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Review

Moving forward with strengthening routine immunization delivery as part of measles and rubella elimination activities

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ABSTRACT

The Global Vaccine Action Plan includes a goal of meeting global and regional measles and rubella elimination targets, noting that such efforts should not operate in silos but be coordinated with other immunization efforts. Similarly, the Global Measles and Rubella Strategic Plan for 2012–2020 emphasizes the need for integrated approaches to achieve and maintain very high levels of population immunity using both routine immunization and supplemental immunization activities (SIAs). The strategic plan also includes routine vaccination coverage targets, highlighting the critical role of strong routine immunization systems as a cornerstone for sustainable measles control/elimination efforts. It encourages exploiting the resources and visibility of SIAs to strengthen routine immunization, thereby reducing the frequency with which SIAs are needed. Documented examples of doing so include training health workers, procuring cold chain equipment, and improving injection safety and adverse events management. However, the concept has been put into practice only to a limited extent and missed opportunities persist regarding this aspect of SIA planning and execution. This paper draws on recent studies of the interaction between measles activities and health systems as well as country experiences in using SIAs to strengthen routine immunization. It identifies obstacles and enabling factors to doing so and proposes options for systematically strengthening routine immunization as part of a best practice SIA.

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1. Introduction

The endorsement of the Global Vaccine Action Plan (GVAP) by the World Health Assembly in May 2012 validated several existing initiatives in immunization. Among the GVAP's five goals is to meet global and regional elimination targets for diseases, emphasizing that efforts should be made to "ensure that global vaccination

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programs focused on eradication and elimination goals (for example, poliomyelitis and measles campaigns) do not operate in silos." The GVAP further states that the specific mechanisms by which interaction and coordination among programs can be promoted varies by local contexts [1].

The endorsement of the GVAP closely followed the release in April 2012 of the Global Measles and Rubella Strategic Plan for 2012–2020 [2] by the Measles Rubella Initiative (MR Initiative[1]). This plan lays out goals and milestones for achieving measles and rubella elimination in at least five of the six World Health Organization (WHO) regions by 2020. The first of the five core components of the strategy is to achieve and maintain high levels of population immunity by providing high vaccination coverage with two doses of measles- and rubella-containing vaccines. Consistent with the GVAP, the Global Measles and Rubella Strategic Plan situates measles elimination within the broader health system context: its guiding principles include using measles elimination activities, including supplemental immunization activities (SIAs), to strengthen routine immunization and equitably provide other proven health interventions to a wide target group. The Strategic Plan points out that SIAs can and should help strengthen routine immunization systems through renewed attention to core components of program management such as microplanning, health worker training, and reinforcement of the cold chain [2].

In theory and in practice, this approach to measles elimination confers mutual benefits. In 2008 alone, measles SIAs in 17 African countries provided over 57 million doses of vitamin A supplements, 24 million doses of deworming medication, and 3.4 million insecticide-treated nets [3], thereby supporting multiple health programs. This approach, in turn, generates support from country governments and donors for future SIAs and measles control activities. The relationship between SIAs and high routine immunization performance is important in epidemiologic terms. Achieving and maintaining high levels of timely routine measles immunization is central to reducing measles transmission [4] and accounts for two thirds of all measles deaths averted [5]. Maintaining high levels of routine immunization coverage each year reduces the accumulation of susceptible populations, thereby lengthening the interval needed between SIAs and conceivably eliminating the need for them altogether if validated routine coverage with two doses of measles vaccine were to exceed 90–95% for at least three consecutive years [6].

While SIAs and routine immunization share the goals of averting vaccine-preventable diseases, they differ in operational ways. Routine immunization aims to attain high coverage for all doses of vaccine in a national immunization program through ongoing (daily, weekly, monthly) fixed and outreach services to specific target groups, often children under one year of age and women of childbearing age. Routine doses are recorded and used as the basis for annual national estimates of coverage. By contrast, SIAs aim to reduce transmission of a particular disease by temporarily administering vaccine to an expanded age or target group through fixed, outreach, and door-to-door services and an expanded network of vaccination posts. Also unlike routine immunization, SIAs are conducted intermittently with timing determined by disease epidemiology and routine immunization performance; and SIA doses are not captured in annual estimates of immunization coverage. Also in contrast with routine immunization, SIAs are high visibility events that attract much attention to immunization.

Current evidence suggests that SIAs can and often do contribute to strengthening routine immunization systems but cautions against potential negative impact, especially in countries with weaker heath systems [7]. However, despite many years of discussion and development of frameworks and tools on how to use the opportunities of SIAs to strengthen routine immunization and reduce potential disruptions of SIAs to routine services [8–13], there is limited documentation of the systematic application of such tools in planning and executing SIAs. In 2011, WHO undertook a program to identify opportunities and practical ways in which countries can use activities focused on controlling or eliminating measles to also strengthen routine immunization and surveillance system performance for the mutual advantage of both efforts. Findings from this work, described below, that are relevant to strengthening routine immunization will serve as the basis for a guidance document for countries to use in planning, implementing, and monitoring their SIAs.

2. Materials and methods

The objective of the work described here is to prepare practical guidance for countries in low resource settings to use in planning SIAs in ways that systematically and strategically contribute to the strengthening of routine immunization. A mix of methods was used to develop this guidance. In addition to examining findings from a recent series of studies on the interaction between accelerated measles activities and health systems, we examined existing regional and country SIA guidelines, SIA reports and related documentation to identify potential operational actions and processes that could be incorporated into SIA planning without overburdening health officials already engaged in labor-intensive SIA preparations. Interviews were conducted with individuals engaged in country-level research and implementation currently under way in Ethiopia, Jharkhand State of India, and Nepal on using SIAs to bring about improvements in routine immunization.

To supplement the information from the above sources, we carried out field work in 2011 in two countries to learn the perspectives of health officials at national, subnational, and facility level regarding using measles activities to strengthen routine immunization for vaccine preventable diseases. The field work was conducted in the Lao Peoples Democratic Republic (Laos) and Bihar State of India in settings with suboptimal coverage for a first dose of measles-containing vaccine (MCV1) and where measles or measles-rubella SIAs were planned or recently conducted. At national level, in-depth interviews and discussions were carried out with immunization officials and development partners who support immunization. Visits were made to a purposeful sample of relatively accessible health districts and facilities representing a mix of urban and rural settings and higher and lower levels of routine immunization coverage for MCV1 and a third dose of diphtheria-tetanus-pertussis containing vaccine (DTP3) (Table 1). Interviews were carried out with district health teams in 8 districts and healthcare providers at a total of 15 health facilities.

Qualitative methods of inquiry [14] were used to elicit the views of country level stakeholders, planners, and implementers of SIAs regarding approaches, specific activities, and feasibility of using SIAs to strengthen routine immunization. Semi-structured interviews [15] were conducted to explore the perspectives of managers and frontline health workers.

Pretesting of the interview instruments in an initial district revealed that in some sites, the concept of taking advantage of SIAs to benefit routine immunization was too unfamiliar, abstract and hypothetical for respondents to be able to respond in a meaningful way. Interviewers revised the technique to relate the questions to respondents' personal experience with other recent SIAs involving injectable vaccines. Respondents were asked to contrast the SIA experience with the management of routine immunization

[1] The leading partners in the Measles Partnership are: American Red Cross, United Nations Foundation; U.S. Centers for Disease Control and Prevention (CDC), UNICEF, and the World Health Organization (WHO).