



## Review

## Strengthening vaccination policies in Latin America: An evidence-based approach

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## ARTICLE INFO

## Article history:

Received 21 September 2012

Received in revised form

13 December 2012

Accepted 20 December 2012

Available online 25 January 2013

## Keywords:

Immunisation

Latin America

Policy

Vaccination

Vaccines

Vaccine-preventable disease

## ABSTRACT

Despite many successes in the region, Latin American vaccination policies have significant shortcomings, and further work is needed to maintain progress and prepare for the introduction of newly available vaccines. In order to address the challenges facing Latin America, the Commission for the Future of Vaccines in Latin America (COFVAL) has made recommendations for strengthening evidence-based policy-making and reducing regional inequalities in immunisation. We have conducted a comprehensive literature review to assess the feasibility of these recommendations. Standardisation of performance indicators for disease burden, vaccine coverage, epidemiological surveillance and national health resourcing can ensure comparability of the data used to assess vaccination programmes, allowing deeper analysis of how best to provide services. Regional vaccination reference schemes, as used in Europe, can be used to develop best practice models for vaccine introduction and scheduling. Successful models exist for the continuous training of vaccination providers and decision-makers, with a new Latin American diploma aiming to contribute to the successful implementation of vaccination programmes. Permanent, independent vaccine advisory committees, based on the US Advisory Committee on Immunization Practices (ACIP), could facilitate the uptake of new vaccines and support evidence-based decision-making in the administration of national immunisation programmes. Innovative financing mechanisms for the purchase of new vaccines, such as advance market commitments and cost front-loading, have shown potential for improving vaccine coverage. A common regulatory framework for vaccine approval is needed to accelerate delivery and pool human, technological and scientific resources in the region. Finally, public–private partnerships between industry, government, academia and non-profit sectors could provide new investment to stimulate vaccine development in the region, reducing prices in the long term. These reforms are now crucial, particularly as vaccines for previously neglected, developing-world diseases become available. In summary, a regionally-coordinated health policy will reduce vaccination inequality in Latin America.

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**Abbreviations:** ACIP, [U.S.] Advisory Committee on Immunization Practices; AMC, advance market commitment; CDC, Centers for Disease Control; COFVAL, Commission for the Future of Vaccines in Latin America; DILAVAC, [Latin American Diploma on Vaccinology]; EMA, European Medicines Agency; EPI, Expanded Program on Immunization; IFFIm, International Finance Facility for Immunisation; NHA, national health accounts; NIP, national immunisation programme; NITAG, National Immunization Technical Advisory Groups; NRA, national regulatory agency; OECD, Organisation for Economic Co-operation and Development; PAHO, Pan American Health Organization; PANDRH, Pan American Network on Drug Regulatory Harmonization; R&D, research and development; VAC, Vaccine Advisory Committee; VENICE, Vaccine European New Integrated Collaboration Effort; VPD, vaccine-preventable disease; WHO, World Health Organization.

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## 1. Introduction

The adoption of the Expanded Programme on Immunization (EPI) has played a pivotal role in reducing mortality and morbidity due to vaccine-preventable diseases (VPDs) in Latin America, with successes including the elimination of polio, measles and congenital rubella syndrome (CRS), and dramatic decreases in neonatal tetanus and Hib infections [1–3]. However, there remain significant shortcomings of vaccination programmes throughout Latin America and further work is needed to maintain current progress and prepare for future advances including the introduction of newly available vaccines [4].

In order to address the challenges of implementing vaccination policies in Latin America, the Carlos Slim Health Institute convened the Commission for the Future of Vaccines in Latin America (COFVAL) to make recommendations for reducing regional inequalities in coverage and outcomes [4]. Using a consensus-building approach, COFVAL aims to produce and implement regionally applicable recommendations to renew Latin America's leading role in immunisation.

Following a series of recommendations made by COFVAL in 2008 [4], we have conducted a comprehensive literature review (supplementary method 1) to assess their evidence-basis and feasibility, and here we present the key findings and discuss each recommendation in the context of existing VPD control strategies.

## 2. Current challenges in Latin America

The Commission outlined a number of challenges currently facing Latin America and these are summarised in Fig. 1. COFVAL have suggested that by addressing these concerns, Latin America can sustain achievements in immunisation, address widening inequalities in the region and continue to be a leader in immunisation policy as a new generation of vaccines, specifically targeted to developing countries, is introduced [4].

Regional data on effective coverage or epidemiological risk are poorly detailed, often using inconsistent criteria or collection methods. Standardisation of criteria would allow comparison between countries and evidence-based decision-making to drive policy.

Regional inequalities in vaccine coverage exist, both between countries and within countries (Table 1). A regional reference scheme for vaccine introduction and vaccination scheduling would go some way to reduce the gaps between countries with different incomes.

As vaccines succeed in eliminating diseases, social awareness of their benefits recedes and, in turn, political motivation for extending coverage also decreases. Training and education for vaccine providers and other healthcare personnel are deficient and out of date, contributing to variation in quality and coverage.

Immunisation inequality between countries is compounded by a weak international coordination between countries in the region.

Since infectious diseases do not respect borders, better planning between neighbouring countries would increase the efficiency of vaccination programmes.

Thirteen out of thirty-four Latin American countries surveyed by WHO/UNICEF lack an independent advisory committee to provide ongoing guidance on vaccine introduction and scheduling [5]. Such bodies could facilitate the uptake of new vaccines and support evidence-based decision-making in the implementation of national immunisation programmes (NIPs).

A lack of appropriate financing mechanisms is delaying the introduction of new vaccines, and the primary mechanism for acquisition, the Pan American Health Organization (PAHO) Revolving Fund (described in more detail below), has become a rigid structure with limited financial capacity to meet the future demands of the region. For example, despite recommendation by WHO to include pneumococcal vaccination in NIPs, and the existence of the Revolving Fund, it has taken over a decade longer for Latin American countries to introduce the vaccine compared to North America and Western Europe [6]. Innovative finance mechanisms are needed to meet the costs of new vaccines and ensure investment in immunisation programmes in the region.

The introduction of new vaccines to Latin America is often delayed by lengthy and inefficient regulatory procedures, which need to be streamlined. A coordinated effort between countries in the region to strengthen regulatory authorities, and limit their dependence on outside organisations, is needed.

Local capacity for research, development and production of vaccines is limited, and investment in these areas would expedite the introduction of new vaccines and reduce costs in the medium and long term. Partnerships between private and public sectors may prove a mutually beneficial way to deliver such investment.

Based on the issues outlined above, COFVAL made seven key recommendations, for which we discuss the evidence base and feasibility in the following sections.

## 3. Standardised performance indicators for assessing vaccine impact

COFVAL recommended the standardisation of performance indicators in six areas: (1) burden of disease and vaccine coverage, (2) epidemiological surveillance, (3) national health accounts, (4) evaluation of functional health, (5) human resources performance, and (6) financial protection [4]. We found supporting evidence that standardisation of the first three would help to ensure reliability and comparability of data used to assess the effectiveness of vaccination programmes.

### 3.1. Burden of disease and vaccine coverage

Harmonisation of indicators for VPD burden and vaccine coverage is needed to aid comparison between countries, allowing implementation and evaluation of evidence-based policies across

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