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Building Better Systems: Improving Delivery of Immunisation Services in the Context of Universal Health Coverage

Background

Strong health systems are the foundation for well-functioning immunization programs and a necessity for reducing morbidity and mortality due to vaccine preventable diseases. Strong health systems demand an equally distributed health workforce, well maintained infrastructure, a functioning and integrated logistics and supplies management system and adequate funding to support implementation of health programmes that are monitored and evaluated. As a whole, health systems provide equitable access to health services for the population.

Despite the fact that many health systems across Africa are not as strong as they need to be, countries have still made important progress in delivering immunisation services, specifically in terms of introducing new vaccines and expanding the reach of immunization programs.

In 73 GAVI-eligible countries, DTP3 coverage rose to 83% in 2013 from 68% in 2000, and child mortality fell to 6.3 million in 2013 from 12.6 million in 1990¹. Additionally, financing, multi-year planning, and measurement and accountability are on the rise. However, ongoing challenges persist, including:

- Reaching marginalised communities
- Reducing vaccine stock outs
- Reducing financial barriers to access
- Improving community awareness regarding the benefits of immunisation

To continue making gains in immunisation coverage and to maintain past progress, stronger health and immunization systems need to be a focus moving forward. By improving health systems, governments can help ensure increased access to routine immunization for all.

Developing strong immunisation systems

All countries should develop appropriate strategies and activities to deliver high quality routine immunization services and systems. As a guide, the Global Vaccine Action Plan (GVAP), and Global Routine Immunization Strategies and Practices (GRISP) have identified the following key components of strong immunization systems:

Strategic and operational plans

National immunisation programmes should articulate their overall programme direction and needs through the development of a comprehensive, funded multi-year plan in line with the national health strategy. Plans should be comprehensive and contain all immunization-related activities, including increasing equity and coverage of Expanded Programme on Immunization (EPI) vaccines, elimination/eradication programmes of vaccine preventable diseases, new vaccine introductions, mass vaccination campaigns and vaccine preventable disease surveillance over the five-year planning period. Multi-year plans allow for ongoing long-term programme directions to be translated into implementable activities and annual planning. They align with other health sector planning cycles and processes and should be informed by all relevant assessments and reviews. When funded appropriately, the multi-year plans are a powerful tool for advocacy and resource mobilization.

KEY FACTS



DTP3 coverage
in 73 GAVI-eligible
countries

68%
2000

83%
2013



Child mortality
(millions)

12.6
1990

6.3
2013

¹Bustreo F, Okwo-Bele J-M, Kamara L. ArchDis Child 2015;100 (Suppl 1):s34-s37.

Strategies to reach the unvaccinated and under-vaccinated

Reaching the unvaccinated and under-vaccinated requires identifying these groups and their barriers to access and use of immunization. At this point, countries can begin strengthening the organisation and management of district/county health systems and tailoring interventions to address identified barriers.

Within this framework, countries can develop tailored strategies to improve access to immunization for unreached populations. For example, outreach services are a central strategy for areas where fixed sites are inadequate for regular provision of preventive health services. Outreach routes, frequency, and services should be carefully planned using local knowledge, and the program must be adequately resourced with staff, supplies, vehicles, fuel and other operational requirements to ensure that they are reliable and predictable. This requires that the immunisation activities be fully integrated into district operational plans. For more difficult to reach locations, child health days are used to provide immunization along with other primary health care interventions. Additionally, the health district model, although effective for immunization in a rural environment, needs to be revisited for the urban areas. In many cases, the community entry point for health services in urban areas is not a health center where vaccination activities are performed.

Vaccinator and manager skills

The success of an immunization programme is directly tied to the knowledge and skills of its vaccinators and peripheral managers. It is critical to give increased attention to training needs in times of rapid change (e.g. new vaccine introduction), especially in programmes where staff turnover is high. Motivation is also a critical component to a productive workforce; unless health workers are motivated to conduct their work with excellence, programme improvement efforts will fail. Motivation not only requires opportunities for training, mentoring and career development, but also requires regularly paying salaries, granting allowances and fostering a sound work environment. Every staff member at every level should be able to rely on regular interactions with their supervisors and a process for dialogue and feedback. These interactions should reinforce good practices and allow for challenges and problems to be discussed and resolved.

Vaccine supply chain

Health workers can only be effective if sufficient supplies (e.g., vaccines, injection materials, safety boxes) are available when needed and are supported by reporting and stock management tools. Vaccines and their related supplies should be delivered alongside one another to maximize supply chain efficiency.

To maximize efficiency, vaccine supply chain systems should be incorporated into the national supply chain for other essential medicines and commodities. Supply chains should be reviewed to optimize the number of levels in the chain and adapted to accommodate varying delivery strategies.

Almost all vaccines require storage and transport at cold chain (+2 to +8° C) temperatures. The equipment needed

Unreached populations include:

- **Nomadic populations**
- **People in remote**
- **Hard to reach areas**
- **Urban poor**
- **Ethnic minorities**
- **Migrants**
- **Others who may be within reach of facilities but do not access them due to other issues**

to maintain this temperature consistency has to be fit-for-purpose, maintained diligently, repaired rapidly when not functional, and replaced at the end of the set period of use. New refrigeration technologies have drastically improved the reliability and lowered the running costs of available refrigeration devices, particularly solar fridges that do not require batteries.

At national and subnational levels, vaccine forecasting and the timing of deliveries should be managed by a trained, competent logistician, taking into consideration current stocks, stocks at peripheral levels, seasonal variations and special activities such as campaigns and accelerated vaccination drives. Stock-outs represent a great danger to the programme and should be avoided where possible through systematized management and the clear definition of minimum, maximum and order point levels at each store.

The supply chain should be measured and managed for continuous quality improvement, including an accurate assessment of system costs and performance.

Accurate information systems

Timely, high-quality information enables programs to monitor their performance and to measure impact as well as take corrective action to address identified bottlenecks/challenges. However, concerned staff must have the capacity to analyse, synthesise and interpret data and use this evidence in decision making and planning. Programmes should review and strengthen data collection, analysis and use from the point of vaccination to the national level. This should be done as part of the national health information system. It is paramount that immunization programmes develop progressively better information on target populations in conjunction with national statistics offices. Where the vital registration system is strong, data from birth registrations should be considered.

Common and visible problems in information systems include:

- Inaccurate target population estimates
- Low levels of defaulter tracking and identification of the unvaccinated
- Lack of community involvement in helping track newborns and defaulters
- Poor visibility into stock and human resources
- Sub-optimal practices for aggregating and communicating data from the facility to national level
- Poor feedback and data use mechanisms

Community support

Despite the seemingly high demand for vaccination services, accessing hard-to-reach populations and achieving equity objectives will require additional approaches to stimulate demand. When communities are empowered to make demands on the health system and participate in the planning and implementation of programmes within their local communities, improvements in quality of services, coverage and programme sustainability are possible.

Engaging stakeholders (e.g., traditional leaders, religious leaders, local politicians, civil society organizations) at the district and local levels has been shown to bear positive results. Local actors should be engaged in immunization programmes for mobilizing eligible populations, disseminating information and discussing concerns with health staff. A small group of community leaders and representatives should be invited to meet regularly with the management of health facilities to discuss issues of common concern, to update fixed/outreach services to fit community needs, and to plan for special events. Similarly, volunteer community mobilizers and people to trace newborn/defaulters should be encouraged to become part of the extended health team.

Coordination and integration

Among all national health programmes and initiatives, immunization programmes often have the greatest ability to reach infants, children and pregnant women with preventive interventions. Using this programme, other interventions can be delivered alongside vaccinations to the appropriate

age and target group where possible. Immunization services have successfully incorporated vitamin A supplementation, anti-helminthic treatment, insecticide-impregnated bed nets and intermittent preventive treatment against malaria. Other important preventive interventions are frequently added, as well as expanding services to older target groups such as adolescents. This should be implemented as part of an integrated package of essential services. With all additions, however, care should be taken not to overburden immunization programmes to the extent of weakening or compromising focus on its ability to reach its particular target age group(s).

The need for coordination extends to private sector healthcare providers. Efforts should be made to engage private vaccinators to enhance the ability of programmes to deliver recommended doses, especially to clients who prefer these over public services. National immunization programmes should ensure that appropriate schedules and high quality practices are implemented by private healthcare providers and that they are held to appropriate vaccine handling and storage standards. Should public sector vaccines be obtained and administered in the private sector, the vaccine should remain free of charge and the vaccinator should comply with national reporting requirements.

Lessons Learned

The most important factor in achieving excellence is national leadership and programme management. National teams and their sub-national counterparts are essential in the planning, funding, training, supervising, managing and monitoring activities that are needed in all countries. Assuring an excellent, capable and well-resourced programme team stands out as being the most important enabler for all other strategies and practices to succeed.

Strong links between ministries of health, education, and finance, as well as ministries in charge of managing human resources and legislators are essential for sustainable programme implementation. Coordination between immunization and other programmes within health systems to strengthen information, human resources, and supply chain and logistics components of health systems is essential, and can be particularly beneficial in countries with fragile health systems.

Way Forward

To build better routine immunization systems, countries should:

- Develop and implement comprehensive multi-year plans with integrated annual operational plans
- Commit to allocating adequate and timely human and financial resources to achieve the vaccination goals
- Update supply chains to improve efficiency, accessibility and reliability, ensuring vaccine stocks are always available
- Strengthen district health systems to deliver routine immunisation services as part of a package of essential health services and mobilize, involve and empower communities to effectively demand and utilize vaccination services
- Enhance and sustain multi-sectoral collaboration and partnerships in the implementation of strong routine immunization systems



The most important factor in ACHIEVING EXCELLENCE is national leadership and programme management.



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