

Vaccination has been shown to be one of the most effective public health interventions. In the past ten years, many new vaccines have become available to low- and middle-income countries. The London School of Hygiene & Tropical Medicine carried out two studies, in collaboration with partners in eight countries, one exploring national decision-making processes around new vaccine adoption and another on the impact of new vaccines on country health systems.

Introducing PCV10

Ethiopia

Study 1 Decision-making for new vaccine adoption

As new and improved vaccines become available, countries need to make decisions on which vaccines to adopt into their immunisation programmes. The ten-valent pneumococcal conjugate vaccine (PCV10) was introduced into routine childhood immunisation services in Ethiopia in November 2011, with the support of funding from the GAVI Alliance. This study investigated processes of national decision-making for new vaccine adoption and sought to understand the factors affecting these decisions in Ethiopia.

Methods

Interviews were conducted with 16 key informants in Ethiopia between February and March 2011, including Ministry of Health and Ministry of Finance officials, staff from non-governmental organisations and clinicians. The interviews mainly focused on the decision to adopt pneumococcal vaccine, although there was also some discussion of rotavirus vaccine.

Findings

Main actors

Only a limited number of actors were directly involved in the decision-making process, with the Minister of Health and other ministry officials playing key roles, as expected. There was no technical immunisation advisory committee operating in the run up to the decision to adopt, although the Interagency Coordinating Committee played a coordinating role. The World Health Organization (WHO) was considered an important stakeholder, providing information, technical support and assistance to the Ministry of Health. The previous adoption of the pentavalent vaccine led to discussions of additional ways to reduce childhood pneumonia. Advocacy activities by international agencies, such as the WHO, played an important role in supporting the decision-making process, opening the door for the adoption of pneumococcal vaccine when it became available. The importance of evidence was recognised, but respondents stated that the capacity to generate evidence in Ethiopia was lacking. Decision-making was structured by the GAVI application process, although it also seemed to become more automatic as the GAVI process became familiar.

Key drivers of the decision

- The availability of GAVI funding was a major driver of adoption decisions
- The burden of disease was also considered an important driver of decisions
- Political prioritisation of immunisation, reaching Millennium Development Goal 4 on reducing child mortality was considered a key driver
- Advocacy activities by international agencies, such as the WHO, played a key role in setting the agenda at country level and supporting the decision-making process
- The new vaccine was felt to form part of an integrated community-based management strategy for pneumonia
- Some interviewees reported a preference for PCV13; however, the global supply was limited so instead of delaying adoption, the decision was made to adopt PCV10, of which there was sufficient supply for the relatively large Ethiopian population
- New vaccine introductions in other countries were reported to have helped to promote adoption in Ethiopia.

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CONCLUSION: *The decision to adopt new vaccines in Ethiopia was driven by political prioritisation of immunisation and the desire to address the burden of disease and seize GAVI funding.*

Study 2

Assessing the impact of PCV10 introduction on the health system

It is often hoped that introducing additional vaccines may help to strengthen immunisation programmes and health systems more broadly. There are also concerns, however, that such additions may prove to be an added stressor where resources are already overstretched. Ethiopia has high infant mortality and pneumonia is the leading cause of death in under-5s. The WHO estimated the number of severe illnesses and deaths due to streptococcus pneumonia in children aged under 5-years in Ethiopia in 2000 was 438,628.¹ It was decided that all children in Ethiopia below one year of age at the time of introduction would be vaccinated with PCV10. This study evaluated the impact of PCV10 vaccine introduction on Ethiopia's immunisation programme and on its wider health system.

Methods

The study used a mixed methods approach and data were collected during December 2012, 13 months after PCV10 was introduced. Semi-structured interviews with 23 stakeholders were conducted at national, regional and wereda (district) levels. Three regional states and one city were selected for data collection: Amhara, Oromia, Afar and Addis Ababa. Structured questionnaires were completed with staff at 26 purposefully selected health facilities in these

regions. Routine data on antenatal visits, number of children vaccinated with the PCV10 and pentavalent vaccines, reported cases of pneumonia and adverse effects following immunisation, one year before and one year after PCV10 vaccine introduction, were collected from the 26 health facilities and 10 weredas visited. Data collection tools and data analysis were structured using the WHO health system building blocks framework.²

PCV10 is delivered along with the oral polio vaccine and pentavalent vaccine at 6, 10 and 14 weeks of age

"At the beginning there were some difficulties. After society heard about the PCV vaccine in the media, the flow was really high. At that time we faced a shortage."

District level interviewee

"We concluded that the PCV had some impacts in strengthening the routine...the supervisions were strengthened. The training and capacity-building done for the PCV also has an impact for the other routine vaccines."

National level interviewee

Ethiopia

Findings

Overall, the PCV10 vaccine was well-integrated and there were no major impacts, either positive or negative, on Ethiopia's immunisation programme or health system.

- Most facility-level respondents and key informants were positive about the PCV10 vaccine introduction
- Demand for vaccination and other services was perceived to have increased after the vaccine introduction, however the routine data did not support this
- The organisation and provision of routine vaccination services remained unchanged
- The social mobilisation campaign for PCV10 was highly visible at all levels of the health system and primarily focused on the new vaccine
- There were limited reports that the introduction helped trace defaulters for other vaccines or improve outreach, however routine data did not support this
- Training helped staff strengthen skills related to the Expanded Programme on Immunization (EPI) and also covered some elements of pneumonia prevention
- Workload increased following the introduction of the PCV10 vaccine, particularly in Oromia - some said this was temporary, for others workload remained high months after introduction
- Staff morale was boosted
- Improvements to the adverse events following immunisation (AEFI) surveillance system were reported at the national level, although this was less apparent at the facility level
- Coordination between EPI and actors involved in integrated management of childhood illnesses (IMCI) training in preparation for the introduction was reported
- Temporary stock outs of the PCV10 vaccine were reported at some facilities (mostly in Addis Ababa) immediately after introduction
- Staged improvements to the cold chain at the sub-national level were reported.



Photo: Sergio Torres-Rueda

References

- 1 Ministry of Health of Ethiopia. Global Alliance for Vaccines and Immunisation (GAVI) application form for country proposals. July 2009.
- 2 World Health Organization, *Everybody's business: strengthening health systems to improve health outcomes. WHO's Framework for Action*. Geneva: World Health Organization. 2007.

CONCLUSION: Overall, the vaccine was successfully introduced and well-integrated into Ethiopia's Expanded Programme on Immunization. As such, it had no major impacts on the EPI or health system. Positive effects of the introduction included strengthening vaccination skills and increases in staff morale, some perceived improvement in tracing defaulters and targeting hard to reach populations and strengthening AEFI surveillance capacity. The perceived increased demand for other vaccines was not supported by routine data.