

The Role of Healthcare Specialists Collaboration in Enhancing Patient Care in Military Hospitals in Saudi Arabia

Waad Abdulmohsen Alahmadi¹, Ahmed Salem Alzahrani², Saad Abdullah Al Qarni³, Mohammed Abdulmohsen A Malaekah⁴, Shakhis Hajed Shakhis Alghamdi⁴, Raed Mastour M Alharthi⁵, Abdulkarim Mohammed Bakar Aljofi⁶, Turki Mansour AlSubaie⁷, Abdullah Saeed Moraya Alqahtani⁸, Emad Harbi Muidh Alkhudaydi⁴, Raed Abdulaziz Farah Albalawi⁹, Ahmed Abdullah Almalki¹⁰, Khaled Abdullah Albugami¹⁰, Sami Saad Aljuhani¹⁰, Abdulaziz Amer Almuarribi¹⁰

¹ Registration Nurse, King Fahad Armed forces Hospital, Jeddah, Saudi Arabia

² X-Ray Technician, Radiology Department, King Fahad Armed Forces Hospital, Jeddah, Saudi Arabia

³ ECG Technician, Cardiology Department, King Salman Armed Forces Hospital, Tabuk, Saudi Arabia

⁴ Medical Records Technicin, Al-Hada Military Hospital, Taif, Saudi Arabia

⁵ Health Information Management Specialist, Al-Hada Military Hospital, Taif, Saudi Arabia

⁶ Nursing Technician, King Khaled Hospital, Tabuk, Saudi Arabia

⁷ Laboratory Specialist, King Fahd Armed Forces Hospital, Jeddah, Saudi Arabia

⁸ General Physician, Khamis Mushait General Hospital, Khamis Mushait, Saudi Arabia

⁹ Emergency Medical Services Technician, Armed Forces Hospital in Jubail, Saudi Arabia

¹⁰ Health Information Management Specialist, Al-Hada Military Hospital, Taif, Saudi Arabia

Abstract: Interdisciplinary collaboration plays a crucial role in enhancing patient care within military hospitals in Saudi Arabia by integrating diverse expertise and perspectives from various medical and non-medical disciplines. Such collaboration allows healthcare professionals, including doctors, nurses, psychologists, social workers, and rehabilitation specialists, to develop comprehensive treatment plans that address the multifaceted needs of military personnel. By fostering an environment where communication and teamwork are prioritized, interdisciplinary teams are better equipped to navigate complex medical cases, share insights, and implement best practices that lead to improved health outcomes. This collaborative approach is especially vital in military settings, where patients may present with unique physical and psychological challenges resulting from combat-related injuries and stressors. Moreover, interdisciplinary collaboration in military hospitals enhances the overall healthcare experience by promoting holistic care models that consider the patient's social and psychological well-being alongside their physical health. For example, coordinated efforts among mental health professionals and primary care providers can lead to more effective strategies for managing conditions like PTSD, which is prevalent among military personnel. Furthermore, this teamwork fosters a supportive environment for healthcare providers, encouraging continuous learning and innovation in treatment protocols. As Saudi Arabia continues to invest in military healthcare infrastructure and training, the emphasis on interdisciplinary collaboration will be essential for overcoming healthcare challenges and delivering optimal care to servicemen and women.

Keywords: Interdisciplinary collaboration, military hospitals, patient care, healthcare professionals, Saudi Arabia, treatment plans

Introduction:

The provision of healthcare services in military hospitals presents unique challenges and opportunities, particularly within the context of Saudi Arabia, a nation characterized by its strategic

geographic location, significant military presence, and ongoing socioeconomic development initiatives. In recent years, the healthcare sector in Saudi Arabia, including its military hospitals, has undergone substantial reform, paralleling the country's Vision 2030 initiative. This vision seeks to

improve the quality of life for Saudi citizens through advancements in various sectors, including healthcare. One pivotal aspect of this transformation involves interdisciplinary collaboration, which is increasingly recognized as a vital component in enhancing patient care [1].

Interdisciplinary collaboration refers to the process whereby professionals from diverse fields work together towards a common goal, sharing their knowledge, expertise, and perspectives. In the setting of military hospitals, where complex healthcare needs arise from a variety of factors—ranging from combat-related injuries to chronic health conditions—the integration of various disciplines becomes essential. Such collaboration not only aids in delivering comprehensive care but also enhances the efficiency and effectiveness of medical services. Military healthcare professionals, including physicians, nurses, psychologists, and social workers, must navigate the intricacies of treatment protocols and patient management in an environment often marked by acute stress and limited resources [2].

In Saudi Arabia, military hospitals serve a dual purpose: they provide healthcare for active-duty soldiers and their families and, at times, for civilians, especially during humanitarian missions or natural disasters. As such, these institutions function within a broader healthcare framework that calls for innovative approaches to patient care. A collaborative environment that fosters interdisciplinary teams can lead to improved diagnosis, treatment strategies, and overall health outcomes for patients. Moreover, the dynamics of military healthcare—where rapid decision-making and adaptability are paramount—make interdisciplinary collaboration not merely beneficial but necessary [3].

Research has shown that interdisciplinary collaboration in healthcare settings leads to numerous advantages, including increased patient safety, enhanced communication among healthcare providers, and improved satisfaction rates among patients and their families. When disciplines converge, it allows for a holistic understanding of patient needs, minimizes redundancy in services, and facilitates the pooling of resources. This collaborative approach is particularly pertinent in military hospitals, where the demands of agile care

delivery must be balanced with the complexities of multidisciplinary needs [4].

Furthermore, the cultural context of Saudi Arabia presents additional layers of significance for interdisciplinary collaboration in military hospitals. The country's healthcare system is marked by a diverse population, distinct cultural norms, and unique health challenges. Addressing these multidimensional factors requires an integrative approach that considers the physical, psychological, and social dimensions of health. Interdisciplinary collaboration can effectively bridge cultural divides, promoting cultural competence and sensitivity among healthcare providers, which is vital for delivering meaningful patient-centered care [5].

Despite its recognized benefits, the implementation of interdisciplinary collaboration within military hospitals in Saudi Arabia is not devoid of challenges. Barriers such as hierarchical models in healthcare organizations, differences in professional training, and communication discrepancies can hinder teamwork and effectiveness. Understanding these obstacles is crucial for developing strategies that foster a culture of collaboration. Moreover, there is a need for empirical research to assess the extent and impacts of interdisciplinary collaboration on patient care within the specific context of military hospitals in Saudi Arabia [6].

This research aims to explore the role of interdisciplinary collaboration in enhancing patient care in military hospitals in Saudi Arabia. By examining current practices, identifying barriers to effective teamwork, and highlighting successful models of collaboration, the study seeks to contribute to the existing body of knowledge in military healthcare. It will also intend to provide actionable recommendations to policymakers and healthcare administrators aiming to optimize the effectiveness and efficiency of military health services [7].

Overview of Healthcare Systems in Saudi Arabia

Healthcare has been an essential pillar of the Kingdom of Saudi Arabia, and its evolution reflects a narrative of significant progress aligned with the nation's socio-economic development. The Kingdom's healthcare landscape is characterized by a complex interplay of public and private sector involvement, increasingly emphasized by strategic policies aimed at enhancing health services,

improving access to care, and ensuring the quality of healthcare delivery [8].

The roots of Saudi Arabia's healthcare system can be traced back to the early 1900s, before the establishment of the Kingdom in 1932. Initially, healthcare was rudimentary and largely community-based, reliant on traditional medicine and local healers. However, the discovery of oil in the mid-20th century marked a significant turning point, providing the financial resources necessary for extensive health system development. The government recognized the need for modern healthcare facilities and services to cater to the increasing population and the expectations of a rapidly modernizing society [9].

By the 1960s, the Saudi government took decisive steps in establishing health policies and infrastructure. The Ministry of Health was created in 1950, laying the groundwork for an organized healthcare system. The expansion of public health services accelerated in the following decades, marked by the establishment of hospitals, clinics, and preventative health initiatives. Rapid government investment in healthcare was paralleled by an increased focus on education and training for healthcare professionals [10].

The Saudi healthcare system is primarily a government-funded sector, with the Ministry of Health (MoH) being the main regulatory body responsible for overseeing healthcare services. The healthcare system is built around three main components: public healthcare, private healthcare, and specialized health services [3].

1. **Public Healthcare Sector:** The MoH is the chief provider of healthcare services in Saudi Arabia, managing the majority of hospitals and clinics across the Kingdom. Public hospitals offer a range of services, including outpatient care, emergency services, surgeries, maternity care, and chronic disease management. The availability of these services is intended to ensure that every citizen, regardless of economic status, can access necessary healthcare [11].

2. **Private Healthcare Sector:** While the public system dominates, the private healthcare sector has grown substantially, providing an alternative for those who can afford it. Private hospitals and clinics often boast shorter waiting times, a wider menu of services, and enhanced

comfort. The emergence of private healthcare has encouraged competition, driving improvements in service quality across the board. It is important to note that private healthcare facilities are often used by expatriates and wealthier Saudi citizens [12].

3. **Specialized Healthcare Services:** The Kingdom also prioritizes specialized health services, including facilities for cardiac care, oncology, and mental health. Health authorities have established centers of excellence to provide advanced medical services and contribute to research and education in specific fields [11].

In recent years, numerous reforms have been initiated to improve the efficiency and quality of healthcare delivery. The Saudi Vision 2030, launched in 2016, articulates ambitious goals for the Kingdom, including enhancing healthcare services. One of the critical objectives is to increase the quality of care while reducing the government's direct role in providing services. This includes empowering the private sector involvement through public-private partnerships and the introduction of insurance schemes [13].

Moreover, efforts have been made to develop a more patient-centered approach to healthcare delivery. Initiatives such as the "Seha" app have transformed how patients access healthcare services, enabling online appointments, consultations, and personal health records, thus promoting greater engagement in personal health management [5].

Despite the enormous strides in development, the Saudi healthcare system faces several challenges. These include:

1. **Demand and Supply Imbalance:** With an expanding population, enhanced life expectancy, and rising prevalence of chronic diseases such as diabetes and obesity, the demand for healthcare services is surging. Meeting this demand is a challenge, particularly in rural areas where healthcare facilities are less accessible [14].

2. **Human Resources:** The healthcare sector is challenged by the need for skilled professionals. While there have been substantial investments in training and education, the Saudi health system still relies heavily on expatriate healthcare workers. Initiatives aimed at increasing the number of Saudi nationals in the healthcare workforce are ongoing, but a gap remains [15].

3. **Quality of Care:** Alongside access, ensuring high-quality care is critical. Variations in service quality across regions and between public and private sectors can affect health outcomes. Consistent standards, accreditation, and oversight are necessary to maintain and improve care quality [10].

4. **Integration of Services:** As healthcare systems evolve, there is an increasing need to integrate health services to provide holistic and coordinated care. Currently, fragmentation exists between various levels of care, making it challenging for patients to navigate the system [12].

Looking to the future, the Kingdom of Saudi Arabia is poised to continue transforming its healthcare system. The emphasis on digital health and telemedicine, accelerated by the COVID-19 pandemic, signals a potential revolution in how healthcare is delivered. Investments in technology can enhance patient access and streamline processes, making healthcare more efficient [15].

The push towards preventive care and health promotion is also significant. A strong emphasis on public health initiatives, awareness campaigns, and lifestyle modification programs could shift the focus from treating illness to promoting overall wellness [16]. Furthermore, ongoing reforms aimed at increasing the role of the private sector and diversifying financing mechanisms (such as health insurance) will play critical roles in shaping the system.

The Importance of Collaborative Care in Military Hospital Settings in Saudi Arabia

The unique nature of military healthcare, often influenced by the operational tempo and distinctive injury patterns associated with military engagements, necessitates a collaborative approach. Military personnel are frequently exposed to specific health challenges such as combat injuries, psychological trauma, and rehabilitative needs. These diverse conditions require a multifaceted treatment approach, wherein various specialties can contribute their expertise to ensure comprehensive care [17].

Moreover, military hospitals often operate under conditions that demand efficiency and effective resource utilization. The use of collaborative care models helps to streamline processes, minimize

duplication of services, and alleviate the burden on individual practitioners. By fostering communication and cooperation among various health professionals, military healthcare facilities can provide targeted and efficient treatment regimens that cater to the specific needs of their patients [18].

Collaborative care has been shown to improve patient outcomes significantly in military settings. Research demonstrates that when healthcare providers work cohesively, patients experience better management of complex health issues. This is particularly important in the military context, where injuries can be multifaceted and chronic conditions often require interdisciplinary management [19].

For instance, consider a soldier returning from combat with physical injuries and psychological distress. A collaborative care team might consist of orthopedic surgeons, physical therapists, mental health professionals, and pain management specialists. This synergy not only addresses the immediate physical rehabilitation but also considers the psychological implications of warfare, promoting holistic recovery [20].

Furthermore, collaborative care can lead to enhanced patient satisfaction. When individuals feel that their healthcare providers are communicating effectively and coordinating their care, they are more likely to trust the medical system and adhere to treatment plans. In military environments, where personnel may face additional stressors associated with service, maintaining patient confidence is paramount [16].

Implementing a successful collaborative care model in military hospitals requires a deliberate organizational structure and an emphasis on interdisciplinary training. Within the Saudi military healthcare system, focused efforts have been put into training programs that promote teamwork and communication skills among healthcare providers. Collaborative practice needs to be woven into the fabric of military medical training, instilling the importance of shared goals in delivering patient care [11].

The establishment of regular, structured meetings where interdisciplinary teams can discuss cases, review treatment plans, and share expertise can enhance the practice of collaborative care. Utilizing chairpersons or facilitators who can guide

discussions ensures that all voices are heard and that common challenges are addressed [21].

Additionally, integrating advanced technology into collaborative care is vital. Electronic health records (EHR) can streamline communication, enabling quick sharing of patient information among team members. In a military hospital context, where decisions often need to be taken swiftly, such technological solutions can minimize delays and enhance the efficiency of care delivery [22].

Despite the many advantages of implementing collaborative care in military hospitals, some challenges persist. Hierarchical structures inherent in the military can impede communication and collaboration. Additionally, cultural differences between various healthcare professionals may create barriers to effective teamwork. Addressing these challenges involves fostering an organizational culture that prioritizes collaboration over hierarchy. Leadership must advocate for a team-oriented approach, demonstrating the benefits that come from inclusive decision-making and collective accountability [23].

Another consideration is the need for ongoing assessments of collaborative practices within military hospitals. By identifying barriers, measuring outcomes, and adjusting approaches as needed, military healthcare leaders can ensure that collaborative care remains effective and responsive to the evolving needs of their patient populations [24].

Roles and Responsibilities of Healthcare Professionals in Interdisciplinary Teams

Interdisciplinary teams consist of healthcare providers from multiple disciplines, including, but not limited to, physicians, nurses, pharmacists, social workers, physical therapists, occupational therapists, and dietitians. These teams collaborate to develop, implement, and evaluate patient care plans focused on the holistic needs of individuals. The convergence of diverse viewpoints fosters innovative solutions to complex health issues, ultimately improving patient experiences and health outcomes [24].

Physicians hold a central role in interdisciplinary teams as they are primarily responsible for diagnosing medical conditions, prescribing treatment, and overseeing overall patient

management. Their extensive medical training equips them to interpret clinical data, make critical decisions, and lead the team in developing effective treatment plans. In an interdisciplinary setting, physicians must effectively communicate their insights to other team members while being receptive to their expertise. This collaborative approach ensures that all aspects of a patient's care are considered, from physiological to psychological factors [25].

Nurses are often the backbone of interdisciplinary teams, acting as liaisons between patients and the various specialists involved in their care. Their roles encompass direct patient care, medication administration, patient education, and advocacy. Nurses monitor patient progress, identify changes in physical or emotional health, and provide vital information to the team regarding patients' responses to treatment. Their strong rapport with patients allows them to gather insights into patients' needs and preferences, ensuring that care plans are patient-centered and culturally sensitive [26].

Pharmacists contribute their expertise in medication management, playing a pivotal role in ensuring safe and effective pharmacotherapy. Within interdisciplinary teams, they participate in medication reconciliation, monitor for drug interactions, and provide consultation on medication plans. Pharmacists also educate patients about their medications, counsel them on adherence strategies, and dispel misconceptions about pharmacotherapy. By actively managing medications, pharmacists help reduce adverse drug events and enhance therapeutic outcomes [27].

Social workers are essential in addressing the psychosocial aspects of care, which can significantly impact a patient's health outcomes. They assess social determinants of health—such as socioeconomic status, housing stability, and access to care—and provide interventions to help patients navigate these challenges. Social workers also facilitate communication among family members, coordinate support services, and advocate for patients' rights. Their involvement is crucial in ensuring that patients receive comprehensive care that includes emotional and social support [28].

Physical therapists, occupational therapists, and speech therapists focus on improving patients' functional abilities and quality of life. They

collaborate with other team members to assess patients' needs and set rehabilitation goals. Physical therapists help patients regain mobility and strength following surgery or injury; occupational therapists facilitate daily living activities and assist return to work; speech therapists address communication challenges and swallowing disorders. These specialists contribute valuable insights into the functional aspects of patient care, emphasizing the importance of rehabilitation and recovery [29].

Dietitians play a vital role in managing patients' nutritional needs, which can significantly affect overall health and recovery. They provide individualized dietary assessments, develop nutrition plans, and offer counseling on healthy eating practices. In chronic disease management—such as diabetes or heart disease—dietitians work closely with other team members to devise strategies that align with medical protocols while addressing patients' preferences and lifestyle challenges. Their expertise helps mitigate complications, enhance healing, and promote wellness through nutrition [30].

As members of interdisciplinary teams, healthcare professionals share several key responsibilities that contribute to effective collaboration and patient care:

Effective Communication

Effective communication is foundational to the success of interdisciplinary teams. Each healthcare professional must convey critical information in a clear and concise manner while also being open to feedback and insights from their colleagues. Regular team meetings, electronic health record updates, and informal check-ins can facilitate communication among team members. The goal is fostering a culture of transparency and respect, where every voice is valued, and patients' concerns are prioritized [31].

Collaborative Decision-Making

Collaborative decision-making entails the collective development of care plans that incorporate diverse insights and expertise. Each professional contributes their knowledge to formulate comprehensive, evidence-based strategies tailored to the patient's needs. This collaborative approach empowers team members to engage in shared problem-solving, ensuring that patient care is well-rounded and

considers both medical and socio-environmental factors [32].

Continuous Learning and Adaptation

In the rapidly evolving field of healthcare, continuous learning is vital for all team members. Professionals must stay abreast of advances in their respective fields, emerging best practices, and new technologies. Interdisciplinary teams should cultivate a learning environment, encouraging members to share knowledge and experiences. By doing so, teams can adapt their practice approaches to meet the dynamic needs of their patients [30].

The collaborative efforts of interdisciplinary teams have profound implications for patient care. Research consistently shows that teams that work effectively together yield better health outcomes, reduce hospital readmission rates, and enhance patient satisfaction. The holistic approach inherent in interdisciplinary care enables healthcare professionals to address not only the physical but also the emotional and social dimensions of health. Moreover, reducing fragmentation of care ultimately leads to a more seamless experience for patients, who benefit from comprehensive and coordinated services [15].

Strategies for Enhancing Team Communication and Coordination:

1. Implement Multi-Disciplinary Team Approaches

Multi-disciplinary teams (MDTs) involve bringing together healthcare professionals from various specialties to collaboratively address patient care. This approach not only integrates diverse expertise, enhancing treatment plans, but also fosters an environment of shared communication. Regular MDT meetings can serve as platforms for members to discuss cases, voice concerns, and share insights, ensuring that all team members are aligned in the care process [9].

In Saudi Arabia, healthcare institutions can promote MDTs by establishing protocols that encourage the participation of various disciplines during patient care. This not only improves diagnosis and treatment outcomes but also cultivates an inclusive communication culture where team members feel valued and heard [2].

2. Utilize Technology for Enhanced Communication

Technology can serve as a powerful tool to improve communication among healthcare teams in Saudi Arabia. The integration of electronic health records (EHR), communication applications, and telemedicine platforms can streamline the exchange of information [28].

Healthcare organizations can invest in sophisticated Communication and Collaboration Tools (CCTs) that enable real-time discussions, document sharing, and video conferencing. This is particularly useful in a country where specialists may be located in different geographic areas, allowing seamless communication regardless of distance [28].

Furthermore, incorporating artificial intelligence (AI) and machine learning can facilitate data analysis, providing teams with relevant patient histories and predicting outcomes based on shared information. This ensures that decisions made are informed and evidence-based, enhancing the overall coordination of patient care [33].

3. Foster a Culture of Open Communication

Creating an organizational culture that promotes open communication is vital in healthcare settings. Encouraging feedback from team members can lead to improvements in processes and patient care. This can be achieved through regular training and workshops focused on interpersonal communication skills, conflict resolution, and collaborative problem-solving [15].

In a hierarchical healthcare system, team members may sometimes hesitate to voice their opinions, resulting in inefficiencies and potential errors. Leadership within healthcare organizations in Saudi Arabia should advocate for a flattened hierarchy, where every team member, regardless of rank, feels empowered to communicate openly. Creating anonymous reporting systems can also provide staff with a safe avenue to express their concerns without fear of retribution [11].

4. Emphasize Continuous Professional Development

Continuous education and skills development are key in maintaining high standards in healthcare delivery. Enhancing communication and coordination skills should be an integral component

of professional training programs for healthcare workers in Saudi Arabia. Healthcare organizations can offer workshops and courses focused on team dynamics, effective communication strategies, and cultural competency to equip healthcare professionals with the tools necessary for effective collaboration. These training sessions can help bridge the communication gap that exists due to cultural and linguistic differences in a multicultural workforce. Additionally, establishing mentorship programs, where experienced healthcare professionals guide less experienced team members, can facilitate knowledge transfer and better communication practices [33].

5. Establish Clear Roles and Responsibilities

Defining clear roles and responsibilities can mitigate confusion and enhance team coordination. When every team member understands their specific role in patient care, there is less chance for overlap and miscommunication. Healthcare organizations should implement standardized protocols that delineate the duties of various team members in different scenarios. Regular team meetings can serve as a platform to revisit these roles, identify any overlaps, and adjust responsibilities based on evolving patient needs. Clarifying roles also enhances accountability, fostering a sense of ownership within the team [34].

6. Prioritize Collaborative Care Models

Collaborative care models emphasize teamwork in developing and executing patient care plans, integrating services across various healthcare providers. In Saudi Arabia, healthcare organizations can adopt these models by aligning their services with patient needs and involving patients in their care decisions [35].

Establishing a patient-centered approach not only enhances communication among healthcare professionals but also fosters collaboration with patients. Encouraging patients to voice their preferences and concerns can lead to tailored care plans that enhance satisfaction and clinical outcomes [35].

Conclusion:

In conclusion, the growing complexity of healthcare needs within military hospitals necessitates innovative approaches that not only enhance patient care but also ensure resilient and adaptive healthcare

systems. Interdisciplinary collaboration stands out as a progressive strategy that aligns with the overarching goals of the Saudi healthcare sector, particularly within the framework of Vision 2030. By fostering synergy among healthcare professionals, military hospitals can significantly improve outcomes for their patient populations—military personnel and civilians alike—while also laying a strong foundation for future advancements in healthcare delivery. This research ultimately endeavors to illuminate the path towards a more integrated and collaborative model of healthcare in the unique context of Saudi Arabia's military hospitals.

References:

1. Alasiri, A. A., & Mohammed, V. (2022). Healthcare transformation in Saudi Arabia: An overview since the launch of vision 2030. *Health Services Insights*, 15, 11786329221121214. 10.1177/11786329221121214
2. Al-Dossary, R. N. (2022). Leadership style, work engagement and organizational commitment among nurses in Saudi Arabian hospitals. *Journal of Healthcare Leadership*, 14, 71–81. 10.2147/JHL.S365526
3. Agarwal, R., Anderson, C., Zarate, J., & Ward, C. (2013). If we offer it, will they accept? Factors affecting patient use intentions of personal health records and secure messaging. *Journal of Medical Internet Research*, 15(2), e43. 10.2196/jmir.2243
4. Acharya, B., Maru, D., Schwarz, R., Citrin, D., Tenpa, J., Hirachan, S., Basnet, M., Thapa, P., Swar, S., Halliday, S., Kohrt, B., Luitel, N. P., Hung, E., Gauchan, B., Pokharel, R., & Ekstrand, M. (2017). Partnerships in mental healthcare service delivery in low-resource settings: Developing an innovative network in rural Nepal. *Globalization and Health*, 13(1), 2. 10.1186/s12992-016-0226-0
5. Al-Dossary, R. N. (2018). The Saudi Arabian 2030 vision and the nursing profession: The way forward. *International Nursing Review*, 65(4), 484–490. 10.1111/inr.12458
6. Alhazzani, W., Alshahrani, M., Alshamsi, F., Aljuhani, O., Eljaaly, K., Hashim, S., Alqahtani, R., Alsaleh, D., Al Duhailib, Z., Algethamy, H., Al-Musawi, T., Alshammari, T., Alqarni, A., Khoujah, D., Tashkandi, W., Dahhan, T., Almutairi, N., Alserehi, H. A., Al-Yahya, M., ... Al-jedai, A. (2022). The Saudi Critical Care Society practice guidelines on the management of COVID-19 in the ICU: Therapy section. *Journal of Infection and Public Health*, 15(1), 142–151. 10.1016/j.jiph.2021.10.005
7. Alharbi, M. F. (2018b). Does health financing in Saudi Arabia need a national health accounts framework? *International Journal of Health Sciences (Qassim)*, 12, 72–77.
8. Alam, D. S., Chowdhury, M. A. H., Siddiquee, A. T., Ahmed, S., & Niessen, L. W. (2014). Awareness and control of hypertension in Bangladesh: Follow-up of a hypertensive cohort. *BMJ Open*, 4, e004983. 10.1136/bmjopen-2014-004983
9. Al-Dossary, R. N. (2022). Leadership style, work engagement and organizational commitment among nurses in Saudi Arabian hospitals. *Journal of Healthcare Leadership*, 14, 71–81. 10.2147/JHL.S365526
10. Alkhamis, A., Hassan, A., & Cosgrove, P. (2014). Financing healthcare in Gulf Cooperation Council countries: A focus on Saudi Arabia. *The International Journal of Health Planning and Management*, 29(1), e64–e82. 10.1002/hpm.2213
11. Alalami, K. (2021). The impact of cultural factors on the acceptance of telemedicine in Saudi Arabia. *Journal of Telemedicine and Telecare*, 27(8), 490–498.
12. Alharbi, M. F. (2018a). An analysis of the Saudi health-care system's readiness to change in the context of the Saudi National Health-care Plan in Vision 2030. *International Journal of Health Sciences (Qassim)*, 12, 83–87.
13. Al-Hanawi, M. K., Mwale, M. L., & Kamninga, T. M. (2020). The effects of health insurance on health-seeking behaviour: Evidence from the kingdom of Saudi Arabia. *Risk Management and Healthcare Policy*, 13, 595–607. 10.2147/RMHP.S257381
14. Alaboudi, A., Atkins, A., Sharp, B., Balkhair, A., Alzahrani, M., & Sunbul, T. (2016). Barriers and challenges in adopting Saudi telemedicine network: The perceptions of decision makers of

- healthcare facilities in Saudi Arabia. *Journal of Infection and Public Health*, 9(6), 725–733. 10.1016/j.jiph.2016.09.001
15. Alkhamis, A. A. (2017). Critical analysis and review of the literature on healthcare privatization and its association with access to medical care in Saudi Arabia. *Journal of Infection and Public Health*, 10(3), 258–268. 10.1016/j.jiph.2017.02.014
16. Al-Hanawi, M. K., Khan, S. A., & Al-Borie, H. M. (2019). Healthcare human resource development in Saudi Arabia: Emerging challenges and opportunities-a critical review. *Public Health Reviews*, 40(1), 1. 10.1186/s40985-019-0112-4
17. Alhur, A. (2024). Overcoming electronic medical records adoption challenges in Saudi Arabia. *Cureus*, 16, e53827. 10.7759/cureus.53827
18. Albejaidi, F., & Nair, K. S. (2019). Building the health workforce: Saudi Arabia's challenges in achieving Vision 2030. *The International Journal of Health Planning and Management*, 34(4), e1405–e1416. 10.1002/hpm.2861
19. Brown, A. (2019). Understanding corporate governance of healthcare quality: A comparative case study of eight Australian public hospitals. *BMC Health Services Research*, 19(1), 725.
20. Al Mutair, A., Saha, C., Alhuqbani, W., Alhuqbani, M. N., Alqahtani, M. N., Abogosh, A. K., Alsedrah, A. M., Alhindi, A. H., Alfehaid, R. H., & Al-omari, A. (2023). Utilization of telemedicine during COVID-19 in Saudi Arabia: A multicenter study. *Cureus*, 15, e41541.
21. Al Khashan, H., Abogazalah, F., Alomary, S., Nahhas, M., Alwadey, A., Al-Khudhair, B., Alamri, F., Aleisa, N., Mahmoud, N., & Hassanein, M. (2021). Primary health care reform in Saudi Arabia: Progress, challenges and prospects. *Eastern Mediterranean Health Journal*, 27(10), 1016–1026.
22. Ansell, C., & Gash, A. (2007). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory*, 18(4), 543–571.
23. Alotaibi, A., Saleh, W., Abdulbaqi, A., & Alosaimi, M. (2022). Health research priority agenda for Ministry of Health, Kingdom of Saudi Arabia from 2020 to 2025. *Journal of Epidemiology and Global Health*, 12(4), 413–429.
24. Al Ruthia, Y., Alsenaidy, M. A., Alrabiah, H. K., AlMuhaisen, A., & Alshehri, M. (2018). The status of licensed pharmacy workforce in Saudi Arabia: A 2030 economic vision perspective. *Human Resources for Health*, 16(1), 28.
25. Alshammary, S., Altamimi, I., Alhuqbani, M., Alhumimidi, A., Baaboud, A., & Altamimi, A. (2024). Palliative care in Saudi Arabia: An updated assessment following the national vision 2030 reforms. *Journal of Palliative Medicine*, 27(5), 651–657.
26. Alonazi, W. B. (2017). Exploring shared risks through public-private partnerships in public health programs: A mixed method. *BMC Public Health*, 17(1), 571.
27. Alqahtani, N. M., Alqahtani, A. M. M., Alqahtani, H. M. S., Jathmi, A. Y. J., Alqahtani, B. M. S., Alshehri, A. A., & Alqahtani, A. M. A. (2022). Physicians' knowledge and practice of nutrition education in health care centers of Saudi Arabia: Systematic review. *Archives of Pharmacy Practice*, 13(4), 30–34.
28. Alazemi, N., Tulenko, K., Herbst, C. H., Hamza, M. M., & Alghamdi, M. G. (2020). Challenges and policy opportunities in nursing in Saudi Arabia. *Human Resources for Health*, 18(1), 98.
29. Alsaadi, S. M. (2022). Beliefs, attitudes, and behaviors of Saudi physiotherapists toward evidence-based practice: A multicenter, cross-sectional study. *Saudi Journal of Medicine & Medical Sciences*, 10(3), 227–235.
30. Alodhayb, L., Al-Qudah, M. A., Aldair, A. H., Alghamdi, Y. S., Aleidan, O. R., & Alqhtani, N. S. (2022). Telehealth during COVID-19: Saudi Arabian medical students' perspectives. *Journal of Medical Internet Research*, 24(4), e26513.
31. Almatham, M., & Almedar, A. (2021). The role of educational interventions in improving knowledge and reporting practices of health profession students regarding medical errors. *Iranian Journal of Public Health*, 50(4), 854–861.
32. Alzeidan, R., Rabiee, F., Mandil, A., Hersi, A., & Fayed, A. (2016). Non-Communicable disease

- risk factors among employees and their families of a Saudi university: An epidemiological study. *PLoS One*, 11(11), e0165036.
33. Almodhen, F., & Moneir, W. M. (2023). Toward a financially sustainable healthcare system in Saudi Arabia. *Cureus*, 15, e46781.
34. Belrhiti, Z., Nebot Giralt, A., & Marchal, B. (2018). Complex leadership in healthcare: A scoping review. *International Journal of Health Policy and Management*, 7(12), 1073–1084.
35. Braithwaite, J., Hibbert, P., Blakely, B., Plumb, J., Hannaford, N., Long, J. C., & Marks, D. (2017). Health system frameworks and performance indicators in eight countries: A comparative international analysis. *SAGE Open Medicine*, 5, 2050312116686516.