Report Number: ICRR0023396

1. Project Data

Project ID P132308	**Project Name** NISP
Country Pakistan	**Practice Area(Lead)** Health, Nutrition & Population

L/C/TF Number(s)	Closing Date (Original)	Total Project Cost (USD)
IDA-57860,TF-A2189,TF-B3039	31-Dec-2021	121,945,355.03
Bank Approval Date	**Closing Date (Actual)**	
21-Apr-2016	30-Jun-2022	

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	129,600,000.00	87,700,000.00
Revised Commitment	137,700,000.00	73,916,660.51
Actual	122,986,742.05	73,916,660.51

Prepared by	Reviewed by	ICR Review Coordinator	Group
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2. Project Objectives and Components

a. Objectives

The objective of the project was to increase the equitable coverage of services for immunization against VPD, including poliomyelitis, for children between 0 and 23 months in Pakistan (Financing Agreement, August 31, 2016, p. 6).

Note: VPD stands for Vaccine Preventable Diseases.

b. Were the project objectives/key associated outcome targets revised during implementation?

No

c. Will a split evaluation be undertaken?

No

d. Components

Overview: According to the PAD (p. 6), the components aimed at incentivizing immunization results and addressing bottlenecks in support of the Pakistan National Expanded Program on Immunization (EPI), as articulated in the National Comprehensive Multi-Year Plan, 2014. The project intended to focus on provincial level capacity for EPI implementation while concurrently strengthening the stewardship role at the federal level.

The first three project components would use a results-based approach through a set of 11 Disbursement-Linked Indicators (DLIs) to incentivize provincial results (DLIs were also used as intermediate results indicators or as outcome indicators). The fourth and fifth components were based on transactions and statements of expenditure, and would finance the federal EPI cell and partner agencies to provide technical assistance, analytical capacities, and health system strengthening elements, particularly cold chain capacity.

The project included five components (PAD, pp. 6-7) summarized below. Actual costs by component were not provided by the ICR:

I. Strengthening Provincial Management, Governance and Stewardship Functions (Appraisal: US$40.3 million; Revised Cost: US$43.3 million), including: (i) strengthening M&E to provide robust monitoring and evaluation mechanisms; (ii) enhancing the capacity of provincial surveillance, with the federal EPI cell providing technical and logistical assistance; (iii) supporting the provincial expansion and maintenance of the Vaccine Logistics Management Information System (vLMIS); and (iv) promoting oversight and coordination functions that would also contribute to the effective functioning of the National Interagency Coordination Committee (ICC).

II. Improving Service Delivery Performance (Appraisal: US$19.75 million; Revised Cost: US$23.15 million), including enhancing: (i) planning for performance through provincial development of computerized EPI micro plans that would be integrated with the system developed for polio; (ii) availability and management of skilled human resources through the deployment of a variety of qualified personnel in technical and managerial roles in provincial EPI cells; (iii) supervisory systems for EPI by increasing data availability and instituting supervisory systems to allow their effective use, including for supply chain management; and (iv) linkage to communities by establishing links between provincial EPI cells and private sector health providers and civil society organizations (CSOs) working in low coverage catchment areas, especially in urban slums.

III. Demand Generation (Appraisal: US$20.75 million; Revised Cost: US$24.45 million), including the development of: (i) social mobilization and community awareness creation through electronic and print media as well as local community awareness activities, while engaging with CSOs as key partners; (ii) advocacy through the development of an advocacy plan by the federal EPI cell, to be implemented locally

by the provinces, including for sensitizing political bodies and senior religious figures; and (iii) development of immunization awareness as a component of the standard school curriculum.

IV. Vaccine Supply Chain (Appraisal: US$34 million; the appraisal cost was not revised), supporting national procurement of essential equipment to strengthen the capacity and performance of national and provincial vaccine supply chains. It was anticipated that the majority of related procurements would be carried in the first year of implementation through a contract with UNICEF and would utilize a cold chain platform initiated by the Vaccine Alliance (GAVI).

V: Improving Capacity for Increased Immunization Coverage (Appraisal: US$14.8 million; Revised Cost: US$12.8 million), including: (i) capacity building activities of federal and provincial EPI cells in financial management, procurement, environmental and social management, and M&E; (ii) research, including for developing a pilot on a conditional cash transfer scheme that would provide incentives to mothers and health care providers to promote access to immunization services; (iii) DLI certification by independent third party assessment; and (iv) coordination of technical assistance provided to federal and provincial governments by WHO, UNICEF and CSOs.

The components were not revised, but there were fund reallocations and an increased focus on urban centers and slums that were lagging in service access and uptake of vaccines.

DLIs consisted of the following:

DLI 1: Percent of children aged 12–23 months in each project province who are fully immunized.

DLI 2: Percentage of Union Councils (UCs) in each project province for which revised computerized UC level micro plans are in functional use at district and provincial levels.

DLI 3: Percentage of districts in each project province reporting at least 80 percent coverage of Penta3 immunization in children aged between 12–23 months, as validated by a third party.

DLI 4: Number of districts in each project province with at least 80 percent timely and complete reporting on vLMIS.

DLI 5. Percentage of districts in each project province with their recognized surveillance sites having functional online surveillance systems for VPD and Adverse Events Following Immunization.

DLI 6: Percentage of districts in each project province with at least 95 percent functional cold chain equipment in place as per specifications in each tier of the health system (including at least one month buffer stock capacity at the district level).

DLI 7: Percent of detailed UC supervisory plans implemented by district supervisors and made available to supervising officers in each project province.

DLI 8: Percent of children under two years of age with vaccination cards available in each project province.

DLI 9: Budget allocations for immunization are continuous, adequate and can be easily tracked within the provincial financial management information systems.

Two DLIs were added in November 2020 at the time of the additional grant financing of US$ 8.1 million provided by GAVI (ICR, p. 76):

DLI 10: In each province, a simple average of the percent of children in each targeted city aged 12-23 months who are fully immunized.

DLI 11: In each province, within two months from the agreement date, the departments of health continuously maintain appropriately qualified specialized staff in each of the following immunization program positions: epidemiologist, monitoring and evaluation officer, surveillance officer, and financial management officer.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

The project constituted an incremental financing to the larger EPI program, estimated at US$1.58 billion equivalent that included US$326 million from the Federal Government and US$1.26 billion from the four Provincial Governments of Punjab, Sindh, Khyber Pakhtunkhwa (KP), and Balochistan.

At appraisal, the original project cost was estimated at US$129.6 million, consisting of an IDA Credit of US$50 million and a Multi-Donor Trust Fund (MDTF) Grant of US$79.6 million, administered by the World Bank. MDTF partners were GAVI and USAID. The Bill & Melinda Gates Foundation committed to financing up to US$25 million for a partial buy-down of the IDA Credit at the end of the project (PAD, p. 8 and ICR, p. 11). In November 2020, a supplemental grant of US$8.1 million was provided by GAVI (ICR, p. 76) to support an added focus on children in urban slums, at which time two DLI were also added (see Section 2d, above). On December 15, 2021, a level-2 restructuring extended the closing date by six months (from December 31, 2021 to June 30, 2022) to allow completion of activities, largely in view of service delivery disruptions that were caused by the COVID-19 pandemic. The actual cost after project closing was US$123 million.

Key dates included approval on April 21, 2016; effectiveness on November 23, 2016; Mid-Term Review on February 3, 2020; additional GAVI financing in November 2020; six-month extension of the closing date on December 15, 2021; and actual project closing on June 30, 2022.

3. Relevance of Objectives

Rationale

At appraisal, the country’s performance in maternal and child health was poor and children's immunization coverage was recognized as a major challenge (PAD, p. 1). Estimates of the proportion of children who were fully immunized varied between 43 and 62 percent. The rate provided by the 2014 Comprehensive Multiyear Plan for Immunization was 53 percent. Low immunization levels have been attributed to a wide variety of factors (ICR, p. 14). On the supply side, there were weaknesses at various levels of the EPI delivery system, including lack of planning, supervision, and monitoring, weaknesses in logistics, limited numbers of vaccination points, staff shortages, lack of motivation, and lack of strong leadership. On the

demand side, research findings suggested that parents did not get children vaccinated because of a lack of awareness, misconceptions fed by negative propaganda, and difficulties in accessing vaccination services and sites. Armed conflict, natural disasters, and internal displacement of large populations sowed distrust and made it more difficult to reach children. In the case of polio, violence against vaccinators and local government bans also contributed to limiting immunization coverage.

The development objective was fully aligned with the objectives of Pakistan's EPI program that affirmed the commitment of the government to provide safe, effective, and cost-effective vaccination against VPDs; to set national standards and guidelines for immunization aligned with global goals; and to encourage the generation of local evidence for vaccination against VPDs. The government recognized the urgency of increasing immunization coverage and launched several initiatives, including the 2014–2018 National Comprehensive Multi-Year Plan for Pakistan National EPI. Execution of the Multi-Year Plan was relevant not only for Pakistan, but also in the context of polio eradication as a global public good (ICR, p. 12).

The DLIs used by the project were very relevant, as they were directly linked to program performance and core elements of health system strengthening that would facilitate the PDO achievement.

The ICR highlighted the continued alignment of the project objective with the World Bank Group's Country Partnership Strategy (CPS) for the period FY2015-19 that was extended pending the preparation of a new Country Partnership Framework (ICR, p. 11). The CPS recognized service delivery in health and education as key areas of World Bank Group engagement to achieve the twin goals of poverty reduction and shared prosperity in Pakistan. The project objective responded directly to two out of the four results areas of the CPS: Results Area 3: Inclusion that focused on inclusive growth and inequality reduction for marginalized and vulnerable population groups; and Results Area 4: Service Delivery that took into account the devolved system of governance in the country. Project contributions would support these endeavors, including by expanding service coverage for child immunization; setting ambitious targets for areas that were not producing the desired changes in the past; improving public financial management; and increasing resources for health services. Under the latter, the project approach was in line with CPS messages for increasing provincial expenditures on education and health, including child immunization, by 20 percent. The CPS emphasized leveraging additional funds outside World Bank resources as a strategy for transformational change. In this context, the project sought to mobilize co-financing from development partners.

The project objective reflected the World Bank approach to promote universal health coverage that would provide quality and affordable health care to everyone while reducing financial risks associated with ill health. Based on the CPS, the ICR also referred to the new investment framework "Global Health 2035" of the Lancet Commission (as a follow-up to the 1993 World Development Report) to achieve health gains. The Lancet Commission re-confirmed that investing in health has a huge payoff, including in fully valuing child mortality reductions.

Rating
High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

Increase the equitable coverage of services for immunization against VPD, including poliomyelitis, for children between 0 and 23 months in Pakistan

Rationale

The theory of change was based on the premise that the fundamental barrier to improving immunization coverage was not primarily financial, but rather related to low performance and limited capacities of the EPI program. Therefore, the project intended to incentivize improvement of provincial performance in some of its key aspects, deploy technical assistance that would address specific health system bottlenecks, including capacity for coordination, and promote effective management and reporting aspects to enhance accountability (ICR, p. 12).

The theory of change held that:

- **strengthening management, governance, and stewardship functions** by providing support to M&E mechanisms, functions, and standard operating procedures for M&E systems, introducing enhanced surveillance, expanding vLMIS, defining the recommended staffing and capacity requirements for strengthening national and provincial EPI units, and promoting oversight and stewardship functions through review meetings, enhanced interprovincial coordination, monitoring, and reporting **would plausibly result in** strengthened health information systems for planning and management of service delivery and vaccine logistics, establishment of a sound and functional vaccine safety monitoring and early warning system, increased presence of appropriately trained vaccinators, and sustained budgeting and availability of adequate domestic financing for immunization;

- **improving service delivery** performance by enhancing planning and conversion of current plans to computerized micro plans, creation of an online database and joint micro plans for immunization, improving the quality of micro-planning, training and hiring skilled human resources, increasing the effectiveness of supervisory systems for EPI by ensuring regular reporting, increasing electronic tracking of vaccinators and supervisors, and developing supervisory plans in all provincial UCs **would plausibly result in** continuity, enhanced immunization penetration and demand for immunization services, strengthened and empowered EPI, increased presence of appropriately trained vaccinators at the service delivery level, institutionalized utilization of computerized UC-level micro plans for planning and management, and increased numbers of fully immunized children in each province;

- **generating demand** through social mobilization, launching behavior change campaigns, advocacy to raise awareness via social mobilization messaging, advertisement and radio broadcasts about the importance of immunization, introducing Immunization to secondary-level school curricula, enhancing community links through CSO engagement, and sensitization of political bodies and senior religious figures about the merits of immunization **would plausibly result in** provinces having stronger links and trust with communities through sustained relationships with CSOs, increased awareness about immunization, and increased demand for immunization services;

- **strengthening the vaccine supply chain** at the national and provincial levels through the provision of cold chain equipment with adequate maintenance of cold chain vehicles **would plausibly result in** expanded and functional cold chain capacity; and

- **improving capacity** for increased immunization coverage by strengthening the capacities of federal and provincial EPI cells, provision of mid-level management training, contracting an independent third party to verify DLIs, establishment of pooled procurement for vaccines, coordination with co-financing partners on a performance framework and training of relevant EPI staff, and piloting a conditional cash transfer scheme **would plausibly result in** the institutionalization of pooled and efficient procurement of vaccines in Pakistan, and enhanced leadership and accountability at the decentralized level.

All of the above outputs and intermediate results would collectively and **plausibly contribute to increased equitable coverage** of services for immunization against VPD for children between 0 and 23 months in Pakistan.

As equitable coverage was the central project consideration per PDO statement, the theory of change could have further clarified the granularity aspects for monitoring inequities under project activities, such as in surveillance, administrative, and EPI management data.

The broad design assumptions were that (a) resources would support vaccine deployment; and that (b) implementation of activities would create demand and increase the uptake of vaccines (ICR, p. 7).

Since the success of immunization programs, including equity aspects, depends on high coverage of the target population, intended outcomes would be measured by province-specific immunization coverage and by the reduction in coverage disparities by wealth status.

Neither ICR nor this ICR Review address the PDO element on poliomyelitis separately, as polio is an integral part of Routine Immunization services.

Outputs and intermediate results

The project coordinated government and development partners support within a results-based structure with emphasis on strengthening provincial capacity and performance (PAD, p. 6) by:

i. providing a single financing platform to coordinate sources of support for Routine Immunization;
ii. using standard government budgetary and accounting mechanisms to deliver the majority of funds directly to the Federal Ministry of Finance and Provincial Departments of Finance;
iii. employing a performance-based financing structure to incentivize outcomes; and
iv. channeling catalytic technical assistance and funding to address specific health system bottlenecks, and to strengthen management and reporting systems to enhance accountability.

In all provinces, the departments of health maintained appropriately qualified specialized staff (epidemiologist; M&E, surveillance, and financial management officer positions). The project contracted CSOs to provide immunization services in low-coverage catchment areas.

The percentage of children under two years of age with a vaccination card available increased in Balochistan from 8 percent to 35.2 percent, in KP from 39.7 percent to 71.7 percent, in Punjab from 40.7 percent to 85.5 percent, and in Sindh from 25.9 percent to 70.4 percent.

The 80 percent target for the combined number of Executive District Officers and Executive District Officers for Health who attended mid-level management training courses in each province was fully achieved or exceeded. In Sindh the achievement was 43 percent, short of the target of 80 percent.

The percentage of UCs in each province for which revised computerized UC-level micro plans were in functional use at district and provincial levels exceeded the targets (ranging from 80 to 90 percent) in all provinces, achieving 100 percent in KP, Punjab, and Sindh, and 93 percent in Balochistan.

The 100 percent target for UCs in each province with at least two skilled staff capable of providing immunization was achieved at 100 percent in KP, Punjab and Sindh, and at 81 percent in Balochistan.

The 100 percent target for detailed UC supervisory plans implemented by district supervisors and made available to supervising officers in each province was achieved at 100 percent in KP, Punjab, and Sindh; and at 89 percent in Balochistan.

The 96 percent target for districts in each province having functional cold chain equipment in place (as per specifications to exceed 95 percent in each tier of health system) was achieved at 100 percent in all provinces.

The percentage of districts in each province with recognized surveillance sites having functional online surveillance for Vaccine Preventable Diseases & Adverse Events Following Immunization was 100 percent in all provinces, exceeding the common target of 80 percent.

The percentage of secure districts in each province with functional electronic tracking of vaccinators and supervisors exceeded the targets in all provinces, reaching 100 percent in KP, Punjab, and Sindh; and 55 percent in Balochistan.

The percentage of districts in each province with at least 80 percent in terms of timeliness and completeness of reporting on vLMIS was achieved at 100 percent in all districts.

The project intensified its activities focusing on low children coverage in urban slums and supported two new related DLIs in 2020 (see Section 2d).

Outcomes

Notable progress was made in increasing equitable coverage for immunization in all provinces, but with wide variability in reducing disparities (see Table 1 below) measured in terms of wealth status. Two provinces attained their targets and two others did not, and had variable progress. In Punjab, disparities in immunization were reduced from 41 percent to 1 percent, significantly exceeding the target of 28 percent. In Balochistan, disparities were reduced from 35 percent to 23 percent, essentially meeting the target of 20 percent. In KP, disparities were reduced from 43 percent to 38 percent, short of the target of 15 percent. In Sindh, disparities

were reduced from 30 percent to 24 percent, short of the target of 15 percent. Nevertheless, in the latter two provinces, perceptible progress was made in a complex area of equity.

Table 1: Reduction of inequity in immunization coverage by wealth status (measured by Penta3 coverage in each province between the lowest and highest wealth quintile):

Province	Baseline December 2014	Original target	Actual achievement in June 2022	% of target achievement
Balochistan	35%	20%	23%	80%
KP	43%	15%	38%	18%
Punjab	41%	28%	1%	Exceeded
Sindh	30%	15%	24%	40%

In terms of overall immunization coverage, all provinces documented considerable improvements in full immunization coverage, also with variability among provinces. Punjab significantly exceeded its coverage target, increasing from 66 percent to 88.5 percent, exceeding the target of 77 percent. Sindh had significant progress from 29 percent to 68 percent, but remained moderately short of its target of 80 percent. In Balochistan, immunization coverage more than doubled from 16 percent in 2014 to 37.9 percent in 2022, but was short of the target of 65 percent. KP showed some progress, increasing from 53 percent to 60.5 percent, falling short of its target of 80 percent. Penta3 coverage and drop-out rates also showed mixed results while Punjab exceeded its targets. The Task Team reported on May 31, 2023 that there were shortcomings in tracking and vaccinating highly mobile populations and displaced families, especially in KP.

At the aggregate national level, the increase in fully immunized children was significant. The ICR (p. 17) reported that, based on data collected during the final year of project implementation (2021-2022), the actual national coverage achieved, in terms of the proportion of children who were fully immunized, was 76.4 percent, as compared with the baseline of 53 percent (2014 Comprehensive Multiyear Plan for Immunization). By design, the project did not set a national coverage target given the variability in coverage and uptake of services among provinces and because its strategy was to focus attention on promoting provincial ownership and accountability in terms of equitable coverage and program strengthening.

Gender disaggregated data by province were not provided by the ICR; however, the latter reported that there was no perceptible variation by gender under the project, with 76.6 percent of female children and 76.2 percent of male children having been fully vaccinated. The ICR noted that both male and female children had equal access and were administered vaccines, and that there was no evidence suggesting preferential vaccination of male or female children (ICR, p. 19).

Outcomes were supported by significant achievements in intermediate results, as noted above, and by important health system strengthening, positively impacting the immunization program. Pivotal gains were made in operational, institutional, and financing aspects. These included the consolidation under one umbrella of scattered financing for Routine Immunization; establishment of a pooled procurement mechanism for Routine Immunization to ensure timely availability of vaccines; adoption of staffing standards; vaccine

safety monitoring; well-functioning cold chain; development of annual immunization accounts; establishment of EPI-specific Drawing and Disbursing Officer (DDO) codes for tracking EPI fund flows and management; improved budget predictability and utilization (budget releases in FY2021 were 100 percent of the allocated amounts); and, importantly, the regularization of EPI funding under the recurrent budget, thus raising the prospect of domestic financial sustainability of immunization.

The above transfer of the EPI budget from the development budget to the recurrent budget at both federal and provincial levels was of significance, as it would contribute to the availability of domestic financing for immunization. This budget regularization was spearheaded by the Government of Pakistan and incentivized by DLI 9 (see Section 2d). It was also facilitated by a prior policy action under a separate development policy financing arrangement between the World Bank and the Government of Pakistan (ICR, p. 26). In addition, and since the start of the project, there was a gradual increase in the domestic share of EPI financing. The aggregate impact of the project contributed to an increase in the provincial share of total EPI expenditures from 49.7 percent in FY2011 to 89.2 percent in FY2018 (ICR, p. 26).

Under the “Borrower, Co-financier, and other Partner/ Stakeholder Comments” (ICR, Annex 3, pp. 62-65), the Bill & Melinda Gates Foundation noted that financial incentives succeeded in promoting the engagement of provincial leadership in the finance and health sectors, and that the project was very effective at policy and finance changes, but that the extent of fully addressing program performance issues remained an open question.

Based on all of the above findings, the achievement of the stated objective is rated substantial, but marginally so, as there was modest achievement of two intended outcomes used in the assessment of overall efficacy.

Rating
Substantial

OVERALL EFFICACY
Rationale
The objective to increase the equitable coverage of services for immunization against VPDs for children between 0 and 23 months in Pakistan was almost fully achieved, indicative of a substantial rating for overall efficacy. The substantial rating was at a marginal level as noted above.

Overall Efficacy Rating

Substantial

5. Efficiency

In the global context, child immunization is known to be among the most cost-effective public health interventions (World Development Report, 1993). Its benefits in enhancing human capital contribute to improving the welfare of the society, increasing labor productivity, and ultimately to reducing poverty.

At appraisal, the PAD's economic analysis was based on scenarios of the burden of disease from VPD. An analysis titled "*Global Burden of Diseases, Injuries, and Risk Factors Study 1990-2010,"* published in 2013 by the Institute for Health Metrics and Evaluation, an independent global health research center founded by the Bill & Melinda Gates Foundation at the University of Washington, included results for Pakistan and assumed three scenarios with different Disability Adjusted Life Years (DALYs): (i) low scenario of 39,156 DALYS per 100,000 population; (ii) mean scenario of 56,984 DALYs per 100,000 population; and (iii) high scenario of 85,229 DALYs per 100,000 population (PAD, p. 14).

According to the high scenario, the project would be expected to save about 1.16 million DALYs over the five years of the project. Using a 3 percent discount rate, the minimum discounted economic value was estimated at US$1,719 million. The total present value of benefits would be higher, as benefits would continue beyond the five-year implementation period. The total DALYs saved until 2030 were estimated at 3.34 million DALYs that would contribute US$5,491 million in present value terms. According to the mean scenario, the estimated DALYs averted were 0.4 million over the next five years and about 1.7 million by the end of 2030. The corresponding economic gains were estimated at US$590 million and US$2,816 million. Under the low scenario, the project was expected to save 0.27 million DALYs over the life of the project and 1.17 million DALYs by the end of 2030. The corresponding monetary gains were estimated at US$405 million and US$1,935 million, respectively. In all scenarios, the PAD concluded that benefits greatly exceeded costs. Therefore, the economic analysis concluded that the project was economically justified.

The ICR's economic analysis built on appraisal findings and noted that the most recent data available from the Global Burden of Disease Study (*https://vizhub.healthdata.org/gbd-results/*) indicated that the loss of DALYs in Pakistan due to eight common vaccine-preventable illnesses decreased by 33 percent between 2010 and 2019. This in turn decreased the estimated annual economic benefit of project interventions. Nevertheless, the estimated benefits continued to greatly exceed estimated costs, and the reduced burden of disease partly reflected the prevention impact to which the project contributed.

The ICR estimated the cost of fully immunizing a child in Pakistan. At appraisal, the cost was estimated at US$64, based on provincial data for 2011–2012. The economic analysis at appraisal assumed that the average weighted cost per fully immunized child would increase to US$129 in 2024/25. However, based on data collected during the final year of project implementation (2021-2022), the average weighted cost per fully immunized child was estimated at US$42. This lower cost at the ICR stage reflected efficiencies gained during the life of the project, including improvements in overall immunization operations, cold chain capacity and logistics, and pooled procurement of vaccines.

At the same time, some other implementation aspects moderately reduced overall efficiency, and these included factors beyond the control of the project. The ICR (p. 23) reported that the cost of vaccines increased globally, thus increasing fiscal pressure. There was a delay in conducting Third-Party Verification Immunization Coverage Surveys. The implementation of the Environmental and Social Management Plan remained a challenge in the initial years of the project (ICR, p. 25). Capacity constraints in procurement staff (non-EPI personnel) were observed (ICR, p. 27). There were frequent transfers and changes in EPI leadership, both at the federal and provincial levels, affecting the continuity of dialogue and follow up (ICR, p. 64). Security challenges adversely

affected implementation in some areas. Given the political sensitivity and security risks surrounding immunization and polio eradication in Pakistan, the project encountered limitations in accessing some tribal areas (ICR, p. 24). The COVID-19 pandemic caused understandable disruptions in immunization delivery in 2020, and the subsequent national response to the pandemic used the EPI platform for COVID-19 vaccination rollout and deployment, resulting in the temporary diversion of human resources and attention away from EPI.

Efficiency Rating

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 ☐ Not Applicable
ICR Estimate		0	0 ☐ Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

Relevance of the development objective was rated high in view of full alignment with country and World Bank strategies, and because childhood immunization remains among the “best buys” in global health. Efficacy is rated substantial as the development objective was almost fully achieved, but marginally so. Efficiency is rated substantial in view of the high cost-effectiveness of childhood immunizations, but with some negative implementation aspects that moderately reduced efficiency. The aggregation of these findings is indicative of a moderately satisfactory outcome rating.

a. Outcome Rating

Moderately Satisfactory

7. Risk to Development Outcome

The gains made in operational, institutional, and financing aspects as described in Section 4 are likely to help EPI maintain its achievements and to continue making progress beyond the project’s lifetime (ICR, p. 62). The ICR (p. 28) highlighted the fact that the project strengthened the immunization program to the point at which the provincial governments were willing to finance related expenditures under their regular recurrent budget allocations. This ended more than 30 years of development-mode status of this core public health priority. The resilience of Pakistan’s immunization program was also demonstrated in the context of arising challenges in security-compromised areas and during the unprecedented challenges of the COVID-19

pandemic. Although Pakistan's investment in public health is low by international standards, the fundamental importance of immunization to child health—and to the building of human capital—is recognized at all levels of government and remains strongly supported by the international community. The above considerations led the ICR to conclude that the risk to development outcomes is low. This ICR Review concurs with the ICR's overall risk assessment without dismissing the likelihood that higher risks to the outcomes already achieved may continue to oscillate as a result of security threats in localized areas.

Going forward, further immunization equity may be realized through more demand generation and deeper granularity in monitoring and managing inequities in EPI operations. Importantly, in the long run, immunization equity would continue to depend on the challenging endeavors to address broader socio-economic determinants affecting immunization access and demand.

8. Assessment of Bank Performance

a. Quality-at-Entry

The overall design and financing instrument were well suited to support clearly defined provincial immunization programs. The choice to direct the majority of project financing to provincial governments under a results-based mechanism recognized their primary role and prevented bottlenecks that were previously encountered in other development projects that used input-based financing at the central level. This approach was complemented by technical assistance and support for system strengthening. Co-financing arrangements effectively accommodated other donors and coordinated their financial and technical assistance.

Preparation was informed by analytical work undertaken by the World Bank and summarized in a 2012 HNP Discussion Paper "*The Expanded Program on Immunization in Pakistan: Recommendations for Improving Performance."* This study indicated that underachievement of the program in the past was due to a combination of factors thematically linked under management, performance, and accountability. The analysis also underlined the importance of demand-side aspects, notably barriers to health-seeking behavior (PAD, p. 9). Implementation arrangements were informed by the ICR of the Pakistan HIV/AIDS Prevention Project, which identified difficulties in implementing a nation-wide umbrella project. Hence, the project design emphasized provincial ownership and accountability, whereby each province would have province-specific targets and would be independently monitored and incentivized along with a direct flow of funds.

Institutional and implementation arrangements were the same as those of the government's EPI program (PAD, p. 10). Under the federal system, responsibility for financing and delivery of health services was devolved to the four provinces. Provincial program activities were to be implemented by the four provincial EPI cells, supported by the federal EPI cell within the Ministry of National Health Services, Regulation and Coordination (MONHSRC). The main five implementing entities would coordinate their activities with respective health and finance departments, and the Accountant General Office.

The overall quality of the PAD was high. Fiduciary assessment at appraisal was comprehensive, and the project had a robust implementation support/supervision plan. Appraisal was based on recent government policies and processes in immunization, notably the Comprehensive Multi-Year Plan, provincial financing plans, polio eradication strategies, and the decision of the Executive Committee of

the National Economic Council on pooled vaccine financing (ICR, p. 28). Substantial risks were adequately identified with corresponding mitigation measures, including for governance and fiduciary aspects, stakeholder risks, and implementation capacities.

While preparation was satisfactory overall, there were some shortcomings that had minor consequences. The ICR (p. 25) reported that there was an initial lack of understanding of the Environmental and Social Management Plan (ESMP) by the government, and that this issue subsequently contributed to challenges in its early implementation while also noting that related performance and compliance was satisfactory at project closing. There were misunderstandings at the level of implementing agencies on the flow of funds under the DLI mechanism that was to be discharged via the Departments of Finance and not through World Bank disbursements to a Designated Account (ICR, p. 22). Nevertheless, financial management was assessed as satisfactory. The ICR reported that, during preparation, there were multiple institutional changes in implementation responsibilities at the federal level and turnover of government officials that slowed the pace of preparation. The latter issues were not attributable to the Bank Task Team. Also, they may have affected the speed of preparation but not its ultimate quality.

Quality-at-Entry Rating
Satisfactory

b. Quality of supervision
The ICR (p. 28) reported that sharing one vision among partners and instituting a joint monitoring and supervision framework greatly reduced fragmentation in international assistance to Pakistan's immunization program. Supervision reportedly focused closely on concrete progress with regular tracking of indicators in the joint monitoring framework. Policy dialogue of the Task Team with provincial governments was enhanced by the DLI financing mechanism and the close engagement of the departments of finance and health. The ICR (p. 22) reported that the World Bank Team had close coordination with development partners (USAID, GAVI, and Bill & Melinda Gates Foundation), and with UN agencies, namely UNICEF and WHO. Collaboration with UNICEF and GAVI in vaccine procurement and utilizing the cold chain platform launched by GAVI ensured a smooth flow of vaccines, averting shortages and implementation delays (ICR, p. 23). In addition to intensive supervision and implementation support efforts, the Task Team was also responsible for executing analytical and policy activities. In this context, the ICR was of the view that staff time allocations may have been insufficient. If substantiated, this remark may reflect an issue that would be attributable to broader institutional considerations within the World Bank, and not to Task Team performance.

Quality of Supervision Rating
Satisfactory

Overall Bank Performance Rating
Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The development objective was clearly stated and reflected by the selected PDO indicators. The results chain was clear and systematic, although it would have been strengthened by further explaining how inequities would be monitored. Data would be collected and analyzed by the provinces, supported by technical assistance and sound methodologies used globally. Immunization outcomes and intermediate results would be tracked using an annual coverage evaluation survey that provided the basis of third-party verification. Federal and provincial EPI cells would prepare an Annual DLI Results Report to be reviewed by the National ICC and then to inform the steering committee of MDTF during the World Bank's biannual supervision missions. The results of DLI achievements would trigger disbursements. PDO indicators were province-specific by design, as explained in Section 4. Third-party verification analyses would include, among other criteria, gender, maternal years of education, economic status, and urban/rural residence (ICR, p. 24).

b. M&E Implementation

M&E implementation proceeded adequately with some challenges. Given the political sensitivity and security risks surrounding immunization and polio eradication in Pakistan, the project encountered access limitations in some tribal areas, thus delaying or hindering activities, including M&E, in those areas (ICR, p. 24). Since verification of PDO indicators and corresponding DLIs relied on a national household survey, the first round had to be delayed as another national survey had already been contracted by a partner agency (ICR, p. 23). In conjunction with the additional financing grant provided by GAVI in November 2020, the project added three intermediate indicators (two of which were DLIs; see Section 2d). This was prompted by EPI data showing that a proportion of children were not receiving adequate immunization services in urban slums. The ICR (p. 27) stated that gender-disaggregated data were tracked in all PDO indicators, although such data was not reported by province in the results framework.

c. M&E Utilization

M&E findings were used for regular project monitoring, informed decision-making, and triggering disbursements. The reports prepared by the federal and provincial EPI cells informed the national ICC and the steering committee of MDTF. Findings were widely shared, and co-financing partners used the project indicators and reporting framework for their own grant monitoring and for other separate investments. This common utilization increased efficiency in M&E. The ICR Team was informed about continued innovative use of global positioning and monitoring systems using vaccinators' cell phones to track health worker performance and to contribute to informing corrective actions. M&E helped to reveal lagging progress in urban areas, prompting added attention to such areas (ICR, p. 24).

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

The project triggered Safeguard Policy OP/BP 4.01-- Environmental Assessment and was classified as Category B. The risks were mainly related to the generation of health care waste associated with vaccinations, such as sharps, syringes, gauzes, and unused vaccines. An ESMP was prepared and disclosed, and the project emphasized the need to adhere to updated EPI guidelines.

The implementation of the ESMP was initially challenging, and there was no dedicated specialist in the first two years of implementation. Subsequently, the government hired dedicated ESMP coordinators (one at the federal level and one in each of the four provinces), thus facilitating improvements in compliance. The project ensured the use of auto disposable syringes in all vaccination centers and the availability of safety boxes. The cold chain was managed effectively in vaccination centers, assisted by a robust vLMIS. Various actions were taken to improve the handling of health waste at EPI centers, including: (a) the use of color-coded waste bins; (b) adoption of standard operating procedures for safe handling of waste disposal; (c) upgrading of pits to avoid open burning; (d) transport of waste to available nearby incineration facilities; (e) compliance monitoring through frequent site visits by ESMP coordinators along with adequate documentation and reporting; and (f) training at provincial, district, and UC levels. The ICR (p. 26) reported that, with regular follow-up from the World Bank Task Team, the government took strenuous efforts to improve medical waste management and developed, in 2020, National Guidelines for Infection and Prevention.

According to the Operations Portal, the overall safeguards rating was moderately satisfactory during most of the project period, and the final rating was upgraded to satisfactory.

MoNHSRC established a help line for a grievance redress mechanism (GRM) that was accessible across the country. Sign boards and complaint registers were maintained at most EPI centers, where a GRM committee and a focal person were nominated. A record of all complaints was maintained by the EPI program. In addition to the helpline, EPI received complaints through a nationwide GRM initiative (Pakistan Citizen's Portal) that was launched by the Federal Government, and the Portal covered all services.

b. Fiduciary Compliance

Despite a high fiduciary risk rating at appraisal, the project was mostly fiduciary compliant, and its fiduciary performance was satisfactory overall. The ICR reported that financial management was further improved and strengthened throughout the implementation period. Compliance in terms of interim financial statements and audits was satisfactory. EPI audits were carried out by the Auditor General of Pakistan, and the ICR did not report any qualifications. The ICR noted that the flow of funds was adequate, with some delays in fund flows from the provincial departments of finance to the provincial program in Balochistan and KP. Internal control was assessed as moderately satisfactory. UNICEF Financial Utilization Reports were satisfactory. The final financial management performance was assessed as satisfactory, and the ICR reported that, at the end of the project, EPI was fully embedded in the country

systems, and that EPI expenditure could be tracked through the National Financial Accounting and Budgeting System (ICR, p. 78).

Some challenges were encountered. District Health Officers had capacity limitations that necessitated further training to improve budget preparation. While EPI-specific DDO codes were fully operational in Sindh, KP, and Balochistan, there was a lag in Punjab, where the codes were used in 21 out of 36 District Health Authorities (ICR, p. 27). In Balochistan, the operational budget was not sufficient to meet district operational needs in some instances due to insufficient anticipation of service delivery needs. Constraints in staffing capacity for procurement were identified during the implementation period, and the fact that procurement officers were not on EPI's regular payroll was a contributing factor.

c. Unintended impacts (Positive or Negative)

As a positive unintended impact, the ICR (p. 22) reported that project implementation arrangements and procurement mechanisms greatly facilitated Pakistan's rapid emergency response to the COVID-19 pandemic, and that the first procurement of personal protective equipment in the region was deployed through the project, facilitated by legal arrangements with UN partners.

d. Other

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11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	
Bank Performance	Satisfactory	Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

12. Lessons

The ICR (pp. 28-29 and pp. 67-68) provided several lessons and recommendations, including the following lessons re-stated by IEG Review:

- Partnerships and coordination among development partners can provide effective support to the immunization agenda within one project mechanism. Under the project, this resulted in more than five years of joint investment decision-making, supervision, policy dialogue, and effective coordination. In addition, using the buy-down mechanism of the Bill and Melinda

Gates Foundation helped the country in alleviating incremental debt obligations during a period of turbulent economic circumstances.

- The strategic focus on strengthening the immunization program at subnational levels is responsive to province-specific development challenges and allows the central government and development partners to promote a continued engagement with provinces that showed lagging performance, and to jointly identify options for advancing universal health coverage, including immunization.
- The availability of timely, reliable, and verified data on immunization coverage helps in identifying weaknesses in immunization programs and in guiding corrective actions. Under the project, M&E findings were instrumental in identifying under-performance in urban centers and slums, resulting in intensified efforts and oversight.
- The institutionalization of a national pooled procurement mechanism for vaccines, based on provincial demands, can ensure a continuous and uninterrupted supply of competitively priced vaccines.
- Fostering community-led approaches, links, and mutual trust can facilitate the expansion of immunization service delivery and demand generation. The project facilitated community engagement mainly through Civil Society Organizations working in low-coverage catchment areas. The project also sensitized political bodies and religious leadership to help in advancing immunization efforts.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR provided an adequate account of project performance. It was results-oriented. The theory of change was clear and systematic in illustrating the pathway toward intended outcomes. The ICR's narrative was candid and aligned to the development objective. The ICR's analysis was thorough, well organized, and supported by adequate evidence. Both the narrative and the evidence supported the ICR's overall conclusions. In addition to intended outcomes, the ICR reported on other pivotal gains in health system strengthening, including in its financing. Lessons were derived from project experience. The ICR was reasonably concise, with moderate inconsistencies and repetitiveness.

a. Quality of ICR Rating
Substantial