Opening every door - reaching the last child with OPV in Uttar Pradesh, India: Role of management information system in social and behaviour change communication programmes

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Abstract

Background: In 1999, introduction of house-to-house oral polio vaccine (OPV) immunization under the polio eradication initiative in India revealed community-level resistance to OPV vaccine. Responding to this, the USAID-funded CORE Group Polio Project (CGPP) initiated a variety of social mobilisation (SM) and behaviour change communication (BCC) activities in Uttar Pradesh, India. This paper describes the contribution of a Management Information System (MIS) towards implementing SM and BCC activities for polio eradication.

Methods: In 2012, CGPP India engaged an independent expert to assess the quality of project processes, including BCC and the Management Information System (MIS). He performed a desk review of data collection protocols, reports and related publications; and conducted in-depth interviews with project functionaries, community members and other stakeholders.

Results: SM and BCC activities reliant on epidemiological and social science data are crucial for the polio eradication programme for several reasons (e.g. identification of every eligible child). A unique aspect of CGPP strategies is the effective utilisation of MIS in the implementation of BCC strategies.

CGPP-India MIS contributes to SM and BCC strategies by generating real time information on the following four key items: all potential beneficiaries for vaccination; behaviour of each family; location of resistant families; and, the underlying cause of resistance. Having identified resistant families, CGPP India functionaries use the MIS information to identify individuals in the community who could influence each resistant parent. This influencer then visits the family repeatedly. Where the MIS-based influencers' action was used, there was a measurable increase in polio vaccination coverage, reduction in resistant cases, and increase in routine immunisation coverage.

Conclusions: The CGPP MIS increases the effectiveness of BCC and SM interventions in service of polio eradication, and it can be adapted for other health services such as routine immunization where problem detection and follow-up are necessary.

KEY WORDS: Social mobilisation (SM), Behaviour Change Communication (BCC), Management Information System (MIS), Polio Eradication, CORE Group Polio Project (CGPP)

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Background:

Worldwide, the number of confirmed wild poliovirus has reduced drastically from an estimated 350,000 in 1988 to 223 cases in 2012 [1]. As of 18 October 2013, the total number of 2013 wild polio cases worldwide was 296 and there was no case (zero case) of wild poliovirus reported from India [2]. Since January 2011, India has not reported any wild poliovirus. Although India interrupted transmission of wild poliovirus, India remains at risk of an importation from neighbouring countries like Pakistan, Afghanistan and beyond.

The majority of wild polio cases in India have been from the states of Uttar Pradesh (UP) and Bihar. The strategy to interrupt transmission of wild poliovirus in India involves frequent supplemental immunization activities (SIAs or mass campaigns) in high-risk districts and blocks as well as high quality surveillance and high routine immunization coverage. During an SIA, Oral Polio Vaccine (OPV) is given to all children in the age group of 0–5 years as a part of the polio eradication program. The yearly frequency of SIAs in India varies from 4–12 and the extent can range from a district to an entire state up to the entire country [4].

In 1999, introduction of house-to-house OPV immunization under the polio eradication initiative in India generated community-level resistance. As a response, the CORE Group Polio Project (CGPP) initiated a variety of social mobilisation (SM) and behaviour change communication (BCC) activities in UP. Grassroots SM efforts, including those of the CGPP and Social Mobilization Network (SM Net), have been effective in reaching underserved populations during SIAs and combating rumors against polio vaccination [4].

The CORE Group is an umbrella organization of nongovernmental organizations (NGOs) that collaborate on international health and development programs. In India, the CGPP (Consortium of Adventist Development &

Relief Agency (ADRA) India, Project Concern International (PCI) and Catholic Relief Services (CRS), as well as their ten local NGO partners), with funding from the US Agency for International Development (USAID), works across twelve districts in the state of UP. Figure 1 presents locations of CGPP sites (project districts) in India. CGPP is a member of the Social Mobilization Network (SM Net) in UP that also includes UNICEF, Rotary, the Indian Government's and WHO's National Polio Surveillance Project (NPSP). This network was created in 2003 and supports polio eradication by identifying high-risk

Figure 1
Location map of CCGPP in Uttar Pradesh, India

areas and working with underserved communities in planning, implementing and monitoring social mobilization for polio. The primary effort of the SM Net is carried out by a three-level network of community mobilizers (community - CMCs, block - BMCs and district - DMCs) [5].
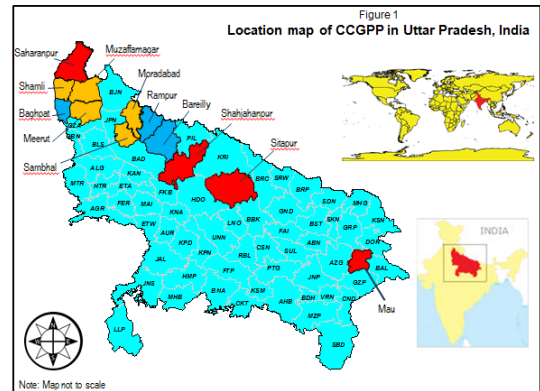
The CGPP focuses on targeting the most communication-challenged populations. The project reaches these populations by systematic enumeration and tracking of children less than five years, and through highly targeted social mobilization strategies that rely on direct personal communication with families and with informal and formal community leaders [5]. An extensive network of 1,300 Community Mobilization Coordinators (CMCs) conduct social mobilization activities for behavior change related to polio vaccination. The CMC interacts with families and community members at the village level. As the backbone of the SM Net, s/he is assigned responsibility for mobilizing about 500 households in either a rural or an urban area and keeps records of the

immunization status of all children less than five years of age in those households [5]. During SIA (Supplementary Immunization Activity) rounds, CMCs assist vaccinators in setting up vaccination booths, organize groups of child mobilizers (Bulawwa tollies) and arrange for mosque and/or temple announcements. They also accompany vaccinator teams to all the houses; work to convince families with an unvaccinated child (called an 'X' household) to allow her/him to be vaccinated (Converting an 'X' household to 'P' - denoting a house where all eligible children are vaccinated against polio) and, accompany persons of influence (influencers) during follow-up activities [3]. In between the SIA Rounds, the CMC carries out activities aimed at

Household marking during SIA

increasing OPV coverage. S/he visits houses, talking to mothers and other caregivers, dispelling their doubts or rumors about the vaccine. S/he holds mothers meetings to discuss children's health issues and explains prevention and management of common illnesses [3]. For more details about the polio eradication activities of the CGPP India, see Weiss et al. (2011, 2013a & 2013b).
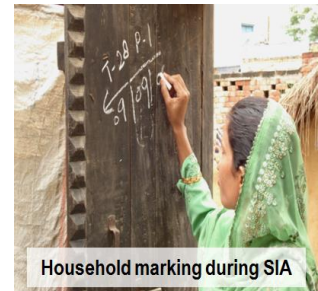
This paper describes the contribution of a Management Information System (MIS) towards implementing SM and BCC activities for polio eradication.

Methods:

This paper is based on previous publications of CGPP and process documentation by an external professional. In 2012, CGPP India engaged an independent public health expert to rapidly assess the quality and document the various processes of the project, including SM, BCC and MIS. He performed a desk review of data collection protocols, reports and related publications, conducted in-depth interviews with project functionaries, NGO heads, community members, religious leaders, government officials and project partners. He also observed some of the crucial activities like household visits by project functionaries.

The MIS was assessed by studying the process of data collection and flow, processing analysis and feedback systems established in the project. The outcome of the MIS on management was evaluated during field visits by assessing the use of this information in the planning, implementation, supervision, monitoring and concurrent evaluation of the CGPP.

Results:

SM and BCC activities reliant on epidemiological and social science data are crucial for the polio eradication programme for several reasons (e.g. identification of every eligible child, identification of households where children could not be vaccinated, etc.). A unique aspect of CGPP strategies is the effective utilisation of MIS in the implementation of BCC strategies.

The Monitoring and Evaluation (M&E) system of CGPP India uses prospectively and retrospectively collected information for planning, implementation, monitoring and evaluation of its social mobilization activities. Key input, output and outcome indicators of the project are tracked by internal assessment and external (Project baseline, midline and end line) assessments. Along with a comprehensive MIS, the project also conducts specific investigations using both quantitative and qualitative techniques like LQAS surveys, barrier analysis, etc.

Figure 2 describes types of registry and records, information flow and reporting by level of operation. The project MIS generates real time information right from the grass root level. All project records maintain uniformity in collection and consolidation of information. The MIS collects and processes disaggregated information for child tracking, supplemental immunization activities (SIAs), routine immunization, and activity planning by using various types of registry and records. At the community level, CMCs maintain a Child Tracking Register, SIA Register and Planning and Reporting Register. S/he tracks all primary beneficiaries and the disaggregated information generated is further compiled at block, district, sub region and country levels.


Figure 2
CORE Group Polio Project, India
Management Information System
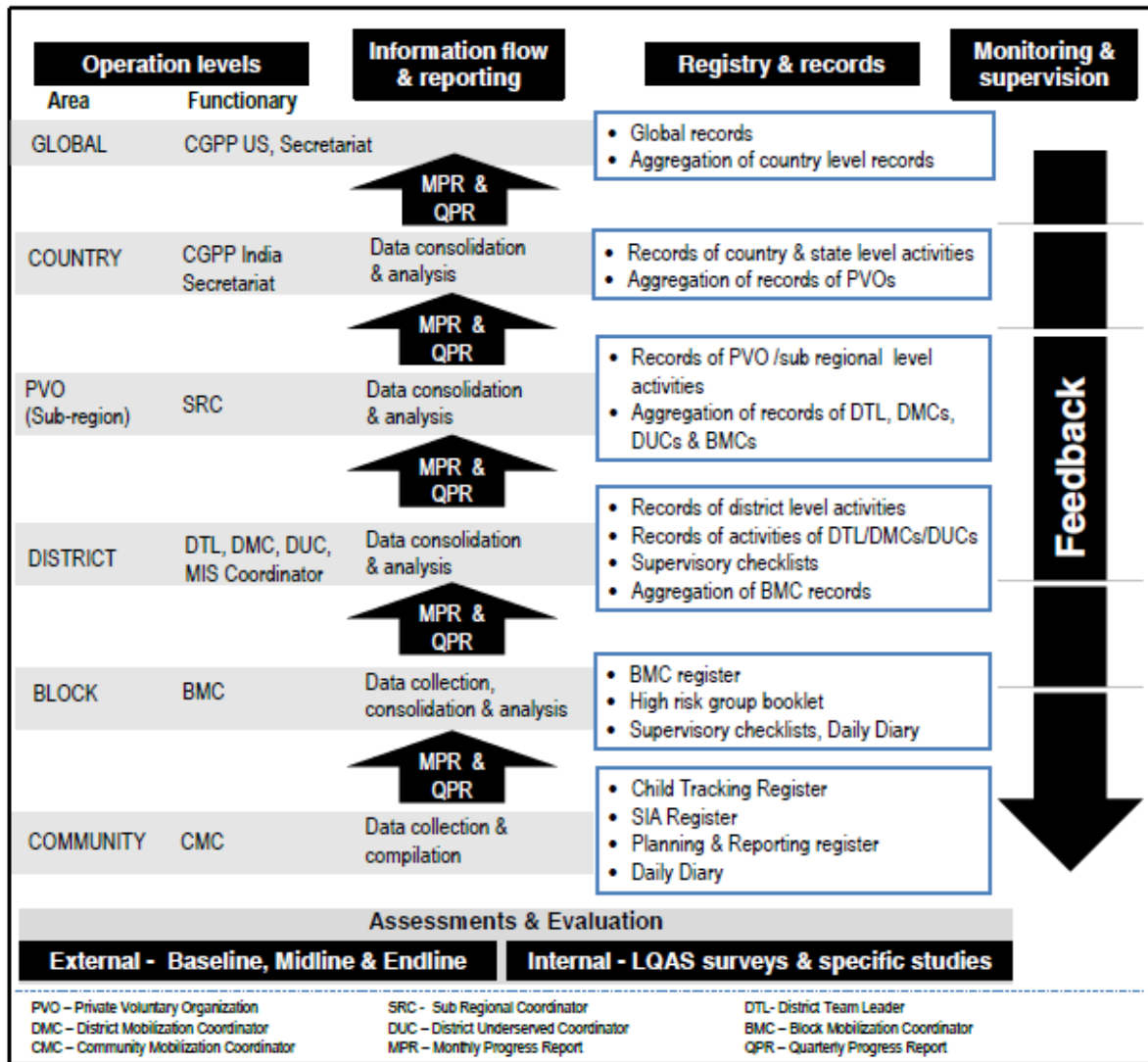
The CGPP MIS includes most of the programmatic indicators (inputs, outputs and processes) and has been crucial in the planning, implementation, monitoring and evaluation of the BCC and SM components of the programme. The MIS has also been central to striving towards universal OPV coverage of children and has provided the means for assessing the progress of the programme on a monthly basis.

Figure 3 describes the processes and role of MIS in addressing family level resistance to OPV. CGPP India MIS contributes to SM and BCC strategies by generating real time information on the following four key aspects:

a) **Potential beneficiaries for vaccination** – MIS tracks all primary beneficiaries (children aged below five years) for vaccination during SIAs and routine immunization.

b) **Behaviour of each family –** Vaccination related behaviour of each household in CGPP catchment area is tracked by specifying the SIA wise vaccination status of each child

c) **Location of resistant families** - The CMCs identify households that have the potential for resistance or are known to be resistant to having their child vaccinated against polio

d) **Underlying cause(s) of resistance** - CMCs investigate the reason(s) behind refusal of each resistant family

Figure 3
Role of CGPP MIS in addressing resistance to OPV
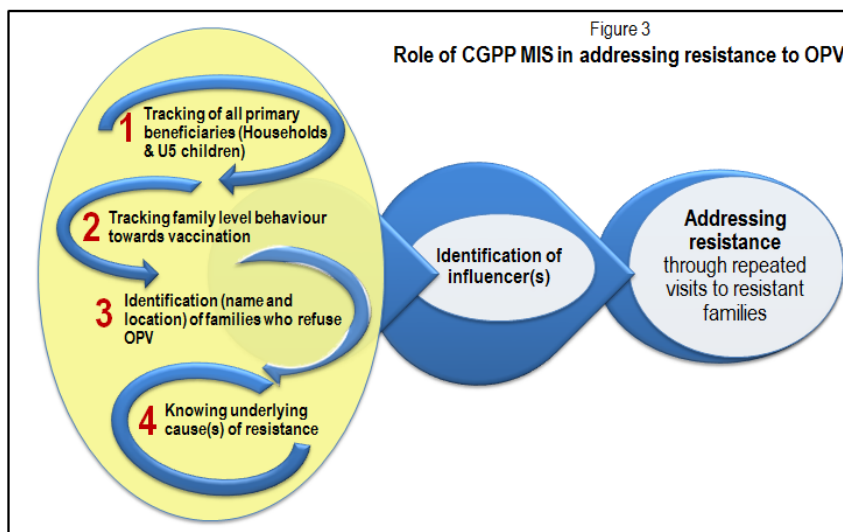
Having identified resistant or potentially resistant families, CGPP India functionaries (CMCs/BMCs) use MIS in the identification of individuals (influencers) in the community who could influence such parents. The CGPP functionary, along with the influencer (Identified on the basis of the MIS), visits the family repeatedly till acceptance.

Vaccinators and influencer visit to resistant family

Figure 4
Trends in no. of houses missed in SIAs due to resistance in catchment areas of CGPP India, Nov. 2007 to Sep. 2013

Source: CGPP India, Monthly Progress Reports – Nov. 07 to Sep. 13
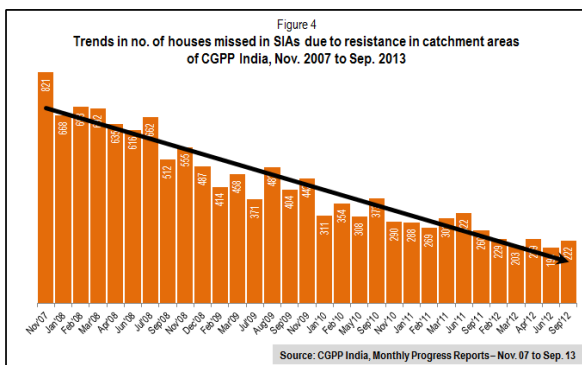
Figure 4 presents the trend in the number of houses missed during SIAs due to resistance in catchment areas of CGPP India. It is obvious that the number of resistant houses has significantly decreased from 821 in November 2007 to 222 in September 2013. Also, where influencers were used, there was a measurable increase in polio vaccination coverage, reduction in resistant cases and increase in routine immunisation coverage.

Conclusions:

For a health programme that aims at universal coverage, it is imperative to collect disaggregated information on the total target population and its distribution by household. This provides the denominator which is crucial for monitoring the coverage of the target population with services and the identification of individuals that are not covered at any given point in time. For a behaviour specific communication program, it is necessary to collect information on the households where the desired behaviour is not occurring and determine the underlying reasons. The CGPP India demonstrated that community based health workers (CMCs) are capable of making behavioural diagnoses and dealing with negative behaviour if they are provided with simple protocols and the necessary skills to use them.

The CGPP MIS supports programme implementation teams in effective management (planning, implementation, monitoring, supervision and evaluation) of BCC and SM interventions (from community to district level) for polio eradication. It can be adapted for other health services such as routine immunization, childhood illnesses and TB control programmes where problem detection and follow-up are necessary.

References

1. WHO: Media Centre, Poliomyelitis, Fact sheet No. 114, April 2013;
    http://www.who.int/mediacentre/factsheets/fs114/en/

2. WHO: AFP/polio case count;
    http://apps.who.int/immunization_monitoring/en/diseases/poliomyelitis/afpextract.cfm. Accessed: 27 October 2013.

3. Weiss WM, Rahman MH, Solomon R, Singh V, Ward D: **Outcomes of polio eradication activities in Uttar Pradesh, India: the Social Mobilization Network (SM Net) and Core Group Polio Project (CGPP)**. BMC Infect Dis 2011, 11:117.

4. Weiss WM, Rahman MH, Solomon R, Ward D: **Determinants of performance of supplemental immunization activities for polio eradication in Uttar Pradesh, India: social mobilization activities of the Social mobilization Network (SM Net) and Core Group Polio Project (CGPP)**. BMC Infect Dis 2013, 13:17.

5. Weiss WM, Choudhary M, Solomon R: **Performance and determinants of routine immunization coverage within the context of intensive polio eradication activities in Uttar Pradesh, India: Social Mobilization Network (SM Net) and Core Group Polio Project (CGPP)**. BMC International Health and Human Rights 2013 13:25.