



**Kazakhstan** Case Study

# How a measles outbreak triggered investment in health systems strengthening and demand generation in Kazakhstan

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Paediatrician Maya Baktygalievna listens to a baby's breathing. ©UNICEFKazakhstan/2021/Nazira Kaiymova.

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To document UNICEF's work on COVID-19 vaccine roll-out and maintaining/restoring routine immunization during the global COVID-19 pandemic in the Europe and Central Asia region, we have developed a series of case studies. The series focuses on enabling factors, challenges and bottlenecks, achievements and evidence-based best practices from planning, implementation, and monitoring of COVID-19 vaccination and routine immunization as well as lessons learned for immunization systems strengthening.

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## Pre-COVID-19 context

When UNICEF Kazakhstan launched its immunization programme 2020–2022, the country and indeed the world was on the cusp of a global health crisis. The intention behind the programme was to strengthen the national immunization programme in the country and respond to the 2019 measles outbreak – a different yet equally serious health challenge. According to WHO, Kazakhstan was classified as a country with endemic transmission of measles; two measles epidemics were registered, in 2015 and in 2019. While the central Ministry of Health (MoH) is responsible for developing national health policies, governors of oblasts (consisting of 17 administrative divisions) are key players in decisions related to the health system. The Government of Kazakhstan procures all its routine vaccines from the national budget with some purchased through UNICEF procurement services. Differences are apparent between Kazakh and Russian speaking citizens in that the latter have more access to information generated outside Kazakhstan.

## The arrival of COVID-19

When coronavirus disease (COVID-19) cases were first reported in Kazakhstan in March 2020, lockdown measures disrupted access to healthcare, including routine immunization services that were temporarily suspended at the primary health care level for six weeks during April and May 2020. In 2020, coverage for the first dose of the measles vaccine (MCV1) fell below the 95 per cent threshold required to protect against outbreaks of vaccine-preventable diseases, to 93 per cent.<sup>1</sup> By 2021, there were 8,000 unvaccinated children and 20,000 were under-vaccinated, and the emergence of increasing gaps in immunization and the demand for information through digital platforms meant that many people turned to social media for advice, which was a source of negative messaging and false information.<sup>2</sup> As of February 2023, 33,691,195 doses of the COVID-19 vaccine had been administered in the country, with a coverage rate of 69.6 per cent for two doses of the vaccine.<sup>3</sup>



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*In collaboration with the European Union, UNICEF brought a shipment of over 300,000 ampoules of dexamethasone and 2,000 pulse oximeters to Kazakhstan, to supply healthcare facilities in all 17 regions of the country.*

- 1 [https://immunizationdata.who.int/pages/coverage/MCV.html?CODE=KAZ&ANTIGEN=MCV1&YEAR=.](https://immunizationdata.who.int/pages/coverage/MCV.html?CODE=KAZ&ANTIGEN=MCV1&YEAR=)
- 2 Kazakhstan Country Office Annual Report 2021.
- 3 [https://worldhealthorg.shinyapps.io/EURO\\_COVID-19\\_vaccine\\_monitor](https://worldhealthorg.shinyapps.io/EURO_COVID-19_vaccine_monitor).

## How UNICEF supported the immunization sector

UNICEF Kazakhstan contributed to strengthening the immunization sector through the following key interventions:

1. Support the Government for preparedness and data generation for improved decision-making within the health system.
2. Development of an immunization road map and standard operating procedures (SOPs) for calculation of vaccines requirements
3. Capacity building to address false contraindications and enhance vaccine demand.
4. Content creation to address dis/misinformation.

## Planning and coordination

UNICEF Kazakhstan contributed to the development of the United Nations Country Team Communication and Advocacy Strategy 2021 and led the COVID-19 United Nations Communication Group. Partnerships were expanded with multilateral donors and the private sector as well as with the European Commission's Civil Protection and Humanitarian Aid Operations (ECHO) through which medical supplies (pulse oximeters, dexamethasone) were procured. UNICEF Kazakhstan supported the development of a National Communication Strategy for Routine Immunization to guide efforts and ensure consistency of communication and messaging around routine immunization, and to improve trust in the healthcare system.

## Service delivery

In Kazakhstan there are 6,565 licensed vaccination clinics and a further 1,161 mobile vaccination teams that provide routine immunization services to populations living in remote areas.<sup>4</sup> After the COVID-19 vaccine became available in Kazakhstan in February 2021 and the target population expanded, the MoH established additional vaccination points to accommodate service delivery, increasing by around 50 per cent, and additional mobile points were provided, particularly in rural areas. To improve routine immunization, UNICEF Kazakhstan provided technical support for the development of a catch-up vaccination calculator that was introduced in 2022. This tool enables the calculation of the individual immunization schedule of children who are behind in their vaccines (according to the national immunization schedule). By entering

the date of birth and vaccines received, it provides information on vaccines that were missed and recommendations for when and how to receive them.<sup>5</sup>

## Research to investigate and strengthen the health system

Research conducted by UNICEF Kazakhstan highlighted the complexity of the immunization space in Kazakhstan, making it clear that effective action required a nuanced understanding and a whole-system approach.

A **root cause analysis** of the measles outbreak in 2019 identified gaps and critical bottlenecks to immunization, including a lack of human resources leading to insufficient outreach activities. This in turn resulted in a failure to ensure timely vaccination, a high burden of false contraindications and medical exemptions resulting in missed vaccination, lack of accurate coverage data leading to weak planning and monitoring policies, and widespread vaccine hesitancy. In response, UNICEF Kazakhstan with the support of the regional office developed a measles preparedness and response plan that created the foundation of the Roadmap for Immunization System Strengthening 2023–2025.

**Mapping of procurement systems** showed that poor planning and under-reporting of vaccine needs was leading to unvaccinated children. To address this, UNICEF Kazakhstan provided recommendations for SOPs to calculate vaccine procurement requirements and build capacity for better monitoring of vaccine and immunization coverage rates, which are currently under review by the MoH.

<sup>4</sup> 'Measles in Kazakhstan: Overview of the health system and root cause analysis of the 2019–2020 outbreak'.

<sup>5</sup> The catch-up vaccination calculator is available on the Egu.kz website via this link: <https://egu.kz/catchup-vaccination>.

**Assessment of the cold chain for COVID-19 vaccines** in late 2022 in two regions (14 health facilities) with support of UNICEF Kazakhstan revealed several regulatory problems at the central level. These included the absence of a comprehensive information system for both cold chain and immunization management and for reliable temperature monitoring at all stages of vaccine distribution and transportation. Based on the results, standards for calculating cold chain equipment requirements using WHO recommendations and UNICEF's cold chain sizing tool were introduced to legislative Order #62 to improve vaccine storage and transport.

### Capacity building and training

A [communication capacity assessment](#) of the healthcare system was undertaken in Kazakhstan in 2022 and contributed to a better understanding of existing communication structures, resources and guidelines. The assessment highlighted the need for a communication strategy and SOPs for the healthcare communication function at both the central and regional levels. Based on this assessment, UNICEF Kazakhstan designed SOPs as a step-by-step guide for the development and implementation of public health communication campaigns at the national and sub-national levels. Both SOPs, 'Developing and effectively implementing a planned health communication campaign' and "[Crisis communication in health care](#)" are available in English, Kazakh and Russian. Nearly 300 healthcare communicators were equipped with the necessary skills and tools for strategic communication, social listening and misinformation management. UNICEF Kazakhstan and the Alliance of Family Doctors of Kazakhstan delivered a five-day training in seven

regions (Aktobe, Atyrau, Kyzylorda, Turkestan, Almaty, East-Kazakhstan and Karaganda) to more than 1,600 medical and healthcare workers, covering vaccinology, false medical contraindications, and interpersonal and communication skills to increase demand for routine immunization and COVID-19 vaccination. An additional 45 public relations managers and press secretaries in the healthcare sector received training on key information and skills development to conduct situation assessments, identify key stakeholders and partners, and build effective communication campaigns.



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*A nurse vaccinating a child in Shymkent city polyclinic No. 11. Shymkent, Kazakhstan.*

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**1,600** medical and healthcare workers trained on vaccinology, false medical contraindications, and interpersonal and communication skills

**45** public relations managers and press secretaries in the healthcare sector trained on key information and skills development to conduct situation assessments, identify key stakeholders and partners, and build effective communication campaigns

**447** physicians trained on vaccination of children with diabetes and management of children with diabetes after a COVID-19 infection

## Strengthening vaccine confidence and uptake

UNICEF Kazakhstan focused on producing evidence to improve understanding about vaccines and contribute towards improved vaccine demand. A 2020–2021 study<sup>6</sup> highlighted the need to revise the principles of monitoring and response to disinformation and expand strategies for sharing reliable content to the public. A knowledge, attitude and practices survey conducted in 2021 found that there was an increasing and significant scepticism of vaccination due to negative information widely disseminated via social media and on internet chat forums, as well as by word-of-mouth.

Behaviour insights research on drivers influencing immunization-related behaviours in Kazakhstan (2022) covered routine immunization, and vaccination against the Covid-19 and human papillomavirus (HPV). Results found that almost half of the parents who vaccinated their children according to the immunization schedule had negative attitudes towards immunization, high levels of false medical exemptions, regional differences in vaccine hesitancy and affected by the role of different societal groups in immunization decision making. Finally, a survey of 518 medical students showed that levels of knowledge on immunization were low and that many participants

believed in common vaccination myths. Most false contraindications were likely to come from doctors, corresponding with findings from the root cause analysis of measles outbreaks that lack of knowledge among healthcare professionals leads to more medical exemptions and a tendency to postpone vaccination.

Investment in building evidence contributed to a vaccine demand generation campaign. In partnership with WHO and the MoH, UNICEF Kazakhstan launched the countrywide ‘With Love to Life’ outdoor vaccine demand generation campaign. More than 40 billboards for different target audiences were placed in all regions. In Nur-Sultan and Almaty cities additional banners were shown on LED screens in airports and train stations, posters at more than 45 bus stops, inside some buses and on taxis. A [short video](#) promoting COVID-19 vaccination was broadcast on two major national TV channels, with the approximate outreach of 2.8 million adults and children aged over 6 years. Additional materials were placed inside malls and markets, the Almaty subway, and government buildings. UNICEF Kazakhstan partnered with the National Volunteers Network to train 30 retired healthcare workers from three pilot regions (Akmola, Karaganda and Pavlodar) with a focus on routine immunization. As trusted community members they reached over 300 mothers and pregnant women.



*Covid-19 vaccination at city clinic, Kazakhstan.*

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<sup>6</sup> ‘Dissemination of disinformation about vaccination in Kazakhstan 2020–2021’.

**30** retired healthcare workers trained on routine immunization and reached over 300 mothers and pregnant women.

**2.8** million adults and children aged over 6 years reached through video promoting COVID-19 vaccination broadcasted on TV

**804** parents of high-risk children improved their knowledge and skills related to COVID-19 vaccination and routine immunization

*Increasing awareness and creating demand for vaccination amongst caregivers of diabetic children*

Given the vulnerability of children with diabetes to COVID-19 it was important to increase awareness regarding immunization during the pandemic. UNICEF Kazakhstan designed a tailored training and awareness generation programme on the necessary skills and knowledge required to increase routine and COVID-19 vaccination coverage among children with diabetes. Training was held in the three biggest cities in the country (Almaty, Astana, and Oskemen) with online connections for other regions. In partnership with the Diabetes Association of the Republic of Kazakhstan, 804 parents of high-risk children improved their knowledge and skills related to COVID-19 vaccination and routine immunization, and 447 physicians (endocrinologists, family doctors, and paediatricians) were capacitated with up-to-date training on vaccination of children with diabetes and management of children with diabetes after a COVID-19 infection. UNICEF Kazakhstan and the MoH, in partnership with MedSupport, launched a website in September 2021 sharing evidence-based information on immunization. The website was set up as the first unified hub in the country for all need-to-know information about vaccine preventable diseases. Complementing the website was the launch of two media projects – one in Kazakh (*Ekpebar*) and one in Russian (*Privivka*) – that produced articles and interviews with doctors, parents and other relevant people sharing the benefits of vaccinating children and the potential consequences of the failure to vaccinate. *Privivka* and its associated social media channels reached approximately one million people. UNICEF Kazakhstan produced and disseminated 11 videos on immunization including eight videos on vaccination, two interviews with measles survivors

and national experts on measles and polio, and one video covering the importance of timely vaccination. These were produced during 2021 and 2022 in Kazakh and Russian languages, with subtitles and sign language.



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*EGU.kz* website provides fact-checked information about vaccines. <https://www.unicef.org/kazakhstan/en/press-releases/all-information-about-vaccines-one-website-egukz-website-launched>

## Lessons learned / best practices

- **A paradigm shift is needed.** The reasons behind falling vaccination rates across all preventable diseases are complex. Most parents who express scepticism would not identify themselves as 'anti-vax'. Additionally, among the children who contracted measles are those who could not be vaccinated for a range of reasons (including not yet meeting the age requirement). A paradigm shift is required from focusing solely on vaccine refusal by parents towards a more nuanced and comprehensive consideration of the dynamics and complexities of both the supply and demand sides of the immunization issue.
- **The relationship between routine immunization and COVID-19 vaccination:** Routine immunization and COVID-19 vaccination are inextricably linked and should be integrated for maximum impact. A significant number of children missed out on routine immunization because health facilities were inaccessible during lockdowns. Moreover, the fears already felt by parents around vaccination were further compounded by the uncertainty surrounding COVID-19 vaccination and the result appears to be a lower demand for all kinds of vaccination.
- **Importance of evidence:** Kazakhstan invested heavily in evidence generation. The root cause analysis of the measles outbreak revealed programmatic and demand-related bottlenecks and triggered systemic change, and subsequent studies and assessments contributed to the availability of reliable data for informed decision-making.
- **Language and communication needs:** Kazakh and Russian language communities prefer and are likely to benefit from and respond to different content and different approaches to content promotion. Going forwards, targeted communication and content that meet the specific needs of different audiences will be a key part of countering false and potentially harmful narratives, providing alternative reliable narratives, and building trust in the health system.
- **Empathy and positive communication:** While it is essential for medical personnel to have up-to-date and robust scientific knowledge on immunization, it is equally critical that they are equipped with the communication skills needed to effectively engage parents who are fearful of vaccinating their child.

Positive, open and empathetic dialogue is vital when interacting with parents otherwise the risk is further reinforcing negative perceptions and reluctance to vaccinate. Strong communication skills increase the likelihood that parents will come away from any exchange feeling supported and that their questions have been taken seriously.



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*Botagoz Kaukenova and Akmaral Tursunova, co-founder of the public fund MedSupport, and volunteers Anelya Murat and Galiya Bekenova, discuss fund's working issues in Nur-Sultan, Kazakhstan, restaurant Masrcello.*

## Conclusion

The measles outbreak triggered investment in health systems strengthening and demand generation through a series of research and studies. Although UNICEF Kazakhstan was not heavily involved in the COVID-19 vaccine roll out, the evidence that was generated was highly beneficial to the overall process and improved immunization programme. While low demand and vaccine uptake is often attributed solely to those members of the population who are anti-vaccination, in Kazakhstan the work that UNICEF has undertaken with partners demonstrated that it is a more nuanced, complex issue. The root cause analysis of the measles outbreak kick started a series of other important assessments of the entire health system during the pandemic and those recommendations have resulted in real policy change. The experience in Kazakhstan shows that investing in evidence generation and building reliable data can have a significant impact beyond understanding the situation and contributing to legislative reform and the evolution of the health system, to build trust with an overall vision to enhance the well-being and health of children.