

POLIO ERADICATION IN PAKISTAN: NOT AS FAR AS IT SEEMS

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Since its inception in 1994, Pakistan's polio eradication program has made significant strides towards achieving the goal of polio eradication¹. This is evident from a 99% reduction in the number of polio cases and restriction of wild poliovirus (WPV) circulation to fewer geographical areas. However, from the global perspective as well as in view of the initial timeline set for polio eradication (year 2000), Pakistan currently stands the farthest from the goal. In fact, Pakistan is currently considered to be the single largest threat to global polio eradication.

While looking at the evolution of polio eradication initiative in Pakistan over the last decade, it is noted that the country had reached a historically low case count of 28 in 2005². The situation in terms of numbers remained in a plateau state until 2008, when there was a sudden steep rise in the number of polio cases going up to 117³. A significant chunk of these cases was from Punjab and Khyber Pakhtunkhwa provinces, where the virus was introduced from the conflict affected Federally Administered Tribal Areas (FATA) due to ongoing significant scale population movement. The outbreak that initiated in 2008 kept going till 2011 with 89 polio cases in 2009, 144 in 2010 and 198 in 2011, (the highest globally that year). The reason for this long standing outbreak was significantly low population immunity due to sub-optimal vaccination activities in some parts of the country due to multiple reasons. These include insecurity in FATA and adjoining Khyber Pakhtunkhwa and management issues in high risk townships of Karachi and the Quetta Block (Quetta, Pishin and Killa Abdullah districts).

The continued outbreak in Pakistan turned into a serious health emergency compelling the Government of Pakistan to launch its National Emergency Action Plan (NEAP) for Polio Eradication in 2011. It took however, almost a year to fully operationalize this plan. It was

early 2012, when the NEAP was augmented and trickled down to the district and Union Council (UC) levels⁴. This was around the time when the World Health Assembly declared the completion of polio eradication a programmatic emergency for global public health and called for a comprehensive polio eradication end-game strategy⁵. One of the most significant and game changing tactics of the Augmented NEAP 2012 was to bring the Administrative Leadership at all levels into the polio eradication initiative⁶. The Chief Secretaries at the provincial level and the Deputy Commissioners (known as District Coordination Officers and Political Agents in some administrative units of the country) at the district level mobilized the Government's machinery including the health department to be fully engaged for polio eradication. This led to significant programmatic improvements at the ground level that ultimately helped reaching more children multiple times with oral polio vaccine (OPV), especially in the polio reservoirs of central Khyber Pakhtunkhwa (greater Peshawar area), FATA, Quetta Block and high risk townships/areas of Karachi. The targeted Short Interval Additional Dose Strategy (SIADS) implemented in regions with intense WPV circulation helped cutting down the viral life span by reaching more frequently the kids with effective bivalent OPV (bOPV) and monovalent OPV-1 (mOPV1). The improved technical and operational strategies helped Pakistan not only in cutting down the number of polio cases by more than 70% in 2012 (58 polio cases compared to 198 in 2011) but also to overcome the endemic WPV type-3 strain⁷. Parts of Bara tehsil in Khyber Agency that were considered to be the last reservoir of WPV type-3 in the Asian continent were successfully targeted with better quality vaccination rounds towards the end of 2011 and early 2012. This led to possible elimination of WPV type-3 that has not been seen in Pakistan and Asia since April 2012 neither in polio cases nor the envi-

ronmental samples⁸.

The country and the global community was considering the poliovirus in Pakistan at its last hiccups, hoping that first half of 2013 would possibly see the end of polio in Pakistan. However a mix of multiple factors from December 2012 onwards got the polio program stuck right at the verge of a possible success. These include:

- a) A series of attacks on the front line polio eradication workers killing more than 50 vaccinators and guarding security personnel in the epidemiological most critical areas of greater Peshawar and Karachi.
- b) Dissolution of the Prime Minister's Polio Monitoring and Coordination Cell by the interim government in May 2014 leading to discontinuation of the momentum gained in 2012 for program management and accountability⁹.
- c) Lack of effective oversight and accountability at the national and provincial levels (except Punjab with relatively better management) after the 2013 elections leading to sub-optimal quality vaccination activities in the key epidemiological zones of the country.

The Polio Eradication Initiative remained almost paralyzed during 2013 mainly because of inability to handle the complex situation emerging from direct attacks on polio vaccination workers. In fact, the momentum maintained in 2012 could never be regained after the dismantlement of Prime Minister's Polio Monitoring and Coordination Cell that was later restored in June 2013. Hence, the all-important low viral transmission season in 2013 (January – April) was lost, taking away an almost won battle in 2012. Rather, this pushed Pakistan back close to where it was at the end of 2011 in terms of numbers of polio cases. It was only June 2013 when the program at the provincial and district levels started making necessary adjustments to implement the Supplementary Immunization Activities (SIAs) by providing security to the polio vaccination teams. But unfortunate attacks on the security personnel in presence of a weak overall management turned the situation more complex. In nutshell, the SIAs during most of 2013 were of an utmost low quality especially in key polio reservoirs of greater Peshawar and Karachi. Pakistan's progress towards polio eradication was also hampered by complete cessation of vaccination in North and South Waziristan since mid-2012 and continued inconsistent SIAs in Bara tehsil of Khyber Agency¹⁰. Together with inconsistent and sub-optimal quality SIAs in Peshawar and Karachi due the reasons mentioned earlier, barring of vaccination in these parts of FATA contributed towards a significant build-up of susceptible for poliovirus.

Since the advent of 2014, some remarkable measures have been taken in critical places like Peshawar, other districts of central Khyber Pakhtunkhwa and Kara-

chi including enhanced and out of the box operational, security and communications strategies¹¹. These steps made it possible to reach more children as compared to 2013 making some impact in Peshawar and central KP but less so in Karachi. The ongoing cessation of vaccination in North and South Waziristan and continued insufficient reach to children in Bara (Khyber Agency) carried on playing role of "decelerating factors" for polio eradication efforts in the country. Hence, the low viral transmission season in early 2014 could not be uniformly utilized in all parts of the country. This marked a continuous second low transmission season "un-consumed". All the children in North and South Waziristan born after the initiation of ban on vaccination and all those not reached in Bara (Khyber Agency), Karachi and Peshawar, carried on being paralyzed by the wild poliovirus. The number of polio cases during the low transmission in 2014 (January – April) was the highest (month wise as well as aggregated) ever during the last decade. With high transmission season approaching (June and onwards) the wild poliovirus had a conducive setting for crippling more children in the country. This is exactly what happened and the country is currently on track to reach 300, with 283 polio cases as of 12th December 2014. It is pertinent to mention that about 60% of these polio cases are from conflict affected FATA, more than 20% from adjoining Khyber Pakhtunkhwa and 10% from Karachi¹².

In an apparently bleak looking situation there are some rays of hope, indeed. Special arrangements were made to vaccinate the temporarily displaced persons (TDPs) from North Waziristan (June 15th onwards) and Bara tehsil of Khyber Agency (October 13th onwards) through transit and house to house vaccination strategies. More than half a million individuals from North Waziristan and nearly 50,000 from Khyber Agency were reportedly vaccinated at the transit vaccination points marking a significant breakthrough by reaching the longstanding unreached populations^{13,14}. Punjab, the largest province population wise has reported only three polio cases, reiterating the fact that polio eradication strategies do work if implemented properly. Some good work done in greater Peshawar region during early 2014 has led to few positive epidemiological developments (local virus' presence at a lower intensity). Moreover, no precious lives were lost in Peshawar and surroundings during the implementation of SIAs in 2014, by virtue of very strong security arrangements.

At the global scenario, Pakistan stands at very critical juncture. Nigeria, the only endemic country in Africa has not reported any wild polio case since almost 4 months (last wild polio case on 24th July 2014). The explosive outbreaks after the WPV importation into Middle East are stopped with no polio case for more than six months. In fact, Pakistan and Afghanistan are the only countries globally that have reported polio

cases during the last three months and the contribution from Pakistan is over 90%¹⁴. Moreover, majority of the polio cases from Afghanistan in 2014 are due to the exported viruses from Pakistan. The Emergency Committee under the International Health Regulations (IHR) has declared the international spread of polio as a "Public Health Emergency of International Concern (PHEIC)" and recommended for all the travellers from Pakistan to be vaccinated against polio four weeks to 12 months prior to travel and have an international vaccination certificate as evidence¹⁶. The Independent Monitoring Board for Global Polio Eradication Initiative has flagged Pakistan's polio program a disaster urging the country to bring revolutionary changes in the program management to reach all the children with polio vaccine consistently during the current low transmission season¹⁷. It is important to re-emphasize that a well formulated National Emergency Action Plan (NEAP) for polio eradication exists in the country providing guidance on all the recommended mechanisms and strategies – its implementation however is missing in some parts of the country. This is the same plan that worked well in 2012 when it was implemented properly. Recently, the Government of Pakistan in coordination with polio partners has fine-tuned and optimized the NEAP for the current low transmission season and developed a national consensus for its uniform implementation.

The question is if how far is Pakistan from reaching the polio eradication and if it is achievable in 2015? The current situation with gigantic number of polio cases in the country makes it look like a far dream. But in actual, it is a doable task if there is will and commitment from the Government and the administrative machinery. The Global Polio Partnership is fully committed to help Pakistan in every possible way, since global efforts of more than two decades are in jeopardy. India, now a polio free country, reported nearly 750 polio cases in 2009. Following a strong national effort in late 2009 and early 2010, the numbers reduced to 42 in 2010. Finally, India had its last polio case in January 2011 and certified as polio free in early 2014. Hence, the large numbers should not bring any doubts about the fact that polio eradication is technically possible and operationally feasible. It is the matter of closing the virus taps in the polio reservoirs and not let it establish elsewhere in the country. The low transmission season when the vaccine field efficacy is at its highest (far more than summers, the high transmission season), availability of all resources and effective vaccine and heightened assistance from the global polio partnership constitute superb opportunities on hand that need to be grabbed and fully utilized to get rid of the menace of polio. Polio Eradication in Pakistan is not as far as it may seem, but the country program has to raise its game to cover this last mile, that is probably the hardest one.

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