



## UNICEF KAZAKHSTAN'S IMMUNIZATION PROGRAMME: 'STRENGTHENING THE IMMUNIZATION SYSTEM IN RESPONSE TO THE MEASLES OUTBREAK'

***"I believe if opponents of vaccination ever saw how people bear measles, they would think about it. It's a shame that children who have medical contraindications are at risk."***

***Anastasia Naumova, mother of an HIV-positive child who survived measles shares her view on false medical contraindications***

### SUSTAINABLE DEVELOPMENT GOALS (SDGs)



Ensure healthy lives & promote well-being for all at all ages

## OVERVIEW

UNICEF Kazakhstan launched its Immunization Programme in February 2020 in partnership with the Kazakhstan Ministry of Healthcare (MoH) and with funding from the US Agency for International Development (USAID) in response to the 2019 measles outbreak in the country. This new initiative aimed to support the Government to strengthen the national immunization system, to lessen the likelihood of subsequent disease outbreaks and to reinforce capacity to respond should further outbreaks occur. The programme began with a series of studies to establish scope, fully understand the complexities of

the issue, and inform targeted strategies and activities. Based on the research findings, UNICEF and partners engaged in awareness-raising activities to fill information voids and provide parents with accurate and accessible information on vaccination, conducted training for health workers, vaccinators and medical PR personnel on vaccinology and communication skills, supported the development of a National Communication Strategy for Immunization, and developed Standard Operating Procedures (SOPs) for accurately calculating vaccine procurement needs. As the current immunization

programme draws to a close in 2022 UNICEF and partners will strengthen the sustainability of results achieved to date by working with the Government to hand over key communication vehicles and training curricula to be embedded at the national level, complete the health-worker training by expanding coverage to all regions not yet reached, prioritize steps to address geographic and language-based inequalities that impact immunization rates, and develop a set of SOPs to strengthen national and sub-national communication systems to bolster confidence in and effectiveness of the national immunization programme. The results of the Immunization Programme to date were presented to the Vice-Minister of Health in May 2022, leading to the decision to establish a Roadmap for Immunization System Strengthening (2022-2025). The draft of the Roadmap was developed during a meeting in August 2022, which gathered key decision makers from governmental entities and international organizations. The resulting document which is undergoing review at the Ministry of Health aims to introduce key changes required to address the gaps and challenges identified in the studies conducted as part of the UNICEF programme. Finally, as focus expands to a new COVID-19 vaccination initiative in 2022, UNICEF and partners will harness the results achieved, lessons learned, and challenges faced under the immunization work so far to ensure efforts going forward have the greatest possible impact on the lives of children, their families and their communities, especially the most vulnerable.

## BACKGROUND

Immunization is one of science's greatest achievements and saves millions of children's lives every year.<sup>1</sup> At the same time, immunization coverage has plateaued in recent years and this has only been made worse by the COVID-19 pandemic. Between 2010 and 2019 vaccination coverage with three doses of diphtheria, tetanus and pertussis (DTP-3) and one dose of the measles vaccine, often seen as key indicators of the state of vaccine coverage, stalled at around 86%.<sup>2</sup> In 2020 the vaccination rate for DTP-3 dropped to 83% and to 84% for measles.<sup>3</sup> This falls short of the 95% threshold required globally, nationally and throughout communities to protect against outbreaks of vaccine-preventable diseases.<sup>4</sup> Figures released by [the World Health Organisation \(WHO\)](#) and UNICEF in 2022 state that '25 million children missed out on basic vaccines through routine immunization service in 2021, 6 million more than before the start of the COVID-19 pandemic in 2019. In 2021, 24.7 million children were at risk of contracting measles due to a drop in coverage of a first dose of the MCV-1 measles vaccine to 81%, the lowest level since 2008. 14.7 million children received a first dose of the measles vaccine but failed to be provided a necessary second dose.'<sup>5</sup>

In the Central Asia region, polio outbreaks were recorded in Tajikistan in 2010 and Ukraine in 2015.<sup>6,7</sup> In 2021 a substantial number of children did not receive measles vaccination in the region; ten countries reported MCV1 coverage below 90% compared to only four countries in 2019.<sup>8</sup> In Kazakhstan, data show that the national vaccination rate across 15 routine vaccines dropped from 94.7% in 2018 to 92.4% in 2019 and 89.1% in 2020, presenting the very real risk of failing to attain the herd immunity required to protect the public from disease outbreaks.<sup>9</sup> The country experienced measles epidemics in 2015 with 2,340 laboratory-confirmed cases and in 2019 with 13,326 laboratory-confirmed cases. In 2019, 1,836 of the cases identified were among children 0-12 months.<sup>10</sup> COVID-19 has only exacerbated the situation by exponentially increasing missed opportunities for routine immunization through lockdowns

***“ Vaccination is the only, most effective and no alternative way for parents to protect their children from the serious consequences of infectious diseases. At the EGU.kz website you will get correct, evidence-based, and reasoned information about immunization. ”***

***Nazgul, whose daughter Mariyam was only 16 months old when she fell ill with whooping cough***

and creating fertile ground for a heightened fear around any kind of vaccination.<sup>11</sup> UNICEF Kazakhstan’s Immunization Programme sought to address these issues in a comprehensive and system-wide manner, leveraging health and communications expertise for maximum impact.

## STRATEGY AND KEY ACTIVITIES

### Strategic goals

Strengthening healthcare systems is a key part of UNICEF Kazakhstan’s long-term goal of ensuring children and adolescents grow up healthy, thrive and build their resilience by benefiting from increased access to quality health and nutrition services and a safe and clean environment.<sup>12</sup> The immunization programme aligns with the UNICEF Strategy for Health 2016-2030, the UNICEF Immunization Roadmap 2018-2030, and the UNICEF Strategic Plan 2022-2025.

**TO ASK THE RIGHT QUESTION IS ALREADY HALF THE SOLUTION OF A PROBLEM.**

CARL JUNG

### KEY ACTIVITIES: LAYING THE GROUNDWORK

#### Formative research to provide robust evidence for effective action

UNICEF and partners undertook a comprehensive portfolio of studies at the outset of the programme to gather robust and targeted evidence on the scope and core dynamics of the routine immunization landscape in the country . This was particularly focused on the measles vaccination situation but with the potential for findings to be extrapolated to all vaccine-preventable diseases. The research included: 1) a root cause analysis of the 2019 measles outbreak, 2) a survey of 518 medical students to assess levels of knowledge on immunization and challenges to ensuring robust knowledge and practice, 3) a Knowledge, Attitudes and Practices survey ([KAP survey](#)) of approximately 2,500 parents, including additional in-depth interviews and focus groups with 52 parents who had

refused immunization for their children and 58 health-care workers, and 4) a comprehensive mapping of procurement systems to identify gaps and discrepancies and to recommend practicable solutions.

**“ I am now talking relatively calmly, but then it was scary. Especially when I started reading stories about children getting sick and being in intensive care. . . My advice to moms: use evidence-based medicine and don’t be afraid of vaccinations. No need to risk the lives of children. ”**

*Nazgul, whose daughter Mariyam was only 16 months old when she fell ill with whooping cough*

### Key findings

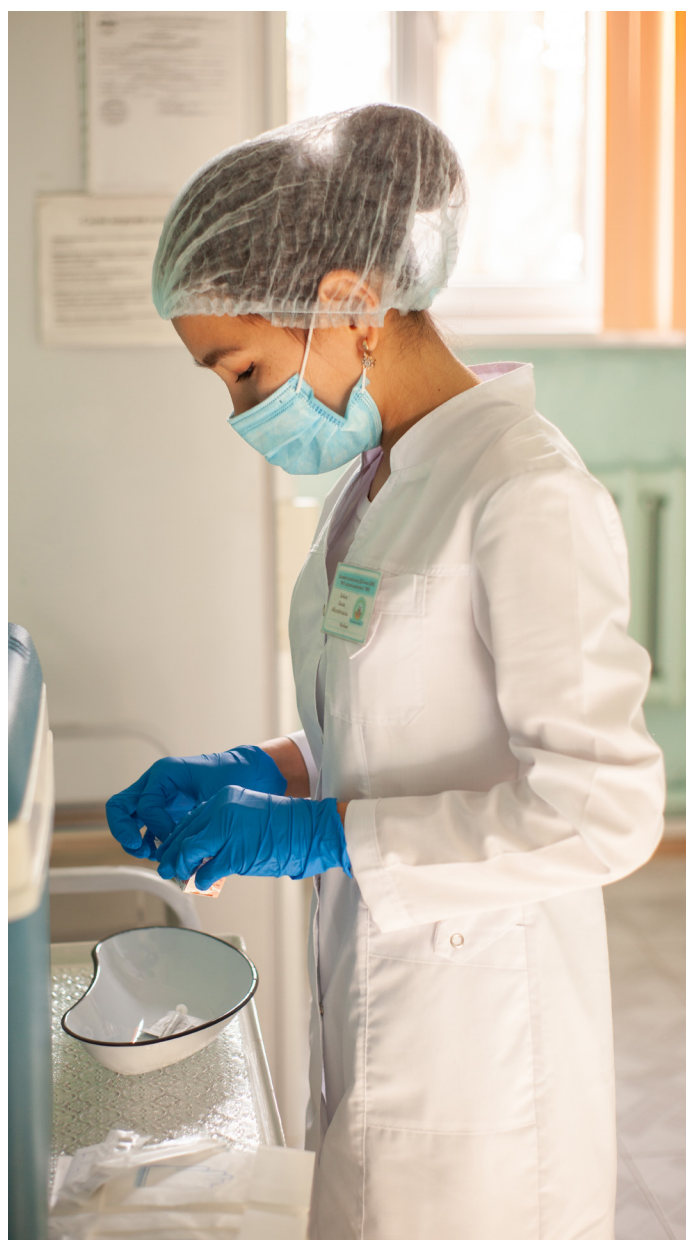
Taken as a whole, the research highlighted the complexity of the issue and made it clear that effective action required a nuanced understanding and a whole-system approach rather than targeting one area:

- The root cause analysis concluded that the 2019 Measles outbreak was influenced by a combination of factors including: lack of human resources leading to insufficient outreach activities and invitation to vaccinate which in turn resulted in failure to ensure timely vaccination, a high burden of false contraindications and medical exemptions (36,740 temporary and 581 permanent contraindications were reported for the MMR vaccine in 2019 <sup>13</sup>) leading to missed vaccination opportunities and growing numbers of unvaccinated children vulnerable to disease, lack of robust and accurate coverage data resulting in poor effectiveness of planning and monitoring policies, and widespread vaccine hesitancy. The latter was grounded in deep-seated mistrust of the health system due to poor communication



skills among vaccinators and inadequate time to provide parents with key information, engage in meaningful dialogue and address any fears, false beliefs or concerns parents may have.<sup>1415</sup>

- The medical students survey found that levels of knowledge on immunization were low and that many participants believed in common vaccination myths. It also concluded that most false contraindications are likely to come from doctors, corresponding with the finding in the root cause analysis that lack of knowledge on true and false contraindications among general practitioners, pediatricians and field-vaccinators leads to 'over-releasing' medical exemptions and a tendency to postpone immunizations.<sup>16</sup>



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- The KAP survey found that most parents believed in vaccines and had a positive attitude towards vaccination. At the same time, it identified an increasing and significant scepticism and questioning of vaccination among parents. According to the 52 parents who refused to vaccinate their children, a key reason for this refusal (71% of respondents) was 'real life' negative experiences reported by acquaintances or strangers who shared stories of their children becoming seriously ill after vaccination.<sup>17</sup> This type of information was found to be widely disseminated via social media and on internet chat forums, as well as simply via word-of-mouth. According to the results, the primary reason for parental refusal to vaccinate children in 2020 (77.8% of parents who refused to vaccinate) was fear that their child's immune system would be compromised after vaccination, leaving the child more vulnerable to contracting COVID-19.<sup>18</sup> Parents also felt there was a lack of easily accessible and understandable information on immunization available to them; they therefore turned to the internet and informal sources to answer their questions.

**“ A false medical contraindication is one of the most common reasons for the low vaccination rates in Kazakhstan. In 2020 alone, 208,932 temporary contraindications were received and 2,642 permanent ones. ”**

**Assel Mussabekova,  
UNICEF Immunization Consultant**

The mapping of procurement systems identified supply-side gaps including lack of standardization in annual target setting that undermined appropriate vaccine quantification and forecasting, and poor-quality data used in target setting. It recommended that steps be taken to augment systems and capacity for better

monitoring of vaccine use and immunization coverage rates to 'avert outbreaks, improve health and save lives'.<sup>19</sup>

## KEY RESULTS

### Created clear, easily accessible and reliable sources of information

UNICEF Kazakhstan and the Ministry Healthcare, in partnership with NGO MedSupport.KZ, developed and launched a website in September 2021 for parents and medical practitioners to find key 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 each vaccine preventable disease. It included information on the full spectrum of available vaccines, the national vaccination calendar, common myths and misconceptions, and a debunking of those myths. A successful digital marketing campaign was launched to promote the website among parents. Complementing the website was the launch of a [media project](#) called 'Privivka', which produced articles and interviews with doctors, parents and other relevant and influential people discussing and sharing stories about the benefits of vaccinating children and the

potential consequences of failure to vaccinate. The Privivka platform and its associated social media channels reached approximately **1 million people**.

### Training and capacity building

A series of training sessions were delivered to healthcare workers and health sector communications and PR teams:

- UNICEF and the Alliance of Family Doctors of Kazakhstan delivered a 5-day training online and offline across the 24 urban and rural healthcare organisations in 7 regions (Aktobe, Atyrau, Kyzylorda, Turkestan, Almaty, East-Kazakhstan and Karaganda) to more than 1,600 medical and health workers. The training covered vaccinology, false medical contraindications, and interpersonal and communication skills to increase demand for routine and COVID-19 vaccination.
- 45 PR managers and press secretaries in the healthcare sector received training covering key information and skills development for conducting situation assessments, identifying key stakeholders and partners, and building effective communication campaigns.



- To promote and strengthen effective dialogue and engagement with parents around vaccination, UNICEF and partner organization the National Volunteers Network (NVN) trained 30 retired healthcare workers over the age of 50 from 3 pilot regions (Akmola, Karaganda and Pavlodar) in early childhood development with a focus on routine immunization. These 'Silver Volunteers' are trusted community members and important information sources for parents. To date, they have reached over 300 mothers and pregnant women.

importance of timely vaccination. These videos were produced in Kazakh and Russian languages, with subtitles and sign language. Dissemination of these communication tools will continue in 2022.

The Immunization Programme Numbers Reached:	
<b>77,000</b>	people visited a new unified vaccination website
<b>1 million</b>	readers engaged with privivka media project
<b>1,675</b>	health and communication personnel received essential training
<b>300</b>	mothers and pregnant women were reached by healthcare volunteers
<b>2,552</b>	parents participated in KAP survey

**“ Thanks to this training we not only received a lot of theoretical knowledge, but also learnt to speak freely about very complicated subjects related to vaccines. I work many years in vaccination cabinet and it is the first time I have had such training, which becomes more interesting from day to day. ”**

*A participant in the five-day workshop on vaccinology shares feedback on the training experience*

### Strengthened data management

UNICEF and partners developed Standard Operating Procedures (SOPs) for calculating vaccine procurement numbers based on an assessment conducted by the Curatio International Foundation.<sup>20</sup> These were presented to and accepted by the Vice-Minister for Health, translated into Russian and Kazakh languages, and in 2021 training on implementing the SOPs was rolled-out across all regions. Additionally, UNICEF commissioned an assessment by Kazakhstan-based research centre [PaperLab](#) on business processes to understand current data flows and registration of contraindications and adverse events, and to identify key lines of responsibility across different governmental and non-governmental processes. In 2022 findings from the assessment will be presented to the MoH along with the practicable recommendations for improving current systems and practices.

## CHALLENGES

### Identifying and tackling inequalities

Important inequalities around language, geography and socio-economic status were identified across the immunization landscape. The formative research found that many doctors and health providers do not speak enough English to read the predominantly English language peer-reviewed medical journals presenting the most

### Developed a National Communication Strategy on Immunization

UNICEF supported the development of a National Communication Strategy on Immunization to guide and complement efforts to ensure that communication and messaging around routine immunization is clear, consistent, and strategic at all levels to avoid confusion, increase effectiveness and bolster trust in the healthcare system. This was approved by the Ministry of Healthcare and dialogue initiated on how this could be adopted at policy level. UNICEF also produced and began the dissemination process of 11 awareness-raising videos on immunization including: 8 videos on vaccination, 2 interviews with measles survivors and national experts on measles and polio, and 1 video covering the



up-to-date science on vaccination and that few alternative information sources of the same standard and credibility exist. This presents a barrier to ensuring medical teams have the robust knowledge needed to consistently adhere to best practices in their work. The health-worker training went a considerable way to addressing this by providing Kazakh and Russian speakers with essential information and skills that could be immediately utilized. Nonetheless, despite efforts to find Kazakh speakers with the medical knowledge required to deliver training, in most cases it was not possible to do so in the time available and the training was therefore delivered primarily in Russian using simultaneous translation into Kazakh. First-language instruction is preferable where feasible, especially considering the nuances involved in the vaccination field, and this will be an area UNICEF seeks to address going forwards.

### **Access to comprehensive data**

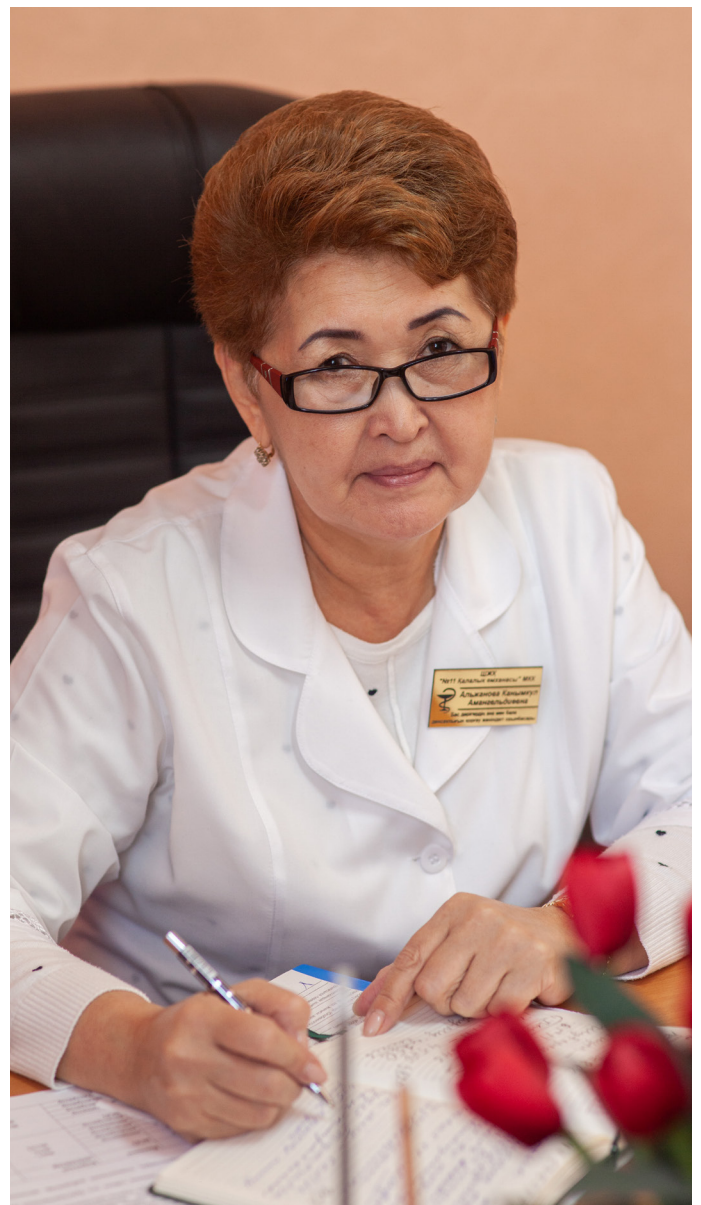
At the national level, basic numeric data is available on measurable outputs such as number of children vaccinated and which vaccines have been administered. However additional data required to build a clearer and complete picture of who is accepting and who is refusing vaccinations such as profession, language, age, geographic location and religion are largely absent. Without this information it is difficult to ensure communication campaigns and activities aimed at increasing vaccination rates and confidence in the health system will have maximum impact.

### **COVID-19**

The COVID-19 pandemic diverted many resources away from routine immunization, including not only health-workers time but also human resource capacity within key Government Ministries. This context made it more difficult to engage optimally with state bodies at all stages of programme development and implementation, thereby making it harder to support Government ownership consistently throughout the work.

### **Striking a balance: the fine line between reaction and strategy**

Another key challenge throughout the programme was balancing the need to respond in a timely manner to emerging issues and events while simultaneously maintaining focus on strategic and longer-term systemic changes. New and potentially harmful misinformation around immunization often needed to be addressed swiftly to minimize damage and to provide counter-narratives grounded in evidence-based science. At the same time, it was important not to get caught up in 'fire-fighting' to the detriment of long-term change and system strengthening. Maintaining the correct balance was a constant challenge.



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## LESSONS LEARNED

### A paradigm shift is needed

Research conducted under this programme found that while parental refusal was a factor in the 2019 measles outbreak, the principal driver was likely to be false contraindications from doctors and vaccinators, exacerbated by procurement problems and other systemic issues. The reasons behind falling vaccination rates across all preventable diseases are complex and it is simplistic, misleading and potentially damaging to place all the responsibility on 'anti-vaccination' attitudes of parents. Moreover, even amongst those who are increasingly vaccine hesitant there is considerable diversity-this is not a homogeneous group. While there are a number of small but well-organised and active groups purposefully spreading disinformation and/or anti-vaccination propaganda, and which capitalized on the increasingly confused and emotionally-charged landscape around COVID-19 vaccination, most parents who express scepticism would not identify themselves as 'anti-vax'. Additionally, among the children who contracted measles and experienced serious complications such as panencephalitis are children who could not be vaccinated for a range of reasons (including not yet being old enough); these children and their families have experienced [serious and often very distressing consequences of a situation beyond their control](#). A paradigm shift is required away from focusing solely on vaccine refusal by parents and towards a more nuanced and comprehensive consideration of the dynamics and complexities on both the supply and demand side of the immunization issue.

### The relationship between routine immunization and COVID-19

A key lesson learned was that routine immunization and COVID-19 vaccination are inextricably linked and going forwards these should be approached as overlapping issues for maximum impact. Whilst data on exact numbers is currently unavailable, it is clear that 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 have been compounded by the ['infodemic'](#) surrounding COVID-19 vaccination and the result appears to be heightened hesitancy around any kind of vaccination.

### Language and communication needs

The 'Privivka' media project highlighted that Kazakh and Russian language communities prefer and are likely to benefit from and respond to different content and different approaches to content promotion. Drawing on learning from the programme that suggested a similar initiative to 'Privivka' could be developed for the rapidly growing Kazakh speaking community, in 2022 Special Media Project "[EkpeBar](#)" was launched. This aims to address public concerns and rumours, mis/disinformation related to COVID-19, and immunization with a focus on the Kazakh speaking audience. 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

The programme implementation process reinforced that 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(ren). Positive, open and empathetic dialogue is vital when interacting with parents or 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.

### Next steps: Building on achievements and lessons learned for sustainability and impact

In 2022 UNICEF is undertaking a series of activities to draw the current immunization programme to a close. These activities will



seek to ensure that results achieved to date are sustainable and that lessons learned are harnessed to strengthen work and maximize impact going forwards under a new USAID funded COVID-19 vaccination programme. Key steps will include:

### **Reinforcing sustainability**

An important step in securing sustainability of achievements will be the planned formal handover of the unified EGU.kz immunization website on the eGovernment to oversee as the principal online source of vaccination information for parents (and practitioners). Discussions are also underway to include the website as a link on the eGovernment website, which will reinforce its official, credible and approved status as a reliable resource hub. Additionally, UNICEF is collaborating with the Government and other key stakeholders to embed the online health-worker training course at the national level, making it a mandatory component of medical student training.

### **Expanding and completing training**

In 2022 UNICEF will disseminate an online course for healthcare workers and medical students. UNICEF will continue to support state healthcare sector press secretaries with consultations, capacity building and content production focusing on strategic communication to tackle immunization misinformation and providing relevant tools for participants to put their learning outcomes into practice.

### **Addressing inequalities**

UNICEF will increasingly focus on engaging harder to reach groups in remote communities to gain a deeper understanding of the contextual factors influencing vaccination coverage in these locations and to assess opportunities for collaboration with trusted community members (e.g. religious leaders, retired medical professionals) who could effectively listen to parental concerns, engage in dialogue with parents, and share accurate vaccination information.

### **Strengthening communication functions**

UNICEF and the Ministry of Health will establish a technical working group of key personnel and government agencies to undertake an assessment of communication systems at national and sub-national levels, aiming to better understand the full range of functions, structures, budget availability, challenges faced throughout the pandemic, and key opportunities for change. The assessment findings will be used to develop SOPs that can be integrated at the national level to strengthen and improve communication functionality.

”

***It's a job that every doctor is obligated to do. In medical school we were taught, 'you're not just a doctor, you're now a teacher for life'. . . if a parent trusts doctors, they will willingly protect their child.***

”

***Akmaral Tursunova, co-founder of the MedSupport Community Trust 2018-2022***

### **Additional resources and useful links**

- How the MedSupport Community of scientists and doctors promotes a responsible approach to health among Kazakh citizens, January 2022, <https://www.unicef.org/kazakhstan/en/stories/weve-got-ticking-time-bomb-right-under-our-belt>
- Crisis Negotiation as a Vocation, December 2021, <https://www.unicef.org/kazakhstan/en/stories/crisis-negotiation-vocation>
- A mother's story of her baby's whooping cough, November 2021, <https://www.unicef.org/kazakhstan/en/stories/no-need-risk-lives-children>
- The mother of a measles survivor from Kazakhstan shares her experience, October 2021,

<https://www.unicef.org/kazakhstan/en/stories/id-settle-year-being-sick-long-its-not-her-not-single-day>

- Sociological research report on childhood immunization, January 2022, <https://www.unicef.org/kazakhstan/en/reports/sociological-research-report-childhood-immunisation>
- Guidelines for developing a communication strategy for immunization programs in Kazakhstan <https://www.unicef.org/kazakhstan/en/reports/manual-designing-communication-vaccination-campaigns-kazakhstan>
- Action plan to improve routine immunization coverage in the Republic of Kazakhstan <https://www.unicef.org/kazakhstan/en/reports/action-plan-improve-routine-immunization-coverage>
- Overview of the Health System and Root Cause Analysis of the 2019-2020 Outbreak <https://www.unicef.org/kazakhstan/en/reports/measles-kazakhstan>

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## Endnotes

- 1 <https://www.unicef.org/eca/health/immunization>
- 2 <https://www.unicef.org/eap/press-releases/20-million-children-miss-out-lifesaving-measles-diphtheria-and-tetanus-vaccines-2018>

3 <https://www.who.int/news/item/15-07-2021-covid-19-pandemic-leads-to-major-backsliding-on-childhood-vaccinations-new-who-unicef-data-shows>

4 <https://www.unicef.org/eap/press-releases/20-million-children-miss-out-lifesaving-measles-diphtheria-and-tetanus-vaccines-2018>

5 <https://www.unicef.org/press-releases/WUENIC2022> release Accessed 18 August 2022

6 <https://news.un.org/en/story/2010/04/336282-polio-outbreak-tajikistan-spurs-un-vaccination-campaign>

7 <https://www.euro.who.int/en/health-topics/communicable-diseases/poliomyelitis/news/news/2016/05/poliomyelitis-polio-transmission-in-ukraine-interrupted,-but-efforts-must-continue-to-protect-children>

8 <https://www.unicef.org/press-releases/WUENIC2022> release Accessed 18 August 2022

9 National Communication Strategy for Routine Immunization in the Republic of Kazakhstan for years 2021-2025, pp15-19

10 'Vaccine Procurement and Supply for the Expanded Program of Immunization in Kazakhstan: Gaps and Challenges for Action', 2021

11 <https://www.unicef.org/kazakhstan/en/press-releases/us-government-provides-us-125-million-fight-measles-outbreak-well-control-covid-19>

12 UNICEF Kazakhstan, 2020, 'Programme of cooperation, 2021-2025, Programme strategy note: child and adolescent health and well-being'

13 A. Miglietta, Measles in Kazakhstan: Overview of the Health System and Root Cause Analysis of the 2019-2020 Outbreak, UNICEF Kazakhstan, Nur-sultan, 2021, P26

14 A. Miglietta, Measles in Kazakhstan: Overview of the Health System and Root Cause Analysis of the 2019-2020 Outbreak, UNICEF Kazakhstan, Nur-sultan, 2021, pp27-28

15 United Nations Children's Fund, Sociological Research Report, Parent's Knowledge, Attitude and Practice on Childhood Immunization, UNICEF Kazakhstan, Nur-sultan, 2021, p16

16 A. Miglietta, Measles in Kazakhstan: Overview of the Health System and Root Cause Analysis of the 2019-2020 Outbreak, UNICEF Kazakhstan, Nur-sultan, 2021, P26

17 United Nations Children's Fund, Sociological Research Report, Parent's Knowledge, Attitude and Practice on Childhood Immunization, UNICEF Kazakhstan, Nur-sultan, p78

18 National Communication Strategy for Routine Immunization in the Republic of Kazakhstan for years 2021-2025, p20

19 'Vaccine Procurement and Supply for the Expanded Program of Immunization in Kazakhstan: Gaps and Challenges for Action', 2021

20 The Curatio International Foundation is a not-for-profit, non-governmental organization whose mission is to improve health through better functioning health systems.