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CASE STUDY: 2022 PEDIATRIC COVID-19 VACCINATION CAMPAIGN SUCSESSES AND CONTRIBUTING FACTORS

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ACRONYMS

ACSM	Advocacy communication and social mobilization
AEFI	Adverse events following immunization
CDC	Centers for Disease Control and Prevention
DOH	Department of Health
EPI	Expanded Program on Immunization
FDI	Federal Directorate of Immunization
GOP	Government of Pakistan
ICT	Islamabad Capital Territory
IHSS-SD	Integrated Health Systems Strengthening and Service Delivery
JSI	JSI Research and Training Institute, Inc.
NCOC	National Command and Operations Center
U.S.	United States
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

Case Study: pediatric COVID-19 vaccination campaign 2022 successes and contributing factors

EXECUTIVE SUMMARY

This case study summarizes the successes achieved of the USAID Integrated Health Systems Strengthening and Service Delivery (IHSS-SD) Activity's support to Pakistan's 2022 national pediatric COVID-19 vaccination campaign including an in-depth analysis of factors contributing to the campaign's success. Findings summarized here can inform future COVID-19 pediatric campaigns in Pakistan and other countries undertaking similar pediatric vaccination activities.

The Government of Pakistan (GOP) implemented the campaign with the support of the USAID IHSS-SD Activity with the aim to fully vaccinate eight million children between the ages of 5 and 11 living in 14 high-burden districts of Punjab Province, Sindh Province, and the Islamabad Capital Territory (ICT). The Activity administered the Pfizer-BioNTech two-dose COVID-19 vaccine regimen in two rounds. Round I took place between September 19–24, 2022 and Round II was conducted between October 31 and November 5, 2022.

The campaign resulted in over 7.8 million children vaccinated, with few and largely non-serious adverse events following immunization (AEFI). This achievement was reached despite several key challenges, including limited data on similar initiatives implemented in other countries to draw from and limited time for campaign preparation and implementation. Four main factors contributed to the campaign's success:

1. Availability of funding
2. Strong national and sub-national leadership and coordination
3. Augmented health care system capacities
4. Effective advocacy and communication to increase demand for pediatric COVID-19 vaccination

According to the World Health Organization (WHO), the World Bank, and their partners, COVID-19 vaccine deployment, especially in low-income countries, has been impeded by an insufficient emphasis on these four factors.

Efforts to increase pediatric COVID-19 vaccination must continue until at least 70 percent of Pakistan's total population is vaccinated against COVID-19. To optimize performance, future pediatric vaccination campaigns should leverage the factors that contributed to this campaign's success and avoid the challenges and limitations experienced when possible. Furthermore, future mass pediatric vaccination campaigns should be phased to gradually increase COVID-19 vaccine delivery alongside routine childhood immunizations.



A boy receiving the COVID-19 vaccine at the Al-Madina Public School as part of the pediatric COVID-19 vaccination campaign, Sept 21, 2022

COUNTRY CONTEXT

In Pakistan, vaccinating children ages 5 to 11 against COVID-19 can substantially reduce the health and socio-economic vulnerability of individuals in this age group.¹ Pakistan has a relatively young population, and vaccinating this age group is an important step towards reaching the global benchmark of all countries achieving 70 percent COVID-19 vaccine coverage. Achieving this target would result in high population immunity—an essential step in the face of an evolving and increasingly transmissible virus.²

OVERVIEW: PEDIATRIC COVID-19 VACCINATION CAMPAIGN

In 2022, the GOP implemented a pediatric COVID-19 vaccination campaign for children ages 5 to 11 with the support of the USAID IHSS-SD Activity. Fourteen districts

¹UNESCO and UNICEF, Situation Analysis on the Effects of and Responses to COVID-19 on the Education Sector in Asia: Case Study from Pakistan.

WHO, Global COVID-19 Vaccination Strategy in a Changing World: July 2022 update.

COVID-19 Vaccination for Children. CDC. Accessed: December 18, 2022. <https://archive.cdc.gov/#/details?url=https://www.cdc.gov/vaccines/covid-19/planning/children.html>

²COVID-19 pediatric doses Accessed: December 18, 2022. https://wvrruralhealth.org/wp-content/uploads/2021/11/Peds-WIN-11-17-2021_Costello.pdf

within Punjab Province, Sindh Province, and ICT with a high COVID-19 disease burden were selected for the campaign. Table I outlines the campaign's implementation areas, priority population, and reach. The campaign aimed to vaccinate approximately eight million children ages 5 to 11 against COVID-19.

The Centers for Disease Control and Prevention (CDC) and the WHO recommend Pfizer-BioNTech and Moderna COVID-19 vaccines for everyone ages six months and older. The pediatric COVID-19 vaccination campaign in Pakistan used the Pfizer-BioNTech COVID-19 vaccine. The Food and Drug Administration (FDA) states the vaccine should be injected into the muscle and should be administered as a two-dose series. The campaign was, therefore, implemented in two rounds. Round I took place between September 19-24, 2022 and Round II took place between October 31 and November 5, 2022. The campaign aimed to reach children in educational institutions (schools and madrassahs), health facilities, and temporary vaccination points through static services, outreach, and mobile vaccination teams. In the post-campaign phase, static COVID-19 vaccination centers continued offering the COVID-19 vaccine.

Table I: Campaign target population, areas, and reach

Implementation areas	Number of children ages 5–11 in the target areas	Number of children ages 5–11 the campaign aimed to reach
Lahore	2,454,455	1,963,564
Multan	1,015,818	812,654
Rawalpindi	1,170,407	936,326
Bahawalpur	783,721	626,977
Okara	645,533	516,426
Subtotal-Punjab	6,069,934	4,855,947
Karachi	3,502,466	2,423,018
Hyderabad	4,67,546	332,187
Subtotal-Sindh	3,970,012	2,755,205
ICT	477,750	334,425
Total	10,517,696	7,945,577

(Data from the Pakistan Federal Directorate of Immunization)

KEY ACHIEVEMENTS

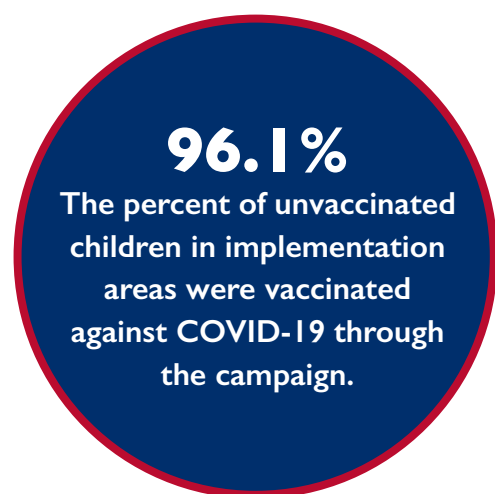
Pakistan's first pediatric vaccination campaign resulted in a significant number and proportion of children vaccinated, low and largely non-serious AEFI, and minimal vaccine wastage.



A child being counseled prior to COVID-19 vaccination, Sept 24, 2022

COVERAGE

In Round I, the campaign vaccinated 7.5 million children, and 7.9 million children received COVID-19 vaccination in Round II.



REPORTED ADVERSE EVENTS FOLLOWING IMMUNIZATION (AEFI)

WHO defines an AEFI as “any untoward medical occurrence following immunization which does not necessarily have a causal relationship to the vaccine.” Individuals vaccinated during the campaign reported minor 857 minor AEFI. The majority of reported adverse

events (53 percent) were non-serious local injection site reactions, such as swelling, redness, and/or pain.

What are the side effects of the COVID-19 vaccine?

Reported side effects are mild, temporary, and similar to those experienced after routine vaccination. Common side effects among children can include pain, redness, and swelling at the injection site; fever/chills; tiredness; headache; muscle pain; and nausea.

VACCINE WASTAGE

Pakistan's Federal Directorate of Immunization (FDI) reported a low vaccine wastage of approximately 4.5 percent. Per the GAVI Global Indicative Wastage Rates 2021, the expected wastage for one campaign round was 10 percent.

CONTRIBUTING FACTORS

Four main factors contributed to the campaign's success:

1. Availability of funding
2. Strong national and sub-national leadership and coordination
3. Augmented health care system capacities
4. Effective advocacy and communication to increase demand for pediatric COVID-19 vaccination

AVAILABILITY OF FUNDING

U.S. government funding and support was essential to the campaign's success. USAID funded the campaign's operational cost, and all COVID-19 vaccine doses were donated by the United States in partnership with COVAX (COVID-19 Vaccines Global Access). The USAID IHSS-SD Activity also supported the GOP to plan and implement the campaign. The United Nations Children's Fund (UNICEF) led the advocacy communication and social mobilization (ACSM) component of the campaign, and WHO led the AEFI component and trained skilled staff. The campaign is part of the ongoing collaboration between the United States and Pakistan to address the COVID-19 pandemic.

At the campaign launch ceremony, U.S. Ambassador Donald Blome remarked on the significance of the pediatric vaccination campaign.

"Today we celebrate the next step in protecting all Pakistanis against this devastating disease by launching the pediatric vaccination campaign. Our recent collaboration to protect the children of Pakistan demonstrates the importance of our longstanding partnership to work together and overcome the global challenge."
- U.S. Ambassador to Pakistan, Donald Blome

Mr. Abdul Qadir Patel, Federal Health Minister, expressed gratitude for the U.S. government's support to improve health services in Pakistan and noted that it reflects the strong bilateral relations between the two countries. He praised the commitment of both countries to combat COVID-19 in Pakistan saying, "Protecting our communities from COVID-19 is a shared priority of both of our governments, and these vaccines will keep millions of children safe from the most devastating impacts of the pandemic."

STRONG LEADERSHIP AND COORDINATION

The GOP adopted a whole-of-government approach to execute the campaign. Diverse government agencies participated in the decision-making process, and there was strong coordination between federal, provincial, and district governments. The GOP also worked closely with development partners, local civil society organizations, and individual experts. This approach succeeded due to several factors, including the country's existing governance and coordination mechanisms for COVID-19 vaccine deployment; the establishment of provincial steering committees and sub-committees; the engagement of the district administrations; and the support provided by the IHSS-SD Activity.

Existing governance and coordination mechanisms for COVID-19 vaccine deployment. Pakistan has clear governance and coordination mechanisms for COVID-19 vaccine deployment. The country has an established decision-making structure and process at the federal and provincial levels that ensure that COVID-19 vaccine deployment is based on rigorous scientific evidence. The GOP established the National Command and Operations Center (NCOC) as part of this decision-making structure. The NCOC oversees the COVID-19 response in

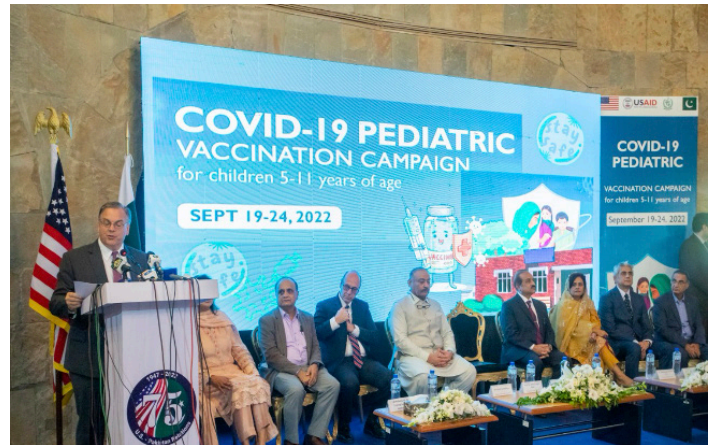
Pakistan and is mandated to make decisions related to vaccine deployment. The NCOC meets daily so federal ministry representatives can participate in the national-level decision-making process. The Ministry of National Health Services Regulations and Coordination (MONHSRC) is also represented at the NCOC and plays a major role in coordinating with the provinces and international partners. FDI operates under MONHSRC. Provincial officials, including officials from provincial departments of health (DOHs) and their Expanded Program on Immunization (EPI) directorates, also support the national decision-making process.

The governance and coordination mechanisms for the 2022 pediatric COVID-19 vaccination campaign operated in line with these existing mechanisms. The NCOC led the campaign and provided guidance and strategic oversight. The FDI was responsible for campaign coordination and planning, and the DOHs and their EPI directorates focused on field activities and campaign implementation. During the daily NCOC meetings, attended by representatives of federal ministries and FDI, attendees monitored campaign progress and analyzed and solved major challenges, including those presented by the provinces.

Establishing provincial steering committees and sub-committees. The provincial EPI directorates established provincial steering committees in ICT, Punjab, and Sindh. These steering committees proved essential in bringing together USAID, implementing partners, key governmental organizations, civil society organizations, and experts to support campaign management. These committees included representatives from USAID, JSI, UNICEF, WHO, DOH, the Department of Education, local government, Pakistan Pediatric Association, Pakistan Medical Association, pediatricians, and public health experts. The steering committees oversaw achievements towards coverage targets and quality assurance. They ensured adherence to WHO recommended guidelines during the pre-campaign, campaign, and post-campaign phases. Provincial sub-committees for AEFI, logistics, communications, and training were also established.

Engaging district administrations. Provincial DOHs brought district administrations on board and held advocacy sessions with deputy commissioners at the provincial and district levels as part of the ACSM component. The deputy commissioners and their offices worked with an array of actors at the district level, including officials from the Department of Education, religious affairs (auqaf), and the police to ensure safe and adequate campaign execution. Deputy commissioner offices also arranged access to garrison and cantonment areas and held daily review meetings to oversee

compliance and track achievement towards daily targets. Support from the IHSS-SD Activity. The IHSS-SD Activity played a crucial role in fostering strong leadership and coordination at multiple levels. The Activity worked with FDI to plan and formalize (through a letter of understanding) the details of the assigned roles and work style of the different entities involved in the campaign. The Activity worked with and provided short-term technical assistance to the FDI, DOHs, and the respective EPI directorates to operationalize the plan.



U.S. Ambassador to Pakistan Mr. Donald Blome speaking at the campaign launch in Islamabad, Sept. 19, 22.

AUGMENTED HEALTH CARE SYSTEM CAPACITIES

A key driver in improving Pakistan's critical health care capacities since the beginning of the COVID-19 pandemic has been the strong bilateral health cooperation between the United States and Pakistan. U.S. Ambassador to Pakistan Donald Blome acknowledged this important relationship during an address in August 2022. He stated, "The vaccines, supplies, and training we have provided to Pakistan, coupled with the expertise and dedication of Pakistan's health care professionals will allow our two countries to continue working together to combat COVID-19 and safeguard the health and safety of the Pakistani people."

Various health system additions. Campaign implementors used a variety of delivery sites to bring vaccination closer to communities. This approach allowed maximum vaccination coverage while also maintaining appropriate cold chain storage and transport. For example, delivering vaccines to children at educational institutions (schools and madrassahs) and accessible health facilities and vaccination centers brought vaccines to much of the priority population and minimized the cost and time required to vaccinate a child.



A girl being vaccinated at the launch of the COVID-19 pediatric vaccination event, Sept 19, 2022

A trained workforce. Globally, a lack of trained health care workers is a main factor behind sub-optimal vaccination coverage. WHO designed and implemented technical training for skilled staff, including those involved in the AEFI management, cold chain, and warehousing. The pediatric COVID-19 campaign trained field teams using a cascade model. FDI conducted a training of master trainers, and master trainers trained provincial trainers who then trained district-level field teams. The IHSS-SD Activity helped implement training sessions and developed a payment mechanism to deliver timely payments to the trainees and the workforce.

A system for effective and efficient AEFI management. Establishing a crisis communication hotline for effective and efficient AEFI management was essential to ensuring continued public confidence and achieving high coverage through the campaign. AEFI committee members were trained to manage any reported case of AEFI and to mitigate any vaccine-related misinformation. DOH provided trainings and WHO provided AEFI kits with the support of USAID. Field teams had the AEFI focal person's contact information, and ambulances were available to transport any AEFI case to an assigned health facility.

EFFECTIVE ADVOCACY AND COMMUNICATION

Introducing and promoting a new vaccine, especially to the 5-to-11 age group, is a complex and challenging task requiring parental consent. To help increase demand for pediatric COVID-19 vaccines, the campaign recruited social mobilizers to be part of the field teams. The ACSM component was effective due to pre-campaign advocacy; using multiple, simultaneous communication approaches; and leveraging context-specific communication channels and content.

Large-scale deployment of trained social mobilizers. As mentioned above, the campaign deployed a trained, paid workforce to augment the health care system. A total of 19,000 social mobilizers were deployed across Punjab, Sindh, and ICT for this purpose. They were part of three- to four-person field teams and worked at static centers to mobilize parents or other caregivers to have their children vaccinated.

Pre-campaign advocacy with key stakeholders to optimize campaign execution and enhance demand for pediatric COVID-19 vaccination.

The campaign team conducted pre-campaign advocacy with key decision-makers and influencers, with a focus on creating buy-in and preventing misinformation. Advocacy activities aimed to leverage the stakeholders' authority and influence to optimize campaign execution and enhance demand for pediatric COVID-19 vaccination. Pre-campaign advocacy activities included:

- Holding advocacy seminars and meetings with various provincial and district-level stakeholders.
- Holding advocacy seminars and meetings with various governmental and non-governmental stakeholders, including those in the education sector.
- Meeting with public and private school associations, madrassahs, representatives from the Pakistan Medical Association and Pakistan Pediatric Association, and deputy commissioners.

Media engagement. The campaign held a seminar for representatives from local and regional television and radio channels to improve their capacity to accurately report on COVID-19 vaccines, including the pediatric vaccination campaign.

Using multiple communication approaches for maximum outreach and impact. UNICEF used multiple communication approaches simultaneously, including interpersonal, media, and social mobilization approaches. It also implemented mid-sized media campaign including billboards, announcements and branding on vehicles, and print media. UNICEF also produced answers to frequently asked questions, leaflets, banners, and streamers. Most communication materials referred recipients to the GOP's Sehat Tahaffuz 1166 help line for further information.

Context-specificity. The ACSM interventions were context-specific as they included communication channels relevant to all audience segments. In addition, the interventions provided audiences with (a) information on the nearest locations and timings for pediatric

vaccinations, making the vaccination process easier for them, and (b) content depicting testimonials from diverse and trusted messengers. The testimonials, largely in the form of videos, provided messages from sources such as the Federal Minister for National Health Services, Regulations & Coordination, political personalities, members of professional associations (i.e., the Pakistan Medical Association and Pakistan Pediatric Association), pediatricians, and religious leaders.

SEHAT TAHAFFUZ 1166 HELPLINE

**Communication materials
referred parents and caregivers
to the GOP's Sehat Tahaffuz
1166 helpline for further
information regarding the safety
of the vaccine and the
vaccination process.**

from children to parents and grandparents. The campaign also demonstrated that parents in Pakistan are largely receptive to pediatric COVID-19 vaccination. Recommended next steps are to scale up pediatric COVID-19 vaccination so that 70 percent of Pakistan's total population is vaccinated against COVID-19.

As a best practice, future pediatric vaccination campaigns should focus on addressing identified barriers to childhood vaccination and should avoid the challenges and limitations experienced by this campaign when possible. Additionally, future mass pediatric vaccination campaigns should be phased, with a gradual increase COVID-19 vaccine delivery alongside routine childhood immunization.

LIMITATIONS

The campaign was implemented successfully despite several key challenges, including limited data on similar initiatives implemented in other countries to draw from and limited time for campaign preparation and implementation. The 2022 pediatric COVID-19 vaccination campaign was Pakistan's first COVID-19 vaccination campaign targeting children ages 5 to 11. A limited number of countries were vaccinating this age group at the time of the campaign, thus, there was limited international experience to leverage.

Additionally, the FDI recommends a four-to six-month preparation period for a vaccination campaign of this scale. However, the team had only two and half months to prepare. Furthermore, a vaccination campaign of this magnitude requires at least twelve days per round, but the team had only six days to carry out each of the two rounds.

CONCLUSION

The success of the 2022 pediatric COVID-19 vaccination campaign shows that investing in childhood vaccinations is safe, minimizes the risk of death and severe disease among children, and minimizes disease transmission

ADDITIONAL INFORMATION:

To learn more about Pakistan's 2022 pediatric COVID-19 vaccination campaign, please see additional case studies authored by our partners:

FDI's Female Vaccinator Programme-A Step towards Bridging the Gender Gap in COVID Vaccination, Ms. Zunash Abbasi, SBC Specialist, FDI

Joint EPI/PEI Social Media One Team Approach, Mr. Fahd Ahmad, Digital Media Head, PEI-NEOC

EPI PEI Synergy, Ms. Huma Khawar, CSO Coordinator, FDI

Role of Journalists in Eradication of Vaccine Preventable Diseases (VPDs) inclusive of Polio in Pakistan, Mr. Zulfiqar Babakhel, Senior Manager Media Affairs, PEI-NEOC

A Memoir of a Successful World Immunization Week, 2023 Pakistan, Ms. Nur ul Ainnie Kazi, Health Consultant, UNICEF

FDI Information Resource Centre: Enhancing Stakeholder's Access to Immunization Information, Mr. Zahid Wasif, Communications Officer, FDI

How FDI website became an information gateway for thousands of information seekers, Mr. Usman Amjad, Website Developer, FDI

The Strategic Role of 1166 Health Helpline in Public Health Emergencies & Programs in Pakistan, Ms. Huma Shaukat, Manager 1166 Call Center, FDI

1166 Helpline - Navigating Health Disparities and Inequities during COVID-19 Pandemic and Beyond, Dr. Arooj Iftikhar, Public Health Consultant/Supervisor Technical Officers, 1166 Call Center, FDI

FDI Providing Monitoring and Evaluation Support to all Provinces, Mr. Ali Muhammad, M&E Officer, FDI