

## **The Future of Global Graduate Training in Quality Improvement and Patient Safety**

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## The Future of Global Graduate Training in Quality Improvement and Patient Safety

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## **Introduction**

Quality Improvement and Patient Safety (QIPS) content is now widely available across the spectrum of healthcare provider training, though this movement is only two decades old.<sup>1,2</sup> A variety of healthcare workers including physicians, support staff, and administrators can pursue QIPS instruction. Many institutions, such as the Accreditation Council of Graduate Medical Education (ACGME), Canadian Royal College of Physicians and Surgeons, and British General Medical Council, mandate QIPS curricular standards through undergraduate and graduate physician education. This yielded various educational programs to standardize the competencies amongst professionals.

Nonetheless, there remains poor adherence and retention of skills taught to physicians.<sup>1-3</sup> Medical schools largely introduce QIPS concepts within existing clerkships instead of creating new stand-alone courses.<sup>4</sup> Postgraduate trainees state that minimal faculty expertise and time constraints concede knowledge gaps; attendance in mortality and morbidity conferences is often the maximal exposure received.<sup>5</sup> In this editorial, we review QIPS training within existing curricula and through formal graduate programs, focusing on current and future physicians.

### **Training Within Existing Curricula**

Globally, seminars and non-degree QIPS courses are growing in undergraduate and graduate medical education (UME and GME) programs to better impart competencies. Though no US allopathic medical school has implemented a full QIPS curriculum, examples of limited, yet successful, institutional programs abound. A recent review found 38 non-degree initiatives in the US alone. Keys to successful programming include longitudinal didactics, protected time for

experiential learning, and oversight by experienced QI faculty.<sup>2</sup> Non-degree initiatives commonly apply the Institute for Healthcare Improvement (IHI) Open School Modules,<sup>2</sup> which have been completed by more than 700,000 residents and students across 85 countries.<sup>4</sup>

The University of Colorado created a biannual three-course seminar for fellows across specialties, teaching root cause analysis, construction of Pareto charts, and evaluation of stakeholders. Post-seminar assessments showed improved attitudes and self-perceived skills.<sup>6</sup>

The Aga Khan University Medical College in Pakistan implemented a five-day course modeled after Johns Hopkins University to improve skills in correcting medical errors.<sup>4</sup>

Experiential learning is also common. For example, the University of Maryland established a one-year House Officer for Patient Safety and Quality Improvement role.<sup>7</sup> This position is analogous to the Veterans Health Administration's Chief Resident in Quality and Patient Safety; both offer year-long training while also allowing for increased leadership on site.<sup>7</sup> Institutions worldwide are following suit as QIPS research demonstrates improved outcomes.

### **Advanced Postgraduate Education**

In addition to supplemental training within traditional medical tracks, postgraduate degree and certificate programs exist for those seeking leadership roles. A recent review found 25 masters programs offered by North American (n=17), European (n=7), and Middle Eastern (n=1) universities. The US offered the most programs (n=14). While curricula vary, common topics include safety, leadership, and research.<sup>8</sup> No global QIPS accreditation body exists, but North American programs are accredited by the Commission on Accreditation of Healthcare Management Education (CAHME), which established four core domains: safety and error

science, evidence-based practice, improvement science and quality principles, and measurement and process improvement.<sup>9</sup>

Formal certification programs also exist outside the university ecosystem, such as the Academy for Emerging Leaders in Patient Safety, which provides patient safety training for medical, nursing, and pharmacy learners through a four-day workshop.<sup>10</sup> The IHI Open School offers online asynchronous courses in English, Spanish, and Portuguese for professionals across training levels while also promoting networking through local chapters and mentorship.<sup>11</sup> As programs grow, accessibility must be expanded through virtual and multilingual tools, while greater rigor is established through accreditors such as CAHME.

### **Looking Ahead**

Soon, QIPS will likely gain momentum in low-or middle-income countries (LMICs), which have lagged thus far and face the greatest concentration of financial and health outcomes-related stressors. Further research is necessary to elucidate differences in educational needs for LMICs, which may face unique challenges in health quality and delivery. As this expansion occurs, the need for a global accreditation body only becomes more pressing.

Finally, the emergence of artificial intelligence (AI) and digital health tools form the next frontier for QIPS. Research indicates that AI tools can mitigate provider burnout and improve personalized, patient-specific decision-making, assisting with tasks including education, big data analysis, documentation, medication reconciliation, and diagnostics.<sup>12,13</sup> At-home monitoring tools can improve patient experience and reduce resource utilization. Nonetheless, cost and practicality are chief concerns – particularly in LMICs, where access to Internet, telehealth, or computing power is limited.<sup>14</sup>

## Conclusion

The inclusion of QIPS tenets within training programs, for both physicians and other healthcare professionals, has opened a gateway to formal degree and certificate programs within this space. Since the recognition of the quality chasm in 2001, we believe that a global cohort of well-trained professionals is finally emerging to improve patient outcomes and safety. The marketplace appears to be responding to this cohort with formalized leadership roles including quality officers, physician executives, and Chief Safety Officers.<sup>15</sup> As these professional roles abound, the market for QIPS degrees will correspondingly grow in a positive feedback cycle. While new regulation standards are critical to maintaining excellent training globally, the future of QIPS training is bright.

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