QSEA toolkit with examples of publications.[12] The outcomes of this conference not only include the responses and

work product from attendees themselves—but also the output of their learners back at their local institutions. This is because, as future members of the healthcare workforce, attendees were not only equipped to create locally meaningful curricula but also poised to reach future generations of learners with ongoing adaptations. We believe that this sequential influence, or "ripple effect," is due to the specific design choices of QSEA. We posit that similar choices in content and delivery can influence other emerging fields in need of a critical educator workforce.

THE "RIPPLE EFFECT" OF TRAINING EDUCATORS IN QIPS

QSEA was held annually, in-person from 2012 to 2019 and included plenary lectures, QIPS topic sessions with embedded small group activities, multiple opportunities for faculty and peer networking, and interactive "train-the-trainer" workshops (Supporting Information: 1—QSEA Overview). Prior to the conference, attendees received a 31-item electronic presurvey assessing demographics, professional roles, and baseline experience (Supporting Information: 2—Presurvey). In 2019, 2–7 years after attending QSEA, attendees received a 25-item electronic follow-up survey assessing educational roles, teaching QIPS curriculum, number of curricula developed, projects mentored, and QIPS scholarship (Supporting Information: 3—Follow-up survey).

QSEA provided instruction to 507 physician attendees over 7 years; over half (57.4%) of the attendees were hospitalists. Most (84%) of the QSEA attendees completed the presurvey. Fewer (24%) completed the follow-up survey. Data show a shift toward more respondents in formal training roles as QIPS course directors or GME program directors (Table 1). The majority were still working with residents while an increasing number were also teaching fellows and advanced practice nurses. QSEA met the needs of the national shift to more formal requirements for postgraduate and interprofessional QIPS training.

Among QSEA postsurvey respondents, 60% developed at least two QIPS curricula and 85% mentored at least two QIPS projects, suggesting transfer of knowledge in QIPS education. While QSEA respondents engaged in multiple QIPS scholarship activities, QSEA also impacted attendees' learners through mentorship of scholarship activities, such as 325 QIPs abstracts. Despite the low response rate and assuming no contribution from nonrespondents, a conservative estimate still suggests that QSEA respondents mentored at least 444 projects: one-quarter mentored two QI projects and half mentored six. This "ripple effect" was much larger than we anticipated and suggests that a relatively small train-the-trainer program can have a multiplier effect that extends beyond the conference attendees.

QSEA follow-up survey respondents maintained a high level of satisfaction with the conference experience (96% recommend the course to colleagues) and confidence in their ability to teach/mentor QI, and teach PS. Respondents commented in open-ended questions on the QIPS educational content and how the "train-the-trainer"

curriculum and professional development elements "gave [them] invaluable skills, confidence, and a network of like-minded individuals to advance [their] own career, but more importantly, it helped impact the many other learners and faculty [they] now have the great fortune to mentor in their work!" (Supporting Information: 4). Most comments related to how QSEA impacted career development and helped attendees become "bridging leaders" within their institutions.[13]

PROGRAM DESIGN ELEMENTS THAT AIM TO EMPOWER FACULTY

Drawing on the adult learning theory, goals for the QSEA conference were to provide opportunities for practice and feedback, be action oriented, and support the professional development of attendees as educators.[12] QSEA faculty believed that as "trainers of the trainers" we should not simply deliver content in quality, safety, and curriculum development, but should also raise attendee's self-efficacy and empower them to adapt the material to local needs. Several design elements were incorporated into the program to accomplish this. First, to provide coaching with directed feedback, conference attendance was capped to 100 people annually to preserve a small faculty-to-learner ratio and allow for necessary faculty–attendee coaching at tables. To raise self-efficacy, attendees immediately practiced application of knowledge and skills using cases in small groups, with support and feedback. All cases underwent two rounds of peer review with faculty facilitator guides to ensure that exercises were engaging, and faculty facilitators were trained to ensure uniform delivery at the tables. To encourage local development of curricula, QSEA faculty frequently shared their own approaches to framing and teaching the content while actively teaching the content. QSEA faculty felt strongly that focusing all efforts on formative feedback and not prescribing a single path would empower attendees to innovate and create the most relevant curricula for their institutions and learners. This was also supported through attendee reflection on their own projects and career development in the small breakout groups. Responses from attendees in the open-ended section of the survey suggest that this approach was effective in building attendee's confidence and ability to self-advocate (Supporting Information: 1—Graphical overview).

LESSONS FOR OTHER EMERGING EDUCATIONAL AREAS

New training needs are regularly identified in the modern clinical environment, and faculty workforce development remains challenging. Within the sphere of hospital medicine some recent calls include health and healthcare equity improvement,[14] addiction medicine,[15] and point-of-care ultrasound.[16] As experts respond to these needs and train-the-trainer models are designed, we recommend they consider the following based on our experience:

TABLE 1 Quality and Safety Educator Academy (QSEA) follow-up survey outcomes

QSEA respondent data 2012–2017		
	Presurvey respondents, n = 424 (%)	Follow-up survey respondents, n = 114 (%)
Educational roles[a]		
Course/clerkship director, students	36 (8.6%)	10 (8.9%)
Course director, residents or fellows	75 (17.6%)	35 (30.7%)
Residency program director	25 (5.9%)	18 (15.8%)
Asst or assoc residency director	82 (19.4%)	24 (21.1%)
Residency program core faculty	112 (26.4%)	24 (21.1%)
QIPS admin or leadership role	119 (28.2%)	36 (31.6%)
No formal role but leading QIPS	48 (11.4%)	14 (12.3%)
GME role (DIO, etc.)	24 (5.6%)	8 (7.0%)
No formal position/not teaching QIPS	75 (17.6%)	9 (7.9%)
Other[b]	14 (3.2%)	15 (13.2%)
Target audience for QIPS teaching?[c]		
Medical students	184 (43.4%)	34 (29.8%)
Residents	395 (93.2%)	99 (86.8%)
Fellows	65 (15.2%)	30 (26.3%)
Faculty	214 (50.4%)	47 (41.2%)
Advanced practice nurses/providers	80 (18.8%)	33 (28.9%)
Other healthcare professionals (nurses, pharmacists)	77 (18.1%)	19 (16.7%)
Other[d]	14 (3.2%)	5 (4.3%)
Reported outcomes		
Measures (Kirkpatrick domain)		
No. curricula developed (transfer)	-	40% 2–3 curricula
		12% 4–5 curricula
		8% >6 curricula
No. projects mentored (transfer)	-	25% 2–3 projects
		10% 4–5 projects
		50% >6 projects
Scholarship (results)	-	238 QIPS education abstracts
		325 QIPS learner abstracts
		66 publications
		103 regional or national talks

Note: QSEA Outcomes (2012–2017) Characteristics of survey respondents. Presurvey filled out 1 month prior to attending the QSEA conference. Follow-up survey was a 2019 sampling performed 2–7 years after attending the QSEA conference. Outcomes mapped to the Kirkpatrick educational framework.

Abbreviation: QIPS, quality improvement and patient safety.

[a]Respondents could choose multiple titles.

[b]Includes chair of medicine, practice lead, veterans affairs QI mentor, etc.

[c]Respondents could chose multiple learners.

[d]Includes multidisciplinary groups, veterans affairs quality scholars, etc.

1. Unless the content is very narrow, train the faculty in curriculum development skills so they can adapt content to their environment and update it as the field evolves.

2. Start a ripple effect by including training on mentorship and dissemination so that the field can grow organically through work of attendees and their future learners. The National Collaborative for Improving the Clinical Learning Environment and others have suggested that one purpose of QIPS education is to involve learners in changing the culture of safety and quality in academic centers.[17] This could be true for several emerging areas in medical education today.

3. Design programs to deliver content but also support critical teaching skills. For example, to teach "perspective taking" as a skill in health equity improvement, not only teach what it is, but also role model it and give attendees a chance to practice coaching learners on it.

4. Promote self-efficacy by allowing for application and reflection with feedback from experts. This space for safe exploration will help build attendee confidence and could help them in their local educational work upon their return home.

CONCLUSION

QIPS education can be stimulated by a "train-the-trainer" conference and lead to substantive outcomes for attendees and their learners. Design of QSEA's program to deliver content, provide opportunity to practice skills, and promote tools for career development were keys to success. QSEA conference offers attendees formative feedback on their work and leaves them with a motivating action plan. We believe this model of curriculum development education and mentoring can be replicated to expand teaching workforces in multiple emerging areas in medical education. Future assessments would ideally measure the impact on learners and patient outcomes.

ETHICS STATEMENT

All evaluation methods were granted IRB exemption by the institutional review board at the University of Chicago.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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