

**Executive Summary for SAGE April 2012 Meeting: Interviews with country and WHO regional EPI staff**

**Impact of vaccine introductions on immunization and health systems: interviews with EPI managers and WHO regional officers held during the 2011 annual NUVI meeting**

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**Introduction**

Interviews with nine national immunization and health officials and seven EPI officials from WHO regional offices were conducted during the annual NUVI meeting in June 2011 to gain their perspectives on the impact on introducing a new vaccine on the overall immunization program and health systems. Informants were also asked during the interviews and at a side meeting their views about possible tools to guide countries to consider the impact of introducing a new vaccine in order to minimize potential negative effects and maximize positive effects. The countries and regions represented by the informants are shown in the table below.

Persons interviewed during the 2011 NUVI meeting	
9 EPI and health officials from: <ul style="list-style-type: none"><li>▪ Argentina</li><li>▪ Ethiopia</li><li>▪ Ghana</li><li>▪ Jordan</li><li>▪ Kenya</li><li>▪ Nepal</li><li>▪ South Africa</li><li>▪ Sudan</li><li>▪ Tanzania</li></ul>	7 WHO EPI Focal Points from: <ul style="list-style-type: none"><li>▪ EMRO</li><li>▪ EURO</li><li>▪ PAHO</li><li>▪ SEARO</li><li>▪ WPRO</li></ul>

Many of the country experiences discussed by the informants concerned the introduction of Hib vaccine – mainly the pentavalent DPT-Hepatitis B-*Haemophilus influenza* type b (Hib), which replaced DPT or DPT-HepB. However, a number of countries had introduced HPV, H1N1 influenza vaccine, pneumococcal conjugate vaccine or others (e.g., yellow fever, Japanese encephalitis).

**Methods**

The interviews were semi-structured, using a question guide, and lasted 45-90 minutes. Most were one-on-one, although two persons were interviewed together in some cases. The interviewer started by asking each informant to rank the impact magnitude of vaccine introductions on the six building blocks – either positive or

negative. Detailed discussion followed about each building block area, starting with those ranked as most affected by the vaccine introduction.

## **Limitations**

Among the limitations were the relatively short length of each interview, limiting the amount of information and depth of detail that could be obtained, and the relatively small number of national EPI managers interviewed. In addition, most informants were involved in implementing or supporting vaccine introductions and thus may have been biased towards focusing on the more positive aspects of introducing a vaccine. Since their expertise was in immunization, they also tended to focus on the impact of vaccine introductions on the rest of the immunization program, as opposed to examining the effect on the broader health systems. Responses were based on perceptions of the impact of vaccine introductions and could be confirmed. The main vaccine introduction discussed was the replacement of DPT or DPT-Hepatitis B with pentavalent vaccine, although vaccines requiring a change in the immunization schedule or delivery strategy were also examined.

## **Findings**

Overall, interviewees believed that introducing new vaccines had a positive impact on the immunization program and on health systems. However, negative effects on certain aspects were also reported by most informants.

### ***Service delivery***

The impact on service delivery was most frequently cited and was largely positive. According to informants, the introduction of the new vaccine led to an increase in coverage of all childhood vaccines in a number of countries. This was due to the greater awareness of immunization in the community as a result of social mobilization campaigns for the new vaccine, and to the demand generated by new vaccines against frightening, highly-visible diseases such as meningitis and pneumonia (prevented by Hib and pneumococcal vaccines), which brought in new, previously unimmunized children to health facilities. However, safety concerns in the public about the new vaccine – fueled by anti-vaccine lobbies – did result in short-term declines in coverage of other vaccines in several countries (e.g., Latin America with H1N1 introduction). Informants also reported that injection safety improved in several countries, due to the introduction of auto-disabled syringes that accompanied GAVI-supported vaccine introductions and to refresher training of health workers that took place in preparation for the new vaccine. In one country, the use of AD syringes for immunization led the government health sector to switch to AD syringes for all medical injections.

### ***Supply management***

The second most-frequently cited health system component impacted by new vaccine introductions – and one of the biggest challenges – was the area of vaccine

logistics and management. The majority of countries discussed had insufficient cold storage capacity to adequately handle the new vaccine, which mainly came in one or two-dose vials. This resulted in more frequent vaccine deliveries to the districts and in at least one country to inadequate cold storage of other vaccines (due to overcrowded cold rooms). These problems eventually led, however, to the expansion of national cold chain systems, in some cases taking into consideration the introduction of other new vaccines well into the future. New vaccine introductions also exposed weaknesses in vaccine forecasting and stock management, which resulted in stock outs of the new vaccine in several instances.

### ***Health workforce***

The perceived effects of introducing a vaccine on the health work force were both positive and negative. Many countries provided refresher training on various aspects of immunization during training sessions for the new vaccine, which reportedly improved their skills and motivation level. Having a new vaccine to offer clients also motivated health workers in some countries, though the extra workload as more vaccines were introduced without an increase in the work force, reduced motivation in other countries. Constraints on human resources were cited as the immunization program's biggest limitation in one Latin American country.

### ***Financing and sustainability***

The introduction of new vaccines with GAVI support had increased the financial commitment for immunization of some governments that were largely or entirely dependent on donor support for their immunization program. However, government financing for new vaccines – including co-financing for GAVI-supported vaccines – had been a significant challenge in some countries, reportedly leading to shortages of other vaccines in one country and to less funding for other health programs in others. Donor dependency had actually increased in some countries that have reduced the government budget for the immunization program as a result of increased donor support.

### ***Leadership and governance***

Another largely positive effect of new vaccine introductions in several countries had been improvements in the decision-making process, including the creation or strengthening of national immunization technical advisory groups (NITAGs) and the introduction of evidence-based decision-making. In some countries, the NITAG model led to the establishment of similar advisory committees for other health programs. However, the political attractiveness of some new vaccines (e.g., HPV, pneumococcal conjugate) appeared to have resulted in political leaders in some countries bypassing formal decision-making processes.

## ***Information***

New vaccine introduction improved the capacity to conduct disease surveillance. This was especially the case with post-conflict countries that had little functional surveillance. These improvements – due to donor support for laboratory equipment, construction of laboratories, and training of laboratory and health workers – led not only to surveillance for diseases targeted by new vaccines (e.g., rotavirus, bacterial pneumonia and meningitis), but also in some countries to surveillance of other infectious diseases, such as TB, malaria and hospital-acquired infections. General AEFI surveillance was considerably strengthened in several countries.

## ***Views on tools to improve the impact of vaccine introductions***

People who were interviewed and participants of the side meeting generally felt that guidelines to assist countries in thinking through the potential impact of introducing a new vaccine on the broader immunization program and health systems would be useful. They could especially be used to analyse the health systems' readiness to introduce a new vaccine, to determine what systems and areas could be strengthened with the vaccine introduction, and to monitor the impact of the introduction. Instead of creating a new, separate tool, it was strongly suggested that checklists and other guidance be incorporated in a new version of the *WHO Vaccine Introduction Guidelines*.

## ***Additional comments***

The positive effects of vaccine introductions cited most often were: perceived increases in coverage of all EPI vaccines ; benefits of refresher training on health workers' skills and motivation; and improved planning, decision-making, cold chain systems, and disease surveillance – sometimes affecting other (non-vaccine) disease control programs or health interventions.

The main negative effects were: instances the difficulty facing countries in sustaining the EPI once donor support for new vaccines ends; initial problems with cold chain capacity increasing transport costs and even affecting the cold chain of other vaccines; and workload impact on frontline workers.

The introduction of vaccines into national immunization programs has provided the opportunity to make improvements but often required external funding. Several examples showed greater improvements in areas such as planning and decision-making in countries receiving GAVI support than in wealthier (middle-income) countries not receiving this support.

A WHO regional official contrasted the introduction of a new vaccine into the routine EPI schedule with the impact that supplemental immunization activities (SIAs) (special campaigns) can have on the routine program. While SIAs can be disruptive, since health workers are out conducting the campaigns, many of the new vaccines are introduced into the routine program, thereby strengthening it through increased worker motivation and skills.