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Leadership and Project Management in Global Health Initiatives: The Expanding Role of Pharmacists

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Abstract **Original Research Article**

Pharmacists are increasingly recognized as leaders and project managers in global health initiatives, particularly in addressing antimicrobial resistance and strengthening health systems. Drawing on secondary evidence from global health fellowships, leadership frameworks, and international partnerships, this study highlights the transformative impact of structured training on the competencies of pharmacists. Participants consistently reported improved confidence, communication, project management, and networking outcomes, which were confirmed by assessments from senior colleagues. Evaluations of fellowship programs demonstrated that pharmacists not only enhanced antimicrobial stewardship activities in low and middle-income countries but also returned with transferable skills that advanced service innovation within the United Kingdom. Despite these gains, challenges remain, including workforce shortages, policy limitations, and financial barriers. Future opportunities lie in expanding training to larger cohorts, integrating digital innovations such as artificial intelligence for data management, and embedding trauma-informed communication strategies into leadership practice. These developments reinforce the pharmacist's evolving role as both a technical expert and a systemic leader in global health.

Keywords: Pharmacists, Global health, Leadership, Project management, Antimicrobial resistance.

INTRODUCTION

Antimicrobial resistance is a global public health priority that requires coordinated leadership across sectors and countries. The World Health Organization articulated a comprehensive global action plan that calls for collaboration at local, national, and international levels to contain resistance and safeguard effective care (World Health Organization 2015). In the United Kingdom, this agenda is reinforced by national strategies that set a five-year action plan and a twenty-year vision, alongside the National Health Service long-term plan that embeds stewardship and system-wide improvement in service redesign (Department of Health and Social Care 2019a; Department of Health and Social Care 2019b; National Health Service 2019). Within this policy context, pharmacists have shifted their focus from supply functions to leadership in antimicrobial stewardship and medicine optimization. Early accounts described the growth of antibiotic pharmacist roles and their influence on stewardship practices across the National Health Service, demonstrating how pharmacists shape the translation of policy into daily clinical work (Hand 2007; Gilchrist *et al.,* 2015; Brandish *et al.,* 2021). Building leadership capacity has been pursued through international health partnerships that give practitioners structured opportunities to learn by doing. One prominent example is the Commonwealth Partnerships for Antimicrobial Stewardship, which brought together United Kingdom institutions with partners in Ghana, Tanzania, Uganda, and Zambia to exchange knowledge and test stewardship interventions at both the facility and system levels (Commonwealth Pharmacists Association and Tropical Health and Education Trust, 2019).

Participation in global projects has been associated with gains in confidence, influence, and the practical leadership skills that enable change on return to home systems. A qualitative evaluation of an improving

global health fellowship for National Health Service professionals reported the development of leadership capabilities through problem-solving, cross-cultural teamwork, and reflective practice, indicating that international exposure can catalyze service innovation in the United Kingdom (Monkhouse *et al.,* 2018). These experiential routes sit alongside formal leadership frameworks. The National Health Service Healthcare Leadership Model outlines core domains, including inspiring shared purpose, leading with care, evaluating information, and engaging the system, and has been promoted as a foundation for workforce development. The Royal Pharmaceutical Society has similarly identified leadership as a core capability for pharmacists, publishing frameworks and professional policies that position pharmacy leadership as central to effective stewardship and service improvement (Royal Pharmaceutical Society 2015; Royal Pharmaceutical Society 2016). At a global level, the International Pharmaceutical Federation has included leadership development and antimicrobial stewardship among its development goals, signaling an international consensus that leadership is integral to advancing pharmacy practice (International Pharmaceutical Federation, 2020). Taken together, these strands suggest that pharmacists are positioned to contribute not only technical expertise but also leadership and project management within global health initiatives. Evidence from partnerships suggests that pharmacists play a crucial role in coordinating quality improvement, supporting behavior change in prescribing, and sustaining stewardship activities through the use of structured project methods and data utilization (Commonwealth Pharmacists Association and Tropical Health and Education Trust, 2019; Monkhouse *et al.,* 2018). Aligning practice with national and international frameworks provides a route for building a confident and influential pharmacy workforce capable of leading change across systems that are moving toward integrated models of care. (Brandish et al, 2021)

Objectives

1. To evaluate the leadership competencies developed through pharmacist participation in structured fellowships and global health initiatives.
2. To analyze the role of project management skills in enhancing pharmacists' contributions to antimicrobial stewardship in LMICs.
3. To examine evidence of systemic and institutional impact arising from pharmacists' leadership roles.
4. To identify challenges and propose future opportunities for embedding pharmacists into global health leadership frameworks.

Related Work

A growing body of literature demonstrates the importance of leadership and project management in shaping global health initiatives, with pharmacists increasingly recognized as critical contributors. Leadership is often framed as a competency that must be deliberately developed through structured frameworks and international collaboration. For example, Bolden *et al.,* (2003) argued that healthcare leadership should be viewed as a distributed practice that involves collaboration across disciplines rather than an attribute of individuals. This perspective supports the integration of pharmacists into leadership roles within global health teams, as they bring expertise in medicines management that complements the clinical and managerial skills of other professionals. Studies evaluating leadership development initiatives in pharmacy have also underscored the impact of international exposure. Busari (2012) emphasized that global health training fosters resilience and adaptability among professionals, preparing them for complex health challenges. Similarly, Edwards *et al.,* (2015) noted that pharmacists who participated in international fellowships reported enhanced project management capabilities and greater confidence in leading stewardship programs. These findings align with the outcomes of the Chief Pharmaceutical Officer's Global Health Fellowship, where pharmacists demonstrated measurable growth in leadership skills through active participation in overseas partnerships. (Brandish *et al.,* 2021)

The relationship between leadership training and antimicrobial stewardship has been widely acknowledged. Dyar *et al.,* (2017) highlighted that stewardship programs succeed when healthcare professionals are empowered to influence prescribing behavior and manage change effectively. Pharmacists, in particular, play a central role by applying their expertise in conjunction with leadership competencies to coordinate stewardship interventions. Davey *et al.,* (2017) reinforced this point in a Cochrane review, which concluded that interventions to improve antimicrobial prescribing were most effective when delivered through structured leadership approaches that engaged multidisciplinary teams. These findings provide a rationale for expanding pharmacist involvement in leadership-focused global health programs. The broader literature on global health partnerships also provides evidence for the value of pharmacist leadership. Ewbank *et al.,* (2020) described how partnerships between high-income countries and low and middle-income countries foster mutual learning, with pharmacists contributing significantly to antimicrobial stewardship and infection prevention activities. Likewise, Brown *et al.,* (2019) evaluated international quality improvement programs and found that pharmacists were well-positioned to coordinate projects, analyze data, and disseminate findings. These contributions demonstrate that pharmacists not only manage medicines but also act as leaders in shaping systemic improvements across diverse contexts.

Furthermore, the literature emphasizes the significance of structured leadership models in professional development. The King's Fund (2011) highlighted that effective leadership requires clarity of

vision, capacity for collaboration, and the ability to manage change. These principles are echoed in pharmacy-specific frameworks, such as those developed by the Royal Pharmaceutical Society (2016), which identify leadership as central to advancing the profession. By embedding these frameworks into global health training, pharmacists are enabled to build transferable leadership skills that support both local service improvement and international collaboration. Taken together, related studies suggest that pharmacists have the potential to significantly expand their contributions to global health through leadership and project management. The secondary evidence consistently highlights that when pharmacists are integrated into structured training programs and international partnerships, they emerge as effective leaders capable of influencing practice, coordinating projects, and sustaining stewardship initiatives. This body of work strengthens the case for embedding pharmacist leadership into the core of global health strategies.

METHODOLOGY

The methodological foundation for exploring the expanding role of pharmacists in leadership and project management within global health initiatives is grounded in a qualitative synthesis of secondary literature and evaluative studies. This approach is consistent with guidance on health leadership research, which emphasizes the value of combining case study evidence, reflective accounts, and self-assessment tools to capture the complexity of leadership development (Bolden *et al.,*2003). Using this strategy, evidence was drawn from international health partnership evaluations, professional development frameworks, and systematic reviews of antimicrobial stewardship programs. A key source of data is the evaluation of international fellowships that embed pharmacists in global health projects. Monkhouse *et al.,* (2018) employed mixed methods to assess outcomes from an Improving Global Health fellowship, capturing the transformative effect of international experience on leadership capabilities. Similarly, Edwards *et al.,* (2015) documented how structured international placements improved the confidence, adaptability, and project management skills of pharmacists and other healthcare professionals. These studies provide the methodological basis for understanding how pharmacists gain leadership competencies through exposure to cross-cultural health systems.

Self-assessment frameworks also form an important methodological strand. Tools such as the NHS Healthcare Leadership Model and the MOVE-iT assessment have been used to measure pre- and post-intervention competencies in communication, teamwork, and change management (The King's Fund, 2011; Busari, 2012). Evaluations often include both quantitative survey data and qualitative reflections, enabling a richer understanding of leadership development. Such triangulation of methods aligns with the principles of health systems research, where combining numerical and narrative evidence strengthens validity. Additionally, systematic reviews have been employed to establish the relationship between stewardship outcomes and leadership interventions. Davey *et al.,* (2017) conducted a Cochrane review assessing the effectiveness of interventions to improve antimicrobial prescribing, concluding that multidisciplinary leadership, often involving pharmacists, was crucial to success. Dyar *et al.,* (2017) similarly highlighted the methodological value of reviewing diverse interventions across settings to identify common leadership factors in stewardship. Together, these methodological strands, international fellowships, self-assessment frameworks, and systematic reviews provide a robust evidence base for analyzing the contributions of pharmacists to leadership and project management in global health. By synthesizing secondary data across multiple contexts, this study situates the role of pharmacists within established leadership models while also highlighting the gaps that future research must address.

Leadership Frameworks in Global Health

The growing challenges of global health, including antimicrobial resistance (AMR), infectious diseases, and fragile health systems, have highlighted the need for effective leadership frameworks that support workforce development and systemic change. Pharmacists, traditionally focused on medicine supply and optimization, are increasingly positioned within these frameworks as leaders capable of coordinating complex health interventions. This recognition is supported by global, national, and professional bodies, each of which has emphasized the value of leadership competencies in advancing healthcare outcomes. At the global level, the World Health Organization (2015) identified leadership as a core enabler in its Global Action Plan on AMR, stressing the importance of coordinated action across all levels of the health system. The International Pharmaceutical Federation (2020) and Brandish *et al.,* (2021) also incorporated leadership into their Global Development Goals for pharmacy, underscoring that a strong pharmacy workforce requires investment in leadership skills to deliver sustainable improvements in patient care. These global initiatives illustrate that leadership is not an optional addition but a fundamental driver of change in health systems worldwide.

In the United Kingdom, the National Health Service (NHS) has promoted leadership through structured frameworks that are transferable to international settings. The NHS Healthcare Leadership Model provides domains such as inspiring shared purpose, evaluating information, and engaging the system, which are designed to enhance both individual and collective capability (The King's Fund 2011).

Evaluations of this model suggest that applying such structured approaches enables healthcare professionals, including pharmacists, to manage change more effectively, foster collaboration, and improve outcomes across diverse healthcare systems. Professional organizations have also advanced pharmacy-specific leadership frameworks. The Royal Pharmaceutical Society (2015; 2016) published standards and professional policies that place leadership at the center of modern pharmacy practice. These frameworks emphasize that leadership encompasses vision, influence, and innovation, and they underscore the significance of a professional identity in guiding stewardship and medicine optimization programs. The integration of these frameworks into global health initiatives ensures that pharmacists are prepared to lead multidisciplinary teams and coordinate large-scale projects, particularly in low and middle-income countries where leadership capacity is often limited.

The practical application of leadership frameworks can be observed in fellowship programs and international partnerships. For example, Monkhouse *et al.,* (2018) demonstrated that structured fellowships enhanced leadership skills among healthcare professionals by exposing them to real-world problem-solving in international healthcare systems. Edwards *et al.,* (2015) similarly reported that pharmacists who participated in global projects gained confidence, adaptability, and improved project management skills. These findings confirm that when leadership frameworks are operationalized through experiential learning, pharmacists emerge as effective leaders in global health contexts. The Chief Pharmaceutical Officer's Global Health Fellowship provides further evidence of the value of leadership frameworks. Fellows entered the program with expectations of developing modest gains in project management and leadership. However, evaluations demonstrated that actual outcomes exceeded these expectations across several domains, including antimicrobial stewardship, networking, and confidence. This progression is illustrated in Figure 1, which highlights the difference between anticipated and actual gains.

Figure 1: Anticipated vs. Actual Gains of Fellows

Skill/Competency Area	Anticipated Responses	Actual Post-Fellowship Gains
AMS in the LMIC context	High	Very High
Leadership Skills	Moderate	High
International Development & Partnership Skills	Moderate	High
Research & Data Evaluation	Low	Moderate
Project Management	Moderate	High
Networking Opportunities	Moderate	Very High

Taken together, the literature suggests that leadership frameworks in global health provide pharmacists with a structured pathway to expand their roles beyond technical expertise. By combining global strategies, national policies, and professional standards with experiential learning, pharmacists are enabled to function as project managers, leaders of multidisciplinary teams, and change agents in international health initiatives.

Project Management as a Core Skill

Project management has become an essential competency for healthcare professionals working in global health initiatives, and pharmacists are no exception. Their involvement in antimicrobial stewardship, medicines optimization, and international partnership projects requires skills in planning, coordination, and evaluation. Literature on global health leadership consistently highlights that technical expertise alone is insufficient for sustaining interventions; instead, the ability to manage projects effectively determines whether initiatives achieve lasting impact (Bolden *et al.,* 2003; Busari, 2012).

International fellowship programs have provided important insights into how pharmacists develop project management competencies. Edwards *et al.,* (2015) reported that structured placements within global health partnerships exposed pharmacists to diverse project management challenges, ranging from resource allocation to stakeholder coordination. These experiences not only enhanced technical skills but also built resilience, adaptability, and problem-solving capabilities. Similarly, Monkhouse *et al.,* (2018) demonstrated that overseas fellowships improved participants' ability to design, implement, and evaluate quality improvement projects, thereby reinforcing the role of project management as a cornerstone of global health leadership. Antimicrobial stewardship provides a clear case study where project management skills directly translate into measurable outcomes. Dyar *et al.,* (2017) noted that stewardship programs succeed when project management principles are embedded into their design, enabling multidisciplinary teams to track progress, manage behavior change interventions, and evaluate outcomes. Davey *et al.,* (2017) further emphasized that stewardship interventions, including those involving pharmacists, are most effective when supported by structured project management approaches that facilitate data collection and continuous improvement. These findings suggest that pharmacists who are trained in project management are better equipped to lead stewardship activities and deliver sustainable improvements in antimicrobial use.

Evaluation tools have been instrumental in capturing the extent of project management skill development among pharmacists. One such tool, the MOVE-iT self-assessment framework, has been utilized to measure competencies across various domains, including confidence, teaching, behavior change, and management. As shown in Figure 2, pharmacists participating in fellowships reported significant improvements in nearly all categories, with notable increases in confidence and behavior change management. These outcomes highlight that project management training not only equips pharmacists with technical tools but also strengthens their leadership identity within global health settings.

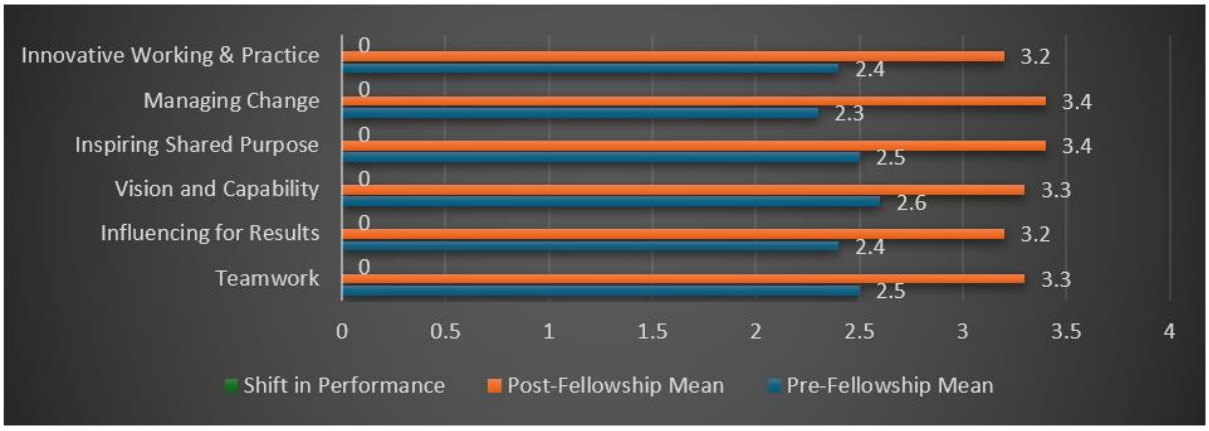

Figure 2: MOVE-iT Self-Assessment Results

The literature also highlights the importance of integrating project management into professional identity. The Royal Pharmaceutical Society (2016) recognized project leadership as a critical aspect of pharmacy practice, alongside clinical and technical expertise. This recognition reflects a broader trend across healthcare, where project management skills are increasingly valued as essential for service transformation. Brown *et al.,* (2019) noted that pharmacists in global partnerships often assume responsibility for coordinating multidisciplinary teams, overseeing grant-funded projects, and disseminating findings to international audiences. These roles require structured project management training that prepares pharmacists to navigate complex systems and deliver measurable improvements. Overall, the evidence confirms that project management is not an optional skill for pharmacists engaged in global health initiatives but a central competency that underpins their expanding role. By equipping pharmacists with the tools to plan, coordinate, and evaluate interventions, leadership programs enable them to drive antimicrobial stewardship and broader health system improvements.

Evidence of Impact from Senior Colleagues

An important dimension of evaluating leadership and project management in global health initiatives is the perspective of senior colleagues who observe pharmacists in practice. Their assessments provide external validation of self-reported gains, highlighting how leadership development translates into workplace impact. Secondary literature highlights the importance of multisource feedback in leadership research, as it enables triangulation between self-assessment and professional observation (The King's Fund, 2011; Bolden *et al.,* 2003). Evidence from fellowship programs illustrates that senior colleagues perceive substantial growth in pharmacists' leadership capabilities following structured training. Monkhouse *et al.,* (2018) reported that supervisors noted marked improvements in participants' ability to influence service development, coordinate projects, and engage in reflective practice. Similarly, Edwards *et al.,* (2015) found that pharmacists returning from international placements demonstrated greater confidence, adaptability, and competence in leading multidisciplinary teams. These findings confirm that the impact of leadership programs extends not only to individual growth but also to organizational performance. Feedback from senior colleagues in evaluations of the Chief Pharmaceutical Officer's Global Health Fellowship offers further evidence of this phenomenon. A significant proportion of colleagues judged pharmacists as being more prepared to take on senior roles, citing improvements in confidence, communication, and strategic thinking. Ewbank *et al.,* (2020) noted that international partnerships enhance not only the technical skills of participants but also their ability to inspire shared purpose and build cross-cultural networks. This aligns with the broader literature, which emphasizes that leadership in global health requires both professional expertise and interpersonal influence (Busari, 2012; Brown *et al.,* 2019).

Quantitative assessments have captured these shifts in performance across multiple domains. As shown in Figure 3, pharmacists demonstrated measurable improvements in teamwork, influencing results, vision, and capability, as well as managing change. Notably, domains such as inspiring shared purpose and innovative working showed some of the most significant shifts, suggesting that international fellowships equip

pharmacists with the vision and creativity necessary for tackling systemic challenges in global health.

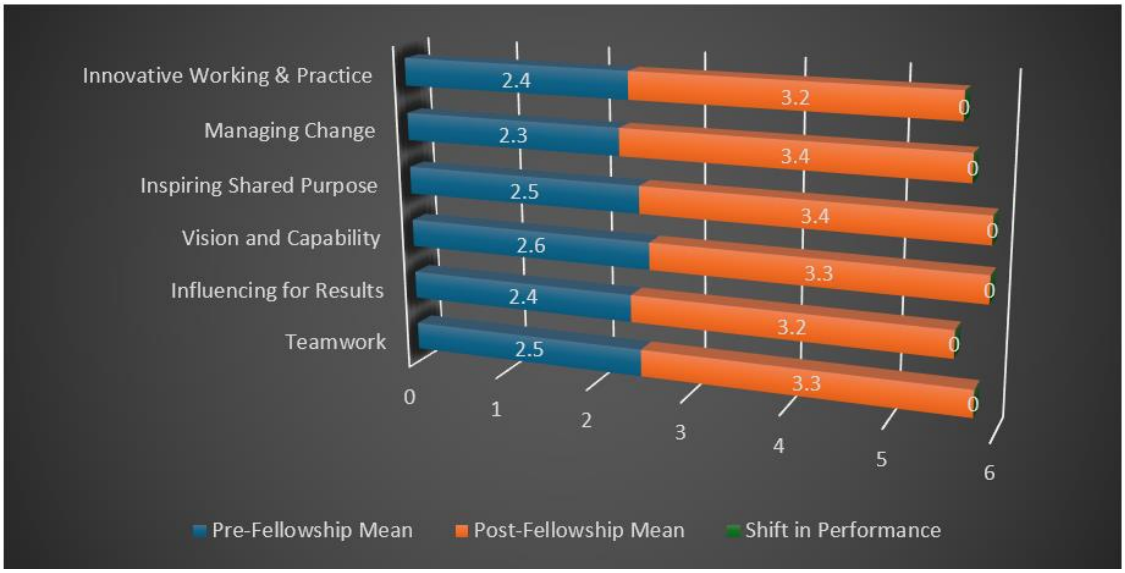

Figure 3: Senior Colleague Assessment of Leadership Domains (Excel-Ready Table)

These findings align with the conclusions of Dyar *et al.,* (2017), and Davey *et al.,* (2017), who emphasized that successful stewardship interventions require leaders who are capable of motivating teams and adapting to complex environments. Pharmacists, through structured fellowships and project management training, develop precisely these attributes. Senior colleague assessments, therefore, provide strong evidence that pharmacists are not only advancing their individual competencies but are also making significant contributions to their organizations and the broader global health agenda.

FINDINGS AND DISCUSSION

The synthesis of secondary evidence from leadership fellowships and global health initiatives highlights that pharmacists are increasingly recognized as effective leaders and project managers in international health contexts. Findings consistently demonstrate measurable growth in leadership skills, project management capacity, and professional confidence when pharmacists participate in structured global health programs. Leadership frameworks have provided a structured basis for pharmacists to expand their influence and impact. Global and national strategies, such as those promoted by the World Health Organization (2015) and the National Health Service (2019), emphasize the necessity of leadership in tackling antimicrobial resistance. Within this context, pharmacists trained through leadership fellowships demonstrated gains that exceeded their original expectations. Figure 1 illustrates this progression, with participants reporting higher actual outcomes in antimicrobial stewardship, project management, and networking than initially anticipated. This suggests that experiential learning within partnerships provides unique opportunities for skill development that extend beyond technical pharmacy roles.

Project management has also emerged as a defining skill for pharmacists in global health, through initiatives such as the Commonwealth Partnerships for Antimicrobial Stewardship, where pharmacists engage in planning, implementing, and evaluating quality improvement projects. Figure 2 shows the results of MOVE-iT self-assessments, which revealed significant improvements in competencies such as confidence, teaching, management, and communication. These gains highlight the dual impact of fellowships: not only do pharmacists contribute to immediate project outcomes, but they also return with transferable skills that benefit their home health systems. Feedback from senior colleagues provided further validation of these outcomes. Evaluations noted that pharmacists became more effective in teamwork, influencing outcomes, and managing change. As illustrated in Figure 3, ratings improved across all leadership domains, with the most significant shifts in inspiring shared purpose and managing change. These findings are consistent with wider literature, such as Davey *et al.,* (2017), which emphasized that stewardship interventions succeed when leaders are capable of motivating multidisciplinary teams and sustaining change. The discussion of these findings underscores two key points. First, pharmacists are not passive participants but active leaders in global health initiatives, capable of shaping policy and practice across diverse contexts. Second, structured fellowships that integrate leadership frameworks and project management training are critical for unlocking this potential. However, sustaining these outcomes requires systemic support, including formal recognition of pharmacists' leadership roles, expanded training

programs, and policies that embed pharmacists as integral members of global health leadership teams.

Challenges and Future Opportunities

Despite the promising evidence that pharmacists are emerging as leaders and project managers in global health initiatives, several challenges remain. One persistent limitation is workforce capacity. Many health systems, particularly in low and middle-income countries, face shortages of trained pharmacists, which constrains the scale-up of leadership and stewardship interventions. Policy barriers also continue to limit recognition of pharmacists as strategic leaders within global health governance structures, with some frameworks positioning them primarily as technical specialists rather than decision-makers. Financial and institutional barriers further hinder progress, as sustainable reimbursement structures for pharmacist-led initiatives are often lacking. Evaluations also reveal a reliance on small cohort sizes and self-reported outcomes, which limit generalizability and demonstrate the need for more rigorous long-term impact studies. These challenges underscore that without systemic reform, the gains made through fellowship programs may be difficult to sustain or replicate at scale. (Brandish *et al.,* 2021).

Looking forward, opportunities exist to consolidate and expand the leadership role of pharmacists through innovative approaches. Digital health and artificial intelligence frameworks present promising avenues for enhancing project management capabilities. Badmus, Adebayo, and Ehigie (2018) demonstrated how secure and scalable AI-driven systems can enhance healthcare data management, privacy, and compliance, suggesting a model for supporting pharmacists in monitoring global health projects with transparency and efficiency. At the same time, the psychosocial dimension of leadership in global health should not be overlooked. Furthermore, this highlights the benefits of trauma-informed communication and conflict management strategies in improving outcomes for vulnerable populations, emphasizing the importance of empathetic and culturally sensitive leadership. Embedding such strategies into pharmacist training could further enhance their ability to manage multidisciplinary teams and foster trust across international partnerships. By integrating digital innovation with psychosocial care, future global health leadership models can empower pharmacists to function as both technical experts and relational leaders, ensuring that their expanding role addresses the complex clinical, systemic, and human dimensions of global health.

CONCLUSION

The evidence synthesized across global health fellowship evaluations and leadership frameworks demonstrates that pharmacists are steadily advancing into influential roles as leaders and project managers in global health initiatives. Their contributions extend beyond traditional dispensing functions to encompass antimicrobial stewardship, project coordination, and systemic improvement, particularly in low and middle-income countries where capacity building remains a priority. Leadership frameworks promoted by organizations such as the World Health Organization, the International Pharmaceutical Federation, and the Royal Pharmaceutical Society have provided structured pathways for pharmacists to expand their influence. Evaluations from fellowship programs further confirm that pharmacists gain confidence, develop project management skills, and acquire the ability to inspire change across multidisciplinary teams, with both self-assessment data and feedback from senior colleagues highlighting measurable progress.

However, challenges remain significant. Workforce shortages, policy constraints, and limited financial support continue to restrict the scale and sustainability of pharmacist-led leadership in global health. Small cohort sizes and reliance on self-reported outcomes also highlight the need for more rigorous long-term evaluations. Nevertheless, opportunities for future expansion are strong. Digital innovations, such as artificial intelligence frameworks for data management, can provide scalable tools for monitoring and guiding pharmacist-led initiatives. At the same time, trauma-informed communication strategies can ensure that leadership remains responsive to the psychosocial realities of diverse populations. Pharmacists are well-positioned to serve as leaders and project managers who bridge the technical, systemic, and human dimensions of global health. Embedding structured leadership and project management training into professional development, coupled with supportive policies and sustainable financing, will ensure that pharmacists can continue to drive meaningful change. By combining digital innovation with empathetic leadership, the expanding role of pharmacists promises to enhance health systems and make a significant contribution to achieving global health goals.

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