KAZAKHSTAN
Use of mobile technologies in primary health care as part of state-run reforms in the health sector
Acknowledgements

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Background

The Declaration of Alma-Ata on primary health care (PHC) is a strategic global document that first defined PHC in 1978 and was adopted in the capital of Kazakhstan, formerly known as Alma-Ata (“the city of apples”) (1). Supported by WHO and UNICEF, the Minister of Healthcare of the Republic of Kazakhstan, Professor Toregeldy Sharmanov, played a key role in organizing the first international conference dedicated to PHC, which marked the start of the era for the recognition of the importance of PHC in the field of public health.

The Declaration emphasized the necessity for action by all governments worldwide to protect and promote the health of all people. Although over the past 40 years, some priorities of health care systems have changed, the role of PHC remains crucially important in designing and maintaining efficient health systems and achieving better health outcomes for populations (1,2). The commitment to the Declaration of Alma-Ata is welcomed by WHO Member States, international agencies and experts (4), and its values and core principles remain true and valid today.

As in 1978, Kazakhstan offered to host another international forum to revitalize the role of PHC and to further promote its role as a foundational building block of a health system by co-organizing, together with WHO and UNICEF, the Global Conference dedicated to the 40th anniversary of the adoption of the Declaration of Alma-Ata. At this meeting, it is intended to demonstrate the ongoing commitment to PHC by initiating the development of a new Declaration. Despite the inspirational, revolutionary and ambitious nature of the Declaration of Alma-Ata that promoted the right of everyone to health and the goal to achieve health for all, there were compelling grounds to develop a new Declaration on PHC. The Declaration of Astana is expected to answer the questions on how to further prioritize and design PHC in the context of the challenges and opportunities offered by the 21st century.

This case study illustrates how Kazakhstan taps into the vast opportunities offered by mobile technologies in disease management for better health outcomes in the PHC setting.
Challenges and barriers

Human life expectancy has improved significantly worldwide. Similarly, in Kazakhstan, life expectancy has increased by six years within the last 10 years, reaching 72.3 years in 2017. Despite the progress made in recent decades, the improvement in health outcomes has been uneven with regard to age, demographics and geographical location. Population ageing and urbanization have accelerating the risks of spreading both infectious and noncommunicable diseases (NCDs). Disparities in the availability of clean water, healthy food options and quality medical care remain in various parts of Kazakhstan. In particular, these are delineated by divisions among the population, such as urban versus rural residence, the ability to informally co-pay for medical care or use private healthcare versus an inability to do so, as well as geographical and cultural differences (southern versus northern region mentality).

The common challenges currently experienced across the world, such as the growing burden of communicable diseases, the impact of people’s mobility on the spread of infectious diseases and transnationally persistent antimicrobial resistance patterns, also create the urge to transform the way in which health systems are governed and operated, as well as how investment decisions are made.

At present, the health care system of Kazakhstan is in the active phase of health care reforms driven by the necessity to re-design the national health care system and offer more integrated and evidence-based models of care. This need follows on from the former predominantly state-run and state-owned health care delivery system inherited from the previous regime, which comprised a fragmented network of single specialty hospitals. The modern trends of needs-based health services planning, value- and outcome-based purchasing and reimbursement, represent a switch from a physician-dominated society with a very limited patient role to an era where patients play a more active role in their care. Patients now have the opportunity to take a higher ownership for their health management, expect a customer-service orientation and open communication made possible by internet and social media. The recognition of these trends led to a rapid chain of reforms initiated by the Ministry of Healthcare.
The state as a driver of change

Central government in Kazakhstan plays the biggest role in spearheading national reforms, and not only in healthcare. Each year, the President of Kazakhstan gives an annual address with specific tasks to branches of the Government, with the overarching goal of entering the list of top 30 most developed countries (5). Every five years, the various governmental departments, including the Ministry of Healthcare, receive the President’s approval for a mid-term State Development Programme for a period of four or five years, supported by funding. Such programmes are strategic development plans for a given ministry that contain specific activities and key performance indicators (KPIs) that aim to reform or modernize the field of interest, subject to monitoring by the Prime Minister every six months. The current four-year State Health Development Programme (“Densaulyk”, meaning “health”) for 2016-2019 includes 10 nationwide projects that transverse the planning, governing, financing and delivery of care.

Among the 10 projects, the “Integration of health services around primary health care” is the strategy that drives the reform in PHC. For example, its goals or KPIs include decreasing the patient load from 2200 per general practitioner (GP) to 1700 as a target for 2019, integrating specialized services into PHC by re-training GPs to detect and manage diseases formerly referred to specialists, allowing the creation of many small GP offices instead of large (often crowded) polyclinics. Most importantly, since 2013, starting with pilot projects in some regions, Kazakhstan introduced the “disease management programmes” (DMPs) for three NCDs – diabetes, hypertension and chronic heart failure. The revolutionary feature of the DMPs is the high emphasis on patient literacy and engagement in the management of the disease, leading to higher patient compliance and better health outcomes. Pilot implementation of DMPs among selected PHC providers in 2013-2016 showed that for those enrolled in DMPs, improved health outcomes included stabilization of blood pressure among 75% of hypertension patients, lowering glucose levels among 65% of diabetes patients, and a two-fold decrease of hospital admissions among patients with chronic heart failure.

In addition, since January 2017, all branches of the Government adopted the “project management” approach as a means to introduce a fast pace of economic growth by focusing on drivers of economy in every industry, including health care. For example, the latest reform of the Ministry of Healthcare using this approach is called “Healthcare system modernization” and includes six specific initiatives – one of the six being the creation of a single information space in health care, in other words, the digitalization of health care. These six initiatives provide points of economic growth that will lead to a more efficient care and better health outcomes if implemented.
For PHC, the aggregate result of this complex grid of reforms stemming from both the State Health Development Programme and the “Healthcare system modernization” constitute the following:

- the reform of medical education at universities to prepare GPs to meet the current and future needs of patients;
- the reform of the regulation and procurement of medication to ensure a wider access to medicines included in the “State-guaranteed benefits package” for people at the PHC level (GPs prescribe medicines that can be received for free at PHC clinics);
- introducing corporate governance and professional managerial practices and skills among health care providers (ensuring how ex-physicians, who are now chief executive officers, can be good managers);
- deregulation of care delivery to allow more private and smaller-size GP practices to open and operate;
- a national health insurance reform that brought a new player, the national health insurance fund, which started collecting insurance premiums from employers in addition to government taxes for protected populations, becoming the largest source of reimbursement for providers;
- the digitalization of health care – going paperless from year 2019.

The foundational project for PHC is the above-mentioned “Integration of health services around primary health care”. To start the project, the following baseline KPIs were registered:

- 2.7 visits per year per person per GP in Kazakhstan versus 6.7 in OECD (Organization for Economic Cooperation and Development) countries;
- 2200 persons per GP (living adjacent residency areas to be served) versus 1500 in OECD countries;
- In 2017, 28.2% of all government financing in health care in Kazakhstan was spent on outpatient care and 19.8% was spent on PHC. Of total health care spending, including both government financing and out-of-pocket and prepaid insurance sources, the share of spending on outpatient care was 17.4% with 12.3% spent purely on PHC.
- 49% of financing for all outpatient care (or 19% of all financing for PHC) versus 62% for all outpatient care in OECD countries.
PHC reform targets include reaching the workload allocation of not more than 1700 persons per GP by 2019, and not more than 1500 persons by 2025; increasing the number of people's visits to GPs as a result of conscious health check-ups, promotion and screening services (for example, the screening rate for mammograms is set to reach 80% from the current 55% by 2020), with a decrease in hospital admissions; and allocating additional funding to PHC, from the current 19% to 25%.

Moreover, in the latest President's Address to the Nation of 5 October 2018, the Head of State announced that the salaries of PHC GPs will be increased by 20% for those providers who implement DMPs for NCDs in order to stimulate providers by a differentiate coefficient (additional reimbursement) for the evidence-based practice of DMPs.

No reform can be successful without the buy-in and engagement of local authorities. The local health authorities, that is, the regional health departments, are important stakeholders of the reforms because they own the majority of health care providers, have direct responsibilities in ministry-initiated projects, and their participation in national projects is monitored by the Prime Minister on a semi-annual basis. In addition, they have Memorandums of Collaboration signed between the mayor of each region and the central Government, which outline the same KPIs and activities as the State Health Development Programme. The local health authorities ensure the continuity and integration between health care organizations both horizontally and vertically across levels of care. They also monitor patient referrals, carry out internal and external quality audits for medical care, including for PHC providers, and are responsible for the implementation of mentioned reforms.
Digital solutions in PHC

Digitization of health care is a major factor in economic and social progress for any country. In this regard, digitalization in PHC requires a wide distribution of digital communication channels, including internet, servers, personal computers and mobile applications. Taking into account these modern challenges, the Government of Kazakhstan launched the project “Creating a unified health information system” as part of the State Health Development Programme.

Through investing in an informatics infrastructure (as of 2017, 38-74% of all health care providers have health information systems, 55% have access to internet, and 85% have a sufficient number of personal computers and hardware), the Ministry of Healthcare taps into the opportunities offered by digital technologies and smaller scale projects, such as mobile phone applications, to improve health care delivery and outcomes. Penetration of smartphones reaches 95% among people aged 20 to 35 years in Kazakhstan. Hence, mobile applications are used especially intensively among the relatively young generation, giving the opportunity to provide continuous data reporting from patients to providers.

Since 2017, various private companies piloted mobile phone applications that could improve disease management or patient monitoring at a distance.

For example, the Karaganda region has successfully implemented a mobile application for pregnant women called “my pregnancy”, which improved antenatal care for pregnant women at the PHC level, with smartphones connected to their GPs and midwives throughout the pregnancy. The application allowed routine care management, such as questions and answers for common symptoms, physician visit scheduling, exchange of health information, as well as a special emergency call button for a medical urgency. For vulnerable poor women, the local health department arranged for the provision of the telephone and service fees for free, paid by the local government.

Another example of how mobile technologies implemented in PHC improved care is the successful implementation of the “home care nurse” mobile application. First introduced in the Kyzylorda and Mangystau regions of Kazakhstan in pilot mode, this tool allows data entry during home care visits by nurses immediately from their mobile phones directly into medical records, instead of the old style recording on paper and then copying from the paper into the medical record kept at the PHC facility. This solution allows to keep the medical history up-to-date for prenatal care visits for pregnant women, as well as for postpartum home visits for the mother and child, including documentation of not only medical conditions, but also to enter data from the assessment of risks of the living environment and social conditions.

Finally, a mobile application called “the people’s control” was launched by the national health insurance fund – the largest payer for health care services since the introduction of the health financing reform in Kazakhstan in 2017. The application allows any patient to evaluate the perceived quality of care after receiving health care services by entering feedback and generating data for the provider’s ranking system. This application helps to improve transparency for feedback on providers’ service quality and plays a role as an additional and independent patient satisfaction evaluation tool.
Summary

The results of ongoing reforms transform PHC from different angles, that is, human resources, provision of medicines, professional management and corporate governance, infrastructure and workload, and value-based financing mechanisms. These reforms are implemented simultaneously and aggregately stimulate the preventive nature of PHC, thus expanding the range and quality of services provided to the public. The central Government represented by the Ministry of Healthcare, as well as local health authorities, plays a key role in reform implementation in Kazakhstan by encouraging the development and application of new mobile technologies in PHC organizations; ensuring the rational and effective use of funds; increasing the motivation of health care personnel in PHC to follow evidence-based practices, such as DMPs for key NCDs that actively involve the patients to maintain their health. The pilot implementation of mobile applications for use in PHC demonstrate the benefits of these technologies in improving patient satisfaction and care delivery.
References


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