

Boosting Health Workforce Performance: A Cross-disciplinary Strategies for juggling Medical Services in Hospital Administration, Health Assistance, General Medicine, Optics, Emergency Medical Services, Laboratory, Pharmacy, and Public Health

Mansour Jamel Aldilami¹, Fahad Abdullah Saad Binmadhi², Abdulsalam Abdullah Alqahtani³, Abdullah Mohammed Saeed Alqahtani⁴, Fayez Abdullah Fayez Alotibi⁵, Ahmed Abdullah Alsalawi⁶, Abduaziz Muatd Jaber Aljohaani⁷, Walaa Mohammed Brashi⁸, Mohammed Ahmed S. Aljuhani⁹, Meshari Mohammed Saadi Alzahrani¹⁰

Abstract

The performance of healthcare workers is a critical factor in ensuring high-quality healthcare delivery, particularly in complex and dynamic environments like hospitals and public health settings. This review aims to explore cross-disciplinary strategies to enhance the performance of healthcare professionals across diverse sectors, including hospital administration, general medicine, emergency medical services (EMS), laboratory services, optics, pharmacy, and public health. Key strategies examined include leadership models that foster a supportive work environment, targeted workforce training that adapts to technological advancements, and the promotion of inter-professional collaboration. Additionally, the review addresses the importance of mental health and wellbeing initiatives, which are often overlooked but essential for sustaining worker performance. By synthesizing research from healthcare management, clinical practice, and organizational behavior, the article provides insights on how to build a resilient, motivated, and efficient healthcare workforce capable of responding effectively to evolving healthcare demands.

Keywords: Health Workforce, Performance Enhancement, Hospital Administration, Healthcare Systems, Emergency Services, Inter-Professional Collaboration, Workforce Training, Leadership in Healthcare, Mental Health in Healthcare, Healthcare Workforce Development.

Introduction

The health workforce is the backbone of any healthcare system, significantly influencing the quality of patient care and overall healthcare outcomes. As global healthcare systems grow more complex, the performance of healthcare workers becomes increasingly crucial in ensuring that services are efficient, accessible, and of high quality. In an era where healthcare demands are rising due to aging populations, increased chronic disease prevalence, and global health threats such as pandemics, it is essential to address the diverse factors that impact healthcare workers' performance across various sectors (1).

The healthcare workforce spans multiple domains, including hospital administration, health assistance, general medicine, emergency medical services (EMS), laboratory services, pharmacy, optics, and public health. Each of these areas, though distinct in their specific functions, shares common challenges and opportunities for improvement in workforce performance. These include issues related to leadership,

¹ Health Services and Hospitals Management King Abdullah Medical Complex

² Health Assistant/Health Care Security Al-Dawadmi General Hospital.

³ General Physician General Directorate of Aseer Region.

⁴ Health Care Assistant Alkhobar Health Network Hospital.

⁵ Technician-Optics Jeddah Eye Hospital

⁶ Technician-Optics King Fahad Hospital, Jeddah

⁷ Emergency Medical Services First Settlement in Qassim - Al Nabhaniyah General Hospital

⁸ Lab Technician King Abdullah Medical Complex

⁹ Technician-Pharmacy King Abdullah Medical Complex, Jeddah

¹⁰ Public Health Specialis Hafar Albatin Central Hospital

training, inter-professional collaboration, technology adoption, and worker well-being. As such, a cross-disciplinary approach is needed to devise strategies that improve performance across these sectors simultaneously (2).

Hospital administration, for instance, plays a pivotal role in the organization and management of healthcare facilities. Effective administration ensures that medical services are delivered smoothly, coordinating the efforts of healthcare professionals across different departments. Similarly, the performance of healthcare workers in emergency services, where timely interventions can be life-saving, is paramount. Laboratory services and pharmacy are also critical in providing accurate diagnostics and medication management, ensuring that patients receive the right treatments in a timely manner (3).

Optics, as an often-overlooked aspect of healthcare, has a significant role in improving patient quality of life, particularly in vision care. General medicine, the foundational aspect of healthcare, requires continuous performance improvements to ensure that primary care providers meet evolving patient needs in a cost-effective and accessible manner. Public health, meanwhile, requires a broad, system-wide approach to improving population health and tackling public health crises, all while managing the performance of a diverse workforce, including epidemiologists, health policy experts, and community health workers (4).

This review examines the various strategies available for boosting health workforce performance across these sectors, recognizing that the integration of leadership, technology, training, collaboration, and employee well-being can help create a more resilient, motivated, and efficient workforce. By synthesizing research from organizational behavior, healthcare systems management, clinical practice, and public health, the article presents actionable strategies that can lead to improvements in service delivery, employee satisfaction, and, ultimately, patient outcomes.

With the increasing recognition that healthcare workforce performance directly correlates with patient care quality, addressing the barriers to workforce effectiveness has become an urgent priority. As we delve into the cross-disciplinary strategies, it is important to recognize that these strategies are not one-size-fits-all solutions but must be tailored to specific healthcare environments, considering unique challenges and opportunities within each domain.

Hospital Administration and Medical Services

Hospital administration is a critical pillar of healthcare organizations, ensuring that medical services are efficiently delivered and that operational systems function seamlessly. Administrators oversee everything from financial management and staffing to compliance with regulatory standards and patient safety protocols. They are responsible for creating an organizational culture that supports high-quality care while managing resources effectively (5).

Medical services within hospitals require the coordination of various departments—each providing specialized care—to ensure that the hospital operates efficiently. From surgical services and emergency care to inpatient and outpatient departments, hospital administration plays a key role in integrating these services. Effective management in this context means optimizing staffing levels, reducing wait times, ensuring the availability of medical supplies, and integrating technology to enhance patient care (6).

Furthermore, administrators are tasked with implementing policies that promote interdepartmental collaboration, which is essential for ensuring continuity of care and maximizing operational efficiency. This includes managing relationships between medical professionals, including doctors, nurses, technicians, and support staff, as well as creating avenues for professional development to boost workforce morale and improve performance (7).

Health Assistance and Workforce Support

Health assistance is another critical area in boosting the performance of healthcare systems. Health assistants, which can include medical assistants, nursing aides, patient coordinators, and community health

workers, provide essential support to clinicians, allowing for a more streamlined workflow and improved patient outcomes. In hospital settings, health assistants help with administrative tasks, patient intake, basic medical procedures, and ensuring patient comfort. In public health, health assistants play a vital role in health education, outreach, and promoting preventive care (8).

To enhance the performance of health assistants, training programs that focus on patient communication, healthcare administration, and technical skills are key. Additionally, fostering a culture of respect and collaboration between health assistants and other medical professionals can improve job satisfaction and overall performance (8).

General Medicine and Primary Care

General medicine, also referred to as primary care, serves as the foundation of any healthcare system. Physicians and healthcare providers in general medicine are often the first point of contact for patients seeking care, making them essential for preventing, diagnosing, and managing a wide range of health issues. Performance in this area is directly tied to the ability to manage patient flow, maintain accurate records, provide timely diagnoses, and follow up with patients for ongoing care (9).

The performance of general practitioners (GPs) can be improved through continuous professional development, exposure to emerging medical trends, and better tools for managing patient data. Supporting GPs with the latest diagnostic tools, training in new medical treatments, and providing mental health resources for dealing with the emotional stress of patient care are also crucial (10).

Optics and Vision Care

Optics is often underrepresented in broader healthcare discussions, yet its role in improving patient outcomes is undeniable. Optometrists and ophthalmologists play a pivotal role in diagnosing, treating, and managing a range of vision-related health issues. The ability to provide timely and accurate assessments of vision health not only improves the quality of life for patients but also prevents potential long-term disabilities related to sight impairment (11).

To boost the performance of healthcare workers in optics, incorporating new technologies such as teleoptometry, electronic health records (EHR), and AI-based diagnostic tools can improve both efficiency and the accuracy of diagnoses. Furthermore, integrating vision care into general healthcare and increasing collaboration with general practitioners and other specialists can lead to a more holistic approach to patient health (8).

Emergency Medical Services (EMS)

Emergency Medical Services (EMS) represent one of the most high-pressure and time-sensitive sectors in healthcare. EMS professionals, such as paramedics and emergency medical technicians (EMTs), are the first responders in critical situations, often determining whether a patient survives an emergency before they reach a hospital (12).

The performance of EMS teams hinges on their ability to provide rapid, accurate, and effective care in unpredictable and high-stress environments. Strategies to improve EMS performance include enhancing training programs focused on emergency medical techniques, stress management, and effective communication with hospital teams. Moreover, incorporating mobile health technologies, real-time patient data sharing, and improving the coordination between EMS and hospital staff can improve patient outcomes and ensure smoother transitions from pre-hospital to in-hospital care (13).

Laboratory Services

Laboratories play an indispensable role in the healthcare system, as accurate testing and diagnostics are fundamental for patient care and treatment decisions. Laboratory professionals, including clinical laboratory

scientists and technologists, ensure the timely and precise analysis of blood, urine, tissue samples, and other diagnostic specimens (14).

Performance in laboratory services can be enhanced through continuous training on new testing methodologies, quality control processes, and regulatory compliance. Ensuring access to state-of-the-art laboratory equipment and fostering an environment of collaboration with other medical professionals are also key factors in improving lab performance. Additionally, the integration of automation and digital technologies in lab settings can increase efficiency, reduce human error, and improve overall diagnostic outcomes (14).

Pharmacy and Medication Management

Pharmacists and pharmacy technicians are essential for managing the safe and effective use of medications in healthcare settings. In hospitals, pharmacies play a key role in ensuring that patients receive the correct medications, dosages, and administration routes. Pharmacists also collaborate with physicians to monitor drug interactions, advise on alternative treatments, and provide patient education on medication use (15).

To boost performance in the pharmacy sector, healthcare institutions should invest in advanced pharmacy management systems, continuous education for pharmacists regarding new pharmaceutical research, and collaborative efforts between pharmacists and healthcare teams to optimize medication management. Additionally, incorporating technology, such as medication tracking systems and drug database software, can enhance the accuracy and efficiency of medication administration (16).

Public Health

Public health encompasses a wide range of services aimed at improving the health of populations through prevention, education, and policy advocacy. Public health professionals, such as epidemiologists, health policy makers, and community health workers, work together to tackle issues such as disease outbreaks, health disparities, and access to care (8).

Performance in public health depends on effective data collection and analysis, the ability to quickly respond to public health crises, and the implementation of evidence-based policies. Cross-disciplinary collaboration is vital in ensuring that public health efforts are aligned with the needs of communities. Strategies to improve performance in public health include investing in health communication, enhancing surveillance systems, and improving intersectoral coordination between public health agencies and healthcare providers (17).

Each of these areas plays an essential role in the overall healthcare system, and by adopting strategies that address the unique needs of each sector, the performance of the workforce can be significantly improved. Enhancing communication, providing continuous education, leveraging technology, and supporting healthcare workers' mental health are critical elements in building a healthcare system that can adapt to the challenges of the modern world. By understanding the intricacies of these individual sectors and integrating cross-disciplinary approaches, healthcare systems can achieve better performance outcomes and, ultimately, improve patient care and health outcomes (8).

Strategies to Boost Health Workforce Performance

Leadership in Healthcare

Effective leadership is fundamental to workforce performance. Leaders in healthcare must cultivate an environment where team members feel valued, supported, and motivated. Leadership styles that emphasize collaboration, open communication, and shared decision-making are essential in fostering job satisfaction and engagement across healthcare teams. Additionally, leadership development programs, such as mentorship and coaching, can help identify future leaders and improve organizational culture (18).

In hospital administration, leadership is particularly crucial, as administrative staff must coordinate multiple departments, ensuring that all functions, from emergency services to pharmacy operations, work together seamlessly. Similarly, public health leaders must ensure that local, national, and international policies are aligned to maintain optimal health systems (18).

Inter-Professional Collaboration and Teamwork

A multidisciplinary approach is essential for providing high-quality patient care and efficient services across various healthcare domains. Encouraging inter-professional collaboration not only improves clinical outcomes but also enhances workforce satisfaction by fostering a sense of shared purpose and mutual respect. For instance, in general medicine, physicians, nurses, and allied health professionals must work together to address complex patient needs. In emergency medical services, seamless coordination between paramedics, physicians, and hospital staff is crucial for saving lives (19).

Training programs that promote communication skills, conflict resolution, and team dynamics can further enhance collaboration. In settings such as laboratories or pharmacy departments, the integration of multidisciplinary teams ensures that all perspectives are considered when making clinical or operational decisions (19).

Training and Development

Healthcare systems are rapidly evolving, and continuous professional development is necessary to keep pace with emerging trends, technologies, and best practices. Workforce training programs tailored to specific sectors are vital in ensuring healthcare workers have the skills needed to perform at the highest level (8).

For example, in emergency medical services, training on the latest life-saving techniques and technological tools can improve field performance. Similarly, laboratory staff must stay up-to-date with advancements in diagnostic technologies. Continuing education programs, certifications, and in-service training that emphasize clinical knowledge, technical skills, and ethical practices are critical across the board (8).

Technological Integration

Technology is transforming healthcare across all disciplines, and its integration into workforce performance is essential for both improving efficiency and enhancing care delivery. The implementation of electronic health records (EHRs), telemedicine, diagnostic imaging, and AI-based tools has had profound implications for hospital administration, general medicine, pharmacy, and laboratory services (20).

Healthcare workers need to be proficient in the use of these technologies. Training in digital tools can streamline workflow and reduce human error, while also improving the quality of patient care. Furthermore, technological advancements such as AI-driven diagnostic systems in laboratories or telehealth in rural areas can help healthcare workers manage higher workloads more efficiently and improve access to care (8).

Mental Health and Wellbeing Initiatives

A key factor influencing workforce performance is the mental health and overall wellbeing of healthcare workers. The demanding nature of healthcare work can lead to burnout, stress, and high turnover rates. This is particularly evident in high-pressure fields such as EMS, emergency departments, and intensive care units. Addressing mental health through employee support programs, counseling services, and stress management workshops is crucial in sustaining workforce motivation and performance (21).

Implementing programs that focus on mental health not only benefits the individual worker but also contributes to the overall health of the healthcare system. Reducing burnout and improving job satisfaction are essential for retaining skilled professionals and maintaining effective services (8).

Recognition and Incentives

Healthcare workers, often facing high-stress environments and long hours, need to feel appreciated for their efforts. Developing a culture of recognition through performance incentives, awards, and feedback mechanisms can improve job satisfaction and morale. In hospital administration, incentives might include monetary bonuses, career advancement opportunities, or increased professional autonomy. Similarly, in the public health sector, recognition of workers' contributions to disease prevention and community health programs can improve retention and motivation (22).

Building a culture of appreciation ensures that healthcare workers remain engaged, which is a key factor in improving service delivery and patient care.

Challenges and Barriers to Effective Workforce Performance

While the strategies outlined above have proven benefits, several challenges remain in optimizing workforce performance across sectors (23).

Workforce Shortages: Many healthcare systems face critical shortages in both clinical and administrative positions. This is especially problematic in remote or underserved areas, where attracting and retaining skilled workers remains a challenge.

Resource Allocation: Adequate funding and resource allocation are required to implement workforce development programs, mental health initiatives, and technology integration. Limited financial resources can hinder the implementation of these strategies, particularly in lower-income regions.

Cultural and Structural Barriers: In some healthcare settings, traditional hierarchical structures may limit inter-professional collaboration. Additionally, organizational cultures that do not prioritize diversity, inclusion, or open communication may hinder workforce development.

Resistance to Change: Healthcare workers may resist new technologies or practices, especially when they are perceived as adding additional workload or disrupting established routines. Overcoming this resistance requires comprehensive training and strong leadership.

Conclusion

Enhancing health workforce performance across hospital administration, healthcare services, and public health requires a multi-faceted, cross-disciplinary approach. Strategies such as effective leadership, continuous training, inter-professional collaboration, mental health initiatives, and technological integration are all essential components in fostering a high-performing workforce. However, challenges such as workforce shortages, resource constraints, and resistance to change must be addressed to fully optimize these strategies. By prioritizing the development and wellbeing of healthcare workers, organizations can improve both job satisfaction and patient outcomes, ultimately leading to stronger healthcare systems.

References

- Duffy, J. R. (2022). *Quality caring in nursing and health systems: Implications for clinicians, educators, and leaders*. Springer Publishing Company.
- Li, X., Lu, J., Hu, S., Cheng, K. K., De Maeseneer, J., Meng, Q., ... & Hu, S. (2017). The primary health-care system in China. *The Lancet*, 390(10112), 2584-2594.
- Butt, S., Raza, A., Siddiqui, R., Saleem, Y., Cook, B., & Khan, H. (2024). Healthcare employment landscape: comparing job markets for professionals in developed and developing countries. *Journal of Work-Applied Management*, 16(1), 84-96.
- Butt, S., Raza, A., Siddiqui, R., Saleem, Y., Cook, B., & Khan, H. (2024). Healthcare employment landscape: comparing job markets for professionals in developed and developing countries. *Journal of Work-Applied Management*, 16(1), 84-96.
- Manyazewal, T. (2017). Using the World Health Organization health system building blocks through survey of healthcare professionals to determine the performance of public healthcare facilities. *Archives of Public Health*, 75, 1-8.

- Khatri, R., Endalamaw, A., Erku, D., Wolka, E., Nigatu, F., Zewdie, A., & Assefa, Y. (2023). Continuity and care coordination of primary health care: a scoping review. *BMC Health Services Research*, 23(1), 750.
- Kuo, D. Z., McAllister, J. W., Rossignol, L., Turchi, R. M., & Stille, C. J. (2018). Care coordination for children with medical complexity: whose care is it, anyway?. *Pediatrics*, 141(Supplement_3), S224-S232.
- National Academies of Sciences, Medicine Division, Board on Global Health, & Committee on Improving the Quality of Health Care Globally. (2018). *Crossing the global quality chasm: improving health care worldwide*.
- Miller, W. L. (2021). The story of general practice and primary medical care transformation in the United States since 1981. Commissioned paper for the NASEM Consensus Report: Implementing high-quality primary care rebuilding the foundation of health care, 1-60.
- Bitton, A., Ratcliffe, H. L., Veillard, J. H., Kress, D. H., Barkley, S., Kimball, M., ... & Hirschhorn, L. R. (2017). Primary health care as a foundation for strengthening health systems in low-and middle-income countries. *Journal of general internal medicine*, 32, 566-571.
- Ay, S., Cardei, M., Meyer, A. M., Zhang, W., & Topaloglu, U. (2024). Improving Equity in Deep Learning Medical Applications with the Gerchberg-Saxton Algorithm. *Journal of Healthcare Informatics Research*, 8(2), 225-243.
- Mould-Millman, N. K., Dixon, J. M., Sefa, N., Yancey, A., Hollong, B. G., Hagahmed, M., ... & Wallis, L. A. (2017). The state of emergency medical services (EMS) systems in Africa. *Prehospital and disaster medicine*, 32(3), 273-283.
- Aringhieri, R., Bruni, M. E., Khodaparasti, S., & van Essen, J. T. (2017). Emergency medical services and beyond: Addressing new challenges through a wide literature review. *Computers & Operations Research*, 78, 349-368.
- AL ALI, F. T., Almajed, Z. A., Almugran, I. A., ALSannaa, G. M., Alomran, Z. A., Alhassan, R. E. H., ... & Alhashim, M. G. Department of Clinical Nursing and Diagnostic Laboratories.
- Gernant, S. A., Nguyen, M. O., Siddiqui, S., & Schneller, M. (2018). Use of pharmacy technicians in elements of medication therapy management delivery: a systematic review. *Research in Social and Administrative Pharmacy*, 14(10), 883-890.
- Borchert, J. S., Phillips, J., Thompson Bastin, M. L., Livingood, A., Andersen, R., Brasher, C., ... & Lee, J. C. (2019). Best practices: Incorporating pharmacy technicians and other support personnel into the clinical pharmacist's process of care. *Journal of the American College of Clinical Pharmacy*, 2(1), 74-81.
- Mattingly, A. N., & Mattingly II, T. J. (2018). Advancing the role of the pharmacy technician: a systematic review. *Journal of the American Pharmacists Association*, 58(1), 94-108.
- Shanafelt, T., Trockel, M., Rodriguez, A., & Logan, D. (2021). Wellness-centered leadership: equipping health care leaders to cultivate physician well-being and professional fulfillment. *Academic Medicine*, 96(5), 641-651.
- Alsubaie, S. S., Bukhamseen, Z. F. A., Alyami, F. S. A., Alotaibi, M. F., Alkahtani, F. A., Alkhamsan, M. S., ... & Al Khamees, Z. H. (2024). Multidisciplinary Approaches in General Medical Practice: Enhancing Collaboration for Better Patient Care. *Journal of Ecohumanism*, 3(7), 2659-2669.
- Susskind, R., & Susskind, D. (2022). *The future of the professions: How technology will transform the work of human experts*. Oxford University Press.
- Trenerry, B., Chng, S., Wang, Y., Suhaila, Z. S., Lim, S. S., Lu, H. Y., & Oh, P. H. (2021). Preparing workplaces for digital transformation: An integrative review and framework of multi-level factors. *Frontiers in psychology*, 12, 620766.
- Norful, A. A., Rosenfeld, A., Schroeder, K., Travers, J. L., & Aliyu, S. (2021). Primary drivers and psychological manifestations of stress in frontline healthcare workforce during the initial COVID-19 outbreak in the United States. *General hospital psychiatry*, 69, 20-26.
- Ozkan-Ozen, Y. D., & Kazancoglu, Y. (2022). Analysing workforce development challenges in the Industry 4.0. *International Journal of Manpower*, 43(2), 310-333.