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Review Article

Towards Universal Health Coverage in Kazakhstan from the Alma-Ata Declaration in 1978 to Astana Declaration in 2018: Challenges, Successes and Future Outlook

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Abstract:

For centuries, health was viewed from the lens of biomedicine as the core. This view considered medical professionals and hospitals as the sole agents and venues where health could be obtained, with only passive mentions of the impact of social determinants of health. In a paradigm shift from this view in 1978, at the Alma-Ata Declaration in Kazakhstan, 134 member countries of the WHO formalized the recognition of the social determinants of health into a global policy. Factors such as accessibility, affordability, availability, social and economic status, and education about health services are crucial for population health. The Alma-Ata Declaration required the governments of member countries to include deliberate policies that strengthen and promote population health, by ensuring that social measures are included in their national development plans while recognizing the rights of collective and individual participation of their populations. The phrase "Primary Health Care" (PHC) was then adopted. It was defined as "essential health care based on practical, scientifically sound and socially acceptable methods which are of relevant technology, made accessible and affordable to families and communities through their participation". Health became a human right underpinned by equity and population participation principles. The aftermath of the Declaration was an immediate implementation challenge. It was soon to be realized that PHC interventions are not linear and generalizable like biomedical interventions which have specific measures and predictable outcomes. To date, there is no blueprint for universal intervention measures because economic disparities, social and situational contexts differ and determine the success of any intervention measure. Our review explores the challenges and successes of the implementation of PHC in Kazakhstan, the birthplace of the global health policy on PHC.

Keywords: PHC; Universal Health Coverage; Kazakhstan

Introduction

Kazakhstan is the country that saw the birth of the modern concept of primary health care (PHC) with the declaration of Alma-Ata, adopted at an International Conference in what was then the capital city of the Kazakh Soviet Republic (now Almaty) in 1978. The Alma-Ata Declaration defines PHC as essential health care based on practical, scientifically sound, and socially acceptable methods and technology. It emphasizes making healthcare universally accessible to individuals and families in the community at a cost that the community and country can afford, and therefore a key to achieving universal health coverage (UHC) [1].

PHC requires a comprehensive approach that includes not only treatment of diseases but also prevention, promotion, curative and rehabilitative care. A core principle of the Alma-Ata Declaration is the pursuit of equity, emphasizing that health is a fundamental human right and that inequity in the provision of healthcare services is unacceptable. Equal access, particularly for marginalized and vulnerable populations, is a critical component of PHC. The Declaration advocates for the involvement of local communities in decision-making to ensure that health services meet their needs and priorities. It also recognizes that health is influenced by multiple sectors and calls for collaboration across various sectors such as education, agriculture, housing, and public works to address the broader determinants of health.

The Alma-Ata Declaration has had a profound impact on global health policies and strategies. It inspired the Astana Declaration on Primary Health Care (PHC) in October 2018 at the Global Conference on Primary Health Care in Astana, the current capital of the Republic of Kazakhstan. The conference emphasized the foundational principles of the 1978 Alma-Ata Declaration, and reaffirmed global commitment to strengthen PHC as a central element to achieving UHC in line with the Sustainable Development Goals (SDGs), and outlined the strategic framework for countries to develop their PHC systems, ultimately aiming to achieve better health outcomes and greater health equity[1].

In the Soviet period, the Semashko system emerged as a cost-efficient and highly organized model of healthcare. It was built on a centralized, hospital-oriented framework, featuring a hierarchical structure in which the state both financed and delivered medical services free of charge to the population. A strong focus was placed on the prevention and management of infectious diseases such as tuberculosis and typhus, with both primary care and hospitals forming the backbone of the system. This approach enabled notable achievements, including reliable access to vaccines, widespread immunization coverage, and reductions in infant and maternal mortality[2].

After the collapse of the USSR, however, Kazakhstan's health sector faced serious difficulties. Many facilities lacked adequate equipment, medicines, and up-to-date technologies. As a result, the newly independent republic inherited a hospital network that was oversized, underfunded, and inefficient, which made large-scale reforms of public healthcare unavoidable.

Since independence, Kazakhstan has been making significant strides in improving its PHC system. As a country in transition in the aftermath of the independence, Kazakhstan faced multiple health challenges such as low life expectancy, high infant and maternal mortality, surging rates of non-communicable disease (NCD), high rates of infectious diseases such as tuberculosis, and the emerging threat of HIV/AIDS. The situation was worsened by the lack of an adequate number of skilled health workforce and imbalances in healthcare facility staffing compounded by the initial economic downtime after the independence. The country was still struggling to optimally achieve the health-system-level outcomes of the Alma-Ata Declaration made on its soil just over a decade earlier. Citizens still expected to see a specialist as first-line consultation when ill and building trust in a PHC system remained a challenge[3]. The economic situation began to improve in the second half of the 1990s. As the country's GDP neared 10%, the next twenty years saw major reforms aimed at building multidisciplinary, team-oriented primary healthcare. This process was supported by improvements in governance, human and physical resources, financing, and the digital transformation of PHC. More recently, the country has adopted a mandatory social health insurance system, which was aimed to greatly enhance access to healthcare services.

The objective of this Review is to describe the development of the PHC systems in Kazakhstan, describe its current status and challenges, and reflect on future prospects.

Methods

We searched PubMed using the following terms: care, primary health; primary health care; primary healthcare; primary care; physician; family practice; general practice; general practice physician; ambulatory care, and Kazakhstan. We also searched web pages of international organizations like the World Health Organization and the Organization for Economic Cooperation and Development (OECD) to find relevant documents describing PHC in Kazakhstan, its situation, progress, and challenges. Titles and abstracts were reviewed by 4 authors to determine their relevance to the objective of this review (ASS, NMT, KY and UK).

Results

Implementation and Successes

As the host of the 1978 Alma-Ata Declaration, Kazakhstan initiated its first steps toward putting the principles of primary health care into practice, maintaining this progress until the dissolution of the Soviet Union in 1990. Following independence, the country's PHC system advanced significantly; however, as this study will demonstrate, greater emphasis is still required to ensure the system achieves outcomes that make a lasting impact.

Kazakhstan, covering 2,773,000 km² and home to about 20 million people, holds the distinction of being the world's largest landlocked nation and one of the least densely populated. Following independence, the country underwent significant political, economic, and social reforms, with the oil and gas industry playing a central role in driving its rapid economic expansion. Today, Kazakhstan is characterized by a relatively youthful population and a changing demographic structure. In 2023, its Gross Domestic Product (GDP) was valued at approximately USD 261.4 billion[4].

Kazakhstan undertook a series of phased healthcare reforms aimed at enhancing service availability, improving efficiency, and ensuring equitable access for the population. The process began with the State Program for Reforming and Developing Healthcare (2005–2010), which laid the groundwork for subsequent initiatives. This was followed by the "*Salamatty Kazakhstan"* program (2011–2015)[5], the "*Densaulyk"* program (2016–2020), and most recently, the State Program for the Development of Healthcare of the Republic of Kazakhstan for 2020–2025[6].

Since the launch of the mandatory social health insurance system in 2018, healthcare financing in Kazakhstan has relied on pooled funds drawn from two main sources: the republican budget, covering socially vulnerable groups such as children, the elderly, pregnant women, and the unemployed through tax revenues, and contributions from employers and employees directed to the Social Health Insurance Fund[7]. Although the scope of publicly financed services is fairly broad, out-of-pocket spending remains significant. Citizens and permanent residents are entitled to two main packages of medical services: the State-Guaranteed Basic Package, funded by the government, and the Social Health Insurance Package[8]. Both are administered by the Social Health Insurance Fund, which acts as the sole public purchaser of healthcare services.

At the PHC level in Kazakhstan, the range of services covers: (i) screening and diagnostic measures for early identification of diseases; (ii) outpatient medical care; and (iii) inpatient substitutes such as day hospitals and home-based treatment; (iv) evaluation of temporary disability; (v) regular preventive health examinations; (vi) immunization; (vii) activities promoting healthy lifestyles and providing counseling; (viii) guidance on balanced nutrition; (ix) family planning services; (x) maternal and childbirth care; and (xi) health status monitoring.

PHC in Kazakhstan is centered on accessibility and quality. Nearly 6,000 PHC organizations (polyclinics), 23,000 physicians, and 63,000 nurses provide services nationwide. Special attention is given to preventive care, with extensive programs for child health, school health posts, and regular screenings for adults. The country has also invested heavily in digital health technologies, including telemedicine and remote consultations and monitoring, which improve access to care, particularly in rural areas, given the geographic characteristics of the country.

Central to the reform was strengthening general practice/family medicine as the backbone of PHC. Special attention has been given to training family doctors in the new system of interaction with patients, which places a greater focus on patients' needs. Family doctors who are members of multidisciplinary teams have upgraded their skills by improving their clinical knowledge in evidence-based medicine and non-clinical competencies in areas such as communication with patients and within the PHC team and assessing the individual medical and social needs of patients[9, 10].

The government has made notable progress in integrating mental health services into PHC, with medical psychologists and social workers now part of PHC teams. This integration aims to comprehensively address the population's psychological needs. Insights from innovative PHC practices highlighted the importance of strengthening primary care teams by granting them greater professional autonomy and enhancing the skills of nurses, social workers, and psychologists to provide better PHC responses to meet people's needs comprehensively, but there are still some improvements necessary to determine the responsibilities and functions of these mental health care specialists[11].

Outpatient drug supply at the PHC level has increased in recent years: free ambulatory drugs provision has been expanded from 48 in 2019 to 126 diseases in 2023 covering about 4 million people. Access to expensive diagnostics like CT and MRI has increased in recent years, too.

The Republic of Kazakhstan has made a substantial breakthrough in healthcare informatization, guided by a long-term strategic vision aimed at creating an integrated information environment. This environment ensures access to essential data for all key stakeholders, including the population, healthcare providers, medical professionals, as well as management and financing bodies. Key elements of the system consist of an electronic health record (EHR) repository, a data analytics platform equipped with business intelligence tools, and a patient access portal. Achieving this vision requires full interoperability across all health information systems and resources, enabling real-time clinical decision-making at every level of care. It reduces barriers between different levels of service delivery and healthcare facilities, while also improving coordination of patient pathways across outpatient and inpatient settings through PHC[12, 13].

Telemedicine has made some significant impact on the improvement of PHC in this country. However, the implementation of telemedicine and its maximum benefits has been a challenge for many medical institutions due to the poor internet coverage and low-capacity digital infrastructure in the country[13].

Current Challenges

The two main challenges facing PHC in Kazakhstan now are the growth of non-communicable diseases (NCD) and the challenge of providing UHC[14]. Other areas of concern are infectious diseases, especially HIV/AIDS and tuberculosis and increasing financial burden for PHC.

One of the key challenges facing Kazakhstan's health system is the relatively low level of health expenditure per capita, which stood at US$ 765 in 2019 (purchasing power adjusted). While this figure exceeded the Central Asian regional average of US$ 552, it remained below both the average for upper middle-income countries in the WHO European Region (US$ 1 338) and the overall WHO European Region (US$ 3,226). In the same year, health spending accounted for just 2.8% of GDP, placing Kazakhstan among the lowest in the WHO European Region[15].

Out-of-pocket (OOP) spending on health services represents a critical cause of financial hardship, even in Europe's richest countries. Kazakhstan introduced social health insurance (SHI) to increase health spending and it has had some effect on reducing OOP. Between 2000 and 2021, Kazakhstan's UHC service coverage index rose from 38.7% to 80%. This global indicator, used to monitor progress toward Sustainable Development Goal 3, target 3.8.1, reflects not only a substantial improvement in access to essential health services but also places the country above the WHO European Region average of 77.1%[15].

As ageing is accompanied by a rising prevalence of chronic and disabling conditions, evidence increasingly highlights the importance of PHC in delivering continuous, comprehensive, and well-coordinated services. PHC also plays a key role in addressing social inequalities in health. In contrast, hospitals are less suited for preventive services or the long-term management of chronic illnesses. From both a clinical and economic perspective, strengthening PHC systems is therefore a logical priority for healthcare systems[16].

Ensuring geographical access to PHC care is a challenge in Kazakhstan due to the vast geographic expanse of the country as well as its topography: large deserts, huge territory, and sparsely populated areas exacerbate barriers to healthcare access. The consequences are that the majority of rural settlements in Kazakhstan have low availability of PHC services[16].

Over the first decade following independence (1990s into the early 2000s), the burden of disease changed considerably and the inherited model of care struggled to address it. The growth of non-communicable diseases (NCD) and the challenge of providing UHC placed an increased financial burden on the PHC system. Cardiovascular diseases and cancer became the leading causes of mortality[17], although as mentioned earlier, infectious diseases especially HIV/AIDS and tuberculosis remained of relative concern.

Kazakhstan ranks among the countries with the highest levels of premature mortality from NCDs in the WHO European Region. NCDs account for 84% of all deaths in the country, with cardiovascular diseases (CVDs) responsible for more than half (54%) of these cases.

Although there is an overall downward trend in premature mortality due to the major NCDs, cardiovascular diseases remain the primary cause of premature mortality. The global burden of disease (GBD) estimates that elevated blood pressure, poor dietary habits, tobacco use, excess body weight, harmful alcohol consumption, and raised fasting plasma glucose are the main contributors to combined morbidities in Kazakhstan. In light of these patterns, the demand is growing for both accessible and high-quality services for the early identification and management of high-risk individuals for CVDs[17, 18].

The capacity of PHC to detect and control these problems shows mixed results, promising but uneven. For example, screening for breast cancer (BC) detection is part of the national list of benefits, but about 10% of BC patients in Kazakhstan faced treatment delays, which were linked to diagnoses at more advanced stages of the disease. Approximately 69% of the target population was screened in 2015, (75% in the urban areas vs 63% in rural areas), a relatively high proportion relative to OECD countries (58.5%), but in line with EU guidelines suggesting a 75% screening rate of the target population[19].

Delays in BC treatment and late-stage diagnoses were linked to certain women characteristics (advanced age and Russian ethnicity) but there are also regional differences. Kazakhstan's cancer care system is structured by geographic regions, which may lead to differences in how screening programs are implemented across the country[19].

People aged 40 years and older are allowed for free cardiovascular screening in PHC polyclinics. The principles of cardiovascular risk assessment and management, recognized by WHO as one of its 'best buys', have already been incorporated into Kazakhstan's national policies, screening initiatives, and clinical guidelines. However, outcomes still show significant room for improvement[20].

A WHO promoted study exploring ambulatory care sensitive conditions (ACSC) in Kazakhstan raised serious concerns about the quality of PHC. Hospital admissions for ACSCs in Kazakhstan are high, probably representing weakness in the services delivered at the PHC level, and improving the management of ACSCs outside hospitals remains a priority. Overall, the high rates of hospitalizations for ACSCs were attributed to a range of factors including overburdened PHC providers with limited ability to provide continuity of care, excessive and irrational prescribing of antibiotics, as well as limited adherence to guidelines. PHC organizations still lack comprehensive disease management programs to control conditions like high blood pressure. An estimated 75% of hypertension-related hospital admissions in Kazakhstan could have been prevented with more effective PHC interventions[21].

A significant reflection is the elevated under-detection of conditions such as cardiovascular risk factors, hypertension, and elevated cholesterol level. Underreported diabetes is also very high, with estimates of 50% of cases not being detected[22, 23].

Burnout of PHC professionals in Kazakhstan is high, with significant implications for physicians' personal health. Burnout undermines the quality of care by affecting patient safety, satisfaction, physician turnover, and reduced productivity. While its causes are complex, major contributors include excessive administrative workloads from poorly designed systems, low wages, and weak regulatory frameworks, all of which fuel clinician frustration[24, 25].

Psychiatric care in Kazakhstan remains largely hospital-based, while community and psychosocial services at the PHC level are ineffective. Stigma surrounding mental illness is still prevalent, misconceptions about psychiatry are common, and public awareness of human rights is limited. Recently, however, political attention to mental health has started to increase, accompanied by some encouraging improvements in service provision[24].

Tuberculosis continues to pose a major public health concern, even though its incidence has been gradually declining. Kazakhstan carries one of the heaviest burdens of multidrug-resistant tuberculosis (MDR-TB) globally. Following independence, Kazakhstan retained the centralized Soviet-style tuberculosis control system, which relied heavily on active case detection, individualized treatment, and prolonged hospitalizations, factors that likely contributed to widespread resistance to anti-tuberculosis medications[26,27,28].

To address the escalating TB epidemic, Kazakhstan launched the National Tuberculosis Program and the World Health Organization's Directly Observed Treatment Short-Course strategy in 1998. This shifted care toward an outpatient model, reducing reliance on hospital beds. TB services have since been integrated

into PHC, with daily medication provision and hospital-substitution technologies included[28].

HIV infection is still of concern though not at epidemic levels. The number of newly reported HIV infections in Kazakhstan has risen by 39% since 2010, yet the true extent of the situation remains unclear due to limitations in reliable data and statistics. Moreover, cultural factors, including HIV-related stigma and discrimination, may hinder timely diagnosis and access to treatment[29, 30].

COVID-19 highlighted the structural limitations of the Kazakh healthcare system. It has been estimated that excess mortality in Kazakhstan may be 3.8 times greater than the reported COVID-19 mortality[31, 32].

Discussion

The health system in Kazakhstan has made significant positive developments following the Alma Ata Declaration in 1978 and in the post-independence era after 1990. Further commitment to the principles of the PHC was adopted at the Astana Declaration on Primary Health Care (PHC) in October 2018 at the Global Conference on Primary Health Care in Astana, the current capital of the Republic of Kazakhstan. The conference emphasized the foundational principles of the 1978 Alma-Ata Declaration, and reaffirmed global commitment to strengthening PHC as a central element to achieving UHC in line with the Sustainable Development Goals (SDGs), providing a strategic framework for countries to develop and strengthen their PHC systems, ultimately aiming to achieve better health outcomes and greater health equity[1].

The implementation of the PHC and the achievement of its health-level outcomes still face major challenges in Kazakhstan due to the low level of funding, urban-rural differences, low quality trained personnel, and financing to expand a secondary care-intensive and specialist-led approach to NCDs.

The Social Health Insurance Fund, established in 2016, now plays a crucial role in financing healthcare, covering a broad range of services and reducing the financial burden on citizens.

Kazakhstan's PHC has seen substantial improvements through policy reforms, increased funding, and the adoption of innovative technologies. The current reallocation of funding is enhancing the efficiency of health expenditures, supported by incentives that encourage a shift from inpatient care toward day and ambulatory services. Additional opportunities remain to improve payment mechanisms for providers, including the introduction of case-based financing for hospital services, which have now been introduced for rural hospitals, supplemented with additional coefficients.

It will expand knowledge of effective practices, encourage the design and implementation of reform agendas, and promote the adoption of innovative technologies, with the aim of strengthening NCD management at the PHC level in underserved regions to reduce inequalities, strengthening governance and institutional capacity to achieve UHC and SDG.

Greater investment in preventive measures is essential to save lives, while strengthening NCD management models, covering early detection, curative, therapeutic, and palliative care, can further reduce morbidity and mortality, boost productivity, and lower the risk of impoverishment among vulnerable groups, particularly women and populations in underserved areas.

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