Original Research Article

Reaching the unreached with polio vaccine campaign Innovative Public Health Vaccine Immunization Intervention to migrant population children residing in remote hard to reach field locations through Community partnership with Primary Health Center Mangasuli Taluka Athani District Belgaum Karnataka INDIA

Basavaraj Muralidhar Tenginkai[1*], Narayan Honnungar[2], Ramesh K Mang[3], Rajendra Firangi[4], Jainuddin Mujawar[5]

[1]Assistant Professor, Konaseema Institute of Medical Sciences and Research Foundation Amalapuram East Godavari Andhra Pradesh, INDIA.
[2]Retired RCH Officer, Department of Health and Family Welfare Belgaum Karnataka, INDIA.
[3]Nursing officer, CHC, Athani, Belgaum, Karnataka, INDIA.
[4]Senior Health Inspector, PHC, Kurdi, Karnataka, INDIA.
[5]Senior Health Officer, CHC, Kagwad, Belgaum, INDIA.
Email: brajten@gmail.com

Abstract

Background: The Campaign was Aimed at covering 0-5 children from Migratory Population especially from Maharashtra Bheed Taluka (Sugar cane cutters families) where Wild Polio Virus 3 was active the challenge was to Identify, Locate, Reach and Immunize these 0-5 years' children. Because most of the sugar cane cutters and other migratory population were located in very remote fields and hamlets and they work from 7.00am to 6.00pm in their fields with their children. The 0-to-5-year children of migrated families were only available in the evening from 6.00 to 10. 00pm.National Immunization Day is on Sunday and House to house survey is d from 8 Am to 5 Pm. The partnership with Community Leaders and Primary Health Centre Mangasuli and Gram Panchayat Mangasuli and Shedbal was initiated in targeting to reach 0-to-5-year children in Remote and hard to reach field Gabbali Gang migratory Huts. These children were otherwise would always be missed by both the routine and supplementary immunization activities. **Methods:** The Medical officer of Health Mangasuli, District RCH officer had series of meetings with community leaders of the above said villages and microplanning of the campaign was done. Planning Joint planning with the community leaders' team was an integral part of the strategy which determines the effectiveness and efficiency of the partnership. Mapping and updating of the hard to reach and field areas were accompanied by micro planning for logistics, materials, and personnel. The 10 Additional Vaccination Teams were composed of two persons community leaders and one health staff as vaccination team. Results: the community partnership not only helped to reach the unreached, but also improved the ownership and collaboration by the community and family members towards efforts for Polio eradication. 6th January 2007: 995 migratory families covered and immunized 670 children10th February 2007: 452 families and immunized 409 children. 6th January 2008 560 migratory families from Maharashtra and immunized 437 children Using this partnership it was possible to reach a significant number of children in insecure and hard to reach areas with polio vaccine and other child survival interventions. The Community partnership also contributed in increasing the demand and addressing rejection for the polio vaccine. **Conclusion:** Community Partnership and ownership is a potentially productive force that can be used for any development activities in any country. The Reach the unreached pre booth day campaign experience has demonstrated that it is possible to form a partnership with the Community Leaders for basic health intervention activities with little training and investment.

How to cite this article: Basavaraj Muralidhar Tenginkai, Narayan Honnungar, Ramesh K Mang, Rajendra Firangi, Jainuddin Mujawar. Reaching the unreached with polio vaccine campaign Innovative Public Health Vaccine Immunization Intervention to migrant population children residing in remote hard to reach field locations through Community partnership with Primary Health Center Mangasuli Taluka Athani District Belgaum Karnataka INDIA. *MedPulse International Journal of Community Medicine.* December 2022; 24(3): 18-24. https://www.medpulse.in/

*Address for Correspondence:
Dr Basavaraj Muralidhar Tenginkai, Ex Medical Officer PHC Mangsuli. Assistant Professor, Konaseema Institute of Medical Sciences and Research Foundation Amalapuram East Godavari Andhra Pradesh, INDIA.
Email: brajten@gmail.com
Received Date: 02/09/2022 Revised Date: 12/10/2022 Accepted Date: 28/11/2022
DOI:

Access this article online

Quick Response Code:

Website: www.medpulse.in

DOI: https://doi.org/10.26611/10112432

INTRODUCTION

Since the establishment of the global goal of eradicating polio in 1988, huge progress has been made. The number of endemic countries has dropped from 125 to only two, Pakistan and Afghanistan. These successes were achieved through effective and safe vaccines, strong surveillance and global and local innovative strategies.[1] Progress Toward Poliomyelitis Eradication --- India, January 2006--September 2007. India is one of four countries where wild poliovirus (WPV) transmission has never been interrupted (the others are Afghanistan, Nigeria, and Pakistan) 1 An outbreak of poliomyelitis cases caused by WPV type 1 (WPV1) occurred in India in 2006, primarily in the northern states of Uttar Pradesh and Bihar, where polio remains endemic. This outbreak resulted in the greatest annual number of cases of poliomyelitis in India since 2002. In response, the Government of India and its partners implemented additional vaccination measures based on recommendations from the India.

Expert Advisory Group on Polio Eradication.

These measures focused predominantly on use of monovalent oral poliovirus vaccine type 1 (mOPV1), * which has higher efficacy against WPV1 than trivalent OPV (tOPV) 2 3. As a result, WPV1 cases in India decreased approximately 84% to 66 cases during January--September 2007, compared with 405 cases during the corresponding period in 2006. However, a WPV type 3 (WPV3) outbreak also has been reported, with 261 cases occurring through September 30, 2007, primarily in the northern states where polio remains endemic. This report summarizes progress toward polio eradication in India during January 2006--September 2007 and highlights the challenges and strategic adaptations of eradication measures 4.

WPV3. In 2006, a total of 28 WPV3 cases were reported, all from districts of western Uttar Pradesh. However, in 2007, the number of WPV3 cases has increased to 261, with 231 (83%) occurring in western Uttar Pradesh. During the peak transmission season (June--September), WPV3 spread to areas outside of western Uttar Pradesh, with seven cases reported in the neighbouring areas of Delhi, Uttarakhand, Haryana, and Rajasthan; three cases in central Uttar Pradesh; and 23 cases in Bihar.

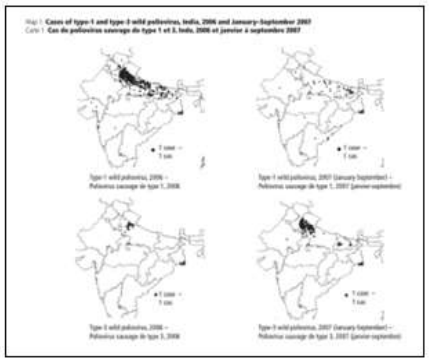

Figure 1

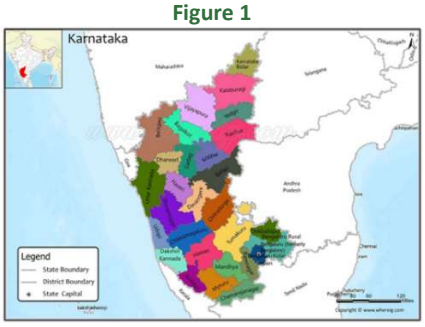

Figure 2

Figure 3

Karnataka state was not having any active WPV 1 and WPV 2 transmission in 2006 and 2007. Neighbouring State Maharashtra had WPV 3 Cases in Bheed Taluka in 2006 and 2007. Majority of the sugar cane cutters and their families migrate every year to Karnataka state especially in sugar cane harvesting season from October to march every year. In districts where sugarcane is the main crop. Belgaum district in Karnataka is known for Sugar factories in all villages where sugar cane is harvested it's the sugar cane cutters from Bheed Taluka migrate with their 0 to 5 years children till the harvesting season is over. They are known as Gabbali Gangs and every year contract is given to hundreds of families of sugar cane cutters who migrate and reside in their temporary huts in sugarcane fields which are remote hard to reach areas of many subcentres in Belgaum District. Karnataka India

The partnership with Community Leaders and Primary Health Centre Mangasuli and Gram Panchayat Mangasuli and Shedbal was initiated in targeting to reach 0-to-5-year children in Remote and hard to reach field Gabbali Gang migratory Huts. These children were otherwise would always be missed by both the routine and supplementary immunization activities. This paper describes the Primary Health Centre Mangasuli and Community partnership in polio eradication activities and their contribution to National Polio Vaccination Campaign

The aim was to Stop the Wild Polio Virus Transmission in our community.

METHODS

The Campaign was Aimed at covering 0-5 children from Migratory Population especially from Maharashtra Bheed Taluka (Sugar cane cutters families) where Wild Polio Virus 3 was active. The challenge was to Identify, Locate, Reach and Immunize these 0-5 years' children. Because most of the sugar cane cutters and other migratory population were located in very remote fields and hamlets and they work from 7.00am to 6.00pm in their fields with their children

The 0-to-5-year children of migrated families were only available in the evening from 6.00 to 10. 00pm.National Immunization Day is on Sunday and House to house survey is done from 8 Am to 5 Pm. So, under these situations and circumstance's this Reach the Unreached Campaign was conceptualised. Before embarking on creating a partnership with community leaders of Mangsuli, Shedbal, Kallal, Shedbal station and lokur villages where gabbal gangs with their 0 -5 years children it was essential to make advocacy with top community decision makers and community leaders of Gram Panchayat to engage the leadership in the process for better and sustainable support to the strategy. The Medical officer of Health of Mangsuli, District RCH officer had series of meetings with community leaders of the above said villages and microplanning of the campaign was done. Especially the message was given to the community leaders about importance and implications and consequences of missing these 0 to 5 year children from area where active transmission of WPW 3 was going on. Distribution of logistics using Personal two wheelers and community leaders refused the petrol charges from the Primary Health Center and arranged Petrol for two wheelers at their own expense motor cycles were used to reach hard to reach and remote areas was also part of the support. Planning Joint planning with the community leaders' team was an integral part of the strategy which determines the effectiveness and efficiency of the partnership. Mapping and updating of the hard to reach and field areas were accompanied by micro planning for logistics, materials, and personnel. The 10 Additional Vaccination Teams were composed of two persons community leaders and one health staff as vaccination team. First most crucial step taken by Community Leaders was to contact Mukkadam i.e Local liaison officer of all nearest sugar factories. Who was responsible for giving contract to Gabbali Gang sugar cane cutters from Bheed Taluka Maharashtra their respective sugar cane fields to cut the sugar cane and load and send it to concerned sugar Factories.

This was a crucial step to locate the huts in the remote, hard to reach areas.

Indications for the use of community leaders as vaccinators were: (a) hard-to-reach villages located very deep or inaccessible field areas, (b) very remote border areas of the neighbouring state Maharashtra areas, and (c) filling the gap in the situation of not reaching these 0-5 years children of Gabbali migrant families by Day Time vaccinators of Pulse Polio Immunization. During the planning care was taken not to underestimate the target population in each village in order to avoid any potential logistic and material stock out during the implementation phase of the strategy. Clear chronogram of the preparation and implementation phase was also part of the planning.

Strategy

Ten Additional Teams comprising of One vaccinator and Two community leaders which included Gram Panchayati Vice-President, Members, Local community Leaders, Veterinary Staff and Indian Railways Staff reached their respective areas as planned in the micro plan. By bikes and some remote areas by walk starting at 6.00pm to 10.00pm on 6th January and 10th February 2007 and 6th January 2008 Saturday Evening (Pre-Pulse Polio National Immunization Day Reach the Unreached Polio Campaign).

Logistics

Leaflets were prepared and provided to the community leaders and vaccinators to guide them on the target

population, the importance of the vaccine, the dose to be administered, the route of administration and other important technical issues lie VVM. The leaflets also addressed social mobilization issues and community case definitions for immediately reportable diseases.

Coordination and supervision

All Addition teams deployed had an officer in charge to supervise and coordinate support with the PHC Mangasuli technical team.

At the local level, coordination was done with the health facility in charge of the vaccination area with Gram Panchayat.

The coordination site for the Additional Teams was usually at Primary health centre or nearby subcentres

Monitoring the quality of the campaign

One more field of the collaboration of the community partnership is their involvement in the implementation of independent monitoring of the polio campaign coverage. Administrative data of the number of vaccinated children came from daily tally sheets filled in by vaccination teams and summarized sequentially by villages, coordination areas, and communes. The 10 additional team vaccinators reached children not only in remote unreachable and hard to reach areas but also in poorly covered areas with the vaccination volunteers. During every polio campaign Though this was the main information to assess vaccination results and assess the coverage of target population for each area, it was also assumed that there is a concern for the quality of this data due to poor recording, consolidation, and reporting of data.

RESULTS

Table 1

Date	Number of Migratory Families covered by Additional Teams	Number of 0 to 5 Year children Immunized
6th January 2007	995 Families	670 Children
10th February 2007	452 Families	409 Children
6th January 2008	560 Families	437 Children

Since the initiation of the PEI, the partnership with the community partnership made it possible to reach a significant number of children in remote and hard to reach areas with polio vaccine.

Figure 4

Figure 5

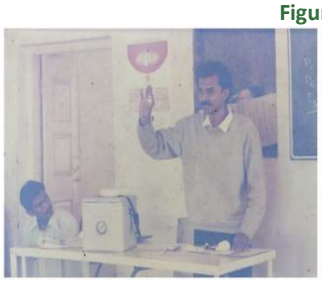

Figure 6

Figure 7

Figure 8

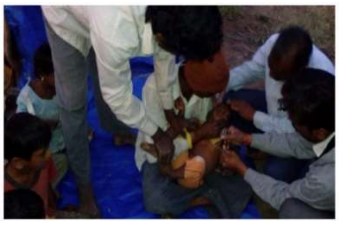

Figure 9


Figure 10


Figure 11


Figure 12


Figure 13

DISCUSSION CONCLUSIONS AND RECOMMENDATIONS

We found that community participation in polio eradication campaigns has enabled to reach children in remote and hard to reach areas in Belgaum District. At this stage of PEI end game, polio SIAs strategies should be reoriented to focus on missed children of migrant population from neighbouring states where WPV 1 and 3 was still active and other vulnerable subpopulations with targeted use of the most effective community participation strategies.[2,5] The community partnership and leadership has big strategic importance in boosting the immunity of children and preventing continuous transmission of poliovirus in high-risk areas. Mass immunization campaigns—most often launched as a strategy to eradicate polio and increasingly being used for other diseases. Achieving a high percentage of vaccination coverage, while common and necessary, may not be sufficient to eliminate or eradicate polio. Outbreaks of diseases occur in under-immunized inaccessible populations living within otherwise highly immunized populations.[7-8] Overall, the logistical difficulties of travel and communication, which are common in developing countries, constrain the conventional surveillance system that relies on epidemiologists visiting sites to discover and investigate cases, particularly in rural areas.[10] Other challenges include: community members' lack of knowledge about the possible link between a case of paralysis and a dangerous, communicable disease WPV1 and WPV3; lack of access to health care, including the low number of clinics and health care workers; cultural beliefs that favor seeking a local healer before consulting a nurse or physician; and health workers' lack of training in AFP surveillance.[10] The quality of surveillance in developing countries can improve if a community-based approach is adopted. Such a system has been used successfully in Niger during smallpox-eradication and guinea worm-control campaigns. In a community-based system, community members receive basic education or more extensive training to motivate and enable them to notify health care staff about possible cases of disease in a timely fashion.[10] Local organizations, local projects and local leaders must be included to ensure the success of such a program. In Niger we found sufficient quantities of this type of social capital, along with enough local experience of past health campaigns, to suggest that a community-based approach can improve the level of comprehensiveness and sensitivity of surveillance.[10] In this, one of the major contributing factors for this is the quality of vaccination volunteers. The volunteer's community leaders knew the geographical details about the remote field areas. N their villages so it made the task of microplanning correct and accurate. The community leaders ensured that there was no rejection of vaccine by the Gabbali gang families. The community leaders as vaccinators being matured and responsible, they manage to reach those under immunized children and improved the confidence of the community in the service. In this regard, the community partnership not only helped to reach the unreached, but also improved the ownership and collaboration by the community and family members towards efforts for Polio eradication. In countries with weak health systems, it is suggested that innovative delivery mechanisms be used to scale up effective child survival interventions in a manner complementary to ongoing efforts to strengthen national health systems.[8,9] Provisions of these services do not require advanced knowledge and skills. Therefore, through the Community partnership, it was possible to reach children in hard to reach and insecure areas with these basic interventions. Lack of access to health care is a barrier not only to child survival interventions but also disease surveillance. Under these circumstances, there are fewer opportunities for

interfaces between healthcare staff and children who are for example at risk for polio. Lack of access constraints the detection and reporting of Acute Flaccid Paralysis (AFP) cases by limiting opportunities for cases to be observed and investigated.[10] It is also recognized that community participation is an effective means of achieving cost-effective and sustainable health objectives, as opposed to 'top down' and heavily bureaucratized systems of health care delivery. Community participation in health projects, especially in developing countries where populations are the poorest and most powerless, was strongly advocated at the Alma Ata Conference in 1978, in which 138 countries adopted the declaration that 'people have the right and the duty to participate individually and collectively in the planning and implementation of their health care' [World Health Organization (WHO)/ UNICEF, 1978; Asthana and Oostvogels, 1996]. Community members participate in health projects with neighbourhood organizations, self-help groups and other voluntary organizations (WHO, 1992). Effective community participation in health does not simply involve community members working side-by-side with health care professionals and doing what they are told to do; it involves professionals and their clients sharing both power and responsibility In this regard, the community partnership in Mangasuli and Shedbal villages has helped in overcoming late detection and notification of AFP, reporting of Vital events like Early ANC Registrations, Pregnancy tracking and reporting of adverse events following immunization also reporting of pregnancy outcomes live birth, still birth and Maternal Deaths in the communities. and other epidemic-prone diseases in areas with limited access to health services. Hence, contributing to early investigation and management of outbreaks. Although the community partnership in polio campaigns and other child survival interventions has been successful in reaching the unreached, it has some limitations.

limitation is that polio campaigns and other health service intervention data were not strictly treated separately for those areas covered by the community participation. Because of this, it was not possible to statistically demonstrate the impact of the partnership on the outcome of the interventions. We recommend strengthening community partnership-based systems on the basis of the factors that we have outlined in the reach unreached polio campaign pre booth day activity. Strengthening surveillance would help to ensure the detection and reporting of disease cases and would complement current public health delivery systems and activities. It should be noted that community-partnership alone cannot improve the surveillance process without the support of well trained and dedicated health care staff, including epidemiologists, and minimum logistics needed to ensure communications between community members and district epidemiologists and Primary Health center staff. Two essential steps need to be taken to establish the foundations of such participation. The first important step is to recruit, train, supervise and motivate a corps of community health leaders. These community leaders can play different roles, including conducting campaigns of awareness and motivating other key players in their respective and neighbouring villages Community leaders should also keep their eyes and ears open and report movement of migrant families on their own. The second important step is to develop linkages and collaborations among various community opinion leaders and interest groups to improve the sensitivity of presence of migrant families and 0-5 years children at the peripheral and local levels. Traditional local Doctors, local midwives who deliver babies and follow their growth, securities who provide first aid, and community health agents who disseminate health information are all involved in providing health care. It would be useful for Government higher officials to partner these individuals, who are likely to encounter or know about presence of migrant families in their districts. Providing rewards to community members who reported cases and to health workers who confirmed them was critical in the smallpox-eradication campaigns (Foster *et al.*, 1980; Cutts *et al.*, 1993). Similar examples with regard to the eradication of polio were given by de Quadros *et al.* and Nareth *et al.* for South America and Asia, respectively (de Quadros *et al.*, 1991; Nareth *et al.*, 1997). However, compensation for community surveillance workers is a controversial issue on which there is no consensus among development experts. In conclusion, the Community participation is a potentially productive force that can be used for any development activities and Public Health Interventions in any country. The Reach the Unreached Campaign Pre- Booth Day Evening polio vaccination is a effective Public Health Novel Delivery Model in achieving many Goals set by WHO.

Scale Up. The Neighbouring Talukas of Athani Taluka Belgaum district Karnataka have successfully replicated and are conducting Pre booth day reach the unreached Polio campaigns in their communities

experience with Reach the Unreached the unreached Campaign has demonstrated that it is possible to form a partnership with the community leaders for basic health intervention activities with little training and investment. It can also serve as an outline of other programs who wish to make use of the Community Participation and involvement for addressing public health issues in hard to reach and Remote areas.

ACKNOWLEDGEMENT

Shedbal Team Community Leaders
Annasab Appasab Handage, Kiran Y Yandagoudar Shedbal,Balappa Tuppanavar Shedbal,Ashok Bagi, Aravind Payaprappa Shedbal and Subash Dhale.
Shedbal Station Team: Sandeep Salunke.
Mangasluli Team Community Leaders.
Late Mallappa kagwade,Late Balu Sakhroji Mangsuli, Late Sanjay **(Post Man)** Sanjay Pralhad Landge,Sopan Sawanth,Babasab Sankapal,Mohan Laad,Uday Sankpal,Chidanand Mali,Umesh Madhale,Gajanan Madhale,Ravindra Pujari and Vishnu Mali.
Lokur Team: Appasab Babu Gadage
Kallal Team: Sadashiv Annappa Giddagol and Sudarshan Ravindra Makannavar
Veterinary Government Staff: Gopichand Lamani and Mahesh Hadimani.
Primary Health Center Mangsuli Vaccinators Team: Late Mrutyunjaya Mallayya Jagadalmath Pharmacist,Dr Basavaraj Tenginkai MOH, Ramesh K Mang SN,Rajendra Phirangi Jr Health Assistant,J D Mujawar Sr Health Inspector ,Mahesh Hiremath Lab Technician.
Technical Support: Bharmappa B Avoji. Athani And Vinayak S Mehtre Examba

REFERENCES

1. WHO - Global Polio Eradication Initiative. Polio eradication and endgame strategic plan 2013–2018. World Heal Organ.; 2013 (April). p. 1–89.
2. GPEI. Polio eradication and endgame midterm review July 2015. Mid Term Rev.; 2015 (July).
3. Saving Lives: The Civil- Military Response to the 2014 Ebola outbreak in West Africa.
4. Sato H. New roles of the military and the United States: crisis management and a view on alliance-based cooperation; 1996. p. 63–83.
5. Mohammadi D. The final push for polio eradication? Lancet 2012;380 (9840):460–2.
6. Gaspar M, Morais A, Brumana L, Stella AA, *et al.* Outbreak of poliomyelitis in Angola. J Infect Dis 2000;181(5):1776–9.
7. Drebot MA, Mulders MN, Campbell JJ, Kew OM, Fonseca K, Strong D, *et al.* Molecular detection of an importation of type 3 wild poliovirus into Canada from The Netherlands in 1993. Appl Environ Microbiol 1997;63(2):519–23.
8. Mirza IR, Kamadjeu R, Assegid K, Mulugeta A. Somalia: supporting the child survival agenda when routine health service is broken. J Infect Dis 2012;205 (SUPPL. 1).
9. Salama P, McFarland J, Mulholland K. Reaching the unreached with measles vaccination. Lancet 2005;366(9488):787–8.
10. Ndiaye SM, Quick L, Sanda O, Niandou S. The value of community participation in disease surveillance: a case study from Niger. In: Health promotion international. p. 89–98.

Source of Support: None Declared
Conflict of Interest: None Declared