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This paper provides an update on the Accelerated Vaccine Introduction initiative (AVI). It is for information only. A more detailed progress report was presented to the Programme and Policy Committee in September) and can be provided to Board members upon request.

Accelerated Vaccine Introduction (AVI) Progress Report

Background

1. The aim of GAVI's Accelerated Introduction Initiative (AVI) is to drive the sustainable introduction of rotavirus vaccine and pneumococcal conjugate vaccine in GAVI-eligible countries. Initial targets for the initiative, set in 2008, were to launch rotavirus vaccines in 44 countries and pneumococcal conjugate vaccines in 42 countries by 2015. The targets are now revised to align with the GAVI Alliance strategy 2011-2105.
2. The AVI is coordinated by an interagency team ("AVI management team") consisting of representatives of WHO, UNICEF, AVI Technical Assistance Consortium (AVI TAC¹) and the GAVI Secretariat. It is led by the GAVI Secretariat and the Bill & Melinda Gates Foundation participate as an observer. The management team has established a number of dedicated sub-teams for key work areas including: strategic vaccine supply, large countries, cold chain and logistics, and ad-hoc pneumococcal vaccine introduction.
3. The AVI management team provides detailed reports to the Programme and Policy Committee in addition a half day briefing session is scheduled prior to each PPC meeting and AVI is standing item on the PPC agenda.

Progress since June

4. Following the Executive Committee approval of paused applications in August 2010, there are now 19 countries approved for pneumo introduction and one country approved for rota introduction. Introduction is being planned for pneumo in 13 countries over the next 12 months, and, in total, in 19 countries over the next 24 months. For rota, introduction is being planned for 1 country over the next 12 months.
5. The AVI management team and sub-team members have been involved in the development of the GAVI Strategy and Business Plan, including

¹ A consortium of PATH, Johns Hopkins University (JHU), US Centers for Disease Control and Prevention (CDC) and others

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development of indicators and targets and activities in support of accelerating new and underused vaccines, market shaping and advocacy and communications. The 2011 activities and associated budgets will be assigned through the new GAVI business plan. From 2011 onwards, this will include activities related to the yellow fever vaccine and introduction of the meningitis A conjugate vaccine.

Generate Informed Country Decisions

Support country level decision-making

6. Status updates of the WHO and UNICEF activities were provided to the PPC for their October meeting. In summary:

6.1 Rotavirus vaccines:

- 6.1.1. 4 countries have launched - Bolivia, Nicaragua², Guyana and Honduras.
- 6.1.2. 1 new country has been approved for funding since September 2009 (Sudan).
- 6.1.3. Of note eight applications were received in September 2009³. 3 were recommended for approval by the IRC (Ethiopia, Malawi and Madagascar) but the countries prioritized Pneumo over Rota when asked to make the choice as required by the pilot prioritization mechanism. 3 more countries (Tanzania, Uganda and Ghana) were conditionally approved for both rotavirus and pneumo and are expected to express a preference prior to submission to the next IRC round. One country was asked to re-submit.

6.2 Pneumococcal vaccines:

- 6.3 Gambia, Rwanda launched (through donation program) in 2009.
- 6.4 19 countries (including Gambia and Rwanda) are now approved and all will be supplied through the AMC mechanism.
- 6.5 Of note, GAVI approved 6 new applications for pneumo in August 2010 and another 5 have received conditional approval by the IRC.

Vaccine Demand

7. The strategic demand forecasts developed by AVI are a key tool as they inform the financial projections as well as the projections on future impact (eg. future deaths averted and numbers of children immunized).

² Nicaragua introduced with a donation from Merck and plan to switch to GAVI supported vaccine in 2010

³ Applications for countries in Africa and Asia were invited in July 2009 following WHO global recommendation for use of rotavirus vaccines

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8. Following board meetings the demand forecast are revised to take into account policy and other factors which affect demand. The current version, strategic demand Version 2.0, takes into account the Board and Executive Committee decisions of June and July 2010. Although it assumes **no financial constraint** - in other words all successful applications can be funded, it does apply prioritization (eg1 vaccine per round). As result of prioritization and revisions to the eligibility policy, the number of introductions forecasted through 2015 has decreased for both vaccines, with a more significant decrease for rotavirus vaccine⁴.

Number of countries introducing by 2015	Target	Version 1.0 1.0 July 2009	Version 1.1 Jan 2010	Version 2.0 Aug 2010
Rotavirus	44	57	41	33
Pneumococcal	42	60	47	45

Large country demand

9. The large country work stream of AVI focuses on India, Nigeria, Pakistan, Indonesia, Bangladesh, Ethiopia and DR Congo. These seven countries constitute 65% of the birth cohort of the currently 72 GAVI eligible countries. With regards to country decision making for new vaccines there has been considerable progress. Based on country applications, DR Congo is approved for introduction of pneumococcal vaccine (planning a phased introduction) in 2011, Ethiopia is approved to introduce pneumococcal vaccine in 2011 dependant on supply availability and forecast to re-present their application for introduction of rotavirus in 2012; Pakistan is approved to introduce pneumococcal vaccine, forecast in Q1 2012 after resolution of surveillance and financial shortcomings and is also assumed to apply for rotavirus introduction in 2014. However, challenges remain regarding India, Nigeria and Indonesia.

⁴ Reasons for the demand for rota vaccine being 'behind' pneumo reflect primarily the fact that the evidence base for the use was available at different times. At the time the two ADIPs were started, the evidence base for pneumo was largely available, with a vaccine approved and a clinical trial demonstrating efficacy in a GAVI-eligible country completed. As a result, the pneumococcal ADIP invested heavily in advocacy for the use of vaccine. In contrast, the rotavirus ADIP invested heavily in developing the evidence base, including conducting clinical trials in GAVI-eligible countries and establishing disease surveillance networks. With the evidence base for rotavirus vaccines now available, there is a need for a concerted advocacy effort for rotavirus vaccines, e.g., similar to the Hib Initiative.

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Large country	Application Status New vaccines	Issue
India	Penta - applied and approved Pneumo - not applied Rota - not applied All vaccine support subject to the \$350m cap	Despite a private legal case being filed, which may still impact introducing Hib vaccine with a subsequent delay in the introduction of pneumococcal and rotavirus vaccine, India has submitted plans for introduction in 2011 in 2 states. Pneumococcal introduction assumed 2016 rotavirus assumed 2018. There is the possibility that these 2 introductions could switch.
Nigeria ⁵	• Penta - applied • Pneumo - applied • Rota - not applied	Due to the 2009 DTP3 coverage reported in 2010 of 42%, Nigeria does not pass the new vaccine filter ⁶ . Thus emphasis must be placed now on working with Nigeria to help them raise their coverage.
Indonesia	• Penta – not applied • Pneumo - not applied • Rota - not applied	Indonesia loses eligibility in 2011. An application for penta is expected for the 2011 round (grandfathering).

Generate evidence for decision-making

10. AVI is conducting a series of studies generating information (safety, immunogenicity, efficacy and health economic data) to inform policy decisions. For pneumo vaccines, to gain technical consensus on what constitutes serotype replacement and the factors that drive shifts in observed invasive disease due to specific serotypes, the WHO, in collaboration with AVI TAC, has undertaken a systematic review of all available data and a series of consultations with experts in the field. A technical expert meeting was held in July 2010 which will form the basis for a report to SAGE with recommendations for countries on how to evaluate and interpret serotype changes.

⁵ Nigeria applied for both Pentavalent and Pneumococcal vaccines for two successive application rounds. The IRC recommended resubmission. However, because of the new filter that requires a country have 70 percent national coverage, Nigeria may not at this time apply for new vaccine support.

⁶ The new vaccine filter for penta was DTP3 coverage of 50%, following the Nov Board 2009 the filter was raised to DTP3 70%, if Nigeria's application in 2009 was approved conditionally then it could have been assessed using the 50% filter, however it was a re-submission which is the same as a new application so the 70% filter is applied.

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Ensure Sufficient Supply⁷

PCV product availability

11. Advance Market Commitment (AMC) provisional supply agreements signed week commencing March 23rd 2010. Annual quantities committed to were 30 million doses for GSK and Pfizer from 2012 and 2013 respectively, for a 10 year period; supply in the years prior to this, amounts to 49.2 million.
12. PCV 10 (GSK) in 2 dose vials without preservative is WHO prequalified as of March 2010; however the pre-qualification is limited to Kenya until successful completion of a 12 month assessment of programmatic issues in two demographic surveillance sites. PCV 13 (Pfizer⁸) in 1 dose vials has been pre-qualified as of Q3 2010. AMC Independent Assessment Committee has deemed PCV10 and PCV13 both eligible for AMC funding, i.e. vaccines meet the AMC Target Product Profile (the assessment was made in two separate meetings during 2010). Consequently, supply agreements with Pfizer and GSK became effective. Under the AMC the first deliveries of PCV10 and PCV13 to countries started Q4 2010.
13. Vaccine uptake in country is subject to both increases and decreases, which combined with the long manufacturing lead-times of pneumococcal vaccines means that GAVI and UNICEF must constantly monitor the supply and demand situation, especially in the early stage of the AVI initiative. Currently it is considered that supply under contract is sufficient to meet country demand following budget approvals.
14. In June 2010, the GAVI Board approved the grandfathering of the AMC deal to include all currently GAVI-eligible countries (2003 definition). Graduated countries will need to completely self finance the vaccine price (tail price) once GAVI support has ended. Also, all countries must have achieved DTP3 coverage above 70% in order to purchase under the AMC agreements.

Supply Agreements - Allocation of Doses by Year

	Headroom Supply		AMC Supply Agreements		
Year	2010	2011	2012	2013-2021	2022
Millions of doses	3.3	25.9	50.0	60.0	30.0

Rotavirus Vaccine product availability

⁷ For additional information, see Annex 1.

⁸ Pfizer have made PCV 7 available in vials as opposed to prefilled syringes; however this only has impact in Gambia and Rwanda where the vaccine was donated in pre-filled syringes.

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15. WHO prequalified rotavirus vaccines are available for procurement by GAVI. Currently, the PAHO Revolving Fund is procuring vaccine for GAVI-eligible countries in the America's region with financial support from GAVI. Following the July approval by GAVI of the first application for rotavirus vaccines UNICEF initiated procurement activities to support country introduction. The Procurement Reference Group (PRG) for rotavirus vaccines has been formed and met November 2010.

Secure Financing

16. Fundraising for the roll-out of new vaccines is lead by GAVI's external relations team. In 2010, the AVI TAC provided supported to these efforts - specifically Media & Communications, and Advocacy and Public Policy teams. AVI TAC assists with the development and implementation of key message frameworks, communication materials and management of activities related to pneumococcal and rotavirus disease. Example of activities from the last three months include conducting a journalist tour in Rwanda to observe the impact of introduction of pneumococcal vaccines; conducting an advocacy training workshop for paediatricians from over 25 developing countries; and hosting an advocacy event for to raise awareness of pneumococcal vaccines in conjunction with the MDG summit.
17. AVI TAC has also supported the implementation of the second annual World Pneumonia Day on November 12th. This year events were held in the US, UK, Australia, Switzerland, and more than 20 developing countries including Nigeria, India, Pakistan, Kenya, Rwanda and Nepal. Initial tracking shows that the efforts of 2009 (167 events in 36 countries) have already been exceeded.

Facilitate Country Introduction

18. For the PCV and rotavirus vaccine introductions a series of activities have been carried out by WHO and UNICEF under the GAVI Workplan.⁹

Coordination of product launches in country

19. Over the next 24 months there will be 20 introductions of pneumo & rota vaccines (not including any new application which may get approved in 2011 or 2012). To ensure optimal coordination around these launches an ad-hoc Pneumo introduction group has been set up comprising staff from UNICEF, WHO, GAVI and the AVI SVS sub-team. The purpose of the group is to assure operational coordination and information sharing on key issues such as cold chain, vaccines supply, fund transfers, etc. The group is also assisting with the specific launch events in Latin America and and Africa.

⁹ A detailed update has been distributed to the PPC and is available upon request.

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Cold Chain & Logistics

20. The demand on cold chain and logistics systems (CCL) increases with the introduction of new vaccines will increase due to the introduction of PCV and rotavirus vaccines. Cold chain capacity therefore is, and will, remain a priority issue for AVI. For this reason, there is a dedicated CCL sub team of AVI. An updated report on cold chain at central level has been provided by this team and is available upon request.
21. In summary, central store level capacity has been well mapped, district level mostly (~70%) mapped, whilst information on service delivery level capacity remains to be consolidated. Preliminary analysis shows that some 63% of countries have sufficient central store level cold chain to immediately launch one vaccine¹⁰. To help improve CCL systems a new tool - Effective Vaccine Management (EVM) is being rolled out. EVM provides a systematic 'diagnostic' used to address deficiencies. Part of the roll out included a UNICEF-led CCL Guidance Workshop in New York 19-21 Oct 2010 (<https://sites.google.com/site/cclguidance/home>).

Communication for social mobilization:

22. UNICEF leads activities around the support of country programs and campaigns to drive behaviour change around Pneumonia and Diarrhoea and other new and underused vaccines. A Communication Framework to provide guidance to countries on communication strategies for new vaccine introduction has been developed. The Framework is continuing to develop based on its application in different countries, including Rwanda, Kenya, and Cambodia.
23. The introduction of PCV provided opportunity to improve overall performance for the routine immunization programmes as well as provide a platform for broader action for child survival communication. The 2010 Post-Introduction Evaluation in Rwanda demonstrated an improvement of EPI capacity with the introduction of PCV7, but also the window of opportunity to strengthen existing efforts for child survival through coordination.
24. In preparation for a 2011 introduction of PCV10 in the country, the MoH in Kenya is leading an integrated communication plan to improve interventions for pneumonia prevention and control along with improvement of routine immunization uptake and demand. These efforts will help to pave the discussion on how to support broader programmatic efforts for the integrated

¹⁰ Global Estimates of the Primary Cold Storage Capacity for New Vaccine Introduction, AVI Cold Chain and Logistics Sub-Team, August 2010

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management of childhood illnesses with a focus on pneumonia and how best to address the gaps.

Establish Platform for Sustained Use

25. With regard to JE, HPV, typhoid or rubella strategic demand forecasting activities have been started to monitor the evolution of demand for these vaccines. Additional activities to prepare for introduction have been funded as part of the 2011 Business plan.

Monitoring and evaluation

26. WHO leads new vaccines activities in coordinating global surveillance networks for rotavirus and vaccine preventable invasive bacterial diseases (VP-IBD). Some of the main accomplishments have included transition of different rotavirus and VP-IBD surveillance sites into one WHO coordinated global surveillance network, agreement to standardize collected surveillance data and to use selected surveillance performance indicators to monitor the networks, as well as establishment of a reporting and feedback mechanism between sentinel sites and WHO. Rotavirus and VP-IBD laboratory networks have been established globally and work is under-way to refine methods, improve the quality of surveillance data, promote greater use of surveillance data for action, and to synergize these surveillance networks with other monitoring networks (eg INDEPTH sites, Centers for Disease Control and Prevention International Emerging Infections Program). During 2009, 47 countries reported VP-IBD data to WHO, including 34 GAVI-eligible countries, and 55 countries reported rotavirus data to WHO, including 34 GAVI-eligible countries.
27. The GAVI Secretariat will be conducting a management review of AVI in the first quarter of 2011 focusing on the business model (cross functional/cross organization product launch team) and “fit” within the 2011-2015 strategy and governance structures.

Annex

1. Pneumo and Rota product updates

ANNEX 1 Pneumo and Rota product update

PCV Pipeline Overview¹¹

Vaccine & Manufacturer	GAVI ¹² Presentation & Form	Licensure Status In country of origin WHO pre-qualification status	SAGE Rec	Meets AMC Target Product Profile	Next Steps
Prevenar, PCV7 Pfizer/Wyeth	1 dose pre-filled syringe (pfs) 1 dose vial	FDA approval 2001	YES ¹³	NO	None
Synflorix, PCV10 GSK	2 dose vial without preservative 1 ds	EMA approval Jan 2009 WHO PQ approved March 2010 (Oct 2009 1 dose)		YES	Available for supply ¹⁴
Prevenar 13 PCV13 Pfizer/Wyeth	1 dose vial	FDA approval June 2010 WHO PQ August 2010		YES	Available for supply
In development (most likely) Panacea, Serum Institute India, Intercell, Merck, Sanofi	Not specified	Development timelines information indicates earliest licensure 2015+ (2016 + for PQ)		To be determined	Successful development Local registration WHO prequalification

Rotavirus Vaccine Pipeline Overview

Vaccine & Manufacturer	GAVI ¹⁵ Presentation & Form	Licensure Status In country of origin WHO pre-qualification status	SAGE Rec	Next steps
Rotarix GSK	1 ds 1.5ml oral vaccine 'tube' (2 ds schedule)	EMA Q2 2006 - FDA Q2 2008 WHO PQ PAHO&EURO Q1 2007, RoW Q2 2009	YES (Global 5 June 2009)	Likely to be a call for offers of supply for a time horizon of 1-3 years (depending on demand levels across this period)
Rotateq Merck	1 ds dose 2ml oral vaccine 'tube' (3 ds schedule)	FDA & EMA Q1 2006 WHO PQ PAHO & EURO Q4 2008, RoW Q1 2010		
DCVMN Including Shanta, Serum Institute India, Bharat, Biofarma, CNBC (Wuhan)	Not specified	Development timelines information indicates earliest projected country licensure 2013-4, earliest WHO-PQ 2014-5		Successful development Local registration WHO PQ

¹¹ Publicly available information from industry, WHO, AVI assessments

¹² Presentation & form likely to be supplied to GAVI

¹³ The recommendation on pneumococcal conjugate vaccines are based on data from PCV-7/9 available and applies to other products provisional to establishing non-inferiority to PCV7/9 and subject to some variations in scheduling and indications for specific products

¹⁴ Subject to WHO PQ conditions

¹⁵ Presentation and form likely to be supplied to GAVI

