



Research Article

EVALUATION OF PULSE POLIO IMMUNISATION PROGRAMME DURING JANUARY 2015  
IN MUDDEBIHAL TALUK OF KARNATAKA

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ABSTRACT

**Introduction:** India has been successful in eliminating wild polioviruses (WPVs), which has been acclaimed globally. The last reported cases of wild polio in India were in West Bengal and Gujarat in January 2011. India was officially declared 'Polio Free' by the World Health Organisation in March 2014. While no polio cases have been detected in India for more than three years, poliovirus transmission is ongoing in the endemic countries – Afghanistan and Pakistan, which pose a major threat to Polio transmission and Eradication in India

**Objectives:** To assess the coverage of pulse polio immunisation among under-fives

**Methods:** The study was conducted in Muddebihal taluk from January 19<sup>th</sup> to 22<sup>nd</sup> following the PPI campaign on January 18<sup>th</sup>. Amongst the 12 PHCs of Muddebihal taluk, one area was chosen from each PHC for monitoring booth activities and high risk areas. At least 10 houses were covered for house-to-house survey, in each of these areas.

**Results:** (a) Booth based activities: Most booths were accessible and had supply of logistics (IEC materials, vaccines, cold chain equipment's, marker pens). (b) House to house visits: 4 missed sites with 10 unvaccinated children were detected, while False P detection rates were 3.05% (c) Migratory sites: 9.10% of children were not vaccinated. 10 transit sites showed the inadequacies of program. (d) Street surveys done after completion of NID (Based on finger markings alone) found 6.76% children as not vaccinated.

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INTRODUCTION

The success of the Global Polio Eradication Initiative (GPEI), launched after a World Health Assembly resolution in the year 1988, was astounding and nearly 5 million children were protected from being paralyzed by the year 2003<sup>1</sup>.

Since 1988, about 10 billion doses of polio vaccine have been administered on hundreds of national, state immunization days (NIDs/SNIDs) at a cost of US\$ 4.5 billion. But four countries namely, Afghanistan, Pakistan, India and Nigeria; were never successful in interrupting wild polio virus (WPV) transmission and re-infection of 26 countries in 2006-07. These scenarios raised questions about the feasibility of polio eradication. However By the end of 2007, polio incidence had decreased by 35% and polio transmission had stopped in all but 6 re-infected countries, yet polio eradication seems illusory as endemic countries are missing targets and 1648 cases were reported worldwide in 2008<sup>2,3</sup>.

An important improvement in IPPI during 1998 was the use of Vaccine Vial Monitor (VVM). This mechanism has been mandatory in all vaccine procurements since 1998. VVM is available for all vaccines used in immunization programs in developing countries, and UNICEF requires them on all

vaccines they purchase India has been successful in eliminating wild polioviruses (WPVs), which has been acclaimed globally. The last reported cases of wild polio in India were in West Bengal and Gujarat in January 2011<sup>4</sup>. India was officially declared 'Polio Free' by the World Health Organisation in March 2014. While no polio cases have been detected in India for more than three years, poliovirus transmission is ongoing in the endemic countries – Afghanistan and Pakistan, which pose a major threat to Polio transmission and Eradication in India<sup>5</sup>.

OBJECTIVES

To evaluate various aspects relating to booth activity and house to house activity in Pulse Polio Immunization program in Muddebihal Taluk.

METHODS

The study was conducted in Muddebihal taluk from January 19<sup>th</sup> to 22<sup>nd</sup> following the PPI campaign on January 18<sup>th</sup>. Amongst the 12 PHCs of Muddebihal taluk, one area was chosen from each PHC for monitoring booth activities (at least 2 booths per day) and high risk areas. At least 10 houses were covered for house-to-house survey, in each of these areas. Assessment of booth activity, interview of booth

workers, and to know the source of information about PPI round, interview of parents or guardians who brought children to the booth was made. P and X marking of houses, X to P conversion at the end of the day, false P marking were also analyzed during the round.

**RESULTS**

**Table 1** Observations on the Booth Activity Day during Pulse Polio Immunization

Observations	
No. of target children	400
No. of children immunized	337
No. of booths visited	10
Two booth workers attended last training	18
One community member present	7
Workers mobilizing children to the booth	16
Correct finger marking of children	9
Team having correct knowledge of VVM	7

More than 84.3% percent children were vaccinated at booth during this round pulse polio immunisation in the areas of Muddebihal Taluk. Almost all the booths were easily visible with displayed IEC material (70%). Booth workers attended last vaccinator training more than 90%. Participation from community members like social worker, local leader or college students was about 70%. Good part observed was ‘mobilization of children to booth by booth worker’ (average 80%). VVM in stage 3 or 4 was not found on any booth. In any round, complete knowledge regarding VVM was not found. Among the booth service utilizers, 77.6% of them received information about these rounds from health workers/anganwadi workers, while 37.8% received information from television. Some non utilizers of booth services were sure that the vaccinators will come to their house for polio immunization. Some of these non utilizers forgot about visiting the booths on round day.

**Table 2** Observations on House to House Activities during Pulse Polio Immunization

Observations	Jan, 2008
No of areas visited	22
No. of teams visited	20
No. of houses visited	114
No. of <2 yrs old child received vaccine	40
No. of <2 yrs old child not received vaccine	4
No. of 2-5 yrs old child received vaccine	108
No. of 2-5 yrs old child not received vaccine	6

Total 114 houses from Muddebihal were observed which yielded 5 (4.3%) households with false P marking (houses with unvaccinated children still marked with P by health staff); all false P were seen in urban areas. Together these 114 houses had 158 children, of them 10 (6.3%) were unvaccinated.

**Table 3** Migratory High Risk Areas & Mobile Populations

Observations		
Number of sites monitored	Type 1(Slums with migration)	2
	Type 2 (Nomads)	1
	Type 3 (Brick kilns)	0
	Type 4(Construction site)	0
	Type 5 (Others )	7
Total sites monitored		10
Details of immunisation	No of Children < 5 yrs checked	99
	No of unvaccinated children < 5 yrs found	10

Migratory sites include construction site, slums, brick-kilns, nomadic population with large number of intra and inter-state migrants. 10 such sites were visited in Muddebihal Taluks and checked 109 children for their vaccination status. Total 10 (9.1%) children were not vaccinated.

**DISCUSSION**

The practice of pulse polio immunization (PPI) is there since 1995 and system since then has evolved and improved by learning through its experience and mistakes. Last case of WPV in India occurred in Jan 2011 and we have successfully eradicated it in 2014. Every vaccination booth should have minimum 4 persons who are trained just before the round. The booths should be accessible to beneficiaries and should have enough display of IEC materials. There were 2 booths which were either inaccessible or did not have IEC materials or both. The role of volunteers/ local NGOs is crucial in community mobilization, however three booths no representation of local community was found. In absence of this, team members were seen mobilizing community for vaccination. Practice of keeping vaccine vial outside in a bowl with crushed ice was observed at few booths and resulted in the removal of wrapper making the cold chain evaluation (VVM) impossible. Staff at 3 booths did not know the interpretation of VVM<sup>8</sup>. These aspects should be taken up in future trainings because all such vials had to be discarded. Shortage of quality finger markers and non adherence of protocol of marking on the nail of left little finger was observed in few booths at rural areas.

Source of information about the program as revealed by interview of parents found banners/ hoardings put up few days before the program and health staff (including AWW & ASHA worker) as the main source. The mass media such as Radio, TV and newspapers which are quite cost intensive were found of little use in this study<sup>6</sup>.

House to house visits was done to evaluate the working of vaccination team and identify the missed areas and houses with false P markings. Missed area is a serious issue as it denotes the non coverage of an entire area with all children of that area not receiving the vaccination, while at the level of worker’s performance, false P is a serious concern. 4 (3.05%) missed areas were detected, later for which the concerned health worker in charge of the area was instructed to cover the area, as soon as possible<sup>7</sup>.

10 migratory sites were visited with 109 eligible children, found 10 (9.1%) as not vaccinated More focus should be given on migrants, migratory/ transit sites and they need to be covered more intensely in terms of both performance and supervision<sup>6</sup>.

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