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Independent Evaluation of Major Barriers to Interrupting Poliovirus Transmission in Pakistan

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List of Acronyms and Abbreviations

AFP	Acute Flaccid Paralysis
AIC	Area In Charge
AJK	Azad Jammu and Kashmir
BHU	Basic Health Unit
CDA	Capital Development Authority
CSP	Campaign Support Person
DCO	District Coordinating Officer
DG HS	Director General Health Services
DHCSO	District Health Communication Support Officer
DHMT	District Health Management Team
DHO	District Health Officer
DHT	District Health Team
DPEC	District Polio Eradication Committee
DSO	District Support Officer
DSV	District Superintendent Vaccination
EDO	Executive District Officer
EPI	Expanded Programme on Immunization
FANA	Federally Administrated Northern Areas
FATA	Federally Administrated Tribal Areas
GDI	Gender Development Index
GDP	Gross Development Product
GEM	Gender Empowerment Measure
GPEI	Global Polio Eradication Initiative
HDI	Human Development Index
ICT	Islamabad Capital Territory
IDP	Internally Displaced Person
IG	Inspector General
JICA	Japan International Cooperation Agency
LHW	Lady Health Worker
LHS	Lady Health Supervisor
MoH	Ministry of Health
MOPV	Monovalent Oral Polio Vaccine
NA	Not Available
NID	National Immunization Day
NITAG	National Immunization Technical Advisory Group
NWFP	North West Frontier Province
PCM	Post Campaign Monitoring
PA	Political Agents
PEI	Polio Eradication Initiative
SIA	Supplementary Immunization Activity
SM	Social Mobilization
SO	Surveillance Officer
SSO	Senior Surveillance Officer
STC	Short Term Consultant
TAG	Technical Advisory Group
TCG	Technical Consultation Group
THE	Total Health Expenditure
THO	Town Health Officer
TIP	Temporary International Professional
TP	Transit Point
tOPV	Trivalent Oral Polio Vaccine
UC	Union Council
UNICEF	United Nations Children's Fund
WHO	World Health Organization
WPV	Wild Poliovirus
WR	WHO Representative
ZS	Zonal Supervisor

Executive Summary

An independent evaluation team appointed by the Director General of the World Health Organization assessed the Polio-eradication program in Pakistan in order to identify key barriers and recommend appropriate actions for strengthening polio campaigns and routine immunization in order to eradicate polio disease.. The team conducted a desk review of relevant documents, site visits to three provinces, interviews with stakeholders, and meetings with community members, Lady Health Workers and their supervisors.

Strengths

There was strong political commitment toward implementing Polio campaigns in the four provinces of Pakistan, although the degree of ownership and financial support varied from province to province (e.g., earmarked funds for EPI and buffer stocks of vaccines in Punjab, compared to low resource allocation in Balochistan and NWFP/FATA). Political blessings and the presence of high level policy makers at campaign launches raised the profile for Polio vaccination. The level of ownership of the Polio – eradication program by the different levels of government varied across provinces, yet the working relationships and coordination between the government, WHO, and UNICEF were positive.

A well-performing and high-quality AFP surveillance system to identify Polio cases and wild Poliovirus at a large number of healthcare facilities has been maintained, including detailed case investigations and differentiation and genetic sequencing of wild Poliovirus isolates to trace original sources of circulation. When cases were confirmed, an aggressive case response immunization activity was conducted, covering a very large target population.

Finger marking is an objective and transparent tool to assess campaign coverage. This type of evidence helps to hold campaign teams accountable for their work at the Union Council level, and was used as a guide to improve campaign coverage in subsequent NID and SNID rounds. In most areas that the evaluation team visited, polio teams had engaged in efficient micro-planning and efforts were made to increase effective coverage with hard-to-reach populations through social mapping (which was useful for identifying population migration patterns and covering internally displaced persons (IDPs) and nomad populations).

The use of female team members and Lady Health Workers with knowledge of local languages was helpful in gaining access to otherwise restricted households.

Team meetings with zonal supervisors and area-in-chargers or field supervisors monitored progress, solved immediate problems and ensured the accountability of campaign teams.

In NWFP/FATA the evaluation team found highly committed health teams given the insecurity that permeates that region. Local knowledge was applied to gain access to security compromised areas by such means as peace negotiations with militants, the use of transit teams that can immunize children on the move (especially those moving in and out of security compromised areas), cross border immunization services to all IDPs, and identification of IDPs living with host families and in camps.

Weaknesses

In view of limited Federal financial resources contributed to health sector, the evaluation team found variation in provincial government financial commitment to primary health

care in general and to routine EPI in particular. Polio and routine EPI operate with limited resources, the primary health care (PHC) infrastructure is weak, and there is a lack of human resources.

Political interference in appointing vaccinators and holding them accountable for their performance is a major problem in some provinces. Authorities know of this concern, but few are taking appropriate sanction and disciplinary actions. The evaluation team noted micro-level management problems, a lack of transparency, and weak leadership in several program areas.

The issue of vaccine efficacy surfaced in a number of meetings and discussions. The general public is somewhat suspicious of OPV and their questions about seven doses as reported by mothers are not being adequately addressed by provincial and district government officials, vaccinators, or the media.

There are differences on financial incentives for conducting routine EPI and Polio-campaigns. Apart from monthly salary, there is no additional incentive for vaccinators providing routine EPI services either through outreach or fixed sites. There are financial incentives given to NID/SNID activities. A mixed finding emerges on the capacity of government to utilize strong infrastructure of Polio campaigns to strengthen routine EPI. In resource-poor settings where the routine EPI infrastructure is weak, frequent Polio-campaigns tend to undermine the routine EPI.

Data for the EPI coverage rate is not precise due to the problems with identifying correct denominators; the high routine EPI coverage rates create a false sense of security among policy makers. An independent coverage survey is planned, but it will take time for accurate results to be estimated and reported. The routine OPV coverage (3 doses) among non-Polio AFP cases is being used as proxy for routine coverage.

Discussions with community members and Lady Health Workers confirm high awareness among the general population about the time and place of Polio campaigns. There is, however, a lack of knowledge and understanding about Polio and the need for Polio immunization, and a need to educate the population about the difference between Polio vaccination and other routine immunization. The EPI communication strategy is not effective in explaining Polio and Polio immunization, as it tends to be campaign-specific and does not generate demand for immunization among the public. Messages focus on the dates and places of campaigns rather than providing culturally sensitive and contextually appropriate messages.

There are persistent rumors and misconceptions that link Polio vaccination with sterilization or infertility, and very little effort has been made to address this issue. However, refusal due to misconception is small, less than 1% of target population with some exceptions in a few districts; efforts were given to minimize refusals and active engagement of the community. There is no earmarked budget for communication activities by the different level of governments.

Challenges

Security hampered access to immunization in several districts of NWFP/FATA and Balochistan, making it difficult to reach large numbers of children. However, the program put serious efforts to immunize children in the light of security tension.

The large populations of target infants and under-five children in all provinces strains the existing PHC infrastructure. Competing demands on health worker time, for example the need to conduct Dengue fever or treatment of tuberculosis at the same time as Polio

campaigns has resulted in health worker fatigue and poses serious challenges to sustaining and fostering high quality Polio campaign and strengthening routine EPI.

The dynamic population migration and Poliovirus transmission either through internal or external Afghanistan-Pakistan trans-border crossing poses serious challenges to polio eradication.

Recommendations

Governance: The Government of Pakistan, at all levels, should commit political will and budget allocations to routine EPI and high quality Polio-campaigns. Success of Polio-eradication requires concerted efforts in containment of wild Poliovirus in all affected areas in Pakistan due to dynamic movement of population.

Remedial actions need to be taken with regard to nepotism, the lack of transparency with regard to the transfer of monies, especially to the polio team workers, and political interference in the appointment health workers at the micro-level. Specific persons need to be identified who will be held accountable for the management of Polio campaigns in all provinces.

Surveillance and Campaign Implementation: The current high performing AFP surveillance in three provinces should be maintained; the recent deteriorating surveillance system in Balochistan needs to be immediately strengthened. The finger marking and independent assessments to prevent conflict of interests should be maintained. Efforts should be given to produce post-campaign coverage assessment using finger marking at the Union Council level, not the district level. These assessment data should be used to respond to the immunization needs at the Union Council level, and as a means for holding teams at each Union Council accountable for their work. To avoid conflict of interest in post campaign Polio-coverage assessments, independent teams that are not involved in the NID/SNID in the locality were employed since March 2009.

Routine EPI and Polio Campaigns: There is a need to strengthen routine EPI while maintaining high quality Polio campaigns. If containment measures through NIDs/SNIDs between 2009 to 2011 are successful, the need for NIDs/SNIDs will be reduced. The Government and development partners need to improve the demand for and delivery of routine immunization and improve the performance of EPI coverage through significant strengthening of outreach teams and increased role of Lady Health Workers in provision of EPI services.

Communication Strategy: There is a need to review the communication goals and objectives for Polio vaccination and routine immunization, to develop messages that create demand for routine immunization services, and to deliver clear and culturally appropriate message to address rumors, misconceptions, and misinformation in the general population; the current message might not be effective to address these issues which requires attention to review. Innovative approaches to communication should be tried.

Further Researches: Operations research to determine the efficacy and effectiveness of conducting campaigns, qualitative and quantitative research to determine the true knowledge, attitudes, intentions, practices, degree of self-efficacy and other dimensions of behavioral change with regard to Polio and routine immunization, are needed in order to create an evidence base upon which to build communication campaigns to support the Polio eradication effort. Although there are a number of KAP studies, barrier assessment for all immunization, there is a need to further review if there are still gaps that operational research can guide effective program implementation.

Healthcare Infrastructure: There is a need to strengthen PHC and routine EPI, to improve access to clean water and sanitation, better food hygiene to minimize fecal contamination. It is important to communicate and collaborate with other Ministries and agencies (e.g., Education, Information and Broadcasting, Women and Environment) to develop a holistic approach to immunization and child health.

LHW Programme: The LWH programme is key toward strengthening the PHC system. This programme should be scaled-up, with adequate funding and appropriate remuneration for LHWs, to provide nation-wide coverage.

Background

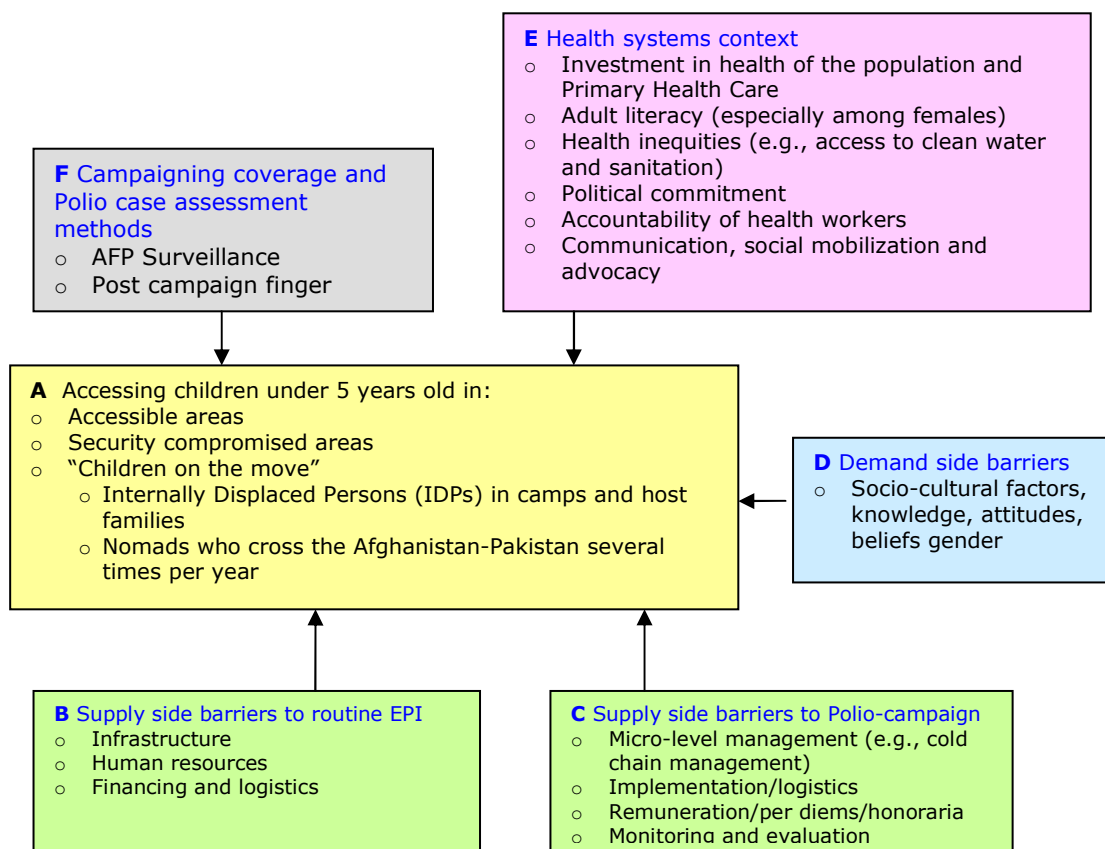
The primary challenges in Polio-eradication (PE) in the remaining Polio-infected areas in Pakistan are (1) the inability to sustain very high OPV coverage in the heavily-populated accessible areas and (2) difficulties in achieving moderately-high coverage in the security-compromised areas of NWFP and Balochistan.

An independent evaluation team was appointed by the World Health Organization to assess the operational barriers to achieving Polio eradication in Pakistan. This evaluation focused on the operational barriers and did not address in detail the existing AFP surveillance systems, which were found to be satisfactory¹. The evaluation team worked in Pakistan from 24 August to 1 September, 2009, during the holy month of Ramadan.

Objectives

The purpose for this evaluation study was to assess the critical factors compromising OPV coverage, routine EPI, and PE campaigns in (1) the accessible areas of Punjab and Sindh provinces, and (2) the security-compromised areas of Balochistan and NWFP/FATA in order to determine the key challenges for interrupting Poliovirus transmission and recommend appropriate actions that local, state/provincial, and federal authorities and stakeholders can take to ensure Polio eradication in the near future.

Figure 1 Conceptual framework for understanding barriers to Poliovirus eradication in Pakistan.



¹ With the exception of AFP surveillance in Balochistan which has deteriorated due to security issues.

Figure 1 shows the conceptual framework for Polio eradication in Pakistan. Box A refers to the target population for Polio eradication. Boxes B, C, D, and E show the elements that support or hinder the Polio eradication initiative in the country. Box F identifies the methods used to determine whether the target population was reached by Polio campaigns. It is important to address both the supply side and demand side barriers to Polio eradication in order to deliver high-quality, high coverage campaigns.

Methods

The evaluation team conducted (1) a desk review of relevant documents, (2) in-depth interviews and interactive discussions with policy makers at the Federal, Provincial and District levels, (3) community meetings with male and female community members, Lady Health Workers (LHWs), and Lady Health Supervisors (LHS), (4) meetings with vaccinators, international development partners, and (5) site visits to areas where active Polio cases were identified, a Basic Health Unit (BHU), a Rural Health Centres (RHC). The evaluation team also participated in several stakeholder meetings in Islamabad. Annex 1 provides a full account of individuals interviewed.

RESULTS

1. Health Systems Context

1.1 Financing healthcare

In general, the resources committed to the health sector in Pakistan are insufficient to maintain a functioning primary healthcare system, including routine immunization. The Total Health Expenditure (THE) is only 2.0% of the Gross Domestic Product (GDP); WHO recommends a THE of not less than 5% of GDP to support the health of the population. THE was stagnant at around US\$ 12 per capita between 2000 and 2004, and increased slightly to US\$ 16 per capita in 2006. It should be noted that Government of Pakistan provide EPI service free of charge and in fact the other PHC and first level health care services are provided with nominal charge of 1 PKR rupee (1.15 cents)

Table 1 provides key health expenditure indicators for national health accounts in Pakistan. Household out of pocket spending remains the main source (about 98% of total private sources) for financing healthcare. There is no social health insurance to support the health of the people of Pakistan.

Table 1 Key Health Expenditure Indicators: National Health Account, 2000-2006.

Indicator	2000	2001	2002	2003	2004	2005	2006
GGHE as a % of THE	20.0	19.7	24.2	16.6	18.5	17.5	16.4
Private expenditure on health as a % of THE	80.0	80.3	75.8	83.4	81.5	82.5	83.6
Out of pocket spending on health, As a % of private expenditure on health	98.2	98.1	98	98.1	98	98	97.9
External resources as a % of THE	0.9	1.4	1.8	2.2	2.5	3.6	3.2
Per capita THE in US dollars	12	10	11	12	13	15	16
Per capita GGHE in US dollars	2	2	3	2	2	3	3
THE as a % of GDP	2.5	2.3	2.3	2.2	2.2	2.1	2.0

Note: GGHE refers to General Government Health Expenditure; THE refers to Total Health Expenditure

Source: http://apps.who.int/whosis/database/core/core_select_process.cfm?country=pak&indicators=nha

According to the *UNDP 2006 Human Development Report*, rural poverty is double that of urban residents. At least 23 percent of the population live at or below the poverty line. The high potential cost of healthcare in Pakistan and the high level of out-of-pocket spending on health often leads to denied access to healthcare services or catastrophic incidents that leave families and households completely impoverished.

The EPI programme in Pakistan is considering a plan to introduce Pneumococcal Conjugated Vaccines (PCV) as an addition to the current Pentavalent vaccines, into the routine EPI by 2011. This plan will be submitted to the GAVI Alliance. Although the current co-financing for PCV is low and affordable, the unit cost per dose of PCV (US\$7, or almost half of the total health expenditure of US\$16) is far too high for Pakistan to afford when GAVI support terminates. Note that funding for routine EPI vaccines by the Government in 2007 was 31% of total program spending.

1.2 Government Efforts to Improve Primary Health Care

The National Programme for Family Planning and Primary Health Care was created in 1994 to address Pakistan's inequity in health provision and is now the world's largest Community Health Worker programme serving about 70% of the population. Commonly referred to as the Lady Health Worker or LHW programme, it consists of some 100,000 female health workers who should, in a few years, cover 100% of the rural population, and 30% of the urban population that live in slums. LHWs bridge the gap between the community and health facilities and ensure that the whole population has access to health services.

LHWs especially cater to women who may be unable to access healthcare services due to social or physical barriers (e.g., living in *purdah*). In-depth interviews with the National Family Planning Program Director and with LHWs and Lady Health Supervisors (LHS') indicated that more than 85% of LHWs were involved in Polio eradication activities, and at least 25% of their time was devoted to Polio campaigns. Community members called LHWs the "Polio sisters giving the drops", see Annex 2 for detail description of LHW program.

LHWs are the frontline workers for primary health care (PHC) development who bridge the gap between facility-based services and households. However, there are a number of threats to the sustained use of LHWs for healthcare and for Polio campaigns in particular, namely additional workload demands by other health programs (e.g., Dengue Fever prevention), low remuneration for work (i.e., half of the 6,000PKR minimum wage), and delayed payment of honoraria for services and training.

A study in 2008 by Burn² supported these findings. Although turnover among LHWs is relatively low, at least two-thirds of women who left the programme, cited factors that are within the programme's control, for example, workload management and honoraria amounts. LHW's family needs or family dissatisfaction with their working outside home, were other reasons for leaving the programme.

1.3 Recommendations

Routine EPI and Polio-eradication efforts operate in a weak and under-funded PHC setting in Pakistan. With a per capita THE of only US\$ 16 in 2006 the government could do very little to scale up PHC services as a strategic hub for the provision of routine EPI. More than 80% of routine EPI services were provided through outreach clinics, and the rest by fixed sites such as BHUs and RHCs. Resources such as vaccine carriers, motorcycles and gasoline for outreach service were inadequate despite funding and technical assistance provided by international donors. The very low level of THE, suggests a lack of political commitment to health and health systems in Pakistan.

The Federal and Provincial Governments should increase funding for healthcare services, especially primary healthcare in rural areas where at least 75% of the population resides. The government should commit to scaling up the LHW program in order to achieve 100% coverage of rural populations and urban slums, and increase the monthly payment to LHWs. The EPI should train all LHWs to be able to provide routine EPI services.

² <http://www.leeds.ac.uk/lihs/nuffield/documents/bscprojectb/08burn.pdf>

2. Supply and Demand Side Barriers to Routine EPI and Polio-Campaign

During site visits to three provinces (Sindh, Punjab and NWFP/FATA) including briefing by government partners from Balochistan, we identify strengths and weakness of routine EPI and Polio-campaign, challenges and finally some key recommendation were provided.

Each province has its own unique characteristics, problems and issues, for example, security and chronic refusal are the main problems in NWFP/FATA and Balochistan, while accountability is more serious in Sindh. Due to the large variation and complexities across provinces, we report key findings in four separate sections 2.1 to 2.4, one section for each province.

2.1 Key Findings From Sindh

The number of reported Polio cases in Sindh decreased from 18 cases in 10 districts in 2008 to 9 confirmed cases in 5 districts in 2009 (as of August 2009). There are 4 cases in Karachi, 3 of which are among Pashtu-speaking families from Killa Abdullah district in Balochistan.

Strengths

Governance

1. There is political commitment to Polio eradication at the Provincial Department of Health. The Special Secretary Health has directly taken on the issue of accountability for reporting and campaign coverage by writing a memo to the Minister of Health to allow fines and disciplinary actions for "wrong campaign coverage reporting". The Special Secretary Health regularly travels to meet Polio vaccination teams and investigate Polio cases.
2. The EDO-H, Karachi, is supportive of focusing on EPI activities in Karachi, a mega-city with poor infrastructure and urban planning. Its 16 million population is more than 10% of the total population of Pakistan.

Program Implementation Capacity

3. There is a strong emphasis on accountability from the grass-roots level up to the level of district and town health officers (EDO-H, THO) and a plan to institute a mechanism for taking disciplinary actions against health workers who falsely report campaign coverage.
4. Social mapping in the micro-plans helps to enumerate households for Polio team visits.
5. Finger marking is used to assess campaign coverage, and useful to hold campaign teams accountable.
6. Karachi is in the process of rehabilitating the cold chain system to ensure appropriate storage and transport of vaccines.

7. A revised curriculum for training zonal supervisors, team supervisors, and *talukah* supervisors has been developed (with inputs from UNICEF and all other partners at federal and provincial levels) based on a training needs assessment conducted in Sindh and Balochistan. This training activity has been outsourced to an outside agency, but the Master Trainers are from the Government of Sindh, which will contribute to the sustainability of the training and ownership on the part of the government. Phase I of the training has been completed and the training will be repeated twice a year and cover all of Sindh. This training will help both campaign implementation and routine immunization because supervisors will have a standard checklist for all aspects of Polio vaccination.
8. The Sindh Polio Eradication Coordination Team meets regularly (twice per month) and circulates minutes with follow-up actions.
9. An Internal EPI Network was established to link donors, health journalists, NGOs and others involved in Polio eradication and share information through a website.
10. The use of Campaign Support Persons (CSP), who supervised and supported the campaign teams, to conduct post-campaign coverage surveys poses a conflict of interest. It is difficult to take administrative action against delinquent and poor-performing staff. To respond to this weakness, In Sindh province, an outsider not directly involved in the campaign conducts the post-campaign coverage surveys; for example, the independent monitor mobilizes teams from outside the district or uses teachers or medical students available in the localities.
11. The post-campaign assessment of OPV coverage using finger marking is the only key mechanism holding Polio-teams in each Union Council accountable to their performance

Demand-Side Characteristics

12. The field visit to Gadap, one of 18 towns in Karachi, showed that children in the community recognize the Polio team members and opened their mouths as if for drops when the team arrived. Similarly children in Baldia town, Karachi, knew the Polio team members. Children in all places visited showed their finger markings from the last Polio-campaign a few weeks prior to the evaluation team's visit.

Weaknesses

Governance

1. The EDO-H is the key entry point for success of a Polio-campaign. The WHO independent evaluation team found the EDOH of Karachi to be unsupportive of the Polio eradication approaches taken by WHO and UNICEF. He elucidated his own agenda for Polio eradication, which focused on environmental surveillance.
2. Law and order problems persist in at least six districts of northern Sindh where *dacoits* (bandits) are present, making it difficult to conduct door-to-door campaigns and campaign monitoring.
3. The EPI Steering Committee does not meet on a quarterly basis as recommended by the Technical Advisory Group (TAG).

Routine EPI program

4. Although BHU in the 17 out of 23 districts in Sindh have been contracted to PPHI³ but routine EPI is still with the district Government's responsibility as it is a federally funded project. This policy incoherence creates problems to routine EPI and Polio-campaign at the district level. PPHI while not responsible for EPI, it does not allow its staff to participate in Polio planning sessions, does not communicate with EDO-Hs, and does not contribute data to the Provincial Health Management Information System (HMIS) which means that health statistics in 17 districts is non-existent. PPHI reports to the Chief Secretary in Sindh, and to the Federal Rural Support Programs Network (RSPN). In effect, PPHI is running a parallel primary health care services, without making linkages to the government EPI and Polio-eradication efforts
5. When districts were converted into towns in Sindh, the number of Polio teams was not equitably distributed or no additional human resources were mobilized due to shortage of human resources. The EDO-H said "it is not easy to find someone who wants to work for 150 Rupees a day for NIDs". According to several sources, some Area in Charges and some Zonal Supervisors did not give the team members their per-diems (or part of their per diems) for their participation in training or in the campaigns. Many people throughout the evaluation team's visit discussed this type of corruption, but it seemed that there were no serious efforts made to change this corruption.
6. Continuous routine EPI outreach services and frequent Polio-campaign rounds, have conditioned community members to expect doorstep immunization services. These expectations translate into low immunization-seeking behavior at fixed-post sites. Many community members believe that when their child receives OPV they are also receiving other immunizations and this confusion often results in not seeking further routine vaccinations for their children.

Campaigns

7. We observed a low proportion of female Pashtu-speaking members in the Polio teams, but the demand is high due to a high in-migration of Afghans to Sindh as well as migration of Pashtoons from conflict affected areas of NWFP and FATA. The lack of sufficient numbers of Pashtu-speaking female team members presents a problem with regard to being able to access the large number of Pashtu-speaking households in some areas.
8. Monitoring is problematic in campaign areas that are geographically difficult to reach or navigate (especially in inclement weather) and that require a four-wheel drive vehicle where none are available, or areas where women cannot travel unaccompanied. Many female team members do not want to travel beyond their designated catchment area (usually the immediate area where they live) as it is culturally not acceptable for women to travel in the evening.
9. Financial disbursements to campaign team members are erratic and/or late, and a cause of de-motivation. There is no accountability of funds or transparency of

³ The People's Primary Health Care Initiative PPHI was initiated in 2005, with the objective of improving service delivery at BHUs. After the initial pilot project, PPHI was scaled up nationwide and managed by Rural Support Programs. In Sindh, facilities include BHUs, dispensaries, and MCH Centres. PPHI, however, does not integrate preventive and curative services provided at BHUs. PPHI has had a detrimental effect on immunization and other preventive services. Currently efforts are given to integrate the preventive and curative services.

disbursements once the money reaches the Area-in-Charge who is supposed to pay the team members.

10. Fatigue is a problem among campaign workers, and among community members. Community members question the need for almost monthly campaigns.
11. Below par performance of Polio vaccination campaigns. There are at least 11 out of 23 districts in Sindh where the performances of Polio vaccination team coverage has been inadequate, ranging from 85% (Hyderabad) to 95% (Tando Allahyar). Note that satisfactory coverage is considered to be at least 90% verified by finger marking.

Communication and Social Mobilization

12. Based on findings for Sindh from the Household Polio KAP Tracking Study 2009 (Phase-V), field visits, and personal interviews, individuals in Sindhi communities recognize the term "Polio", know when a Polio campaign will occur in their community, but they do not have true knowledge of the disease and its consequences.
13. Communication about Polio immunization tends to be "campaign specific" and not "demand generating".
14. There are persistent rumors and misconceptions circulating about Polio immunization (e.g., linking Polio vaccination with sterilization or infertility) and unanswered questions about the efficacy of the vaccine (i.e., individuals question the efficacy given that some children receive a high number of OPV doses and still contract Polio) that are started or amplified by religious leaders and family/community members.
15. There is no earmarked budget by the local government specifically for communication activities. Budget for social mobilization is usually used for small-scale communication activities (e.g., media-based notification of campaign dates and places).

Challenges

1. Large population size of about 45 million in Sindh, of whom at least 6.5 million are less than five years old are major challenges to the health systems, not only effective EPI or Polio-campaigns. There are approximately 17,700 Lady Health Workers (LHWs) and 705 Lady Health Workers' Supervisors (LHS) working in the field in Sindh, though around 4,000 more LHWs are required to cover the entire rural population of the province. There are about 1,204 EPI centers in Sindh Province.
2. Karachi receives a large influx of people from across Pakistan due to employment opportunities, also migrants and nomadic peoples that come down from the mountains of Balochistan seasonally to earn money posed challenges how to immunization huge number of children on the move.
3. Vaccine shortages and stock outs have occurred in several EPI centers. At alternate times, centers have been out of BCG and Pentavalent vaccine.

Recommendations

1. Scale up advocacy activities to achieve high level of political and financial commitment, their interest and ownership equally between Polio eradication and routine immunization in Sindh, and encourage federal-level cooperation and coordination in this effort. Due to heavy dynamic of population migration, the success of the Polio eradication programs depends on the containment of wild Poliovirus in all provinces in particular Balochistan, Punjab and NWFP/FATA, as well as cross border Afghan-Pakistan Polio-control.
2. Conduct operations researches to determine the efficacy and effectiveness of conducting campaigns. These studies may include an assessment of the management structure of the Polio campaign system (from Federal level to Area-in-Charge).
3. Conduct qualitative and quantitative research studies to determine the true knowledge, attitudes, intentions, practices, degree of self-efficacy, and other dimensions of behavior change with regard to Polio and routine immunization in order to create an evidence base upon which to build communication campaigns to support the Polio eradication effort. The current message might not be effective to address these issues, which requires attention to review.
4. Though efforts were given by partners on communications, there is a need to re-visit the communication goals and objectives for Polio vaccination and routine immunization. Develop culturally appropriate demand-generation messages. The government of Pakistan, WHO, and UNICEF need to devise clear message in a culturally appropriate manner to combat rumors, misconceptions and misinformation that are circulating in the general population. Try innovative communication approaches including entertainment-education⁴. In addition, information, education, and communication (IEC) materials be designed for LHW to carry with them that would help them to explain the Poliovirus, health consequences, and in very simple terms of Polio-vaccine efficacy.
5. Improve the quality and coverage of campaigns while maintaining quality routine immunization through more diligent fieldwork by team members and stronger supportive supervision. Routine immunization should be the backbone of the Polio eradication program.
6. Though polio-program had strong intersectoral collaboration, such as schools, traffic polices, further efforts should be given. Polio cannot operate in a vacuum; it is linked to poverty, level of education, water and sanitation, food safety, and other social and cultural predetermining factors. The Polio eradication program should communicate and collaborate with other Ministries and agencies for example, Ministry of Education, Ministry of Information and Broadcasting, Ministry of Women, Ministry of Environment to coordinate program efforts.
7. Re-visit the compensation structure for LHWs in order to encourage sustained motivation for their work, and ensure timely remuneration following their work on campaigns. Consider an amendment to the law that prohibits non-registered women living in Pakistan, for example, Afghan refugee women, to be enlisted as LHWs in

⁴ Entertainment-education, also referred to as *enter-educate*, *edutainment* or *infotainment*, is a way of informing the public about a social issue or concern. The entertainment-education (E-E) strategy involves incorporating an educational message into popular entertainment content in order to raise awareness, increase knowledge, create favorable attitudes, and ultimately motivate people to take action in their own lives (Singhal, A and Rogers, EM (1999). *Entertainment-Education: A Communication Strategy for Social Change*. Mahwah, NJ: Lawrence Erlbaum Associates.

areas at highest risk for wild Poliovirus importation and circulation, which have shortages of women, education level and appropriate language skills (e.g., Dari or Pashtu) to access houses in areas with high numbers of Pashtu-speaking residents.

2.2 Key Findings From Punjab

Punjab reported Polio 1 cases in 1 district in 2007. In 2008, there was a huge upsurge of Polio cases 31 cases in 15 districts. Due to heavy and high quality Polio-campaign in 2009, there were 8 cases reported from 6 districts.

Strengths

Governance

1. Strong, action-oriented political commitment at the highest level. For example, the provincial government earmarked a sizeable budget for EPI operating costs (PC1), and the Chief Minister heads a provincial Task Force on Polio Eradication.
2. The government of Punjab has assumed ownership of the program and plays a leading role in close collaboration with other development partners, in particular, with WHO and UNICEF.
3. High-level provincial and district government officials have a clear understanding of the immediate needs for improving and maintaining high routine EPI coverage and sustaining high-quality NIDs and SNIDs in the context of ongoing low-intensity circulation of wild Poliovirus type 1 in the province, and of the risks posed by intense population migration. As one official said, "There is no room for fatigue and complacency in the face of the slow circulation of WPV1 in South Punjab."

Program Implementation Capacity

4. Well-established capacity to regularly generate evidence for technical and operational decision-making and detailed planning. For example, there exists an effective AFP surveillance system to identify Polio cases and wild Poliovirus that includes (1) a large number of healthcare facilities, (2) detailed case investigations, intra-typic differentiation and genetic sequencing of wild Poliovirus isolates to trace original sources of circulation, (3) aggressive case response immunization activities, and (4) finger marking to assess campaign coverage. This system allows the program implementers to hold campaign teams accountable for their work, to conduct post campaign assessments to identify low-coverage areas that can be either completely redone or 'swept' for missed children, and to plan for subsequent rounds of NIDs. International development partners, in particular WHO, are indispensable to this type of capacity development.
5. Polio campaigns and routine EPI are supported by an adequate and stable work force, and all vaccinators are government employees. Involving government employees as campaign team members is a sustainable strategy. There is a large cadre of LHWs. There are 3,862 routine vaccinators. A total of 3,652 motorbikes were distributed to EPI staff using GAVI resources.
6. Efficient micro-planning ensures high quality campaigns and sustains high levels of coverage; post-campaign coverage estimates based on checking finger marks were on average 96% coverage in Lahore, as well as in Punjab in all NID rounds in 2009.
7. The number of reported Polio cases decreased from 31 cases in 15 districts in 2008 to 8 cases in 6 districts in 2009 (as of July). Lab confirmation of Polio cases in 2009 was immediately followed by aggressive large-scale case response immunization⁵.

⁵ This includes four large aggressive case responses in 2009. For example, during the TT Singh district case response 1.7 million children (<5 years) were covered with mOPV1. The Sialkot case

8. The supervisory mechanism for Polio campaigns is well established and actively involves all levels of health workers on the campaign days. Evening meetings involving zonal supervisors (mid-level workers) and area-in-chargers or field supervisors are held to ensure their accountability⁶. Union Councils (UCs) where finger-marker based coverage is <90% are completely 'redone'. The teams are asked to "do it well or else redo it"⁷.
9. The government and development partners utilize the strong infrastructure of the Polio campaigns to strengthen and support routine EPI. For example, the measles and MNT campaigns used EPI outreach staff to conduct NIDs and SNIDs for some days in each round.
10. Various innovations for improving quality and coverage of campaigns have been introduced over time, including social mapping of internally displaced people (IDPs) and of children on the move who live with host families, including Pashtun-speaking female members in campaign teams, involving school children to identify and report younger siblings missed by vaccination teams to their teacher.

Demand-Side Characteristics

11. The Lahore field visit showed that the community is aware of the campaign and responds in a positive manner, appreciating the availability of services at their doorstep.

Weaknesses

Governance

1. Political interference makes it difficult to take administrative action against delinquent and poor-performing staff, though efforts have been made to improve the situation.

Routine EPI Program

2. At least 80% of routine EPI services are handled through outreach workers. Rural Health Centers (RHUs) provide the remaining 20% of routine EPI services. In Lahore, there are 158 fixed immunization sites (e.g. BHUs). There are only 360 vaccinators to provide routine immunization services to 320,000 target infants (the annual birth cohort is estimated at 918,6034 or 3.53%) in 3,541 Union Councils. Only 15 out of the 360 vaccinators are female. The workload is demanding for the full schedule of immunizations (e.g. BCG, DTP-HepB 1-3, OPV 1-3, Measles). It is estimated that one vaccinator is responsible for providing all antigens to each of 900 infants in one year.

response covered 3.3 million children with mOPV3. In Multan, the case response vaccinated 200,000 children with mOPV1, and the Lahore case response covered 1.7 million children with mopv1 (2 rounds).

⁶ Meetings, when well prepared and managed, can be one of the most effective tools fostering quality of program implementation. This includes pre-campaign meetings chaired by the Health Minister and or Secretary Health, and inaugurations of NIDs presided over by the Chief Minister or Health Minister. District Polio Eradication Committee (DPEC) meetings chaired by district DCOs or Nazims, monthly Provincial Surveillance review meeting, monthly District Surveillance Committee Meeting, Expert Review Committee meetings, and evening meetings during four campaign days.

⁷ The campaign is also re-done in tehsils (the 1st sub-district administrative level) where three areas or more are found to be poorly covered due to "no team" or "missed". If several localities are found to be missed, 'sweeping' for missed children is conducted in the whole district.

This large workload may undermine the coverage and quality of routine EPI. There is no additional financial incentive to keep workers motivated, above the monthly government salary.

3. There is limited evidence to show that reported coverage rates of routine EPI are accurate⁸, and the unrealistically high levels of EPI coverage reported in administrative reports create a false sense of security among provincial and district officials. There is a long lead-time between independent coverage surveys. Disease surveillance for other EPI target diseases (e.g. measles, neonatal tetanus, and diphtheria) relies on reporting from institutions, and it is not clear if surveillance covers private providers.
4. Interruptions of EPI vaccine supplies from the Federal government in the past year, and delivery of 'un-bundled' supplies (i.e., vaccines are not delivered together with auto-disable syringes and other safe injection materials) occurred in 2009. Vaccine supply problems were solved by Provincial budget funds earmarked for a buffer stock of vaccine supplies in case of interruptions from Federal government supplies. Stronger linkages are needed between Federal and Provincial governments.

Campaigns

5. South Punjab is a problem area for the PEI, primarily because of its very conservative culture (which makes it difficult to access children inside homes), poor infrastructure, and security situation. The cooperation with *dacoits* (criminals) in remote and inaccessible areas along the river Indus demonstrates the efforts of the government and partners to immunize children in difficult to access areas, and may be an effective short- or medium- term strategy; however, this strategy may not be sustainable in the long run.
6. Frequent turnover of managerial-level health staff (e.g. EDOH and DOH) is a problem; several sanctioned posts were not filled, particularly in newly created districts/*tehsils*.

Communication and Social Mobilization

7. Evidence from the focus group discussion indicates a basic lack of knowledge and understanding about Polio and the need for Polio immunization among individuals/community members. The EPI communication strategy is not effective in explaining Polio and Polio immunization; the messages focus on the dates and places of campaigns rather than providing culturally-sensitive and contextually-appropriate information and education messages.
8. Community members expect routine EPI services to be delivered to their doorstep. There are ongoing and increasing suspicions by the general public, the media, and provincial and district government officials, about the efficacy of the Polio vaccine given that there have been several confirmed Polio cases among children who received more than 7 doses of OPV. The pending introduction of bivalent OPV (containing both type 1 and 3) may help to address efficacy concerns.

⁸ The status of routine OPV coverage (3 doses) among non-Polio AFP cases was used as proxy for routine coverage. It was 50% in South Punjab (which is considered low), 85% in Northern Punjab, and less than 80% in Central Punjab in 2009.

Challenges

1. Huge population size. There are 15.7 million children under 5 years, 3.5 million infants under one year, and 3.34 million children 12-23 months. There are four million pregnant women and 21.6 million women of child bearing age which poses major challenges on the health of the population.
2. The influx of large numbers of IDPs into North and Central Punjab and from outside of the province seeking employment opportunities. Many IDPs do not stay in camps, but rather live with host families or relatives. The mobility of the IDP families presents challenges for identifying target children for routine EPI outreach.
3. New programs such as PPHI⁹ and NCHD¹⁰ are emerging as key stakeholders in health care delivery, even though the integration and interaction between these organizations and District Governments are weak. EPI, MNCH services and other public health interventions are not included in the service package of PPHI
4. There is a false sense of high levels of routine immunization coverage based on unreliable administrative reports.

Recommendations

1. Maintaining the current level of high political commitment, financial commitment, interest and ownership over the next few years is of prime importance to improve routine EPI and interrupt the circulation of wild Poliovirus in Punjab. Success and failure of Punjab depends on the containment of wild Poliovirus in Balochistan, Sindh and NWFP, and on the coordination of efforts at the Federal level.
2. The government, WHO, and UNICEF need to immediately elaborate clear messages about Polio efficacy for lay people (i.e., that oral Polio vaccine is not 100% efficacious and that several host factors contribute to decreased efficacy, including the presence of maternal antibodies, non-Polio entero-viruses in the intestine, or diarrhea in young children).
3. Focus on maintaining high quality campaigns that cover all children under five with OPV while improving demand for, and delivery of routine immunization in order to reach high coverage. Long-term efforts should include improving access to safe

⁹ The purpose of the People's Primary Health Care Initiative (PPHI), initiated in 2005, is to improve service delivery at first level care facilities or Basic Health Units (BHUs). PPHI was piloted in Rahim Yar Khan District and then scaled up nationwide. It is managed by Rural Support Programs (RSPs). In Punjab and Sindh, facilities include BHUs, dispensaries, *Unani Shifakhana*, and MCH Centres. In NWFP, only BHUs are managed by RSPs. One of the main concerns with PPHI is the disconnect between the preventive and curative services provided at primary care level. PPHI has had a potentially detrimental effect on immunization and other preventive services. Currently, efforts are given to integrate the preventive and curative services at PHC level.

¹⁰ The National Commission for Human Development (NCHD) priority area is education and health is a smaller part of its mandate, it had limited provision of primary health care services in Punjab. It has adopted a mode of operation that is more responsive to the preventive care needs of the community.

drinking water and sanitation¹¹, food safety to minimize the fecal contamination in the food chain and drinking water sources, and careful consideration and coordination with other competing health agendas such as measles, and dengue hemorrhagic fever.

4. A concluding analogy; there is a need to mend the boat (by increase the vaccine coverage of routine EPI program and improve access to safe water and environment) while sailing the boat through high quality NID and SNID to interrupt transmission of WPV.

¹¹ In 1990, only 37% of the population has access to improved sanitation. In 2004, the rate increased to 59%. Some 91% of the population had access to an improved water source in 2004, compared with 83% in 1990.

2.3 Key Findings From NWFP and FATA

The NWFP/FATA has successfully reduced the number of Polio cases over the last 10 years. The number of confirmed cases decreased from 77 in 24 infected districts/areas in 1999, to 5 cases in 3 districts/areas in 2005.

In 2008, Polio cases increased to 51 in 11 infected districts/areas (Polio types 1 and 3) due to deteriorating security in NWFP/FATA. As of July 2009, the number of reported cases was 23 from 7 infected districts/areas. Evidence indicates that campaign quality has improved in all accessible areas. As of July 2009, the majority of cases are reported from conflict-affected areas, with only one out of the 23 Polio cases in NWFP/FATA was reported from an accessible area.

Strengths

Governance

1. There is verbal political commitment by the NWFP and FATA governments to resolve the security problems so that the Polio-eradication program can reach populations in insecure areas (e.g., Mohmand and Bajour agencies).
2. Efforts continue to negotiate Days of Tranquillity in some districts of NWFP /FATA where militant activities are preventing vaccination teams from accessing populations. The WHO Regional Director and the Chairman of the International Polio Plus Committee of Rotary International have written letters to the President of Pakistan to support access to children during campaigns. The NWFP PEI team is included in local peace agreements in high-risk areas, where the media serves as access facilitators and communication with ICRC.

Program Implementation Capacity

3. NWFP/FATA Polio program implementers are applying local knowledge of the political context and innovative program strategies to vaccinate hard-to-access children. They have achieved inclusion of PEI in the peace agreements for North Waziristan Agency and Swat, participated in *Jirgas* (tribal assemblies) to gain support for vaccination campaigns, communicated with militants through tribal/religious leaders to negotiate secure passage to specific Agencies/areas for immunization teams¹². In some areas, militants issued *Fatwas* in favour of vaccination giving Polio teams safe access to

¹² As a result of the active engagement of *Ulemas* (religious leaders) and Taliban *shuras* (local councils) communication with Taliban leaders, deployment of local teams including Area-in-Charges and Campaign Support Persons, *Fatwas* from Taliban *shuras*, there were no major barriers to accessing children in the North Waziristan Agency. There was under-reporting of inaccessible areas in N Waziristan especially in the villages bordering with Afghanistan. The post campaign coverage using finger marking was 91 percent. The numbers of refusals were reduced significantly from 1,682 to 233 in one round of SNID, and there were almost zero reported inaccessible children.

otherwise inaccessible areas. Where access for Polio teams was not possible, local Islamic organizations were trained to conduct campaigns. In some militant-controlled areas, only one-day access was granted to Polio teams and they responded by tripling the number of team members to cover the area.

4. Vaccination posts have been established along the border between Afghanistan and all seven tribal Agencies (FATA) in order to ensure that OPV is given to all target age children crossing the border, in both directions. At least 40,000 under-five children were vaccinated per month as they passed through these posts.
5. There are effective interventions to immunize children in mobile or internally displaced families (IDPs). For example, 16 transient vaccination posts have been established to provide vaccinations to children moving in and out of security compromised areas; OPV and routine EPI are offered to children of IDP families at "new-comer" registration centers; social-mapping of camps and areas where IDPs are hosted by family members was conducted in order to facilitate tent-to-tent and house-to-house campaigns; and targeted advocacy and social mobilization plans were implemented. To date, no Polio cases have been found among IDP camp dwellers and IDPs in host families¹³.
6. Collaboration with intersectoral agencies, for example the National Database and Registration Authority (NADRA) and the Motorway Police, helped to provide vaccinations to 20,000 additional children per SIA round. The transit teams were deployed every campaign and a total of about 80,000 children were vaccinated per round of SIA.
7. In the light of difficulties in this region, there was high quality OPV campaign coverage (92%) and post-campaign monitoring using finger marking (94%) in the accessible areas in 2009. However, coverage assessments after campaigns found estimates < 90% in 14% of all Union Councils in NWFP/FATA.
8. A community-based surveillance system (similar to the one currently being used in Afghanistan) will be put into place in NWFP/FATA in September 2009, though the incentive structure is still being finalized. Staff at local health facilities will be paid \$10 for reporting one AFP case; community focal point persons will be paid \$5 for reporting one AFP case.

Demand Side Characteristics

9. Detailed analyses (by area) of reasons for which caretakers refuse to have children vaccinated have led to culturally appropriate strategies to address religious decrees against immunizations and misconceptions about Polio vaccines. Polio teams have worked with religious leaders to promote OPV through positive *Fatwahs*, and have been able, following each round, to vaccinate 25 to 40 percent of children listed as 'refusal' during the round. Chronic or hard-line refusals were only about 0.6% of the target population.
10. District Health Communication Support Officers (DHCSOs) were in place in 19 high-risk districts/areas to assist with social mobilization activities.

¹³ It is important to note that Swat was a red zone (i.e., no access for Polio teams) from September 2008 to mid-2009. The Taliban issued a *Fatwah* against OPV and routine EPI, despite the fact that these vaccinations were included in the Swat Peace Agreement. In May 2009, there was an extensive military operation that forced the people from Swat to flee to neighboring districts, which provided an opportunity to transient vaccination teams to deploy to those districts and immunize the IDPs from Swat. Transient teams immunized the returnees to Swat when security was resumed.

Weaknesses

Governance

1. Addressing security problems in NWFP/FATA is a priority for the provincial government, but there is lack of provincial government commitment to rehabilitate the public health infrastructure, provide adequate staffing in health facilities, and to strengthen the district level health management system. There is no provincial budgetary allocation to support the operation of routine EPI. Ownership of both EPI and the Polio program is low.
2. There has been political interference (e.g., favouritism) in appointing vaccinators. For example, vaccinators recruited from one district were posted throughout NWFP and FATA. High levels of absenteeism and poor performance were observed among this appointed group of vaccinators. Some efforts are made to take administrative and disciplinary action against delinquent and poor performing staff, but these actions varied across districts depending on the leadership of the Executive District Office Health (EDO-H). In some cases, these actions had negative repercussions for districts where poor-performers were sent, that is, they were usually sent to remote areas that generally required even stronger supervision.
3. There are discrepancies with the salary scale for national professional staff and local staff working in the EPI program compared to other agencies working in the area of emergency humanitarian relief. EPI program staff are not eligible for hazard pay though they are working in the same insecure and dangerous environment. This pay discrepancy contributes to de-motivation among otherwise very committed Polio program staff.

Routine EPI Program

4. In an effort to conduct campaigns to reach children in inaccessible areas, routine EPI was neglected. EPI staff responsible for outreach EPI services were deployed to support campaign activities on almost a monthly basis¹⁴. The lack of such resources as motorbikes and poor cold chain capacity resulted in low performing routine EPI.
5. There is no reliable information on the current routine EPI coverage. Self-assessment by the EDO-H and other staff clearly indicates that the success of the Polio-campaigns was achieved at the expenses of routine EPI¹⁵. Significant investment in the primary health care infrastructure, adequate staffing and better district management are required to sustain high levels of, and high-quality, EPI coverage. In addition, NWFP/FATA has experience vaccine stock-outs on several occasions.
6. The FATA government depends on Federal government funds to support EPI workers. Some 174 EPI workers have had to be funded using FATA development funds until

¹⁴ In 2009, there was almost a year-round campaign; there were four NIDs (in January, March, May and July), one mop-up (in February), and four SNIDs (in April, June, July and August).

¹⁵ These are opinions expressed by the EDO-H. It is not easy, however, to prove if NIDs undermined routine EPI. In some cases where management is weak and there is a lack of leadership and accountability, both routine EPI and NID are poorly performed. In areas where resources are available, such as in Punjab, the government use NIDs to strengthen routine EPI.

the Federal government released money to the FATA, taking away from other development work.

Campaigns

7. On average, only half of the campaign team members were female (ranging from 44% in July to 67% in February, 2009). In Peshawar district, only 10% (12 out of 124) of EPI staff is female, and most females are stationed at fixed sites.
8. Payment for trainings (30 PKR/day) and campaign work (150PKR/day for 4 days) is not timely. Mismanagement of resources was often reported. The per diem incentives for volunteers (e.g. Lady Health Workers) are not high enough in the light of security problems in the areas that they serve.
9. The cold chain management for vaccines is inadequate, especially during the summer months when the weather during campaigns is 45 to 50 degrees Celsius. Vaccine Vial Monitoring (VVM) is used to monitor cold-chain protocol, which is necessary given the levels of power load shedding during the summer months. There is inadequate power backup and no solar cell fridges in the remote districts of NWFP/FATA.
10. Lady Health Workers say that the finger-marking pens (with silver nitrate) are of low quality and leak, evaporate, or do not leave an adequate stain making it difficult to assess coverage. The independent evaluation team witnessed the difficulty in seeing the marked pinky fingers in children, especially among those children with poor hygiene.

Communication and Social Mobilization

11. In some conservative areas, rumours linking OPV with American plots to create infertility among the Pakistan population were the main cause for vaccination refusals. Limited social mobilization efforts due to security risks made these rumours difficult to address.

Challenges

1. UN security regulations limit the mobility of staff working under regular UN contracts to support field operations in most of the insecure areas. District Support Officers (DSOs), however, have greater mobility and may be able to reach areas where UN staff are unable to travel, although they still may face threats from militant groups.
2. Almost all the 23 confirmed Polio cases until July 2009 were children living in areas that were inaccessible to the vaccination teams. For example 12 out of 23 cases were from Bajour Agency; none of the cases had received any routine OPV doses, and most cases had also not received any OPV during SIAs. In 2008, all of the 200,000 under-five children in Bajour Agency were inaccessible; the situation improved in 2009 when only slightly more than 110,000 children (53% of total target population) remained inaccessible. The proportion of children inaccessible to vaccinations is highly dependent on the security situation in the localities; for NWFP/FATA overall, this proportion ranges from 11% to 24% of total children under five years old.
3. Susceptible non-immunized children are part of a large mobile population that regularly crosses the Pakistan-Afghanistan border in both directions; contributing to

the persistent circulation of Polioviruses in the border region, and posing serious challenges to the successful eradication of Polio in both Pakistan and Afghanistan. There remain pockets where SIA quality is very inconsistent on both sides of the border; also, poor coverage of routine EPI, and inaccessibility issues due to insecurity persist in both Afghanistan and Pakistan.

Recommendations

1. Since peace is elusive in NWFP/FATA, a secondary strategy for accessing hard-to-reach populations in insecure/inaccessible areas is to negotiate more “Days of Tranquillity” (i.e., days on which Polio teams are granted one-day access to target populations), and looking for windows of opportunity for immunization. The Directorates should provide specific operational plans for these Days of Tranquillity, and the Secretary Health should provide the necessary resources (e.g., health workers, vehicles) and support. The short-term, high-risk, and non-sustainable strategy would be to scale up the current activities that help to gain access to target children in the midst of arm conflicts (e.g., “low-profile” door-to-door strategies, where LHW hide the vaccine under their clothes and the field supervisor stand as a look-out for Taliban while the LHW accesses a household).
2. Support and improve routine EPI. The Federal and Provincial governments should commit resources to support and improve the primary health care system, and make strong decision to expand the role of Lady Health Workers to provide immunization services for routine EIP and increase the level of current monthly financial support to LHW. There is a need to strengthen vaccine procurement. Ensure a steady supply and limited reserve of vaccines for routine immunization in NWFP/FATA. The EPI training should emphasize safe injection practices.
3. Maintain high quality Polio-campaigns in accessible areas and support and scale up transit teams and cross border immunization points. Continue with social mapping and micro-planning for identifying and reaching IDP populations.

2.4 Key Findings From Balochistan

Background

Due to time constraints and security issues, it was not possible for the WHO/GPEI independent evaluation team to conduct a site visit to Balochistan. The PEI team members from Balochistan came to Islamabad to give the evaluation team a briefing on the Polio eradication efforts in Balochistan to date. This short report highlights the issues discussed with the Balochistan team during and after the briefing.

Since May 2009, there were 5 confirmed Polio cases in Balochistan, namely in Killa Abdullah (one type 1 and one type 3 case), Pishin (one type 1 case), and in Sharhani on the border with NWFP (two type 1 case).

The spread of wild Poliovirus along the Karachi-Northern Sindh-Quetta-Southern Afghanistan corridor has resulting in a failure to achieve and maintain high levels of immunity against Polio, particularly in the Quetta Block (which has a large refugee population). This corridor also allows for the spread of Afghanistan-derived wild Poliovirus through Balochistan and into Southern Punjab. There are a relatively small number of nomad children (about 39,440) that continuously migrate from Punjab to Afghanistan in the summer, and return to Punjab in the winter) that play a significant role in Polio transmission.

Strengths

Campaign Implementation Capacity

1. Polio campaigns were conducted in Balochistan despite the critical security problem in 2009. The provincial government gave special permission to WHO national staff to go to the field and monitor campaign activities during the campaign days. However, the continued serious security problems and restrictions of staff movement did affect the quality of both Polio campaigns and of AFP surveillance activities to a large extent.
2. In recognition of the numbers of nomad children who are missed during Polio campaigns, the tally sheets for monitoring children who were missed have been changed to allow their place of origin/residence to be recorded even if they are currently living with a host family.
3. Polio transit teams and check points have been established to access children when they are migrating with their families. For example, transit points (also called "choke points") are set up for 3-4 months when nomads are moving by caravan from one place to the other. Several Polio teams are assigned to these points in order to vaccinate quickly so as not to slow down the caravans. In some cases, the Polio teams will try to access the nomad camps, but the camps tend to be scattered making them hard to reach.

Weaknesses

Governance

1. Rapid turn-over is a major problem in Balochistan. The Health Secretary in Balochistan changed 5 times in the last 4 years. This type of turnover inhibits the

continuity of the EPI program. At least 90 percent of EDOs changed after the new government of Pakistan was in place.

2. Failure of the provincial government to maintain law and order and to protect UN staff has resulted in a severe decrease in the amount of technical support to the PEI in Balochistan. The International Director of the UNHCR office in Quetta was kidnapped in February 2009. At that time, the provincial government requested that all international WHO Polio officers working in Balochistan (6 in total) be relocated to other parts of Pakistan, and restricted the mobility of national WHO and UNICEF Polio eradication staff, for which it hampers the effective support the operation of NID/SNID.
3. The provincial government made an attempt to address poor quality campaign performance in Killa Abdullah by replacing the Executive District Officer/Health (EDO/H) after the June SNID round.

Routine EPI Program

4. Routine EPI coverage is low due to lack of infrastructure, logistics and other supports for the operation. It is reported that vaccinators are no responsive and accountable to their work.

Campaigns

5. Paramedics in Balochistan are influential and sabotage campaign activities. In the past, paramedics were hired as CSPs to monitor campaign activities and supervise staff. When they asked for more money, they were released as CSPs after two years of service. As a result of being let go from their duties as CSPs, the paramedics started to use their influence to organize strikes among campaign workers, and to sabotage campaigns (e.g., blocking women from participating in the campaigns; only about 70 of the 850 Lady Health Workers work on Polio campaigns).
6. The campaign quality problems during the June 2009 SNID (conducted in the nine most high risk districts, including the Quetta Block) were typical for the province and illustrate the challenges faced by the PEI in Balochistan. A post-campaign assessment of coverage using finger marking, showed that coverage was lowest in the border district of Killa Abdullah (<78%), with similar estimates found in Quetta (79%), Pishin (82%) and Lasbela (85%). The proportion of vaccination teams with at least one female member was very low in Killa Abdullah (15%), Loralai (16%) and Pishin (27%). On average, there was 40% female involvement in the SNID for the whole province.
7. Weak campaign management and a lack of transparency with regard to remuneration for campaign work are issues in Balochistan. It is difficult to recruit team members for campaigns with small incentives, especially where there is more job availability and making more money. In some cases, managers recruited school children (12-13 years old) to work on campaigns. Some school children then out-sourced their work to other children, making it difficult to manage the campaign process. Supervisors in the field visit only 13-14% of teams.
8. AFP surveillance is in decline. By mid-2009, 12 out of the 30 districts in Balochistan had not reported on AFP cases. The rates of AFP reporting and the completeness of stool specimen collection decreased significantly in several critical districts of the Quetta Block.

Communication and Social Mobilization

The Balochistan briefing team that came to Islamabad did not report on communication and social mobilization issues.

Challenges

Balochistan continues to be more challenging than elsewhere in the country because of its proximity to Polio reservoirs in Afghanistan, and because of the high security risks throughout the province. The main challenges for the PEI in Balochistan are:

1. Proximity to the wild Poliovirus reservoir in southern Afghanistan.
2. Constant migration of people along a route from Karachi through northern Sindh and Balochistan in and out of southern Afghanistan.
3. Implementing high-quality campaigns/immunization days in several densely populated districts between the provincial capital Quetta and the Afghan border (the Quetta Block) and in Jaffarabad and Nasirabad, these are the highest risk districts in Balochistan (currently not accessible for immunization purposes). These areas are not accessible to the UN staff for ensuring quality monitoring and supervision but they are accessible to vaccination teams.
4. Restricted access to communities for social mobilization activities. More effective efforts should be given to mobilize communities, though there has been a significant amount of work done, including the deployment of district communications staff and mobilizers who have developed issues specific communications plans. Balochistan contains some of the most conservative communities, and the low number of female campaign workers further restricts access to these communities. As a result, there are a high number of chronic and persistent refusals (mainly religious objections, i.e., the Polio vaccine is perceived as "haram" or forbidden) in Quetta Block. The number of missed children was also high.

Recommendations

1. Encourage active involvement of high-level officials including the Chief Minister, Chief Secretary, Commissioners, and DCOs. The rapid turn over of staff and civil servants is a major threat for continued health systems development and for the improvement of routine EPI.
2. Increase the number of Lady Health Workers, and especially Pashtun-speaking health workers involved in campaigns and SIAs. Encourage LHWs to recruit one male family member to be a part of their team. Provide appropriate incentives and timely payments. Increasing the number of women team members will likely reduce the number of immunization refusals and missed children as LHW can enter to the house compound to convince mothers.
3. Strengthening routine EPI in the five high risk districts of Balochistan that are continually at risk because of exposure to the disease from Afghanistan, including the Quetta Block and Jaffarabad and Nasirabad, where Poliovirus persistently circulates.
4. Address pockets of refusals by active engagement and involving religious leaders in communication and social mobilization activities.

3. Key Findings on Communication, Social Mobilization and Advocacies

The evaluation team observed that relative programmatic efforts and financial investment were given to mobilizing supply side capacity to sustain high quality NID/SNID, relatively less efforts were given to the social mobilization activities. This section assesses the communication, social mobilization and advocacy.

Strengths

Governance

1. There is verbal political commitment to promote Polio campaigns. Money and technical assistance for communication activities come mainly from UNICEF.

Program Implementation Capacity

2. Communication and social mobilization activities have been successful in raising awareness about Polio campaigns and ensuring that the public knows when and where vaccination teams will be delivering OPV vaccines.
3. There are researches undertaken to guide messaging such as barriers studies, assessment of knowledge attitude and practices and refusal study. These have been used as a basis for communication and social mobilization planning.
4. An Internal EPI Network was established to link donors, health journalists, NGOs and others involved in Polio eradication and share information through a website.
5. The MOH Health Education Cell (HEC) and UNICEF partnered with the National Database and Registration Authority (NADRA) [similar to civil registration office in other countries] who allowed Polio campaign teams to ride in mobile registration vehicles in order to reach more children (however, MOH field teams did not fully exploit the opportunity, and only 47% of vehicles had immunization teams riding along).
6. The MOH/HEC and UNICEF partnered with the Pakistan Traffic Police and the Pakistan Pediatric Association to deliver messages about Polio and OPV vaccines. The traffic police worked at toll plazas to help Polio teams reach about 30,000 children in each NID.
7. The MOH/HEC and UNICEF partnered with school health education programs and Jirgas (a tribal assembly of elders which takes decisions by consensus) to promote Polio eradication between campaigns.
8. District Health Communication Officers (DCHO) (about 38 in total) and Community Mobilizers (about 57 in total) with training in Inter-Personal Communication (IPC) work at the community level to support Polio campaigns. The mobilizers work mainly in areas that have high refusal rates and report to the DCHOs. Punjab is currently requesting 12 more DHCs.
9. The MOH and UNICEF, in collaboration with NADRA and the Pakistan media (e.g., PTV), broadcast messages about campaigns from the field, and have set up Polio Control Cells with 1-800 numbers so that people can free-call and let the MOH know that their child has not been immunized or visited by teams, so that a team can be sent to their home to deliver OPV. This initiative holds all immunization teams throughout the country during NID accountable and creates public awareness. The number of phone lines increased from 7 in 2008 to 35 in 2009.
10. There is a newsletter/Polio Journal that reaches 600-700 journalists with messages about Polio, Polio eradication and Polio campaigns.
11. Short stories about Polio immunization have been broadcast on television stations that have broad reach throughout Pakistan.

12. All mass media (TV, radio, print) messages about Polio are tracked using an established tracking service in Pakistan. Both controlled (message that are initiated by MOH/UNICEF) and uncontrolled (messages initiated by independent reporters) are monitored.
13. Mass media personnel at BBC/Asia in London are being trained on issues relating to Polio, Polio immunization and Polio eradication.

Weaknesses

Governance

1. The PC1 contains budget allocations for communication activities, but the MOH/HEC is still paying arrears and is unable to use these funds for new communication and social mobilization activities, forcing them to look for "zero-cost" options (e.g., FM104 radio community channel with a Jirga format) to inform the population about Polio campaigns.
2. There is no earmarked budget specifically for communication activities at the provincial or district levels. Money from the budget for social mobilization is usually used for small-scale communication activities (e.g., media-based notification of campaign dates and places).
3. There is a lack of socio-cultural and anthropological researches to understand how people perceive and react to Polio- to guide effective communication strategies.

Campaigns

4. The focus of communication and social mobilization activities is to publicize campaigns (i.e., dates of when teams will be in specific localities). There are no demand-generation messages that promote use of routine EPI services from health facilities such as Basic Health Unit/ Rural Health Centre--BHU/RHC. Individuals have been accustomed to (for example outreach immunization services and Polio-campaign) and expect of doorstep immunization services to be delivered at home. As such they are less likely to seek services at a fixed-post site. In addition, campaign messages failed to provide clear information that, in addition to Polio drops, there is a need to take children to immunize against other vaccine preventable diseases.
5. The MOH/HEC and UNICEF operate on a year-to-year Communication Strategic Plan with no long term goals, objectives, and messages, and mostly ad-hoc activities. In addition, there also needs to be a long term strategy to address supply side issues.
6. Although MOH and UNICEF have cooperated with an outside group to redesign the training modules to vaccinators, and greatly improve the pre-SIA training (including IPC training as a main priority) for SIA field staffs, a large percentage of whom are LHW. Interviews with Family Planning and PHC program managers who are responsible for LHW found that the recent 3rd party evaluation of the LHW programme found that 85% of all LHW were involved in Polio SIA/NID; this means that 85% of all LHW were more or less exposed to training specifically designed to be more effective communicators about Polio. However, interviews with LHW found that they were gaps on interpersonal communication modules to equip them to be more effective communicators about Polio, OPV and routine EPI.
7. Campaign fatigue is a problem among community members. Community members question the need for very frequent (almost monthly) campaigns, and these questions are not addressed through the communication and social mobilization activities around Polio/campaigns. There remains doubts and fatigues in the communities although there are materials which refer to both polio and routine immunization such as FAQ, Polio True Stories.
8. The Polio KAP Tracking Study 2009 (Phase-V) shows that the majority of the Pakistan population recognizes the term "Polio", knows when a Polio campaign will occur in

their community, but they do not have accurate/correct knowledge about the disease, its presentation, and its consequences.

9. The Polio KAP Tracking Study does not accurately assess knowledge, attitudes and behaviours with regard to Polio; the questions on the survey questionnaires are flawed (e.g., the current attitude questions do not measure how positive or negative people feel about immunization; there are no questions about beliefs, intentions, or self-efficacy; some response categories are not mutually exclusive)
10. There are persistent rumours and misconceptions circulating about Polio immunization (e.g., linking Polio vaccination with sterilization or infertility) and unanswered questions about the efficacy of the vaccine (i.e., individuals question the efficacy given that some children receive a high number of OPV doses and still contract Polio) that are started or escalated by religious leaders and family/community members, and that are not being adequately addressed through either mass media or interpersonal communication efforts. There is a missed opportunity in the area of communication and social mobilization to provide information, education and communication messages to increase knowledge about the disease of Polio, improve attitudes about Polio vaccination, and change immunization-seeking behaviour.

Challenges

1. Securing specific budget and disbursing an appropriate amount of funding to (1) deliver correct information about Polio (e.g., presentation of the disease, consequence of not vaccinating a child), (2) deliver correct information about OPV (e.g., efficacy issues and the need for repeated doses), (3) addressing misconception and rumour undermining Polio vaccination, (4) government and societal doubts on children affected by Polio despite several doses of OPV from maternal reporting.
2. Re-directing communication and social mobilization activities to create demand for OPV and routine EPI, that is, to stimulate pro-active health-seeking behaviour instead of the current passive receiving behaviour.

Recommendations

1. Scale up advocacy activities to achieve financial commitment for communication and social mobilization activities for Polio eradication and routine immunization.
2. Conduct high quality quantitative and qualitative assessment to determine the true knowledge, attitudes, intentions, practices, degree of self-efficacy, and other dimensions of behaviour change with regard to Polio and routine immunization in order to create an evidence base. There is a need to understand that creating demand for routine EPI, and real understanding of Polio- and its consequences has greater difficulties than the creating awareness of Polio-campaign.
3. Assessments should feed forward into communication intervention design; behaviour change model components can also be used to develop indicators to measure successes of communication activities. Hire expert Behaviour Change Communication Consultants to oversee the development of survey questionnaires and focus group or in-depth interview protocols to ensure that the information being gathered is of high quality and useful for program design purposes.
4. Develop a 5-year Strategic Plan for Communication, Social Mobilization, and Advocacy. Re-visit the communication goals and objectives for Polio vaccination and routine immunization. The government of Pakistan, WHO, and UNICEF need to deliver clear message in a culturally appropriate manner to address rumours, misconceptions, and misinformation that are circulating in the general population, instead of simply promoting campaign days. Changing social norms around campaigns and routine immunization requires the use of media (traditional and mass media) AND interpersonal communication in order to stimulate discussion about Polio vaccination.

Try innovative communication approaches including entertainment-education¹⁶.
Medium term plan should be produced to strengthen supply side capacity.

5. Management strengthening and communication/social mobilization activities need to be coordinated so that as the management of campaigns gets better, there will be communication and social mobilization activities to promote campaigns by promoting "quality" teams (i.e., "branding" teams) -- which should be a part of a 5-year communication, social mobilization, and advocacy strategy. Note that teams have been provided with identification, hats, aprons but not continuously. Such branding will raise the profile and visibility of the teams, and will put the ball in the court of team members to live up to the new reputation that they have, generally improving their performance (which still may be a problem for teams in insecure areas). Both branding and demand-generation can also be applied to routine EPI, and could help to address the fatigue issue among parents by addressing the efficacy issue directly, and among Polio teams who will now be "recognized" as quality providers. This strategy has worked well in other areas (e.g., family planning, where fatigue is high in many places).
6. Implement more communication and social mobilization activities, beyond the successful 1-800 numbers, to help identify missed children who are the result of poor-quality campaigns or geographic/security problems.

¹⁶ Entertainment-education, also referred to as *enter-educate*, *edutainment* or *infotainment*, is a way of informing the public about a social issue or concern. The entertainment-education (E-E) strategy involves incorporating an educational message into popular entertainment content in order to raise awareness, increase knowledge, create favorable attitudes, and ultimately motivate people to take action in their own lives (Singhal, A and Rogers, EM (1999). *Entertainment-Education: A Communication Strategy for Social Change*. Mahwah, NJ: Lawrence Erlbaum Associates.

4. Security as a Barrier to Polio Eradication Program

Background

The security environment has deteriorated in Pakistan and is characterized by a multiplicity of potentials risks:

- Terrorist acts
- Political violence
- Sectarian confrontations
- Organized crime and kidnappings

Access to government health services in general, and to EPI and Polio campaign in particular, is hampered by the rapid devolvement of the security situation in Pakistan.

Since July 2007, after the Red Mosque crisis, Pakistan has faced significant security degradation. The attack against the Pakistan People Party (PPP) in October 2007, the State of Emergency declaration in November 2007, the attack claiming the life of Benazir Bhutto, and the Marriott Hotel bombing in September 2008, are some of the events depicting the seriousness of the situation. Pakistan ranks third in the list of countries affected by suicide bombers, after Iraq and Afghanistan.

Each region in Pakistan is characterized by its own security threats. Here we describe security issues that are particular to each province.

Sindh

During the independent evaluation team's visit to Karachi, Sindh in August 2009, seven terrorists were arrested in the port district.. They were allegedly organizing terrorist attacks against official buildings; all seven were members of Lashkar-e-Jahnavi (LeJ) who are linked with Al-Qaida. LeJ is primarily targeting government installations. They claimed the attack against the hotel Marriot in September 2008. The previous week there were major troubles linked to the murder of the Sunni Chief Ali Sher Haider in Karachi. There are no major security threats regarding Polio campaign and routine, only delays if and when the situation does not allow the implementation of the campaign.

Punjab

Rajanpur and other Southern Punjab districts are vast territories not accessed by the regular administration. In the past it was a huge problem to access those areas for the Polio campaign. Although insecurity is not a significant challenge to the program in Punjab, the bandits would cut the nose of any foreigner penetrating their territory. The dilemma is that one cannot deal with criminal organizations. However, in view of the importance of the Polio program, the DCO negotiated with the bandits and recruited supervisors and campaign teams from their group, and allowed them to use their own motorcycles. Since that time, the program went well even with the surveillance. But, even if 100% area is accessible now, one can question the sustainability of such agreements.

NWFP/FATA

This province is one of the two key wild Poliovirus reservoirs. However, the security situation is complex and is a major barrier to the program. The Government does not control a large part of the province. During the independent evaluation team's visit, at

least 16 police officers were killed in a terrorist attack in Mingora, Swat valley. During the same period government helicopters bombed a Taliban stronghold killing at least 30 militants. This region has been the theater of a vast military campaign in April 2009. After the offensive to stop the Taliban advance, the PM Yousuf Raza Gilani declared that "the army has eliminated the rebels from that region". Obviously they are still active. But the army confirms that they have killed more than 1,930 militants and lost 170 men since the start of the operation last spring (2008) with emphasis in the Waziristan, where there are also repeated interdenominational confrontations between Sunni and Shia in the tribal agency of Kurram.

Under those circumstances one can question the efficiency of the Polio campaign and the enormous risks that vaccinators and Polio staff are taking, mainly in places that are controlled by Taliban who refuse vaccination under pretexts such as "sterilization" or "religious banning". The "hit and run" technique implemented currently by Polio team in NWFP/FATA to get round the ban could be particularly dangerous and exposing staff to great danger.

One can question the effectiveness of the PEI given that there is a lack of monitoring and evaluation, and often no UN clearance for international presence over a large part of the NWFP/FATA. The problem of missed children is very serious. ICRC is moving in to the region but under strict control of the Taliban. They raised the issue of Polio but the Taliban said no to the Polio campaign because of its ties to the United States. The only way to access the population would be to partner with religious leaders and with *Mullahs*. In Bajour, ICRC supports two Basic Health Units; one through Taliban and the other through LeJ. Obviously, under those conditions, it is difficult to ensure a good coverage for the Polio campaign, and even more difficult to implement routine immunization and find missed children.

Balochistan

The independent evaluation team did not visit this province which is also a reservoir of wild Poliovirus. It is important to note that Balochistan is the key corridor for vehicles going to Afghanistan. The border crossing activities are intense, not only with vehicles but by nomads and tribes traveling in by foot with animals, and in caravans. Massive migration dynamic is an aggravating factor to Polio transmission. The province is the theater of nationalistic movements' activities and obviously retaliations of the Pakistani armed forces. Currently the province is not allowed for UN staff limiting the M&E process to assess the quality of Polio-campaign. The program is again difficult to implement and cover the needed populations.

Conclusions

If security is not restored and guaranteed, it is unlikely that the coverage of the population will be effective. If no supervision and monitoring and evaluation are conducted to ensure minimum level of missed children and mistakes, the campaigns will not be effective, and the Polio reservoirs will remain in Balochistan and NWFP/FATA with transmission to other parts of Pakistan, and possibly to other neighboring countries.

5. Priority actions by partners

The evaluation team prioritizes the following recommendations to relevant partners, the government and international partners.

5.1 Recommendations to the Government

1. In light of competing demands, to maintain the current level of high political and financial commitment, interest and ownership to strengthening routine EPI while maintaining high quality polio campaign.
2. In light of security compromised situation in certain districts, foster the ongoing government actions to restore peace while continue to seek opportunities to immunize more children moving in and out of these areas with the application of local innovations, scale up transit teams and cross border immunization points where appropriate, continue activities on social mapping in order to effectively immunize the IDP populations.
3. Success of polio-eradication requires concerted efforts in containment of wild poliovirus in all affected areas due to dynamic movement of population in particular children. Special focus should be given to strengthening the weaker districts in term of routine EPI and polio-campaign while maintaining the good performing districts. Foster the ongoing inter-sectoral actions in support of polio-campaign and routine immunization. Quality campaign can be achieved by increasing the number of polio-campaign team members with appropriate language skills in particular Pashtu and female members who culturally have better access to households.
4. Improve demand for and delivery of routine immunization, accelerate the level of routine EPI coverage through better logistical support to vaccinators in their outreach services; strengthen the role of LHW as key actors in strengthening PHC services. LHW programme should be scaled-up to cover the whole population; LHW should be trained to provide vaccination services; review incentive and timely disbursement of their remuneration.
5. Immediate actions need to be taken to counteract nepotism and ensure good governance particularly at micro-level, ensure transparency with regard to the transfer of financial incentive given to polio-campaign teams; minimize the political interference in the appointment of health workers at the micro-level.
6. Maintain the current high performing AFP surveillance. The recent deteriorating surveillance in Balochistan needs to be immediately strengthened.
7. Maintain the post-campaign coverage assessment with the application of finger marking by an independent team not involved with the campaign implementation to prevent conflict of interests. Continued efforts should be given to produce post-campaign coverage assessment at the Union Council level, not the district level in order to hold teams at each Union Council accountable.
8. To set a long term goal of strengthen PHC--the backbone of health systems development including effective routine EPI services.

5.2 Recommendations to the Government and international partners

1. With the application of GAVI Health Systems Strengthening funding opportunities, to improve the demand for and delivery of routine immunization, accelerate the performance of routine EPI service in particular outreach teams and increased role of LHW in provision of EPI services.
2. Continue to provide technical support and sustain high quality sensitive AFP surveillance; continue guiding the number of rounds required for NID/SNID and

vaccine sub-type, based on epidemiological evidence; synthesize best practices of local innovations and support government in scaling up best practices interventions.

3. WHO continues to support post-campaign assessment to produce coverage by Union Council, not district level, in order to hold Union Council accountable, as district is too large to identify remedial actions.
4. UNICEF continues to support and improve the effectiveness of communication strategies to mobilize demand and supply side, to review the communication goals and objectives for Polio vaccination and routine immunization.

Acknowledgments

The evaluation team wishes to recognize the important work of all Lady Health Workers who are the frontline workers that implement the Polio campaigns and routine EPI, especially those who work in security compromised areas. The LHWs, LHS and other management officials have been creative and innovative with regard to conducting campaigns in the face of threats from militants, Taliban, and others, and with mobile populations or “moving targets.”

The evaluation team also wishes to acknowledge the efforts of government officials and international development partners for their untiring efforts to eradicate Polio.

The team is grateful to the persons that we had the privilege of meeting and interviewing, and from whom we gained valuable insights during our 10-day evaluation tour of Pakistan. Our thanks go to staffs in WHO and government who supported the local traveling.

Glossary

1. <i>Fatwa</i>	<i>Religious Verdict</i>
2. <i>Haram</i>	<i>Prohibited in religion Islam</i>
3. <i>Iddat</i>	<i>period of confinement for a Muslim woman when widowed or divorced</i>
4. <i>Pashto</i>	<i>Language of Pathans</i>
5. <i>Pashtun</i>	<i>Pashto speaking people</i>
6. <i>Qari/qaria</i>	<i>Muslim man/woman who can recite Quraan & teaches it as well</i>
7. <i>Saraiki</i>	<i>language of the people in Southern region of Punjab</i>
8. <i>Tehsil</i>	In Pakistan, the term <i>tehsil</i> is generally used except in Sindh where the term <i>taluka</i> predominates e.g. Larkana Taluka. The <i>tehsil</i> is the second-lowest tier of local government in Pakistan; each <i>tehsil</i> is part of a larger District. Each <i>tehsil</i> is subdivided into a number of Union Councils.

Annex 1 Individuals Interviewed

Date	Venue	Lead person met	Others present
Monday 24 th August Islamabad	WHO Office, Islamabad	Dr.Nima Abid	Dr. Obaid Dr. Tariq
	Secretariat, Islamabad	Mr. Khusnood Akhter Lashari (Secretary Health, Federal Ministry of Health)	Dr. Altaf Bosan (EPI manager) Dr. Nima Abid
	NIH, Islamabad	Dr. Altaf Bosan	Steering committee members List circulated
	UN Compound Islamabad	Security briefings by deputy DSO, UNDSS	
	UNICEF, Islamabad	Deputy Country Representative, UNICEF Mr. DEEPAK	MS MELEISSA DR.SAQIB SHAHAB
Tuesday 25 th August Islamabad	WHO Islamabad	Dr. Nima Abid	Ms Melissa Corkum, Dr Tariq, Dr Obaud, Dr Saqib, Dr Azher
	WHO Islamabad	Dr. Munir Magsi (Provincial coordinator Baluchistan)	Ms Melissa, Dr Tariq, Dr Obaud, Dr Saqib, Dr Azher
	WHO Islamabad	Dr. Kahalif Bille (WHO Representative to Pakistan)	International partners round table discussion, World Bank, USAID, UNICEF, DFID, Bill & Melinda Gate Foundation, ROTARY, CIDA and WHO)
	WHO Islamabad	Ms. Melissa Corkum (UNICEF)	Dr Tariq, Dr Obaud, Dr Saqib, Dr Azher Dr. Nima.
Wednesday 26 th August Karachi, Sindh	Secretariat Karachi	Dr. Captain (retired) Majid, Additional special secretary Health	Dr. Kumeisani (EPI Manager Sindh), UNICEF and WHO
	District office Karachi	Dr. A D Sanjnai	UNICEF and WHO
	WHO Office Karachi	Dr. Rahul (WHO Team leader Sindh)	Dr. Laila Rizvi (UNICEF Sindh) Dr. Yahya, Dr. Tariq, Dr. Shaukat (WHO Sindh)
Thursday 27 th August Karachi, Sindh	Sindh Secretariat Karachi	Syed Hashim Raza -Secretary Health, Sindh Dr.Arif Niaz- Baldia Town Health Officer, Karachi Field visit to Gadap and Baldia, two towns having confirmed polio- cases	
Friday 28 th August, Lahore Punjab	Punjab Secretariat Lahore	Dr.Ahmed Dervesh -WHO Punjab Dr.Aslam Chaudhry - DG Health, Punjab UNICEF Officials & Chief for Punjab Dr. Kristi Dr. Anwar Khan-Secretary Health Dr. Ishaque Kamboh - DHO Lahore Dr. Asad Ashraf MNA, (Head of Chief Minister's Polio task force Punjab Dr. Mushtaq Suhaira (Additional Secretary Technical Punjab)	
Saturday 29 th August Lahore Punjab	Punjab Secretariat Lahore	Dr. Ahmad (DHO Lahore) Dr. Muhammad (EPI Manager Punjab)	
Monday 31 st August NWFP/FATA	NWFP Secretariat, Peshawar	Dr. Iftikhar Ahmed, Pediatrician, Infectious Disease Hospital Mr. Ghulam Qadir Khan-Secretary Law & Order, FATA Dr. Fawad Khan Director Health FATA Dr. Abdul Waheed –EDO Health, Peshawar	

Date	Venue	Lead person met	Others present
		Dr. Syed Sohail, Secretary Health, NWFP Dr. Saleh-WHO NWFP	
Tuesday 1st September	Islamabad	Interview of Dr. Iqbal Lehri- Manager FP/PHC (LHW) Program	
	Barakau RHC, Islamabad	Dr. Twawf Orakzai – Medical Officer RHSC Barakau Dr. Iqbal Husain- DHO Interview 2 vaccinators in Barakau RHC	
Wednesday 2 nd September	MOH Secretariat	Debriefing to the Secretary Health (Mr Khushnood Lasahri) and DG Health (Dr.Rasheed Jooma)	DR.ALTAf BOSAN (EPI MANAGER)
	MOH Secretariat	Debriefing of preliminary results of independent evaluation team to the National Interagency Coordination Committee meeting chaired by Secretary Health (Mr Khushnood Lasahri)	
	WHO office	Interview of Professor Prof. Tariq Bhutta- NITAG Chairperson	
	UNICEF Office	Interview of Melissa Corkum- UNICEF Mr. Mazhar Nisar- Advisor Health Education, MOH	

Annex 2 In-Depth Interview: Director of the National Programme for Family Planning and Primary Health Care

Date: 1st September 2009

Interviewee: Dr. Iqbal Ahmaed Lehri

Interviewers: Rudi, Philippe and Viroj

The objectives of this in-depth interview was to understand the rationale behind the National Programme for Family Planning and Primary Health Care for which the Lady Health Workers are the front-line workers, its implementation, strengths and weakness, and the way forward.

The programme originated from the Cairo ICPD meeting in 1990s which the late Prime Minister Benazir Bhutto had attended. Population is a major issue in Pakistan; however it is not easy to discuss family planning issues, or other aspects of maternal and child care in Pakistan. Primary foci of the 'National Programme' are family planning and primary health care, with the concept of mobilizing females in the community to be trained as Lady Health Workers (LHWs). While initiated mainly in rural areas in 1994, the National Programme was later extended to urban slums and other urban poor areas.

Culturally, male health workers are not allowed to enter households / family areas where females are present. Only female doctors, nurses and LHWs have easy access to family members in their houses. Main criteria for women to qualify as LHWs are: being married, minimum age 30 years, living in the locality to be served, and having gone through a minimum of 8 years of education. Women who fulfil these criteria are recruited through interviews and then undergo a three-month training period fulltime 5 days a week in BHU/RHC on basic knowledge about family planning etc. After the training period, LHWs work in their own localities 3 weeks a month, with one week spared for refresher training.

Each LHW is assigned to be responsible for a total target population of 1,000 on average; however, where population density is high, the average target population per LHW may increase to 1200; it may decrease to 600 in low density areas, like large parts of Baluchistan.

While paid by the Federal government budget LHWs are not considered to be regular government employees. The monthly LHW 'stipend' of 3,000 Rp. is much lower than the minimum monthly wage of 6,000 Rp. These low stipends are acceptable at the level of the community but the N.P. is planning to increase stipends by 20%.

The problem of LHW appointments due to 'political influence' still exists but less serious than in the past. In 1995/96 > 1,000 LHWs were dismissed for this reason; however, 'political appointments' of LHWs are thought to be less common today. The National Programme has been assessed by external independent teams on a regular basis. According to the third independent evaluation of the N.P. recently conducted by the UK based Oxford Policy Group, 98% of LHWs were properly selected according to the agreed criteria.

However, there is still some undue political interference in appointing LHWs, and LHWs are sometimes recruited who live outside their responsible catchment areas of 1,000 population. Indeed the programme is well accepted precisely because LHWs are usually recruited from their own area and are known by community members - a major strength of the programme. There are extensive external evaluations. The LHW turnover is no more than 5% a year, however, turnover is more significant this year because of the

world financial crisis which also affected Pakistan. Recently, payments of LHW wages were not disbursed on time, sometimes delayed for 4 months or more. Any LHW leaving the programme will be replaced by a newly trained LHW. Although the National Programme is a Federal level program, however, responsibility for its implementation, training and supervision and support is with local government and in particular with the EDO-H. In Sindh, EDO-H requested to terminate all LHW that are not residents in the localities.

There are a total number of 95,000 LHWs of which, at any time, about 5,000 are undergoing the 3 months training programme, while 90,000 are working. The National Programme currently covers 65% of the rural population; however, the NPs target is to train a total of 100,000 LHWs to be able to cover 100% of rural areas and 30% of urban slums.

The Terms of Reference for LHWs include compulsory visits to all families in their catchment areas and registration of all families under a specific "family number". LHWs provide condoms, pills and injection contraceptives, creating family planning awareness. LHWs also can treat simple case of pneumonia and diarrhoea, give multivitamins to babies, and de-worming tablets to young children

LHWs prepare their monthly activity plan using a calendar / agenda. LHWs are expected to visit 5 to 7 families per day, and to conduct monthly women's group meetings. Twenty LHWs are supervised by a LHS-Lady Health Supervisor. There is a N.P. field medical officer for 1 or 2 districts. Since 2001/2002, a large number of LHWs have undergone extensive training on planning and implementing EPI services, including administering injections. Using GAVI HSS funding support, a formal EPI training program for LHWs started in 2004 in 44 pilot districts,. It is expected that LHW training on EPI will be further scaled up in the near future.

The idea of involving LHWs in vaccination activities has received strong political support. Many vaccinators are now training officers for LHWs and their supervisors. However, there is still some resistance by vaccinators for fear that LHW will replace them.

It is right that some LHW are running their "own shop" in the afternoon and charging for service that should not be charged. But, this is mainly in the case there is no doctor or medicine shops in the area.

Contraceptive rate: 29% to 30% in areas without LHW, but CPR was 39% where there is a LHW. In general people prefer injections it is a "myth" but they have the feeling that it is something they received. Also in many cases injection equals early relief and then early return to work.

Is there a linkage between polio and family planning and "sterilization" in conservative area like FATA or NWFP? There is but this not a big problem in Swat and FATA.

According to the recent 3rd independent evaluation of the N.P., more than 85% of LHWs are involved in polio eradication activities, with approximately 25% of their time devoted to this activity. Community member called LHW as "polio sisters giving the drop"

The N.P. directors noted that the frequent involvements of LHWs in Polio Eradication activities were causing a number of problems, for example:

- 85% of LHW are involved in polio, and more than half are forced to work outside their own catchment area
- their involvement in NIDs/SNIDs takes considerable time from current LHWs, who are also in heavy demand by various other programmes; not only Family Planning and

- PHC, but DOT for TB are gradually introduced. If there was 100% coverage of all rural areas by LHWs, the problem would be much smaller. N.P. directors felt that NIDs take too much time of the LHWs, who spend 10 to 15 days each month for NID. During campaigns, LHWs are not able to do anything else. NID also affects the routine responsibilities of LHW. Today male vaccinators cover the places outside the catchment areas of LHW. Policy should accelerate the geographical coverage of LHW
- NP director perceived that logistic for polio-campaigns should be better supported, for example hot summer may hamper the quality of cold chain and vaccine due to lack of thermos, some use plastic bags with ice cubes donated by communities.

Currently the LHW program is responsible and financed by the Federal Government. However, there is a plan to gradually devolve the N.P. to be administered and financed by provincial and district governments. This poses both threats and opportunities for LHWs. Local governments may change the program criteria selection of LHW, the current central purchasing of logistics, such as family planning devices, de-worming tablets, ORS etc will be devolved and be procured by local government for which it differs from province to province, prices of logistics depends on the size of population services, e.g. Punjab has 50% of total national population while Balochistan has only 7%, there is a difference on the economy of scale in purchasing. Despite these potential threats, opportunities are more provincial ownership.

The recent 3rd independent evaluation found that most LHWs have good job satisfaction since they gain social status in the community. Some LHWs even join political parties and run for political office, since they are among the most influential persons in the community.