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Barriers and Challenges to Implementing a Quality Improvement Program: Political and Administrative Challenges

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ABSTRACT

Quality improvement (QI) programs have rapidly grown in health care over recent years. Despite increasing evidence of successful QI initiatives resulting in improved outcomes, the adoption and implementation of QI programs remain a challenge worldwide. This paper briefly describes political and administrative barriers that impede the implementation of QI programs, including political and ideological factors, socioeconomic and educational barriers, and barriers related to data collection, privacy, and security. Key political and administrative barriers identified include resource limitations due to inadequate public funding, stringent laws, and change resistance. Potential solutions include support and commitment from regional and national authorities, consultation of all involved parties during QI program development, and financial incentives. The barrier of limited resources is starker among low- and middle-income countries (LMICs) compared with high-income countries (HICs) due to the absence of adequate infrastructure, personnel equipped with QI-oriented skills, and analytical technology. Solutions that have facilitated QI programs in some LMICs include outreach and collaboration with other health centers and established QI programs in HICs. The lack of QI-specific training and education in medical curricula challenges QI implementation but can be mitigated through the provision of QI promotion webinars, QI-specific project opportunities, and formalized QI training modules. Finally, barriers related to data collection, privacy, and security include laws hindering the availability of quality data, inefficient data collection and processes, and outdated clinical information systems. Access to high-quality data, organized record-keeping, and alignment of data collection processes will help alleviate these barriers to QI program implementation. The multidimensional nature of these barriers means that proposed solutions will require coordination from multiple stakeholders, government support, and leaders across multiple fields.

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INTRODUCTION

Quality improvement (QI) programs have become increasingly important in the medical field and play a critical role in the delivery of high-quality care to patients worldwide. For example, in the cancer setting, organizations such as the ASCO and the Oncology Nursing Society have established dedicated QI training programs to equip cancer providers with the resources and tools needed to help deliver high-value care to patients.[1,2] Despite the growing body of evidence demonstrating successful QI initiatives that have led to improved patient outcomes, the adoption and implementation of QI programs remain a challenge worldwide, especially in low- and middle-income countries (LMICs).[3–8] Barriers and challenges to implementing QI programs include inadequate resources, change resistance, and political and administrative challenges.[3–5] Although there are many subcategories within these barriers, this paper will focus on the following themes: (1) political and ideological factors, (2) administrative barriers, (3) socioeconomic barriers, (4) educational barriers, and (5) data collection, privacy, and security. A summary of these barriers and proposed solutions are presented in Table 1.

POLITICAL AND IDEOLOGICAL

There is limited literature on the political and ideological barriers that hinder the implementation of QI programs. The political context in which a health center operates can pose substantial constraints on the available resources and personnel that can be dedicated to QI activities. In an assessment of the barriers and facilitators to the implementation of QI programs in five resource-limited pediatric oncology centers in Latin America, a lack of material resources (funding, equipment, and space) and staff shortages were

TABLE 1. Summary of the Identified Barriers for Each Theme and the Proposed Corresponding Solutions

Theme	Barriers	Solutions
Political and ideological	Resource scarcity within public and decentralized health care systems[9]	Alignment of objectives of QI program with national priorities[9]
	Economic instability that hinders effective resource allocation to health care centers[9]	Commitment from regional health authorities and organization-wide networks[10]
	Stringent laws governing clinical work[9]	Government policies that facilitate a QI environment[11]
Administrative	Change resistance and lack of physician buy-in[9,12–18]	Promotion of a QI-oriented culture[19,20] Consultation of staff throughout the research process[3,9,21–23]
	Minimal/lack of incentives or compensation for participation in QI work[24–26]	Provision of financial incentives/compensation[18,21]
	Concerns that QI programs would be used as a punitive approach for singling out individual poor performances[9,15–17]	Program focus on the enhancement of quality for patients[3]
	Tight schedules of many clinicians/lack of designated work time for QI activities[12–14,18,19]	Installment of designated protected time for QI work[18]
	Inadequate support from senior leadership and insufficient institutional support[5,10,13,20]	Strong leadership and commitment from senior managers and executive staff[5,27]
Socioeconomic	Inadequate infrastructure and a lack of skills, resources, equipment, and technology in LMICs[28]	Collaborations with health centers that have successfully implemented QI programs, professional organizations, and philanthropic foundations related to QI[11,12,29,30] Training partnerships between LMICs and well-established QI programs in HICs[11,29]
	Absence of systems to collect and analyze medical and surgical outcomes for QI programs[31]	
	Limited funding for publicly funded hospitals[11,12,32]	
Education	Lack of QI expertise among clinicians and fellows[33–36]	Increased QI building capacity at the continuing medical education level[18,37] QI-centered networking opportunities to foster knowledge exchange and collaboration between clinicians with minimal experiences and those with lots of experience[18] Promotion of virtual webinars on QI project design concepts[18] Participation in learning networks that provide QI education, tools, and frameworks[37]
	Insufficient QI training at the undergraduate and postgraduate medical education levels[18,33,38–40]	Introduction of formalized training modules on QI methodology into residency and fellowship programs[18] Provision of opportunities to lead and conduct QI projects[41,42]
	Minimal consensus regarding QI curriculum delivery and evaluation[18,33,34,38,40,43]	Evaluation and revision of medical curricula to optimize learning objectives[18,41,42]
Data collection, privacy, and security	Laws governing the ownership and copyright and the protection of privacy[31]	Alignment on an accepted definition of QI on a local and global level[5,44] Access to high-quality data45
	Lack of tools to fully anonymize statistical data[31]	
	Data unavailability due to a lack of hospital-based cancer registries in some countries[11]	
	Lack of analytical expertise to collect, store, and analyze data[5,10,46] Improperly preserved/archived data[31] Inefficient data processing systems[10,47]	Collection of data by staff with expertise in quality control, clinical auditing, and data analysis[5,10,16,20] Utilization of electronic medical record systems[23]
	Restrictive/outdated data formats[31]	Organized record-keeping[23,48] Utilization of electronic medical record systems[23]
	Multiple clinical information systems for data collection and documentation[10,47,49] Design and use of data monitoring systems[47]	Alignment of data collection and processes[10]

Abbreviations: HICs, high-income countries; LMICs, low- and middle-income countries; QI, quality improvement.

common barriers identified among participants.[12] Although staff shortages and a deficiency in resources are indicative of poor funding, at a political level, these barriers are also a product of the economic instability that hinders the capacity of health care centers in resource-limited countries.[12] Furthermore, insufficient funding for QI initiatives in resource-limited countries has also been attributed to the health systems in place, as resource scarcity is a challenge within decentralized and public systems alike.[12] In addition, stringent laws governing clinical work were identified as an impediment to QI implementation.[12]

Qualitative responses from individuals involved in the resource-limited pediatric oncology centers mentioned above reveal key enablers for the implementation of QI initiatives.[12] First, the alignment of objectives of the QI

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program with national priorities was a key facilitator, suggesting the importance of not only local support but also interest from the outer, sociopolitical settings.[12] A high level of commitment and supportive policy environment from health authorities and organization-wide networks is required for promoting QI implementation and ensuring provision of required resources to support implementation.[10] Government should increase engagement with stakeholders in academia to further improve strategic plans regarding cancer control to place emphasis on resource allocation for QI initiatives.[11]

ADMINISTRATIVE BARRIERS

At the administrative level, change resistance and minimal incentives impede efforts to implement QI programs. For many hospitals and clinics, there are barriers to the buy-in of QI among clinicians, administrators, and managers.[9,12–18] For example, in a qualitative study that surveyed 200 gastroenterologists, 28% had negative attitudes toward implementation of a QI program due to concerns that the time available for patient contact would be negatively affected.[14] Additionally, 38% of the gastroenterologists assumed that the capacity of the endoscopy department would decrease following QI program implementation.[14] Another common barrier among endoscopists was the concern that the introduction of QI programs would inappropriately be used as a punitive approach for identifying individual poor performances, which would be shared publicly.[9,15–17] One qualitative study reported that in several South American countries, such as Ecuador, El Salvador, Mexico, and Peru, staff resistance to QI program implementation was due to the perception that the QI work would increase the workload of an already stretched thin workforce with limited resources.[12] Due to the tight schedules of many clinicians, only few have time within their designated work hours to perform QI activities.[13,18,19] In the primary care setting, staff attitudes and change resistance were similarly reported as barriers to implementation of QI initiatives in addition to high levels of staff turnover, difficulties in engaging with general practitioners and middle managers, and inadequate support from senior leadership.[5,10,20,50] In a survey investigating physician participation and interest in QI work, resistance toward QI initiatives was rooted in perceptions of QI activities as nonessential and sentiments that additional investment is unnecessary because these activities are already being performed without a systematic approach.[13]

The minimal or lack of financial and other incentives for clinicians has resulted in the low prioritization of QI endeavors.[24–26] Without established avenues for compensating clinicians for time spent conducting QI work, these activities will continue to be a lower priority because clinicians may be operating at a financial loss.[24,25] Among managers, production targets and budget constraints often supersede QI initiatives.[13] Additionally, when managers viewed that opportunities for changing organizational policies and procedures were limited or challenging, implementation of QI strategies was less likely to transpire.[10] The low prioritization of QI work among leadership and limited institutional support have negative ramifications for the pursuit of QI projects among interested clinicians and staff, as many of the barriers to an individual's involvement with QI require major changes at the institutional level, such as collective investment in the funding, time, and QI-trained personnel required to implement and maintain successful programs.[12,21,29,32,47,49]

To address the poor buy-in for QI programs among clinicians, administrators, and managers, efforts to promote a QI-oriented culture are necessary.[19,24] The negative attitudes toward the implementation of QI programs among clinicians could be mitigated by the provision of financial incentives and the installment of protected time for QI activities.[18,21] When recruiting ambulatory oncology practices into a large multisite study, Manojlovich et al found that consulting staff at the beginning of the research process was important for reducing attitudes of resentment and the perception of these activities as extra work.[21] Furthermore, sentiments of ownership and respect toward QI activities can be facilitated through the involvement of physicians throughout the research process and the provision of opportunities to provide feedback on the proposed QI programs.[3,9,22] Ackert et al[23] found particular success when implementing their QI initiative by involving input from departments outside of gynecologic oncology during the study design phase. By involving and collaborating with others, each department took on a personal level of ownership within the project, which the authors suggest helped to improve compliance rates.[23] To address concerns that QI activities are a mechanism for identifying clinicians with poor performance, QI programs should focus on the enhancement of quality for patients and the provision of support for staff with unsatisfactory performance.[3] Finally, strong leadership and commitment from senior managers and executive staff are crucial for ensuring QI goals and objectives are effectively put into action.[5,27]

SOCIOECONOMIC BARRIERS

Compared with high-income countries (HICs), health care systems in LMICs are often more limited by factors, such as inadequate infrastructure and a lack of affordability of skills, resources, equipment, and technology.[28] Furthermore, LMICs experience restraints in available health care providers (HCPs) and staff, which impedes the opportunity for effective care coordination between primary, secondary, and tertiary/quaternary health care levels.[28,51] Without the required information technology, resources, and human capacity and coordination to provide quality cancer care, the implementation of QI programs becomes a low priority. Data collection alone is not a priority in LMICs, and these countries lack systems to collect and analyze medical and surgical outcomes for QI programs.[31] Lack of infrastructure, resources, and expertise makes it difficult to replicate the QI initiatives in HICs to LMICs.[6] LMICs face challenges in

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developing or acquiring expensive technical software and lack the technology experience needed for data entry.[6] Infrastructure barriers such as unreliable internet access, power outages, and limited electronic data storage also make implementation of the QI programs challenging.[6] Previous research also suggests that existing QI programs were more easily maintained in HICs during the COVID-19 pandemic compared with LMICs due to the increased availability of necessary resources.[7,8]

The funding sources for health care systems vary by country, which influences incentives for prioritizing QI initiatives. Although some health care systems are funded directly through their governments, such as Canada, Australia, and the United Kingdom, most regions have health care funded, either partially or fully, through insurance or by self-payment, such as the United States, parts of Europe, the Middle East, and sub-Saharan Africa.[52] Two studies recently evaluated the implementation of a Pediatric Early Warning Systems (PEWS) QI program in resource-limited hospitals and reported that hospitals that are publicly funded are underfunded, and thus, their capacity to fund and implement QI initiatives is limited.[12,32] Furthermore, limited funding impedes opportunities to train oncologists and other clinical personnel required for cancer control activities such as QI programs.[11]

In our literature review, the key facilitators to implementation of QI programs for resource-limited and underfunded environments include collaborations with other health centers and successful QI programs, external funding, and partnerships.[11,12,29,30] For the implementation of PEWS in resource-limited settings, the implementation leaders highlighted that their collaborations with other hospitals, professional organizations, and philanthropic foundations related to QI greatly benefited the implementation of these initiatives.[12] Fostering partnerships between LMICs and well-established QI programs in HICs has also created opportunities for health personnel training for QI.[11,29]

EDUCATIONAL BARRIERS

QI-specific education and training are critical for the implementation of QI programs. Although there have been concerted efforts to integrate QI topics into undergraduate and postgraduate medical curricula, a lack of expertise continues to persist among clinicians and limits their ability to conduct QI projects. At the postgraduate level, studies have reported low satisfaction toward institutional QI training among oncology residents/fellows.[38,39] Insufficient QI training within residency programs has led to gaps in fundamental QI topics (incident learning systems, root cause analysis, and failure modes and effects analysis) that have been found to persist beyond the completion of residency/fellowship programs.[18,33,38,40] As the inclusion of QI as a central principle for medical education is fairly recent, there is minimal consensus regarding curriculum delivery and evaluation, which is further exacerbated by curriculum implementation barriers such as a lack of faculty with sufficient QI expertise and competing educational objectives.[18,33,38,40] In a review of undergraduate and postgraduate QI curricula from the United States, United Kingdom, and Canada, Wong et al[43] observed that an array of teaching methods, evaluations, and topics were used to meet curriculum objectives. Although some studies have reported that QI curricula have led to increased knowledge of QI concepts and skills, some programs do not specifically assess trainee knowledge or competency.[34,43] Although project-based experiential learning is a highly regarded strategy for QI education, the prioritization of learning versus project outcomes varies considerably among QI educators and program directors.[34,43] Ultimately, the lack of standardization of QI curricula has led to the variance in trainees' ability to effectively conduct QI projects.

Owing to the recent incorporation of QI education into both undergraduate and postgraduate curricula in HICs, numerous faculty members have found themselves without the necessary requisite expertise to effectively facilitate trainee QI initiatives.[35,36] Although Terao et al[33] found that 47% of pediatric hematology/oncology attending clinicians could participate in the design of QI projects, only 29% reported being able to lead a QI project. This gap in the ability to lead and support QI programs is likely a result of the absence of formal QI training among many attending clinicians and fellows.[33–35] The success of QI curricula relies heavily on the capacity of program facilitators and educators. Without access to faculty with sufficient expertise, the effectiveness of such programs is greatly hindered. Given that project-based experiential learning is a cornerstone of effective QI education, this deficiency in faculty expertise not only undermines the potential of these learning experiences but also limits the opportunities for trainees to practically apply learned knowledge to QI projects.[43]

Furthermore, the current state of faculty expertise in QI education suggests a disconnect between the theoretical underpinnings of QI and its practical application. Although faculty may be knowledgeable about QI concepts, the opportunity to translate this knowledge into actionable teaching and guidance in real-world projects is limited due to competing learning objectives.[35] This gap not only hinders the development of comprehensive QI competencies among trainees but also limits their exposure to the critical thinking and problem-solving skills essential for successful QI implementation.

To overcome the educational barriers that hinder the implementation of QI programs, undergraduate and postgraduate medical education QI curricula should be evaluated and revised to optimize learning objectives. The current gaps in QI knowledge that persist at the postgraduate level could be mitigated by the implementation of formalized training modules on QI methodology into residency and fellowship training programs.[18] Opportunities to lead and conduct QI projects could better equip medical students and residents to

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lead QI projects as they progress in their medical careers. In an internal medicine residency program at St Luke's University Health Network, the involvement of residents in a residency-wide QI project provided them with the opportunity to apply and thus reinforce their knowledge of QI concepts.[41] At the GKT School of Medical Education in the United Kingdom, early exposure to QI concepts was facilitated through the integration of student-led QI projects into the student curriculum.[42] Although early exposure during the medical education years to QI concepts and projects is pivotal, opportunities to build the QI capacity of physicians at the continuing medical education level should be explored. Physicians with minimal QI experience could benefit from increased QI-centered networking opportunities to foster collaborations with clinicians with lots of QI experience.[18] The promotion of virtual webinars on key QI project design concepts (ie, ASCO's virtual learning collaborative and quality training program) could bridge the knowledge gaps that impede clinicians from conducting their own projects.[18] Additionally, institutions may find success by participating in learning networks that provide its constituents with the education, tools, and frameworks to build QI capacity.[37]

DATA COLLECTION, PRIVACY, AND SECURITY BARRIERS

QI initiatives need measurements pre- and post-implementation, which require access to data that are reliable and accurate.[46] However, there are ethical factors that govern data sharing, such as weighing the proportional benefits and risks of the effect of secondary use of data on public health and ensuring data sharing practices are fair and reciprocal.[31] Legal barriers such as ownership and copyright and the protection of privacy are also factors that influence whether health agencies will be able to collect the public health data required to implement successful QI programs.[31] Ensuring that fully confidential aggregated data without personal identifiers are used is critical for maintaining patient privacy; however, not all health care systems or centers are adequately equipped with the tools to fully anonymize statistical data.[31] Furthermore, some countries have a small number of hospital-based cancer registries, limiting the availability of data.[11] From the HCP perspective, qualitative evidence reveals that some physicians have negative attitudes toward disclosing the results of their quality performance from QI programs, especially to the media, insurance companies, and the government.[3,14] As discussed in earlier sections of our paper, buy-in of implementation of QI programs from all clinic personnel is essential for their successful impact.

A successful QI program also requires a platform to collect, store, and analyze this information, but many centers lack the analytical expertise to achieve this.[5,10,46] Technical barriers to implementing QI programs include collecting data that are not properly preserved or archived, lack of data retrieval systems, poor IT capacity, and restrictive data formats such as paper or outdated electronic format.[5,10,20,31,50] Qualitative studies report that clinicians and staff find it challenging to collect data and provide feedback to clinicians using current technology systems, especially when multiple clinical information systems are used for data collection and documentation.[10,47,49] Furthermore, the existing inefficient data processing systems make the data processing methods very laborious and time-consuming.[47,53] The design and use of data monitoring systems is another barrier to successful implementation of QI programs.[47] Difficulties include defining appropriate quality metrics, efficient data collection, inadequate software packages for auditing, and lack of expertise to translate data into organizational change.[47,54]

Alignment on an accepted definition of QI on a local and global level could help to create a standardized approach and documentation of QI initiatives to guide clinical teams on what information should be collected.[5,44] This alignment of data collection and processes for QI could reduce the burden on clinical staff needing to review data from multiple clinical information systems.[10] Access to high-quality data, the inclusion of experts, such as implementation scientists in teams, and having dedicated QI-focused meetings are key facilitators for implementing QI programs.[45] Data should be collected by staff with expertise in quality control, clinical auditing, and analysis and interpretation of audit data.[10,16,20,50] Previous studies report that seamless and timely data collection and organized record-keeping of clinical data were key facilitators for successful implementation of QI programs.[23,48] For example, Ackert et al[23] implemented an Enhanced Recovery After Surgery (ERAS) protocol for gynecologic oncology total abdominal hysterectomies and partially automated the QI initiative using the electronic medical record system to make adherence to the ERAS protocol as easy as possible. In regard to the concern of disclosing QI program results, QI initiatives should ensure that the results on quality performance on individual HCPs remain confidential.[14]

In conclusion, the successful implementation of QI programs in oncology is contingent upon a strategic alliance between HCPs, policymakers, and academic institutions. The barriers—ranging from political environments to administrative obstacles, socioeconomic limitations, and data management hurdles—are not insurmountable but require a concerted, unified response that transcends geographical boundaries. Key to this endeavor is the alignment of QI objectives with national health care agendas and the marshaling of support from high-level health authorities. This strategic alignment will ensure that QI initiatives are not only prioritized but also integrated into broader health system reforms. Furthermore, it is imperative to incentivize QI participation among health care professionals. This could involve financial compensation, acknowledgment of QI work in career progression, and allocation of protected time for these activities within health care settings. Educational reform is another critical component, necessitating the incorporation of QI principles into medical training curricula to cultivate a future workforce skilled in QI methodologies. This investment in education must be complemented by efforts to bridge knowledge gaps among current practitioners through

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continuous professional development and knowledge-sharing platforms. Moreover, the collection, privacy, and security of data are foundational to the measurement and enhancement of QI programs. Ensuring that data systems are robust and secure will empower HCPs to engage with QI processes more effectively and with greater confidence. In conclusion, the path to embedding QI programs into the global health care system demands a collaborative approach, underpinned by supportive policies, adequate funding, a culture of continuous learning, and a commitment to overcoming systemic obstacles. By embracing this comprehensive strategy, the health care community can drive forward the quality of cancer care, ensuring it is both effective and equitable.

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