

Health Policies and Regulatory Framework in Saudi Arabia

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Abstract:

Health policies and regulatory frameworks in Saudi Arabia are designed to promote public health, enhance healthcare quality, and ensure systematic governance within the health sector. The Ministry of Health (MoH) plays a pivotal role in shaping these policies, focusing on expanding access to healthcare services across urban and rural areas. In alignment with Vision 2030, Saudi Arabia's strategic framework aimed at economic diversification and social development, the health sector is undergoing significant reforms. These reforms include developing primary healthcare services, increasing the efficiency of healthcare delivery systems, promoting preventive care, and enhancing the health workforce. The emphasis on digitization and healthcare innovation also reflects the growing importance of technology in improving patient care and administrative processes. The regulatory framework in Saudi Arabia is characterized by comprehensive legislation governing health practices, patient safety, and quality assurance in healthcare services. Key regulatory bodies, such as the Saudi Food and Drug Authority (SFDA) and the Saudi Commission for Health Specialties (SCHS), are tasked with overseeing the safety and efficacy of pharmaceuticals, medical devices, and healthcare professionals. The robust legal framework not only addresses quality control but also emphasizes the protection of patient rights. Additionally, the government is focusing on strengthening public-private partnerships to enhance service delivery and encourage investment in the health sector, thereby supporting the overall goals of national health strategies.

Keywords: Saudi Arabia, health policies, regulatory framework, Ministry of Health, Vision 2030, healthcare quality, primary healthcare, patient safety, Saudi Food and Drug Authority, Saudi Commission for Health Specialties, public-private partnerships.

Introduction:

Health policies and regulatory frameworks serve as cornerstones in shaping the efficacy and accessibility of healthcare services within any nation. In Saudi Arabia, the health sector has undergone profound transformations, particularly in

response to the dual pressures of rapid population growth and increasing healthcare demands. This introduction aims to present a comprehensive overview of the health policies and regulatory frameworks that govern healthcare in the Kingdom, illustrating their evolution, significance, and impact on public health outcomes [1].

Saudi Arabia's health policies have evolved significantly since the establishment of the kingdom in 1932. Initially, healthcare services were rudimentary and largely informal. The late King Abdulaziz sought to modernize the healthcare system, recognizing that providing basic health services was crucial for the nation's development. The establishment of the Ministry of Health in 1950 marked a pivotal point, initiating a structured approach to healthcare delivery. Over the decades, healthcare policies have been shaped by various socio-economic factors, culminating in a sophisticated framework that addresses both preventive and curative health [2].

The introduction of Vision 2030 in 2016 has set a transformative agenda for Saudi Arabia, aiming to diversify the economy and reduce reliance on oil. A critical component of this vision is the enhancement of healthcare services, emphasizing quality, efficiency, and accessibility. The Vision 2030 blueprint includes initiatives to improve health outcomes, reduce the burden of communicable diseases, and promote preventive healthcare [3].

In line with Vision 2030, several key reforms have been implemented, including the expansion of health insurance coverage, increased investment in healthcare infrastructure, and the promotion of private sector involvement in healthcare delivery. The shift towards a more integrated health system is visible in policies aimed at creating a patient-centered approach, which focuses on the needs of individuals and communities rather than merely delivering services [4].

The regulatory framework for health in Saudi Arabia is governed by several key entities, with the Ministry of Health at the forefront. The Ministry formulates national health policies, oversees healthcare delivery, and ensures the implementation of regulations pertaining to healthcare providers and pharmaceuticals. Additionally, other organizations, such as the Saudi Food and Drug Authority (SFDA) and the Saudi Commission for Health Specialties (SCHS), play crucial roles in regulatory oversight [5].

The SFDA is tasked with ensuring the safety and efficacy of food, drugs, and medical devices, while the SCHS oversees the licensing and accreditation of healthcare professionals. This multi-faceted regulatory environment is designed to ensure that

healthcare services meet international standards and are delivered by qualified personnel [6].

One of the significant challenges in Saudi Arabian health policy has been ensuring equitable access to healthcare services across geographical and socio-economic spectrums. Rural areas, in particular, have historically faced challenges due to the concentration of healthcare facilities in urban centers. Recent initiatives aimed at expanding primary healthcare services in underserved areas are essential for addressing this disparity. Health policies in Saudi Arabia are increasingly focused on preventative care, which is seen as a way to reduce long-term healthcare costs and improve health outcomes for all citizens [6].

As Saudi Arabia continues to navigate the complexities of the global healthcare landscape, the development of health policies will need to reflect a commitment not only to local needs but also to international health standards and practices. The integration of technology in healthcare, particularly through telemedicine and electronic health records, presents promising avenues for enhancing service delivery. Additionally, the emphasis on health education and lifestyle modifications will play a crucial role in combating non-communicable diseases, which are on the rise in the Kingdom [7].

Overview of the Regulatory Framework Governing Healthcare:

The healthcare sector, characterized by its complexity and critical role in society, is governed by a multifaceted regulatory framework designed to ensure the safety, efficacy, and accessibility of healthcare services and products. This framework involves a combination of laws, regulations, standards, and policies that dictate how healthcare is delivered, financed, and administered. One of the primary objectives of the regulatory framework is to protect public health while fostering innovation and efficiency within the healthcare system [7].

I. Key Components of the Regulatory Framework

The regulatory framework for healthcare can be broadly categorized into several components: federal and state regulations, professional licensure and accreditation, quality assurance mechanisms, and ethical standards [8].

1. **Federal and State Regulations:**

At the federal level, the U.S. Department of Health and Human Services (HHS) plays a crucial role in shaping healthcare regulations. Key laws such as the Affordable Care Act (ACA), the Health Insurance Portability and Accountability Act (HIPAA), and the Medicare and Medicaid programs form the backbone of healthcare regulation. The ACA, for instance, mandates certain provisions aimed at expanding healthcare access and improving health outcomes, including protections for individuals with pre-existing conditions and the establishment of health insurance marketplaces.

State regulations complement federal regulations and vary significantly across the country. States have the authority to regulate healthcare providers, facilities, and insurers within their jurisdictions. This includes licensure of healthcare professionals, regulation of healthcare facilities, and oversight of insurance markets. Each state develops its own laws to address local healthcare needs, which can lead to a patchwork of regulations that healthcare providers must navigate [9].

2. **Professional Licensure and Accreditation:**

The regulation of healthcare professionals involves a system of licensure that ensures that only qualified individuals can practice medicine, nursing, pharmacy, and other healthcare professions. State medical boards, nursing boards, and other regulatory entities set the standards for education, training, and ongoing professional development. Accreditation bodies, such as The Joint Commission or the National Committee for Quality Assurance (NCQA), evaluate healthcare organizations based on established quality standards, ensuring that patients receive safe and effective care [10].

3. **Quality Assurance Mechanisms:**

Quality assurance in healthcare is essential for maintaining patient safety and improving health outcomes. Various regulatory frameworks focus on monitoring and evaluating the quality of

care provided by healthcare organizations. Programs such as the Centers for Medicare & Medicaid Services (CMS) Quality Payment Program incentivize providers to deliver high-quality care through value-based payment models. Additionally, regulatory bodies often require hospitals and other healthcare facilities to participate in quality reporting initiatives, collecting data on patient outcomes and safety measures to promote transparency and accountability [11].

4. **Ethical Standards:**

Ethical considerations are central to the regulatory framework governing healthcare. Medical ethics dictate the practices and decision-making processes of healthcare professionals, emphasizing principles such as autonomy, beneficence, non-maleficence, and justice. Regulatory bodies often incorporate ethical guidelines into their regulatory frameworks, ensuring that healthcare providers adhere to high ethical standards in their interactions with patients. Ethical oversight is particularly crucial in areas such as research involving human subjects, where institutional review boards (IRBs) play a pivotal role in safeguarding participants' rights and welfare [12].

II. Key Regulatory Bodies

Several key regulatory bodies are involved in overseeing and enforcing healthcare regulations. These include, but are not limited to:

1. **U.S. Food and Drug Administration (FDA):**

The FDA is responsible for regulating food products, drugs, medical devices, and biologics. The agency ensures that products are safe and effective before they can reach the market. The FDA also monitors post-market safety to identify and address any potential risks associated with healthcare products.

2. **Centers for Medicare & Medicaid Services (CMS):**

CMS oversees the nation's Medicare and Medicaid programs and plays a critical role

in regulating healthcare reimbursements, establishing quality benchmarks, and enforcing compliance with federal healthcare laws [13].

3. **State Health Departments:** Each state has its health department responsible for implementing state regulations, conducting public health initiatives, licensing healthcare facilities, and ensuring compliance with state laws [14].
4. **National Institutes of Health (NIH):** NIH not only conducts medical research but also lays down regulatory frameworks for clinical trials and biomedical research, ensuring ethical standards and participant safety are upheld [15].
5. **Accreditation Bodies:** Various organizations, including The Joint Commission and the Accreditation Association for Ambulatory Health Care (AAAHC), evaluate healthcare facilities for compliance with quality standards and best practices, promoting overall quality care.

III. Challenges in Healthcare Regulation

The regulatory framework governing healthcare faces several challenges that can hinder its effectiveness [16].

1. **Complexity and Fragmentation:** The sheer volume and diversity of regulations can create complexity and fragmentation within the healthcare system. Providers must navigate a myriad of federal and state regulations, often leading to confusion and inconsistencies in compliance.
2. **Balancing Innovation and Regulation:** The pace of innovation in healthcare, particularly concerning new technologies and treatments, presents regulatory challenges. Regulators must strike a balance between ensuring patient safety and fostering an environment that supports innovation. Delays in regulatory approval processes can hinder the timely

introduction of new therapies and devices to the market [17].

3. **Accessibility and Affordability:** Ensuring that healthcare regulations promote accessibility and affordability remains an ongoing challenge. Rising healthcare costs, coupled with varying state regulations, can create barriers for underserved populations seeking care. Regulators must continually assess the impact of their policies on access to care.
4. **Evolving Public Health Needs:** The COVID-19 pandemic has highlighted the need for a responsive regulatory framework capable of addressing emerging public health crises. The ability to adapt regulations swiftly in response to shifting health priorities is critical for maintaining public trust and ensuring adequate patient protection [18].
5. **Data Security and Privacy:** The increasing reliance on digital health technologies raises concerns about data security and patient privacy. Regulations such as HIPAA establish standards for the protection of health information, yet new challenges arise as cyber threats evolve. Regulatory bodies must remain vigilant in updating and enforcing cybersecurity measures to protect patient data [19].

Key Agencies and Stakeholders in Health Governance:

Health governance is a complex and multifaceted field that encompasses various institutions, organizations, and individuals responsible for overseeing the health systems and public health policies of a nation or region. The effectiveness of health governance significantly influences the quality of healthcare services, public health outcomes, and the overall wellbeing of a population. Understanding the key agencies and stakeholders involved is crucial for comprehending the dynamics of health governance and the cooperative efforts needed to address health challenges [20].

International organizations play a pivotal role in health governance, particularly in areas requiring transnational cooperation and coordination. Among

these, the World Health Organization (WHO) stands out as the foremost authority on global health. Established in 1948, WHO serves as a coordinating authority on international public health, offering leadership on global health matters, shaping the research agenda, setting norms and standards, and providing technical support to nations. WHO is instrumental in managing global health crises, such as pandemics, by coordinating responses, disseminating critical information, and mobilizing resources [21].

Other significant international agencies include the United Nations Children's Fund (UNICEF) and the World Bank. UNICEF focuses on child health and welfare, advocating for children's rights and ensuring access to necessary healthcare, nutrition, and education. The World Bank, on the other hand, plays a crucial financial role, providing funding for health initiatives and supporting health systems strengthening in low- and middle-income countries [22].

Every nation maintains a dedicated body responsible for formulating and implementing health policies. In many countries, this is typically the Ministry of Health or its equivalent. These national health authorities are tasked with ensuring that the population has access to adequate healthcare services, managing public health emergencies, and overseeing the delivery of preventive and curative services. Their responsibilities include policy development, regulatory oversight, financial management, and coordination with other governmental and non-governmental stakeholders [23].

In countries with federal systems, regional or state health departments may also play a critical role. These agencies adapt national policies to local contexts, implement health programs and services, and engage with communities to identify and address specific health needs.

The private sector constitutes a significant player in health governance, encompassing both for-profit and non-profit organizations. Private healthcare providers are often the primary source of health services in many regions, particularly in low- and middle-income countries where public health systems may be underfunded or overburdened. These providers include hospitals, clinics, and specialists that offer a vast array of health services,

often competing for patients and striving for quality improvement [24].

Pharmaceutical companies also play a vital role in health governance through the research, development, and distribution of medications and vaccines. Their influence extends to public health policy, particularly concerning pricing, accessibility of essential drugs, and ethical standards in clinical trials [25].

NGOs and community-based organizations are critical stakeholders in health governance, particularly in fostering community engagement and addressing health disparities. These entities often operate in areas where government services may be lacking, providing essential healthcare services, education, and advocacy [26].

NGOs like Médecins Sans Frontières (Doctors Without Borders) deliver emergency medical assistance in crisis situations, such as armed conflicts or natural disasters, while organizations such as the Red Cross focus on community health education, vaccination campaigns, and disaster preparedness. Their grassroots connections and local knowledge often enable them to effectively address the needs of underserved populations [27].

Research plays a fundamental role in health governance by contributing evidence-based knowledge that informs policies and practices. Academic institutions and research organizations engage in vital research on health systems, public health, epidemiology, and social determinants of health. This research helps identify health trends, evaluate interventions, and inform strategies aimed at improving health outcomes [28].

Collaboration between government agencies, international organizations, and academic institutions is essential in translating research findings into actionable health policies and programs. Further, training health professionals through academic institutions ensures that the workforce is equipped with the skills needed to address complex health challenges [29].

Health professionals, including doctors, nurses, public health workers, and allied health professionals, are at the forefront of health service delivery and essential stakeholders in health governance. Their expertise and clinical experience

inform best practices in patient care and health promotion. Health professional associations, such as the American Medical Association (AMA) and the International Council of Nurses (ICN), advocate for policies that support their members and improve health systems [30].

These associations often contribute to the development of clinical guidelines, engage in workforce planning, and provide continuing education to ensure health professionals remain up-to-date with the latest practices and innovations. They also play a critical advocacy role, pushing for policies that address the social determinants of health and reduce health inequities [31].

Policymakers, including elected officials and government representatives, have a central role in health governance. Their decisions directly impact health funding, legislation, and the organization of health services. Advocacy groups, including patient advocacy organizations and health coalitions, influence health policy by representing the interests of specific populations and working to ensure that their voices are heard in governmental processes [32].

These stakeholders engage in lobbying efforts, raising public awareness about health issues, and promoting reforms necessary to enhance the effectiveness and equity of health systems. By advocating for the needs of patients, marginalized communities, and vulnerable populations, they work to address systemic barriers to access and improve health outcomes [33].

The impact of a vision on the development of health policies:

The Kingdom of Saudi Arabia has undergone significant transformation in recent years, particularly in its health sector, propelled by the ambitious Vision 2030 initiative. Launched in April 2016 by Crown Prince Mohammed bin Salman, Vision 2030 represents a strategic framework aimed at reducing the nation's dependency on oil, diversifying the economy, and developing public service sectors, including healthcare. This comprehensive vision has profoundly influenced the development of health policies in the kingdom, ushering in a new regulatory framework that seeks to enhance the quality, accessibility, and efficiency of health services [33].

At the core of Vision 2030 is the belief that an effective health system is essential for the well-being of citizens and the broader objectives of economic diversification and workforce development. The vision's health-related goals aim to increase access to quality healthcare services, improve health outcomes, and promote a healthier lifestyle among citizens. To achieve these objectives, the government has established a clear set of strategic priorities, policies, initiatives, and investments designed to create a robust regulatory framework in the healthcare sector [34].

One of the most significant outcomes of Vision 2030 is the establishment of the Saudi Health Council, which has been tasked with overseeing the implementation and enforcement of health policies aligned with the vision. This council acts as a regulatory body that coordinates health sector efforts, implements strategies for quality enhancement, and fosters collaboration between governmental entities and private sector healthcare providers [34].

Additionally, the establishment of the National Transformation Program (NTP) in 2016 further emphasizes the government's commitment to health sector reform and the achievement of Vision 2030 goals. The NTP outlined specific initiatives aimed at promoting public health, expanding health insurance coverage, and developing healthcare infrastructure within the kingdom. By promoting a comprehensive regulatory framework and a vision-driven approach, these initiatives have facilitated the transition from a predominantly public healthcare model to a more diversified system involving both public and private sector participation [34].

In alignment with Vision 2030, the Saudi government has implemented several key regulatory reforms and initiatives aimed at enhancing the healthcare system. One notable reform is the introduction of a universal health insurance system. Under this system, all citizens will have access to health insurance, enabling broader access to essential health services while alleviating the financial burden on families. The drive toward universal health coverage demonstrates the government's commitment to improving health outcomes while fostering a more equitable healthcare landscape [35].

Moreover, the Kingdom's healthcare policies have increasingly focused on the integration of electronic health technologies. The deployment of the "Health Information Exchange" system is a prime example of this initiative, facilitating improved data sharing among healthcare providers. The incorporation of digital health mediums is integral to enhancing the efficiency and quality of healthcare services, leading to better patient outcomes [36].

Another significant initiative associated with the Vision 2030 health agenda is the prioritization of preventive healthcare. The addition of preventive care initiatives reflects a shift in health policies from reactive treatment approaches toward proactive health management. Programs targeting non-communicable diseases like diabetes, heart disease, and obesity emphasize public awareness and education, ensuring that citizens are equipped with the knowledge and resources needed to lead healthier lives [37].

A crucial aspect of reforming the health sector under Vision 2030 is workforce development. The Saudi government recognizes that a skilled workforce is essential for the sustainability and success of the healthcare system. Consequently, the Kingdom has invested in training and educational programs for healthcare professionals, aiming to increase the local workforce's capabilities and expertise. This commitment to workforce development is further underscored by partnerships with international healthcare institutions to provide advanced training and research opportunities [38].

Vision 2030 also highlights the importance of public-private partnerships (PPP) in the healthcare sector. Through PPP, the government can leverage private sector investments to enhance healthcare facilities, deliver innovative services, and improve overall healthcare quality. Policymakers have actively encouraged private sector participation by creating favorable conditions for investment, streamlining the regulatory framework, and providing incentives for private healthcare providers. This collaborative approach not only expands resources and healthcare options but also elevates competition, ultimately benefiting patients [39].

Despite the promising reforms stemming from Vision 2030, the healthcare sector still faces several challenges. Overcoming bureaucratic hurdles,

ensuring compliance with regulatory standards, and efficiently managing resources are ongoing concerns that require continuous attention. Additionally, the rapid population growth and the increasing prevalence of chronic diseases demand that healthcare policies evolve to meet the changing needs of the population [40].

Moving forward, it will be critical for Saudi Arabia to refine its regulatory framework to bolster the sustainability of health policies. Engaging in regular assessments, soliciting stakeholder feedback, and leveraging data-driven decision-making can ensure that policies remain relevant and effective. Furthermore, promoting a culture of innovation within the healthcare system can pave the way for novel solutions and technologies that enhance service delivery

Quality Assurance and Patient Safety Regulations:

In the realm of healthcare, the twin pillars of quality assurance (QA) and patient safety play a vital role in delivering optimal patient care and enhancing health outcomes. As societies strive for better health services, the integration of comprehensive regulations governing these aspects has become increasingly significant [41].

Quality assurance in healthcare is defined as a systematic approach encompassing the entire spectrum of health services, focusing on the maintenance and improvement of quality in patient care. It involves a series of planned and systematic activities necessary to provide adequate confidence that a product or service will fulfill requirements for quality. Essentially, QA seeks to enhance patient outcomes through strategic planning, monitoring processes, and continual improvement [42].

The significance of quality assurance cannot be overstated. Well-implemented QA processes can aid healthcare organizations in standardizing procedures, minimizing errors, and reinforcing a culture of excellence. Quality assurance methodologies include guidelines based on evidence-based practices, performance metrics, internal audits, and the adoption of patient feedback mechanisms. By establishing key performance indicators (KPIs), healthcare facilities can assess the effectiveness, efficiency, and acceptability of their

health services, thus facilitating informed decision-making [43].

Central to the concept of quality assurance is the principle of continuous improvement—often embodied in the Plan-Do-Study-Act (PDSA) cycle. This iterative process allows teams to test changes in the care process and evaluate outcomes, thereby fostering an environment that encourages learning and adaptation [44].

Patient safety is defined as the prevention of errors and adverse effects associated with healthcare. It encompasses a wide array of factors, such as medication management, surgical safety, infection control, and communication among healthcare providers. As healthcare systems evolve, the need for robust patient safety regulations has become paramount to mitigate risks and safeguard patients throughout their treatment journey [45].

Regulatory bodies, such as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the World Health Organization (WHO), play crucial roles in establishing standards that protect patient safety. These organizations promulgate guidelines that healthcare entities must follow to maintain compliance and promote a culture of safety [46].

Key regulations include the implementation of the World Health Organization's Surgical Safety Checklist, which has been shown to significantly reduce surgical complications and mortality. Other regulations may involve the use of standardized protocols for medication administration to minimize errors or the establishment of root cause analysis (RCA) processes to investigate and learn from adverse events [47].

Significantly, patient safety regulations require organizations to integrate robust reporting systems where healthcare professionals can report incidents without fear of retribution. Encouraging a culture of transparency enables institutions to learn from mistakes and implement preventive measures, thus transitioning from a punitive culture to one focused on patient safety enhancement [48].

Quality assurance and patient safety regulations are interconnected, sharing similar goals—both aim to enhance the efficacy and safety of healthcare services. While QA emphasizes the adherence to

established standards and performance improvement, patient safety focuses on minimizing risks and ensuring a secure environment for patient care [48].

The alignment of QA and patient safety initiatives is essential for organizations striving for excellence. By embedding patient safety protocols within the quality assurance framework, healthcare organizations can create a robust system that not only monitors performance but also actively identifies and mitigates safety risks. For instance, through consistent data collection and analysis, healthcare providers can identify trends relating to patient outcomes and safety incidents, leading to data-driven improvements [48].

Moreover, training and education are critical in harmonizing these two domains. Healthcare providers must be well-equipped with knowledge about quality improvement methodologies and patient safety practices. The implementation of interdisciplinary training programs fosters collaboration among healthcare professionals, cultivating a shared responsibility for quality and safety [49].

Globally, various regulatory frameworks underpin the assurance of quality and safety in healthcare. In the United States, the Agency for Healthcare Research and Quality (AHRQ) collaborates with other agencies to develop evidence-based guidelines and recommendations for improving patient safety. Furthermore, the Centers for Medicare and Medicaid Services (CMS) has established regulations tied to reimbursement incentives for hospitals that prioritize patient safety metrics [49].

In Europe, the European Union has enacted regulations aimed at ensuring medical device safety, pharmacy practice, and quality assurance in healthcare environments. For instance, the European Medicines Agency (EMA) oversees the safety of medicines across member states, while the European Health Insurance Card (EHIC) promotes seamless access to healthcare, thereby indirectly supporting quality and safety standards [50].

In low and middle-income countries, organizations such as the Pan American Health Organization (PAHO) work diligently to provide guidelines and support for integrating quality assurance and patient safety initiatives into national health systems.

Addressing systemic challenges, such as limited resources and workforce shortages, is essential to establish a sustainable culture of quality and safety [50].

Despite the progressive movement toward bolstering quality assurance and patient safety regulations, challenges persist. Healthcare organizations often face the daunting task of balancing compliance with innovation. There exists a risk where stringent regulations may inadvertently stifle creativity or lead to bureaucratic burnout among healthcare professionals. Moreover, the integration of technology, such as electronic health records (EHR), presents both opportunities for improved quality and safety and risks related to data breaches and technical errors [51].

As we look towards the future, the need for adaptive regulatory frameworks is clear. These frameworks will require an emphasis on flexibility to allow healthcare providers to implement novel solutions while ensuring compliance with minimum safety standards. Greater engagement with patients in their care processes can also drive improvements—encouraging them to voice concerns and participate in safety initiatives will create more holistic healthcare environments.

Furthermore, the importance of interdisciplinary collaboration cannot be overstated. The integration of technology in healthcare delivery must be matched with regulatory measures that ensure patient data privacy and security, thereby minimizing potential risks associated with digital health solutions [51].

Public Health Initiatives and Preventive Care Strategies:

Public health is a field that focuses on improving the health and well-being of communities through various initiatives and strategies. Unlike clinical medicine, which primarily focuses on individual patients, public health aims to provide a broad approach to health promotion, disease prevention, and health education on a population level. The relevance of public health initiatives and preventive care strategies has become increasingly significant, especially in light of global health challenges such as pandemics, non-communicable diseases, and climate change [52].

Public health initiatives play a crucial role in addressing various health concerns that affect communities. These initiatives can range from vaccination programs to health education campaigns aimed at fostering healthier lifestyles. The main goals of these interventions include reducing the incidence of disease, minimizing health disparities, promoting healthy behaviors, and improving the overall quality of life for individuals within a community [52].

One of the most significant successes of public health initiatives is the worldwide decline in infectious diseases due to vaccination programs. Vaccination has eradicated or drastically reduced diseases such as smallpox and polio, showcasing how targeted public health actions can save lives and enhance health outcomes. Furthermore, public health initiatives do not only focus on prevention, but they also work to monitor health trends, identify outbreaks, and devise appropriate responses to mitigate their impact [52].

Preventive care encompasses a range of services designed to prevent diseases before they occur. These strategies can be divided into three categories: primary, secondary, and tertiary prevention.

1. **Primary Prevention:** This strategy aims to prevent disease before it occurs. It focuses on reducing risk factors and promoting healthy behaviors. Public health campaigns that advocate for healthy eating, physical activity, and smoking cessation fall under this category. For example, campaigns that educate the public about the benefits of a balanced diet and regular exercise can prevent obesity and related health issues, such as diabetes and heart disease [53].
2. **Secondary Prevention:** This strategy involves early detection and prompt intervention to prevent the progression of diseases. Screening programs are a prime example of secondary prevention. Breast cancer screening via mammograms, cervical cancer screening through Pap tests, and blood pressure screenings are critical in identifying potential health issues before they develop into severe complications. By detecting diseases at an early stage, healthcare providers can

initiate treatment, thereby improving survival rates and outcomes [53].

3. **Tertiary Prevention:** This strategy aims to reduce the impact of an ongoing illness or injury that has lasting effects. It focuses on rehabilitation and support to enhance the quality of life for individuals with chronic conditions. For instance, programs designed for individuals recovering from strokes or heart attacks provide necessary therapy to regain motor skills and promote lifestyle changes that may prevent further health declines [54].

Implementation of Public Health Initiatives

The successful implementation of public health initiatives and preventive care strategies requires collaboration across various sectors, including government, healthcare services, educational institutions, and community organizations. Effective public health campaigns rely on sound epidemiological research, data collection, and analysis to understand health trends and the effectiveness of interventions [55].

Moreover, engaging the community is critical for the success of these initiatives. Public health professionals must communicate effectively with diverse populations, taking into account cultural beliefs, language barriers, and socioeconomic factors. Community outreach programs that involve local leaders and organizations can effectively spread awareness and foster trust—two essential components in encouraging participation in public health initiatives [55].

Furthermore, policymakers play a vital role in supporting public health initiatives through funding, creating supportive legislation, and promoting health equity. For example, laws that mandate vaccinations for school entry or regulations that limit the marketing of unhealthy foods can create a healthier environment for communities.

Despite the numerous successes of public health initiatives, there are several challenges that continue to hinder efforts in health promotion and disease prevention. **Funding** is often a limiting factor, as public health programs typically rely on government support, grants, and community partnerships. Economic downturns may lead to budget cuts,

which can diminish the reach and impact of these essential services [56].

Public Perception and Compliance is another significant challenge. Misinformation, particularly in the digital age, can lead to vaccine hesitancy or a lack of trust in public health recommendations. The COVID-19 pandemic exemplified how critical accurate communication is for public health messaging. Engaging the media and utilizing various platforms to disseminate accurate information is vital for combating misinformation and ensuring that communities understand the importance of public health initiatives [57].

Health disparities present another challenge in public health initiatives. Marginalized populations often face barriers such as access to healthcare, cultural stigmas, and socioeconomic limitations, which can influence their health outcomes. Addressing these disparities requires targeted efforts, such as tailored health education programs and accessible healthcare services, to ensure that all community members can benefit from public health initiatives [58].

Integration of Technology in Healthcare Policies:

In recent years, the integration of technology in healthcare has emerged as a pivotal consideration for policymakers, healthcare providers, and stakeholders alike. Technological advancements have transformed distinct facets of medical practice, patient care, and healthcare administration, consequently reshaping how policies are crafted and implemented to meet the demands of a dynamic, data-driven environment [59].

At the heart of healthcare integration is the patient experience. Technological advancements such as telemedicine, electronic health records (EHRs), and mobile health applications have revolutionized the delivery of care. Telemedicine, for example, allows patients to consult with healthcare professionals remotely, significantly reducing transportation barriers and improving access for individuals in rural or underserved areas. Recognizing this trend, healthcare policies have increasingly incorporated provisions for telehealth services, especially in response to the COVID-19 pandemic, which necessitated remote medical consultations to minimize exposure risks [60].

Moreover, EHRs have streamlined record-keeping processes, enabling healthcare providers to access patient histories more efficiently and reduce the occurrence of medical errors. With the Federal government's initiative to promote EHR adoption through programs like the Meaningful Use program, policies have evolved to mandate the use of interoperable systems that encourage data sharing among providers. This has not only improved continuity of care but also facilitated the integration of artificial intelligence (AI) in diagnostics and treatment recommendations, a promising area for future policy considerations [60].

The expansion of data-driven technologies in healthcare brings forward critical implications for data management and security policies. As health information becomes increasingly digitized, the importance of protecting patient data against breaches and unauthorized access has intensified. Healthcare policies must now address the evolving landscape of cybersecurity threats. Legislative measures such as the Health Insurance Portability and Accountability Act (HIPAA) provide a regulatory framework that mandates to maintain strict confidentiality and security of patient information [61].

However, with the advent of more advanced data processing technologies, including big data analytics, machine learning, and predictive modeling, healthcare policymakers must navigate the complexities of balancing innovation with privacy concerns. The use of patient data for research, quality improvement, and resource allocation must be backed by robust ethical guidelines and transparent governance frameworks to protect individual privacy while harnessing the benefits of data insights [62].

The integration of technology into healthcare necessitates a re-evaluation of existing regulatory frameworks to ensure that they accommodate novel innovations without stifling progress. Policymakers face the challenge of establishing regulations that are flexible enough to adapt to rapid technological changes, yet stringent enough to safeguard public health and safety. For instance, the U.S. Food and Drug Administration (FDA) has begun to establish guidelines for the approval and monitoring of digital health technologies, including software-based

interventions and mobile apps that serve as medical devices [62].

Additionally, telehealth regulations are a significant area of focus for healthcare policy integration. States have enacted various regulations to ensure the quality of care provided through telehealth platforms, including licensing requirements and standards for informed consent. As these technologies evolve, continuous dialogue amongst stakeholders, including regulators, healthcare providers, and technology developers, is crucial to creating a supportive regulatory environment that encourages innovation while safeguarding patient care [62].

The integration of technology in healthcare policies also raises critical questions about equity and access to care. While technology has the potential to broaden access to health services, it simultaneously risks exacerbating existing disparities if not implemented thoughtfully. For example, not all patients have equal access to the internet or digital devices, leading to a digital divide that may impede vulnerable populations from benefiting from telehealth services [63].

To address these challenges, healthcare policies should prioritize equitable technology access. This could involve investing in broadband infrastructure in underserved areas, developing community-based programs that provide technological training, and ensuring that telehealth platforms are user-friendly for individuals of all ages and technological backgrounds. By doing so, policies can promote inclusive healthcare practices that empower all individuals, regardless of socioeconomic status, to benefit from technological advancements [63].

The integration of technology into healthcare policies aims to not only improve patient outcomes but also enhance the overall efficiency of healthcare systems. Automation of administrative processes, such as billing and coding, through artificial intelligence can significantly alleviate the administrative burden on healthcare providers, allowing them to focus more on patient care. Policies that support the adoption of such technologies can lead to cost savings, reduced wait times, and improved resource allocation within health systems [64].

Moreover, implementing data analytics in healthcare decision-making processes enables healthcare organizations to forecast demand, optimize staffing, and improve supply chain management. As a result, the integration of these technologies can promote sustainability and resilience within healthcare systems, particularly during times of crisis such as public health emergencies [65].

Challenges and Future Directions in Health Policy Reform:

Health policy reform is a critical area of focus for governments, healthcare providers, and society as a whole. The complexity of healthcare systems presents a myriad of challenges that require innovative solutions, informed policymaking, and sustained commitment across multiple sectors. As nations grapple with rising costs, accessibility issues, inequities in healthcare delivery, and rapidly changing technologies, it is essential to explore the existing challenges as well as future directions in health policy reform [65].

1. Rising Healthcare Costs

One of the predominant challenges in health policy reform is the escalating costs of healthcare. In many countries, particularly the United States, healthcare expenditure accounts for a significant portion of national GDP. This burden is exacerbated by factors such as the aging population, the prevalence of chronic diseases, and high administrative costs. The complexity of billing and insurance procedures adds further inefficiencies, leading to a situation where a substantial amount of healthcare expenditure does not translate into improved health outcomes. Policymakers face the daunting task of containing these costs while ensuring that quality care remains accessible to all segments of the population [66].

2. Inequity in Healthcare Access

Healthcare inequity is a critical issue that undermines the efficacy of health systems worldwide. Disparities in access to medical services occur across various demographics, including socioeconomic status, race, and geographic location. Rural communities often experience significant barriers to access, with limited healthcare facilities and providers. Marginalized populations may face

systemic discrimination that prevents them from receiving adequate care. Effective health policy reform must prioritize strategies to address these disparities by promoting equity in access and ensuring that all individuals, regardless of their background, can receive necessary medical services [66].

3. The Challenge of Integration and Coordination

As healthcare systems become increasingly fragmented, the need for better integration and coordination of services is paramount. Patients often navigate a maze of specialists, hospitals, and community services, leading to confusion, duplication of services, and gaps in care. Poor communication among providers can result in medical errors and suboptimal patient outcomes. Reform initiatives must focus on creating a more integrated care model that fosters collaboration and communication among providers and ensures a seamless experience for patients [67].

4. Technological Advancements and Data Management

The rapid advancement of technology presents both opportunities and challenges in health policy reform. While telemedicine, electronic health records (EHRs), and artificial intelligence hold the potential to improve efficiency and accessibility, they also raise significant concerns about data privacy, security, and the digital divide. Many patients, particularly older adults and those from lower socioeconomic backgrounds, may struggle with adopting new technologies. Policymakers must navigate the implications of these advancements while balancing innovation with ethical considerations and ensuring that no group is left behind [67].

5. Political Polarization and Public Trust

Health policy reform often faces hurdles due to political polarization and varying public opinions on healthcare-related issues. The debate over government involvement in healthcare continues to be contentious, leading to fragmented policies and unsteady progress. Furthermore, declining public trust in institutions has made it increasingly difficult to implement reforms effectively. To address these challenges, there must be a concerted effort to

engage communities, stakeholders, and policymakers in transparent and participatory processes that promote trust and collective ownership of health policy solutions [68].

Future Directions in Health Policy Reform

1. Emphasizing Preventive Care

An essential future direction for health policy reform is to emphasize preventive care as a means of improving public health outcomes and reducing overall healthcare costs. By shifting the focus from reactive treatment to proactive prevention, strategies can include enhanced education on healthy lifestyles, routine screenings, and early intervention programs. Investment in preventive measures can ultimately lead to a healthier population and reduce the financial strain on healthcare systems [68].

2. Adopting Value-Based Care Models

Moving away from fee-for-service payment models toward value-based care is another promising direction for health policy reform. Value-based care focuses on patient outcomes rather than the volume of services provided. This shift encourages providers to deliver high-quality care while rewarding them for efficient use of resources. Health policies that support the transition to value-based care include incentive structures that promote patient-centered approaches, accountability, and transparency in healthcare delivery [68].

3. Leveraging Technology Responsibly

Future health policy must harness technology responsibly and inclusively. Policymakers should not only promote the integration of innovative technologies but also develop guidelines for data privacy and security that protect patient information. Training and support for both patients and providers can help bridge the digital divide and ensure equitable access to telehealth services and digital health tools. Overall, policies should be designed to facilitate the adoption of technology while minimizing potential risks and ensuring that all individuals benefit from advancements [69].

4. Supporting Workforce Development

A robust healthcare workforce is crucial for effective health policy reform. Investing in education, training, and retention of healthcare professionals will help address shortages and

improve service delivery. Policies that promote interdisciplinary collaboration among healthcare providers can lead to better-coordinated care and enhanced outcomes. Additionally, addressing workforce diversity and cultural competence should be prioritized to better meet the needs of diverse populations [69].

5. Community Engagement and Empowerment

Finally, engaging communities in the policymaking process is vital for successful health policy reform. Policymakers must seek input from patients, caregivers, and community organizations to ensure that reforms are responsive to the needs of those they aim to serve. Empowering communities to take an active role in their health can foster a sense of ownership and accountability, ultimately leading to more effective and sustainable health systems [70].

Conclusion:

In conclusion, the health policies and regulatory framework in Saudi Arabia represent a critical foundation for ensuring the delivery of high-quality healthcare services to its population. The strategic direction set forth by Vision 2030 underscores the government's commitment to transforming the healthcare landscape, emphasizing the importance of accessibility, quality, and innovation. Through the collaborative efforts of key regulatory agencies and the integration of technology in healthcare practices, Saudi Arabia is making significant strides in enhancing patient safety and fostering a more efficient healthcare system.

However, challenges remain, including the need for ongoing investment in health infrastructure, a focus on preventative care, and effective management of public-private partnerships. As the healthcare sector continues to evolve, it will be essential for policymakers to address these challenges while further aligning with international best practices. Ultimately, the successful implementation of these health policies and regulations will not only contribute to improving health outcomes but also support the overall socio-economic development of the Kingdom.

References:

1. Alghanim SA. Assessing knowledge of the patient bill of rights in central Saudi Arabia: a survey of primary health care providers and recipients. *Ann Saudi Med.* 2012;32:151–155. doi: 10.5144/0256-4947.2012.151.
2. Quran. Google Books Result. KSA: Sahih International, Surah Yusuf (Joseph); 1997. 12 Surah 56.
3. Al-Amoudi SM. The right of Saudi women to sign for their health care in Saudi Arabia. Facts and fictions. *Life Science Journal.* 2012;9(4):3143–3146.
4. Ministry of Health. Patient's Bill of Rights and Responsibilities. Riyadh (KSA): Ministry of Health; Update 2011 April 22; Accessed date 2016.
5. El-Sobkey SB, Almoajel AM, Al-Muammar MN. Knowledge and attitude of Saudi health professions' students regarding patient's bill of rights. *Int J Health Policy Management.* 2014;3:117–122. doi: 10.15171/ijhpm.2014.73.
6. McLean M, Yahyaei F, Mansoori M, Ameri M, Ahbabi S, et al. Muslim women's physician preference: beyond obstetrics and gynecology. *Health Care for Women Int.* 2012;33:849–876. doi: 10.1080/07399332.2011.645963.
7. Al-Amoudi SM. Cancer diagnosis: Who has the right to know? *Journal of Womens Health, Issues and Care.* 2013;2:1–4.
8. Al Zeayer N, Cutts R, Abu-Aisha H. Women in Saudi Arabia: Do they not have the right to give their own consent for medical procedures? *Saudi Med J.* 1985;6:74–77.
9. Al Asmri M., Almalki M.J., Fitzgerald G., Clark M. The public health care system and primary care services in Saudi Arabia: a system in transition. *EMHJ.* 2020;26:468–476. doi: 10.26719/emhj.19.049.
10. Alonazi W.B. Exploring shared risks through public–private partnerships in public health programs: a mixed method. *BMC Publ Health.* 2017;17:571. doi: 10.1186/s12889-017-4489-z.
11. Rahman R., Al-Borie H. Strengthening the Saudi Arabian healthcare system: role of Vision 2030. *Int J Healthc Manag.* 2020;14:1483–1491.
12. KPMG. 2021. Revenue Cycle Management: Practical Implementation in Saudi Arabia's Healthcare Sector.
13. Creswell J.W., Creswell J.D. SAGE; Thousand Oaks, CA: 2018. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.
14. Alkhamis A. Critical analysis and review of the literature on healthcare privatization and its association with access to medical care in Saudi Arabia. *J Infect Public Health.* 2017;10:258–268. doi: 10.1016/j.jiph.2017.02.014.
15. Al-Hanawi M.K., Khan S.A., Al-Borie H.M. Health care human resource development in Saudi Arabia: emerging challenges and opportunities—a critical review. *Publ Health Rev.* 2019;40(1):1–16. doi: 10.1186/s40985-019-0112-4.
16. Al-Hanawi M.K., Qattan A.M. An analysis of public–private partnerships and sustainable health care provision in the Kingdom of Saudi Arabia. *Health Serv Insights.* 2019;12 doi: 10.1177/1178632919859008.
17. Rahman R., Qattan A. Vision 2030 and sustainable development: state capacity to revitalize the healthcare system in Saudi Arabia. *Inquiry.* 2021;58 doi: 10.1177/0046958020984682.
18. Alhouse R.T., Mohammed V. Healthcare transformation in Saudi Arabia: an overview since the launch of Vision 2030. *Health Serv Insights.* 2022;15 doi: 10.1177/11786329221121214.

19. Chowdhury S., Mok D., Leenen L. Transformation of health care and the new model of care in Saudi Arabia: kingdom's Vision 2030. *J Med Life*. 2021;14:347–354. doi: 10.25122/jml-2021-0070.
20. Al-Hanawi M.K., Almubark S., Qattan A.M.N., Cenker A., Kosycarz E.A. Barriers to the implementation of public–private partnerships in the healthcare sector in the Kingdom of Saudi Arabia. *PLoS One*. 2020;15 doi: 10.1371/journal.pone.0233802.
21. Rahman R. The privatization of health care system in Saudi Arabia. *Health Serv Insights*. 2020;13 doi: 10.1177/1178632920934497.
22. Merriam S.B., Tisdell E.J. John Wiley & Sons; Hoboken, NJ: 2016. *Qualitative Research: A Guide to Design and Implementation*.
23. Vision 2030. 2022. Vision Realization Programs (VRPs).
24. Alharbi M.F. 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. *Int J Health Sci*. 2018;12:83–87.
25. Saunders B., Sim J., Kingstone T., Baker S., Waterfield J., Bartlam B., et al. Saturation in qualitative research: exploring its conceptualization and operationalization. *Qual Quantity*. 2018;52:1893–1907. doi: 10.1007/s11135-017-0574-8.
26. Alhabib S.M. The responsiveness of the private health sector: views of insured versus uninsured patients. *J King Saud Univ Sci*. 2018;27:13–21.
27. Alonazi W.B., Qattan A.M. Exploring shared risks through public–private partnerships in public health programs: a mixed method. *BMC Publ Health*. 2017;17:571.
28. Kivleniece I., Quelin B.V. Creating and capturing value in public–private ties: a private actor's perspective. *Acad Manag Rev*. 2012;37:272–299.
29. Hazazi A., Wilson A., Larkin S. Reform of the health insurance funding model to improve the care of noncommunicable diseases patients in Saudi Arabia. *Healthcare (Basel)* 2022;10(11):2294. doi: 10.3390/healthcare10112294.
30. Al-Rabeah A., Ogden S., Edgar D., Fryer K. TQM in the Saudi health care system: a national cultural perspective. *World Rev Business Res*. 2015;5:120–136.
31. Braun V., Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3:77–101.
32. Pollock A. Verso; London: 2004. *NHS plc: The Privatisation of Our Health Care*.
33. Alotaibi Y.K., Federico F. The impact of health information technology on patient safety. *Saudi Med J*. 2017;38(12):1173–1180. doi: 10.15537/smj.2017.12.20631.
34. Ministry of Health Statistical Yearbook [Internet] 2018.
35. Ministry of Health Strategic Plan [Internet] 2019.
36. Al-Mubarak S.H., Alfayez A.S., Alanazi A.T., Alwuhaimed L.A., Bo Hamed S.S. Autonomy, accountability, and competition: the privatisation of the Saudi health care system. *J Taibah Univ Medical Sci*. 2021;16:144–151. doi: 10.1016/j.jtumed.2020.11.005.
37. Kuye O.L., Akinwale O.E. Conundrum of bureaucratic processes and healthcare service delivery in government hospitals in Nigeria. *J Human Appl Social Sci*. 2021;391:25–136. doi: 10.1108/JHASS12-2019-0081.
38. Roehrich J.K., Lewis M.A., George G. Are public–private partnerships a healthy

- option? A systematic literature review. *Soc Sci Med.* 2014;113:110–119. doi: 10.1016/j.socscimed.2014.03.037.
39. Larson B.K., Van Citters A.D., Kreindler S.A., Carluzzo K.L., Gbemudu J.N., Wu F.M., et al. Insights from transformations under way at four Brookings-Dartmouth accountable care organization pilot sites. *Health Aff.* 2012;31(11):2395–2406. doi: 10.1377/hlthaff.2011.1219.
 40. Frank K. 2018. Healthcare in Saudi Arabia: Opportunities in the Sector.
 41. Chowdhury A.N., Chen P.H., Tiong R.L. Analysing the structure of public–private partnership projects using network theory. *Construct Manag Econ.* 2011;29:247–260.
 42. Tsai M.H., Porter J.C., Adams D.C. The denominator in value-based health care: Porter's hidden costs. *Anesth Analg.* 2018;127(1):317. doi: 10.1213/ANE.0000000000003401.
 43. Al-Hanawi M.K., Alsharqi O., Almazrou S., Vaidya K. Healthcare finance in the Kingdom of Saudi Arabia: a qualitative study of householders' attitudes. *Appl Health Econ Health Pol.* 2018;16:55–64. doi: 10.1007/s40258-017-0353-7.
 44. Kumar P. How to strengthen primary health care. *J Fam Med Prim Care.* 2016;5(3):543–546. doi: 10.4103/2249-4863.197263.
 45. Barlow J., Roehrich J., Wright S. Europe sees mixed results from public–private partnerships for building and managing health care facilities and services. *Health Aff.* 2013;32:146–154. doi: 10.1377/hlthaff.2011.1223.
 46. Puteh S.E.W., Aizuddin A.N., Al Salem A.A. Feasibility of national health insurance for Saudi healthcare services: qualitative study. *Inf Sci Lett.* 2022;11(2).
 47. Alharbi A. Willingness to pay for a national health insurance (NHI) in Saudi Arabia: a cross-sectional study. *BMC Publ Health.* 2022;22(1):951. doi: 10.1186/s12889-022-13353-z.
 48. Green J., Thorogood N. SAGE; Thousand Oaks, CA: 2018. *Qualitative Methods for Health Research.*
 49. Liu J.X., Goryakin Y., Maeda A., Bruckner T., Scheffler R. Global health workforce labor market projections for 2030. *Hum Resour Health.* 2017;15. doi: 10.1186/s12960-017-0187-2.
 50. Deng J., Guo Y., Ma T., Yang T., Tian X. How job stress influences job performance among Chinese healthcare workers: a cross-sectional study. *Environ Health Prev Med.* 2019;24(1):2. doi: 10.1186/s12199-018-0758-4.
 51. Almost J., Wolff A.C., Stewart-Pyne A., McCormick L.G., Strachan D., D'Souza C. Managing and mitigating conflict in healthcare teams: an integrative review. *J Adv Nurs.* 2016;72(7):1490–1505. doi: 10.1111/jan.12903.
 52. Khan C., Nasrulddin V. Privatization, corporatization, and public–private partnership in the Kingdom of Saudi Arabia. *Health Serv Insights.* 2022;15. doi: 10.1177/11786329221104240.
 53. Clay-Williams R., Johnson A., Lane P., Li Z., Camilleri L., Winata T., et al. Collaboration in a competitive healthcare system: negotiation 101 for clinicians. *J Health Organisat Manag.* 2018;32(2):263–278. doi: 10.1108/JHOM-12-2017-0333.
 54. Bakr R.H., Jarrar M.K., Abumadini M.S., Al Sultan A.I., Larbi E.B. Effect of leadership support, work conditions and job security on job satisfaction in a medical college. *Saudi J Med Med Sci.* 2019;7(2):100–105. doi: 10.4103/sjmms.sjmms_105_17.
 55. Brinkert R. A literature review of conflict communication causes, costs, benefits and interventions in nursing. *J Nurs Manag.*

- 2010;18(2):145–156. doi: 10.1111/j.1365-2834.2010.01061.x.
56. Gerardi D. Conflict engagement: a new model for nurses. *Am J Nurs.* 2015;115(3):56–61. doi: 10.1097/01.NAJ.0000461823.48063.80.
57. Rivers P.A., Glover S.H. Health care competition, strategic mission, and patient satisfaction: research model and propositions. *J Health Organisat Manag.* 2008;22(6):627–641. doi: 10.1108/14777260810916597.
58. Etges A.P.B.D.S., Ruschel K.B., Polanczyk C.A., Urman R.D. Advances in value-based healthcare by the application of time-driven activity-based costing for inpatient management: a systematic review. *Value Health.* 2020;23(6):812–823. doi: 10.1016/j.jval.2020.02.004.
59. Albejaidi F., Nair K.S. Building the health workforce: Saudi Arabia's challenges in achieving vision 2030. *Int J Health Plann Manag.* 2019;34(4):e1405–e1416. doi: 10.1002/hpm.2861.
60. Lin T.K., Bruckner T.A., Alghaith T., et al. Projecting health labor market dynamics for a health system in transition: planning for a resilient health workforce in Saudi Arabia. *Glob Health.* 2021;17:105. doi: 10.1186/s12992-021-00747-8.
61. Barakah D.M., Alsaleh S.A. 2011 International Conference on Information and Finance, vol. 21. IACSIT Press; Singapore: 2011. The cooperative insurance in Saudi Arabia: a nucleus to health reform policy.
62. Wouters OJ. Lobbying expenditures and campaign contributions by the pharmaceutical and health product industry in the United States, 1999–2018. *JAMA Intern Med.* 2020. May 1;180(5):688–97. doi: 10.1001/jamainternmed.2020.0146.
63. Alsultan MS, Khurshid F, Salamah HJ, Mayet AY, Al-Jedai AH. Hospital pharmacy practice in Saudi Arabia: prescribing and transcribing in the Riyadh region. *Saudi Pharm J.* 2012. Jul;20(3):203–10. doi: 10.1016/j.jsps.2011.11.001.
64. Health Sector Transformation Strategy, V3. Riyadh; Ministry of Health, Kingdom of Saudi Arabia; 2016.
65. Health Law [internet]. Royal Decree No. M/11. Riyadh: Kingdom of Saudi Arabia; 2002.
66. Balkhi BP, AlQahtani N, Alwhaibi M, Alshammari TM, Alhawassi TM, Mahmoud MA, et al. Prevalence and factors associated with polypharmacy use among adult patients in Saudi Arabia. *J Patient Saf.* 2017.
67. Kingdom of Saudi Arabia. A medicine policy to support Vision 2030. Riyadh: The Saudi Health Council; 2020.
68. Health sector public expenditure review, Kingdom of Saudi Arabia, Report No: AUS0000184. Washington, DC: World Bank; 2018.
69. Hoebert JM, van Dijk L, Mantel-Teeuwisse AK, Leufkens HG, Laing RO. National medicines policies – a review of the evolution and development processes. *J Pharm Policy Pract.* 2013. Jul 10;6(1):5. doi: 10.1186/2052-3211-6-5.
70. Almoteiry K, Pisani E. Supplementary material for: evolving national medicines policy in an era of health reform: experience of the Kingdom of Saudi Arabia. Cambridge: Harvard Dataverse; 2022. doi: 10.7910/DVN/F3J57U.
71. Middle East & Africa pharmaceutical market insights. Fourteenth edition. Durham: IQVIA; 2019 October.
72. Hashan H, Aljuffali I, Patel P, Walker S. The Saudi Arabia Food and Drug Authority: an evaluation of the registration process and good review practices in Saudi

- Arabia in comparison with Australia, Canada and Singapore. *Pharmaceut Med.* 2016;30(1):37–47. doi: 10.1007/s40290-015-0124-4.
73. Alwhaibi M, Balkhi B, Alshammari TM, AlQahtani N, Mahmoud MA, Almetwazi M, et al. Measuring the quality and completeness of medication-related information derived from hospital electronic health records database. *Saudi Pharm J.* 2019. May;27(4):502–6. doi: 10.1016/j.jsps.2019.01.013.
74. How to develop and implement a national drug policy, second edition. Geneva: World Health Organization; 2001.
75. Igoe K. Putting the drug debate into context: the state of pharmaceutical cost reform in the U.S. [internet]. Boston: Harvard TH Chan School of Public Health; 2020.
76. WHO guideline on country pharmaceutical pricing policies, second edition. Geneva: World Health Organization; 2020.
77. Health insurance & purchasing of healthcare services [internet]. Riyadh: Kingdom of Saudi Arabia, Ministry of Health; 2018.
78. AlRuthia YS, AlKofide H, AlAjmi R, Balkhi B, Alghamdi A, AlNasser A, et al. Drug shortages in large hospitals in Riyadh: a cross-sectional study. *Ann Saudi Med.* 2017. Sep-Oct;37(5):375–85. doi: 10.5144/0256-4947.2017.375.