Assessment of the impact of measles eradication activities on routine immunization and on health systems

Background:

Measles eradication\(^1\) and control involves four major strategies:

- Provide the first dose of measles vaccine to successive groups of all children at the age of nine months or shortly after.
- Guarantee a ‘second opportunity’ for measles vaccination, either through campaigns or routine immunization\(^2\).
- Establish an effective system to monitor coverage, and conduct measles surveillance with integration of epidemiological and laboratory information.
- Improve clinical management of every measles case.

Although the same strategies are used for both eradication and control, the differences lie in the coverage that must be achieved and in the effectiveness and sensitivity of the surveillance system, with eradication requiring at 92-95% population immunity and a sensitive and specific case-based surveillance system. This means that countries aiming to eliminate measles must implement the strategies in a way that ensures 92-95% population immunity (for example, carry out more frequent follow up campaigns) compared to a country aiming for measles control.

Critics of a global eradication initiative argue that such an activity is diverting resources and commitment away from more pressing priorities in some countries and that it is not conducive to the development of a health infrastructure that can support routine immunization and primary health care.

A number of studies have been done to assess the impact of polio eradication on health systems\(^3\), \(^4\), \(^5\), \(^6\). Although useful, these studies do not capture key differences

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\(^1\) Eradication represents the sum of successful elimination efforts in all countries.

\(^2\) The majority of countries have used catch-up and follow-up campaigns. Some countries are implementing both campaigns and a routine second dose to ensure the provision of the second opportunity.

\(^3\) Mogedal S, Stenson B. Disease eradication: friend or foe to the health system? Synthesis report from field studies on the polio eradication initiative in Tanzania, Nepal, and Lao PDR. Geneva: World Health Organization; 2000 (WHO/V&B/00.28)


between polio eradication activities and measles eradication activities. Operational differences include the frequency of the immunization campaigns, the use of health staff rather than volunteers for the implementation of the campaigns, the use of injectable rather than oral vaccine, the need for safe waste disposal, the adverse events associated with errors in reconstituting and injecting the vaccine, the integration of multiple additional health interventions with measles campaigns, etc.

The impact of measles eradication activities on health systems will differ according to the health system in a given country. Health systems differences include funding channels and predictability of external support, differing allocative decisions for investments in infrastructure and Human Resources Development; and differences in how policies for decentralization and more integrated services are adapted to achieve various immunization-specific targets. In addition, previous studies have not specifically focused on identifying strategies and steps that could be taken in order to minimize any negative impact on efforts to strengthen health systems and maximize synergies. Nor have these studies addressed how such strategies could be promoted and applied in countries.

In order to assess the feasibility and appropriateness of measles eradication, programmatic, biological, economic and health systems considerations must be taken into account. This analysis is concerned with the impact of eradication activities on health systems. Other aspects of the feasibility and appropriateness of measles eradication will be addressed in separate areas of work as part of the WHO feasibility of measles eradication project. These include the biological feasibility, the programmatic feasibility, the cost effectiveness analysis and expected impact on vaccine demand and supply.

Proposals will be reviewed by the WHO Quantitative Immunization and Vaccine related Research Advisory Committee (QUIVER) who will select the most qualified proposal. Throughout this analysis, the models and methodology will be reviewed by QUIVER and its working group on measles. In addition, the successful applicants will work closely with other groups working on the WHO project on assessing the feasibility of measles eradication (most notably, work with the group carrying out the economic analysis of measles eradication).

**Objectives:**

1. To develop appropriate methods to assess the impact of implementing measles eradication strategies in at least 6 countries representing different initial types of health system and levels of health systems functioning and development on: i) routine immunization services; and ii) the functioning and development of the health care system (including costing and financing).

2. To identify strategies for maximizing potential synergies and minimize potential negative impacts

3. To provide guidance on how these strategies can be promoted at the national, regional and global levels. This includes a preliminary estimation of the resources required for the implementation of these strategies (financial, human and provision of technical support).
Development of methodology:

1. The methods developed should enable the assessment of the impact of measles eradication activities on routine immunization and health systems as a whole. In this, a framework of indicators (using work based on the WHO Health System building blocks, Health Metrics Network and other recent initiatives) should be developed for describing the structure and capacity of key health systems functions including:
   - policy context
   - financing
   - national capacity (including capacity for planning and management of services)
   - service delivery (physical infrastructure available to deliver services (density of provider networks, quality of infrastructure); as well as issues such as the strength of primary care in the country, integration of services)
   - human resources (e.g., availability of health workers, knowledge, motivation, training and supervision)
   - social mobilization.

2. The proposed methods and indicators should be used to assess the impact of measles eradication activities on the health and immunization systems in 6 countries. These analyses should include the impact on the following components:
   - infrastructure (e.g. cold chain, waste disposal and management, etc.)
   - financing (predictability and sustainability)
   - political commitment and support
   - immunization coverage
   - surveillance and monitoring (including lab capacity and adverse events monitoring)
   - linkages and partnerships
   - harmonization with the efforts of other Global Health Partnerships,
   - alignment with national immunization and health sector plans

3. For each country studied, apply this method and the indicators through reviews of documents, statistics and interviews with concerned individuals at the central (national) as well as the provincial and district levels in a few selected districts.

Outcome:

The consultants will:
1. develop methodology to assess the impact of the measles eradication on health systems and services, and the development of immunization services.
2. Identify key areas in the health system where measles eradication activities could have and impact (positive, negative).
3. Identify existing, potential and proxy indicators to monitor this potential impact.
4. Identify the sources of information and methodology to quantify those indicators.
5. Use the developed methods to carry out the assessment in at least six countries.
6. During the country visits, in addition to obtaining data and information for this study, collect data needed for the economic analysis as per discussions with WHO.
7. Participate in planning and review meetings with WHO.
8. Develop a concise report summarizing major findings by impact on health system and impact on the development of immunization systems, which includes as annexes the country data and individual country reports.
9. Based on the field findings, develop a guidelines document for the national level which provides guidance on how measles eradication activities can be used to strengthen health systems and routine immunization and provide indicators for monitoring this process.

**Time frame:**
Work to be completed by the end of April 2010.

**Selection Criteria:**

The following criteria will be used to review and select the submitted proposals:

- Proven track record and relevant expertise of the individuals and the organization submitting the proposal in:
  - Health systems and health systems financing
  - Conducting studies on the impact of health interventions/programme specific policies on health systems
  - Immunization systems and how they link to health systems especially in developing country context.
- Clear indications of the methodology to be used, data sources, proxies used (in the absence of good quality data), and assumptions used in the analyses.
- Clear identification of potential problem areas and consideration of alternatives
- Demonstration of knowledge of published literature in the specific area of work