CONCURRENT INTRODUCTION OF TWO VACCINES
A Case Study from Ghana, 2012

♦ Ghana introduced Rotavirus (Rota) and Pneumococcal Conjugate (PCV) vaccines concurrently in infants in 2012 to accelerate improvement in child health and survival. ♦ The costs of concurrent introduction were analyzed and observations about effects on planning and operations were compared to the costs and effects if each of the vaccines had been introduced alone and sequentially. ♦ The lessons learned in Ghana confirm that there are potential benefits to concurrent introduction of vaccines that other countries should consider for their immunization programs.

GHANA INTRODUCES ROTA VACCINE CONCURRENTLY WITH PCV

In May 2012, the Ministry of Health of Ghana introduced Rota and PCV vaccines into the EPI schedule as part of routine immunization of infants, beginning at age 6 weeks.

The introduction of any new vaccine into routine vaccination programs requires a complex set of activities including: mobilization and leverage of political will and country leadership; advocacy and communications; advanced planning for all aspects of vaccine introduction including processes, standard operating procedures , preparation of the cold chain, logistics, training, and monitoring and evaluation; broad engagement of stakeholders including health care workers, community leaders, and caregivers; alignment of staff and resources; and, allocation of sufficient and timely human and financial resources. Whereas many of the activities and challenges were similar to introduction of a single new vaccine, EPI program staff and observers in Ghana noted several lessons learned that seemed to be particularly important to the concurrent vaccine introduction.

Ghana is a low-income country with an estimated population of **25,460,099** and an annual population growth rate of 2.2%. The under 5 (U5) year population accounts for 18.5% of the population. The infant mortality rate is 39.7 deaths/1,000 live births and U5 mortality ratio is 72 per 1,000 live births. The country has a total of 10 regions and 110 administrative districts. Pneumonia is responsible for 4,300 annual deaths in children in Ghana. The burden of Rotavirus has also been highlighted in several studies, contributing to 3.6% of deaths in children under five.

CONCURRENT INTRODUCTION SAVED FINANCIAL RESOURCES AND IMPROVED EFFICIENCY OF PLANNING AND VACCINE OPERATIONS

Overall, financial analysis estimated that approximately USD $1.3 million were saved in the government program – specific costs because of concurrent introduction of Rota and PCV vaccines, when compared with the costs of introducing each separately.

Table: Estimated impact on time or costs of concurrent introduction of Rota and PCV vaccines compared to separate introductions, Ghana 2012.

Activity	Impact
Grant application process	↓ ⅓
Preparatory meetings	↓ ¼
Training	time ↓ ½ ; cost ↓ ½
Development of communication messaging/materials	↓ ¼
Advertising	↓ ½
Launch planning and ceremony	↓ ½
Supervision and monitoring	no change
Personnel time for introduction	no change
Vaccine storage	↑ ½
Waste disposal	↑ labor costs

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Photo: PATH

ACCEPTANCE OF CONCURRENT ADMINISTRATION OF ROTA AND PCV VACCINES WAS HIGH

Despite worries by program planners about resistance to giving/receiving two vaccines concurrently, observers reported that acceptance was widespread. Health care workers' concerns about possible increased workloads seemed to be mitigated by their appreciation of the burden of childhood diseases averted through the introduction of both vaccines. In addition, it was clearly communicated that eventually both vaccines would have been a part of the immunization program, whether introduced concurrently or separately. **Concerns among parents/caregivers about the administration of the additional vaccines together to their children seemed to be allayed by an understanding of the impact of diarrhea and pneumonia on children.** In addition, due to the different routes of administration for the concurrently introduced vaccines (i.e. oral and injected), caregivers seemed more receptive to having the children receive multiple vaccinations during one visit.

PILOT INTRODUCTION AND REAL-TIME MONITORING OF THE ROLL-OUT OF THE CONCURRENT INTRODUCTION FOUND TO BE CRITICAL

Based on their experience with concurrent vaccine introduction, Ghana EPI staff suggested that introduction be tested or piloted in a region or a few districts to identify operational challenges, before implementing introduction in additional districts or nationwide. They felt that **a pilot introduction 1-2 months prior to the launch would provide greater ability to quickly adjust implementation strategies and procedures** e.g. identification of the need for early stocking and distribution of both vaccines at the same time. In addition, monitoring visits one month after launch were seen as important for supporting the effective roll-out of the two new vaccines.


Photo: Reuters/Council on Foreign Relations

CONCURRENT INTRODUCTION POTENTIALLY STRAINS THE VACCINE COLD CHAIN

The concurrent procurement, storage, and distribution of two vaccines for concurrent introduction has the potential to strain the vaccine cold chain due to increased quantity and bulk volume in the cold chain. Program staff and observers emphasized that assessment and remediation of the cold chain well before concurrent vaccine introductions begin is critical. With the support of the WHO and UNICEF, Ghana conducted an Effective Vaccine Management (EVM) assessment two years prior to the launch of the concurrent vaccine introduction. However, based on their experience with concurrent vaccine introduction, EPI staff in Ghana recommended that an interim cold chain assessment 12 months prior to the launch of the concurrent vaccine introduction would have been an important step in evaluating the implementation of earlier EVM recommendations. In addition, staff suggested that **some of the challenges in cold chain capacity might have been improved by selection of a multi-dose presentation of the PCV.**

OPPORTUNITIES TO ASSESS DATA COLLECTION AND MANAGEMENT SYSTEMS

Due to the additional potential complexity of recording and reporting on two vaccines concurrently, the piloting of the new vaccines in a region of Ghana that utilized electronic medical records and improved data systems facilitated necessary learning and adaptation prior to the national launch and introduction of the new vaccines. Observers suggested that challenges with data management system were not unique to the introduction of two new vaccines simultaneously, but instead were embedded in the ongoing challenges of updating and managing the country's data systems. Interim solutions of adaptation of existing vaccination record cards, showed that adapting existing systems and records, though more economical than adoption of new records or systems, can also be more complicated. Program staff recommended that **all data collection tools should be updated to adequately cover uptake and should be in place at health facilities ahead of launch**. Failure to do so could result in a loss of valuable data and be an impediment to future planning and forecasting.