Poliomyelitis Eradication in Pakistan: Successes & Failures

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ABSTRACT

The total number of Poliomyelitis in Pakistan were 20,000 polio cases in 1990(Mushtaq, et al., 2015), which were successfully reduced to 28 cases in 2005 through National Polio Eradication Program. After this year the number of cases started increasing which peaked at 198 in 2011. Thereafter, the trend changed again and the number of cases decreased to 58 in 2012. The number of polio cases reached to 306 in 2014.(Mushtaq, et al., 2015) Curiously, 87% of all the cases were reported in Federally Administered Tribal Areas (FATA) and Khyber Pakhtunkhwa (KPK), which are affected by military conflict. Pakistan was the only country in the world where the number of polio cases increased from the previous year, 2013. Fortunately, the number of polio cases decreased to just 8 cases that were reported last year(Global Polio Eradication Initiative.). This decrease is related to the mass vaccination of children by accessing them in FATA regions and hard to reach areas. Most of these children remained unvaccinated for years, as government had no writ in North Waziristan and the militants had banned polio vaccination in these regions. This decrease show that serious efforts in the right direction can lead to positive results.

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INTRODUCTION:

Pakistan holds the dubious distinction of being one of three Poliomyelitis endemic countries in the world; the only other polio endemic state is Afghanistan and Nigeria. The most populous member country of the World Health Organization (WHO) Eastern Mediterranean Region (EMR), according to the WHO-EMR 2010 estimates, Pakistan has an estimated population of 173.1 million, including 21.3 million children under 5 years old, and 61.4 million children under 15 years old (United Nations Department of economic and social affairs.). Administratively, Pakistan is divided into 4 provinces--Punjab, Khyber Pakhtunkhwa (KPK), Sindh and Baluchistan--the Federally Administered Tribal Areas (FATA); the Islamabad Capital Territory; and 2 administrative areas, Azad Jammu and Kashmir, and Gilgit Baltistan. Pakistan is one of the developing countries in the EMR, with a gross domestic product per capita of $1,184 in 2012 and an adult literacy rate of 55%. Pakistan's life expectancy at birth is 67.39 years, and Pakistan spends 2.8% of its GDP on health (2013). Physician density is 0.83/1000 population (2010). Pakistan's health indicators are not promising, with an infant mortality rate of 69.3 per 1000 live births, an under-5 mortality rate of 86/1000 live births, and a maternal mortality rate of 170 per 100,000 live births (2013) (World Bank Pakistan Data, 2015).

The number of Polio cases reported till date this year is only 1 that was reported in Dukki Balochistan (Global Polio Eradication Initiative).

HEALTH ISSUE:

The Global Polio Eradication Initiative has achieved considerable success by reducing the number of polio cases by 99% since it was inaugurated in 1988.

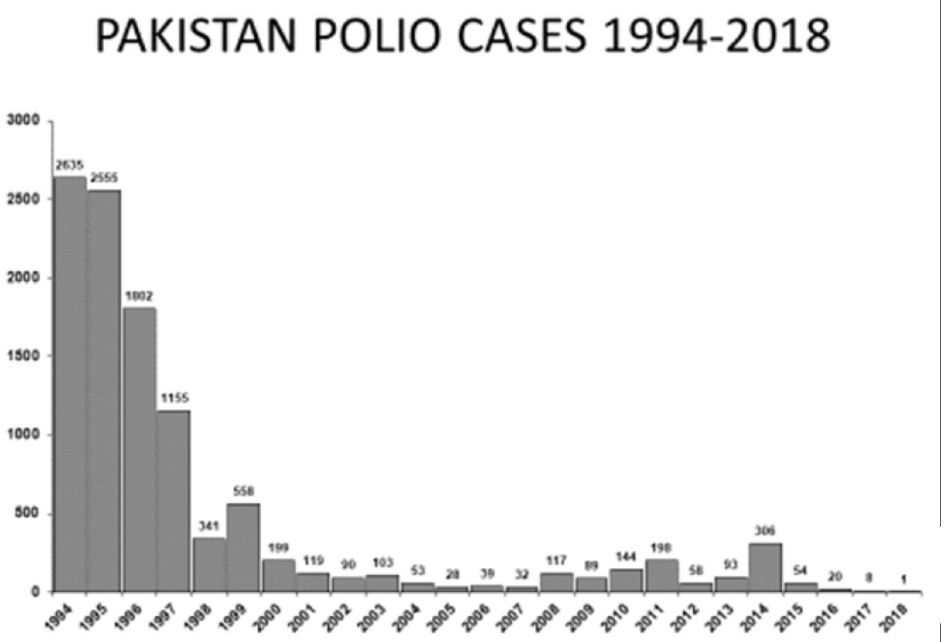
There are several socio cultural and behavioural reasons for the increase in the number of polio cases. The security situation drastically declined in Pakistan in these years, which made it difficult to conduct polio vaccination drives efficiently. Military operation were conducted in Khyber Pakhtunkhwa and FATA to improve the security situation, which at times exacerbated the situation further. Negative views about polio vaccines were being propagated by different local people such as polio vaccine causes infertility and there is hidden foreign agenda attached to it.(Mushtaq, et al., 2015). Polio vaccination teams were attacked several times, killing and injuring 79 and 53 people, respectively (Jawaid, 2015).There is a lack of awareness and distrust on the part of

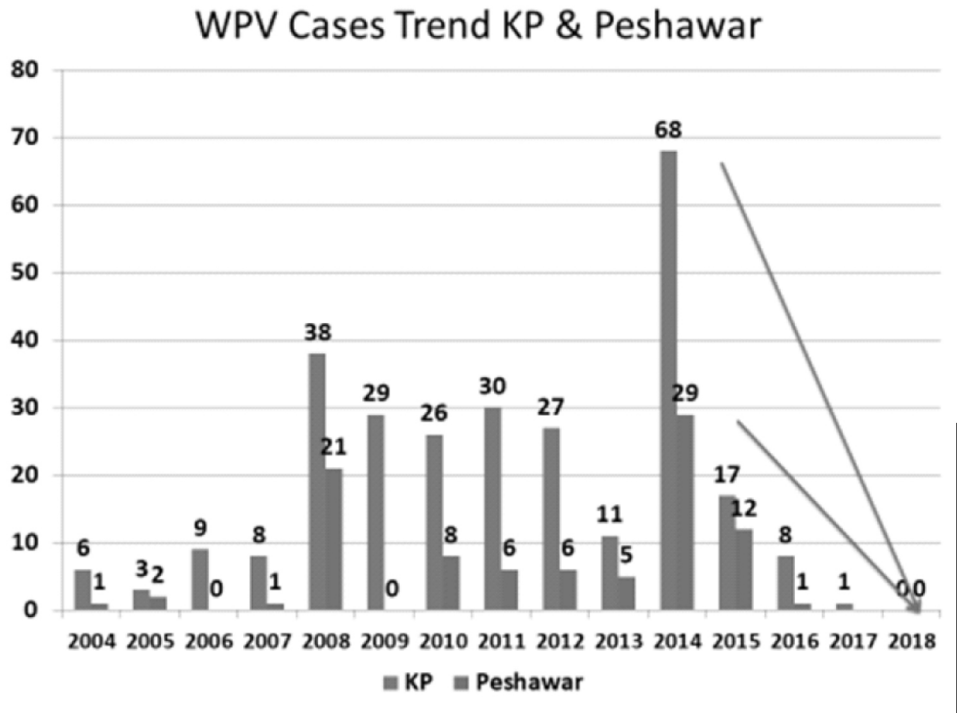
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parents in rural area, and some of them refuse to vaccinate their children. However, with the passage of time the level of acceptance is increasing among the communities and the misconceptions are being addressed by government and partner staff. Studies have shown that conflicts have negative impacts on polio eradication programs. Greater number of parents report negative views about vaccination in conflict areas as well as in settled areas. Unaware and Illiterate parents in rural areas then refuse vaccination to their children. Reported vaccination coverage is also substantially lower in higher conflict areas (70%), compared to lower conflict areas (99%). (Gillian, Robert, & al, 2015) Due to military conflicts and natural disasters like 2010 floods, health system infrastructure was damaged which also lead to negative effects on the vaccination drives. There is substantial difference between rural and urban areas with respect to vaccination coverage. This is explained by various demographic, social, economic, and geographic differences.





with a birth rate per woman of 3.26. Neonatal mortality rate is about 42.2/1000 live births and infant and under 5 mortality rates are 69.3 and 86 per 1000 live births, respectively.(WHO , 2015). Pakistan's health and education spending are very low as compared to the spending on defence and armaments. Pakistan is among the 6 countries who have Nuclear weapons and has 6th largest standing Army in the world. In a sharp contrast, majority of the children's deaths are caused by preventable infectious diseases like pneumonia, diarrhea, Tuberculosis and neonatal infections. Pakistan lacks adequate health system to protect children dying from these diseases.

"In all, 10 per cent of Pakistani children still die before reaching their 5th birthday. Almost 80 per cent of poor households do not have access to proper sanitation facilities. Malnutrition contributes to 35 per cent of under-five deaths, and more than 40 per cent of children are either moderately or severely stunted. Despite some improvement, maternal mortality is 276 per 100,000 live births. Less than half of Pakistan's children are fully immunized; in fact, immunization rates have fallen in every province except Punjab at 55 per cent." Quoted from (UNICEF Annual Report on Pakistan, 2012). The adult literacy rate is about 55% while female literacy rate less than 50%. The rural areas have a patriarchal society and compared to urban areas health facilities are much less accessible. Government health spending per capita is 8$. Out of pocket health spending is about 63% of the total health expenditure. All these factors have considerable influence on the immunization coverage in the country. The underdeveloped and conflict ridden regions like KPK, Baluchistan, FATA and Interior Sindh are more likely to have adverse health outcomes, including the negative perceptions about Vaccines and refusal of vaccination by parents to their children.

INTEGRATION OF ISSUE AND POPULATION:

More than 60% of Pakistan's population live in rural areas, which are much more underdeveloped than urban areas. Rural areas don't have adequate health facilities, schools, roads, and proper governmental machinery. The people living in these areas are unaware of the benefits of vaccinations. The literacy rate is low, and people have their own cultural understanding of health, disease, and vaccinations. Rural Population do not have proper access to health facilities, so vaccination campaigns remains a great challenge. This does not mean that urban areas do not face similar challenges. They do have these problems, but at a lesser level than in rural areas because of easier access to educational and health facilities.

The overall security situation in Pakistan deteriorated from the early 2000s. FATA, Karachi, Baluchistan and KPK are the worst affected areas. FATA and Swat came under the influence of militants under the blind eye of the then government. These organizations banned vaccination campaigns in these areas. (Alexander Jr, Zubair, Khan, Abid, & Durry, 2014) They propagated the views that vaccination is against Islam and it is conducted under foreign agenda to cause infertility in children, especially after the Osama bin Laden raid in Abbottabad. (Roul, 2014) Due to these reasons, a substantial percentage of parents were unwilling to vaccinate their children in these areas. (Hitoshi, et al., 2014) The military conflicts, bomb blasts and natural disasters affected the health infrastructure during the last decade. As a result, children in remote villages don't have access to vaccination. Pakistan has the problem of electrical supply which is interrupted for several hours and cold chain for the vaccines can be compromised, though direct evidence for this doesn't exist. The success of polio eradication initiative is also affected by other public health infrastructure failures like poor sanitation and lack of clean water facilities. Diarrheal diseases are among the leading causes of death in children which can affect the absorption of polio vaccines. (Nishtar, 2008)

The above discussion has elaborated the various risk and negative factors related to social and cultural behaviors of the population. These factors are militancy, illiteracy, lack of awareness, misconceptions, cultural understanding, inadequate health facilities and poor government performance. The positive or protective cultural and behaviour factors in Pakistan is the village culture. In villages all the people know each other and the community is closely knit. The knowledge gap that has grown about vaccination can be bridged once the community elders and religious leaders are taken in to confidence and convinced about its benefits. Most people trust these leaders and they can then assuage the negative views about polio vaccines. The Global Polio Eradication Program is a well-funded program which can also be utilized as a protective/positive factor by proper management.

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS:

The global initiative for eradication of polio is a well-funded initiative and has achieved tremendous successes all over the world. Only three countries now remain polio endemic. The threat of polio transmission from these countries to the polio free countries is a serious concern for other countries. Recently, several cases were detected in different countries, the virus strains were traced to Pakistan. At the same time it minimizes objective analysis of the eradication program and the problems it faces. (Closser, 2012) “Just how optimistic planners have been over the course of polio eradication can be seen clearly in projections of the cost, scale, and duration of the project. The end date for the project, in Pakistan and globally, has always been the topic of hopeful speculation and planning.” Quoted from (Closser, 2012).

According to The Ecological Perspective: A Multilevel Interactive Approach work needs to be undertaken on different levels to improve the results of the eradication program (Rimer & Glanz, 2005) (The Imperatives for Prevention) (Behavioral and Social Science Theory). There is gross misconception about polio vaccination. This problem should be addressed from Intrapersonal, Interpersonal and Community Level. Starting from individual level the misconception needs to be properly explained by information sessions with the community members. It is explained earlier that villages have closely knit communities, where the village elders and religious leader can be taken into confidence and then they can convince people about the benefits of Immunization. The vaccinators should also be educated about the cultural beliefs and they should be adept enough to address any concerns of the care givers or parents of the children. The children who often miss polio vaccinations also don't receive other routine immunizations. This means that there are institutional lapses due to which children are deprived from routine immunizations. The program of polio vaccination is often seen separately from Expanded Program on Immunization (EPI), which leads to fragmentation of the whole program, rather than integration. The polio vaccination program is vertically managed rather than a broad horizontal program to address the existing pitfalls in the EPI. The health authorities don't acknowledge this problem but the situation on the ground is different. (Bhutta, 2011)

Regarding Fostering Coalition and Networks various governmental and non-governmental community organizations can be engaged in solving the problems faced by Polio Eradication Program. Pakistan's health system needs broad structural reforms. Till 1990s Pakistan's government hospitals and programs were functional and most often people would go to these hospitals for health care services. Now private hospitals have propped up which has changed the overall outlook of the health system. Pakistan needs to invest more in health and education to improve the population health and literacy. It would need advocacy for policy and legislative reforms. Political Leaders should also be involved as they have links at the grass root level of the society, which could be used to convince people about the benefits of immunization. Political leaders and parties should also introduce health policy reforms to address this problem.

The attacks on the polio vaccinators is a serious concern which needs to be addressed. These days the government provides security personnel for the protection of vaccination teams, which is a welcome measure. The Military Operation against militants in FATA has delivered the results. There is about 70% decrease in the polio cases this year as compared to last year. People are displaced from North Waziristan and other regions to settled areas where vaccination campaigns are conducted at various security check post. The Lady Health Workers Program is the backbone of Polio Eradication in Pakistan. It's one of the most extensive program in the world with about 110,000 workers. (Harvard School Of Public Health, Maternal Health Task Force, 2014) These are the people who work on the ground despite grave security threats. They should be commended and supported by the government. These above approaches show that different agencies and institutions like Army, Police, Health Authorities and Political forces need to be involved to properly address the problem of Poliomyelitis in Pakistan.

REFERENCES

1. (n.d.). Retrieved from United Nations Department of economic and social affairs: http://esa.un.org/unpd/wpp/
2. Akhtar, A. S., Amirali, A., & Raza, M. (2007). Reading Between the lines: The Mullah Military Alliance in Pakistan. *Contemporary South Asia*, 383-397.
3. Alam, M. M., Sharif, S., Shaukat, S., & etal. (2015). Genomic Surveillance Elucidates Persistent Wild Poliovirus Transmissiion during 2013-2015 in Major Reservoir Areas of Pakistan. *Clinical Infectious Diseases Advanced Access*, 1-10.
4. Alexander Jr, J., Zubair, M., Khan, M.,Abid, N., & Durry, E. (2014). Progress and Peril: Poliomyelitis Eradication in Pakistan, 1994-2013. *The Journal Of Infectious Diseases*, 152-161.
5. (2014). *Annual Report Pakistan UNICEF.* UNICEF.
6. Behavioral and Social Science Theory. (n.d.). In J. Coreil.
7. Bhutta, Z. A. (2011). The Last Mile in Global Polio Eradication. *The Lancet*, 549-551.
8. Closser, S. (2012). "We Can't give up Now": Global Health Optimism and Polio Eradication in Pakistan. *Medical Anthropology*, 385-403.
9. Gillian, K. S., Robert, J. B., & al, S. G. (2015). Threats to Polio Eradication in High Conflict Areas In Pakistan and Nigeria: A polling Study of children Younger than 5 Years. *The Lancet Infectious Diseases*, 1183-1192.
10. *Global Polio Eradication Initiative*. (n.d.). Retrieved from http://www.polioeradication.org/dataandmonitoring/poliothisweek.aspx
11. Global Security. (2015, November 16). *Global Security*. Retrieved from FATA, Global Security: http://www.globalsecurity.org/military/world/pakistan/fata.htm
12. Harvard School Of Public Health, Maternal Health Task Force. (2014). *Lady Health Workers In Pakistan.* HSPH Country Level Programs.
13. Hitoshi, M., Makoto, K., Masahiko, H., Zahir, S. K., Hassan, S. Q., & Sakurada, S. (2014). Refusal of oral polio vaccine in northwestern Pakistan: A qualitative and quantitative study. *Vaccine Science direct El*, 1382-1387.
14. Jawaid, A. (2015, November 17). *Foreign Policy* . Retrieved from Foreign Policy: The South Asia Channel: http://foreignpolicy.com/2015/10/22/the-polio-capital-of-the-world/
15. Khan, S. (2011). FATA's Political Status: What are the options for Pakistan? *Strategic Insights*, 35-46.
16. Mushtaq, A., Mehmood, S., Ateeq Ur Rehman, M., Younus, A., Saif Ur Rehman, M., Malik, M. F., & Hyder, M. Z. (2015). Polio in Pakistan: Social constraints and Travel Implications. *Travel Medicine and Infectious Disease Elsevier*, 360-366.
17. Nishtar, S. (2008). Pakistan, Politics and Polio. *Bull World Health Organ*, 159-160.
18. Rimer, B., & Glanz, K. (2005). *Theory at a Glance.* US Department of Health and Human Services.
19. Roul, A. (2014, August). The Pakistan's Taliban Campaign Against Polio Vaccination. *Combating Terrorism Center at West Point*, pp. 17-19.
20. The Imperatives for Prevention. (n.d.). In L. Cohen, & S. Chehimi, *Prevention is Primary* (pp. 3-31).
21. (2012). *UNICEF Annual Report on Pakistan.* UNICEF.
22. (2013). *UNICEF Annual Report Pakistan.* UNICEF.
23. (2015). *Weekly Epidemiological Report.* World Health Organization (WHO).
24. *WHO* . (2015, November 15). Retrieved from World Health Organization: http://www.who.int/maternal_child_adolescent/epidemiology/profiles/neonatal_child/pak.pdf
25. *World Bank Pakistan Data*. (2015, November 14). Retrieved from World Bank: http://data.worldbank.org/country/pakistan
26. *World Health Organization. Demographic, social and health indicators for*. (2015, November 16). Retrieved from WHO EMRO: http://applications.emro.who.int/