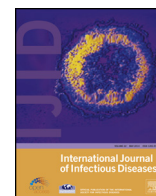




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International Journal of Infectious Diseases

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Editorial

Why is Pakistan a threat to “The Polio Eradication and Endgame Strategic Plan 2013–2018”? A look into the past decade



1. Introduction

The fight against endemic polio transmission is restricted to three countries: Pakistan, Afghanistan, and Nigeria. In 2012, when the world saw the lowest numbers of cases from polio-reporting countries, the World Health Organization (WHO) initiated a comprehensive strategy, “The Polio Eradication and Endgame Strategic Plan 2013–2018”.¹ The plan (as it will be called from this point onwards) aims at: (1) wild polio virus (WPV) interruption by the end of 2014, (2) a strengthened immunization system and cessation of oral polio vaccine (OPV), (3) containment and certification, and (4) the quest for maintenance of a polio-free world by 2018.

Pakistan, unable to cope with the first objective, had the highest case count of the past decade (306 in 2014).² Looking at the active transmission of WPV and the number of cases so far in Pakistan, it can be deduced that the struggle to deliver a polio-free world by 2018 is failing. The continuous reporting of cases during the past decade, despite consistent immunization coverage, is worrisome. An answer to “Why such unpredictability in polio cases during the last decade?” may help reduce the polio case count in the country.

2. The past decade and the polio case inconsistency

Starting with an upward surge in reported paralytic cases from 28 in 2005 to 40 in 2006, the decade saw a wavering increase and decrease year after year, as shown in [Figure 1](#).² A huge earthquake hit the country in late 2005, affecting almost every part of life in the country, especially immunization against diseases.³ This led to an increase in polio cases in the following months and in the next year. Despite the rise in overall immunization coverage in the country from 80% in 2005 to 83% in 2006, the increase in polio cases may be linked to inaccessibility and pockets of unvaccinated children among the population. Furthermore, among the cases reported, the majority were from areas that were inaccessible after the earthquake.⁴

In addition to this, the fight against terrorism – and terrorism itself – has further weakened the initiative. The year 2007 went well (32 cases); however, the following year again saw a huge increase in cases (117 cases). This was the result of prevailing militancy and the subsequent anti-terrorist military operations in the country, which made many areas unapproachable to vaccinators. After a downward trend in 2009 (89 cases), severe monsoon

floods hit the country in 2010, crippling the health system and thus the immunization schemes. The inaccessibility, compromised hygiene and health infrastructure, and an increased displaced population gave way to poliovirus and thus 144 cases were reported in 2010 and 198 in 2011.^{2,5} Most of the new cases were from flood-affected areas, where polio vaccines would not reach or might be in a compromised state.⁶

The year 2012 was by all means a success in terms of the polio eradication efforts. With India's one full polio-less year, the WHO declared ending polio a “programmatically emergency for global public health” and pledged to eradicate polio virus by 2018 under the endgame plan. Due to intense efforts and a strong focus on polio eradication in Pakistan, the immunization coverage touched an all-time high (90%) in 2012, reducing polio cases to only 58 during that year.

2.1. The fading of hope

In 2013, the year the plan began, the number of polio cases started to rise again after heavy rains struck Punjab and Sindh provinces, leaving about 5 million children deprived of immunization.⁴ The first case of 2013 was reported from Pakistan, a count that went on to another high toll (93 cases during that year).² Another blow came when the militant groups started victimizing anti-polio workers, killing many of them in different parts of the country. This created panic among vaccinators, who refused to work and thus the immunization drive was seriously affected. Further, monsoon floods in August 2013 and a damaging earthquake during the following months left the country's fight against polio crippled, like always.⁷

After a time when polio case numbers touched one of the lowest levels in 2012, the world saw an enormous increase in 2014 (306 cases from Pakistan out of a total 359 worldwide).² This was the time when militancy was at its peak, and due to the ban on vaccination by the militants, the number of polio cases during the first half of 2014 equaled the total cases in 2013.⁸ The government of Pakistan launched another mass scale military operation in those areas during June–July 2014, and the number of cases rose to an all-time high during the following months ([Figure 2](#)). The sudden upsurge after July 2014 can also be related to the fact that polio cases usually increase during the fall season each year due to the harsh environmental conditions and the less hygienic situation in the preceding summers.^{5,8}

<http://dx.doi.org/10.1016/j.ijid.2015.11.007>

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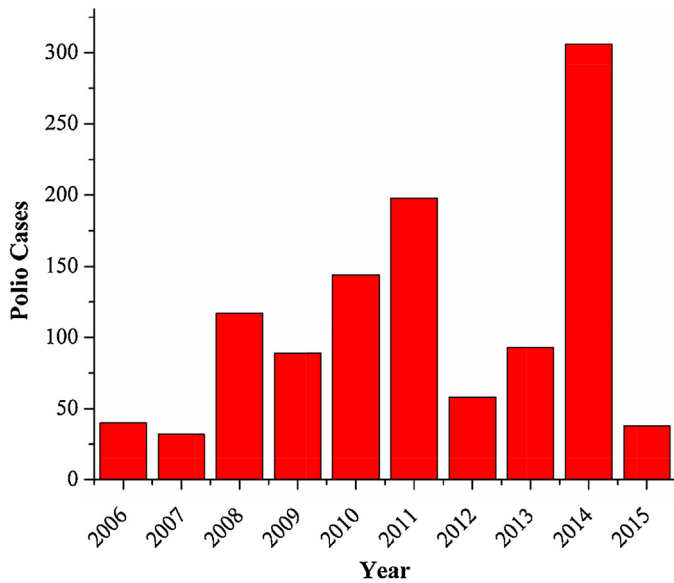


Figure 1. Distribution of polio cases in Pakistan during the last decade.

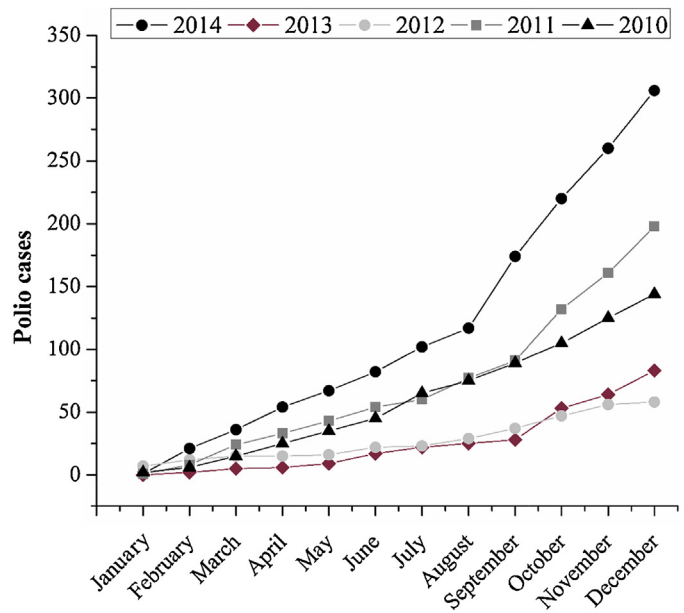


Figure 2. Cumulative polio cases during 2010–2014 (data show the numbers of cases recorded up to the last week of each month).

3. Polio in Pakistan and the Endgame Strategic Plan 2013–2018

While Nigeria has progressed remarkably since the launch of the plan, with a reduction in cases from 122 in 2012 to 53 in 2013, just six in 2014, and none in 2015 so far, Pakistan has reported 38 out of the 51 endemic cases so far, with the other 13 reported from Afghanistan.² On looking at the number of cases from 2014, the lower number of cases so far this year is a relief; however with more than 2 months still to go, this is not the first time that Pakistan has reported a polio case count as low as the current one. The country is still aiming at a shift from the trivalent to bivalent OPV, but will not be able to completely withdraw OPV even for years after the target date, thus causing a delay in containment, certification, and then the introduction of IPV, the other pillars of the plan. Although it cannot be predicted clearly, Pakistan is lagging well behind the target set in the plan. If we assume a decreasing pattern during the coming year, looking at the case of Nigeria, and then a halt to the WPV cases after 2 years, the supposed timeline will look like that shown in Figure 3 as compared to the proposed plan.

4. What needs to be done?

Although, we can hope to meet the world’s expectation, the coming months might bring an increase, as predicted from the data of the past 5 years (Figure 2). While the country has reported a lower number of cases as compared to last year, it has unfortunately seen some remarkable figures after touching the lowest levels in the past.² Being the major contributor to polio case counts, Pakistan is under increased pressure from the global community. The need of the hour is to contain the virus by revisiting the strategies and devising an uncompromising and consistent policy for anti-polio immunization, specifically considering the war against extremism. The country needs to strengthen its disaster management system and focus on vaccination as a main pillar of this. Further, focus should be given to improvement of the health system in order to avoid the late-year upsurge in polio cases.

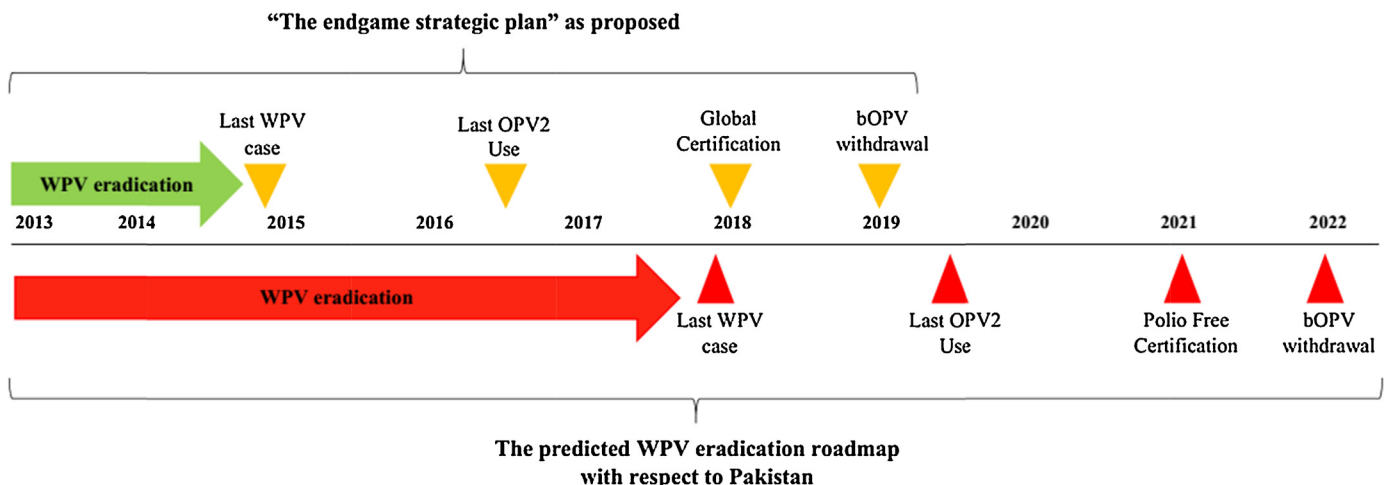


Figure 3. Schematic comparison of the proposed Endgame Strategic Plan 2013–2018 and the predicted ‘Pakistan Polio eradication timeline’.

Acknowledgement

The authors acknowledge the Higher Education Commission, Pakistan for its support.

Conflict of interest: The authors declare no competing interests.

References

1. World Health Organization. The Polio Eradication and Endgame Strategic Plan 2013–2018. Geneva: WHO; 2012, Available at: <http://www.polioeradication.org/resourcelibrary/strategyandwork.aspx> (accessed August 15, 2015).
2. World Health Organization. Polio case count. Geneva: WHO; 2015, Available at: <https://extranet.who.int/polis/public/CaseCount.aspx> (accessed October 15, 2015).
3. Closser S. “We can’t give up now”: global health optimism and polio eradication in Pakistan. *Med Anthropol* 2011;**31**:385–403.
4. Khan T, Qazi J. Hurdles to the global antipolio campaign in Pakistan: an outline of the current status and future prospects to achieve a polio free world. *J Epidemiol Community Health* 2013;**67**:696–702.
5. Shah M, Khan MK, Shakeel S, Mahmood F, Sher Z, Sarwar MB, et al. Resistance of polio to its eradication in Pakistan. *Virology* 2011;**8**:457.
6. Warraich H, Zaidi AK, Patel K. Floods in Pakistan: a public health crisis. *Bull World Health Organ* 2011;**89**:236–7.
7. World Health Organization. Humanitarian health action. Geneva: WHO; 2015, Available at: <http://www.who.int/hac/crises/pak/sitreps/en/> (accessed August 16, 2015).
8. The Global Polio Eradication Initiative. Wild poliovirus list [Internet]. The Global Polio Eradication Initiative; 2015, Available at: <http://www.polioeradication.org/Dataandmonitoring/Poliothisweek/Wildpolioviruslist.aspx> (accessed October 15, 2015).

Tariq Khan^{a,*}

Bilal Haider Abbasi^a

Mubarak Ali Khan^b

Akhtar Nadhman^a

^aDepartment of Biotechnology, Quaid-i-Azam University, Islamabad, Pakistan

^bBiotechnology Program, Department of Environmental Sciences, COMSATS Institute of Information Technology (CIIT), Abbottabad, Pakistan

*Corresponding author.

E-mail address: tkhanqau@yahoo.com (T. Khan).

9 November 2015

9 November 2015