Keynote Address: The Challenge of Achieving Universal Access to Vaccines

WIPO & AMF Seth Berkley M.D, CEO 8 November 2017





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Vaccine landscape



The world before vaccines

Examples of major disease outbreaks

Polio New York 1916 6,000 deaths

Yellow fever Philadelphia 1793 >5,000 deaths Cholera pandemic Europe 1829-1851 >200,000 deaths

> Smallpox epidemic India 1974 15,000 deaths

A.A.S.

Flu pandemic 1918-1920 > 50-100 million deaths worldwide



History of vaccine development









Growing market



Source: PATH (March 2016), Markets & Markets (2017)

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Vaccine industry dynamics

Highly consolidated

Four companies: ~80% global vaccine revenues

Diverse business models

- Pipelines
- Portfolios
- Revenues and number of doses sold globally





Vaccine suppliers to Gavi (volume)





Innovation needed to address challenges across the value chain



- Basic research
- Translational research
- Clinical development

- Manufacturing
- Pricing

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Product quality

- Supply chain
- Data
- Health systems



Product development partnership (PDP) model critical to drive innovation and fill gaps

Example: IAVI is an integrated organization that links its ...



Industry-style labs and diverse research portfolio Academic, government and private-sector partnerships Network of clinical trial centers in Africa and India Advocacy and outreach from community to international level



Acceleration in number of PDPs



Gavi's mission, model and achievements to date



Gavi's mission

Saving children's lives

and protecting people's health

by increasing equitable use of vaccines

in lower-income countries









The Gavi business model: reinventing aid





As economies grow, countries transition out of Gavi support



One third of initial 73 Gavi countries in or completed transition



Immunisation coverage: closing the gap





Achieving impact: India



Currently 7 of 10 countries with most underimmunised children receive Gavi support

Top 10 countries, under-immunised, DTP3





Equitable access to life-saving vaccines



Note: Only countries with universal national introduction are included. World Bank 2016 country classification has been applied to the whole time series. Source: The International Vaccine Access Center (IVAC) VIMS database. Data as of 31 December 2016.

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Gavi vaccine introductions and campaigns



Increased breadth of protection* delivered through routine immunisation



*Average coverage across all Gavi-supported vaccines in Gavi-supported countries



Coverage rates for new vaccines

Pneumococcal vaccine

Vaccines: Accelerating and Access

Table Roomer States Table





Source: WHO/UNICEF 2016



Innovative finance key to Gavi's funding model

International Finance Facility for Immunisation (IFFIm)



Advance Market Commitment (AMC) for pneumococcal vaccine

US\$**1.5** billion





The Gavi Matching Fund



British Government

BILL& MELINDA GATES foundation



Gavi started at a time of limited supply

2001: 5 suppliers from 5 countries of production





Gavi has helped create a viable market with more secure supply

2016: 17 manufacturers from 11 countries of production





Immunisation: a platform for universal health coverage



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Improving health and immunisation systems

Health service workforce

> Health information systems

Integrated

service

delivery

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Demand promotion & community engagement

Management & coordination

Vaccine supply chain – Cold Chain Equipment Platform



Emerging challenges and opportunities



Emerging disease priorities – addressing the gaps



DISEASES TO BE URGENTLY ADDRESSED UNDER THE R&D BLUEPRINT, AS OF MAY 2016

Severe fever with

thrombocytopenia

syndrome



Rift Valley fever virus

coronaviruses relevant to humans (MERS Co-V & SARS)

Novel Agent

a new severe infectious disease

Congenital

abnormalities and other neurological

complications associated with Zika virus

Lassa fever virus



Epidemic preparedness: launch of CEPI



Seth Berkley 🤣 @GaviSeth

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Here broad group of partners celebrating #cepi launch @Davos #wef17 #globalhealth @wellcometrust @gatesfoundation





Richard Hatchett CEO, Coalition for Epidemic Preparedness Innovations (CEPI)



We want to stop future epidemics by developing new vaccines for a safer world.

Vaccines are one of the world's most important health achievements. Yet their life-saving potential hasn't yet been realised for many known and unknown epidemic threats, particularly in low-income countries, where the risks and needs are often greatest.



Gavi's growing role in outbreak preparedness and response



Yellow fever vaccine stockpile



Measles outbreak response



Meningitis vaccine stockpiles



Oral **cholera** vaccine stockpile



Ebola vaccine stockpile



Routine immunisation key to global health security



Countries are more connected than ever



Diseases spread faster and further



70% of countries are not prepared*



Threat to health security



Threat to economic stability

Strong **routine immunisation** systems help build the capacity for communities and countries to **detect**, **prevent** and **respond to** outbreaks



Vaccine candidates will be evaluated and prioritised to enable potential investment decisions in 2018

Vaccine Analyses

- Likely vaccination strategy
- Uptake in countries
- Target population
- Coverage
- Efficacy
- Impact
- Price
- Etc.

Ranking criteria	Health impact
	Economic impact
	Equity and social protection impact
	Global health security impact
	Value for money
econdary criteria	Gavi comparative advantage
	Broader health systems benefits
	Implementation feasibility
	Availability of alternate interventions
Cost	Vaccine procurement cost
	In-country operational cost

Funding decisions

E.g.

- Financing vaccines for routine immunisation
- Catalytic (operational)
 support for introduction
- Stockpile
- Learning agenda

🖛 — — • Vaccine analyses during Oct 2017 – Feb 2018 · — — •



Looking ahead: Gavi's future vaccine investments to be decided in 2018



Candidate Vaccines

* Further analyses and information might shift this list over the course of the next few months

Increasing volumes, growing number of suppliers, reducing prices: Penta example



Source: UNICEF Supply Annual Report, 2014 and UNICEF Vaccine Price Data, 2017

Yellow Fever vaccine: example of an increasingly healthy market

- Between 2013 and 2017, Gavi and partners identified opportunities to improve supply security for YFV:
 - Encouraging manufacturers to invest in securing and increasing supply
 - Providing technical and financial support to manufacturers
 - Strengthening National Regulatory Agencies responsible for ensuring vaccine quality and safety





Oral cholera vaccine: impact of investment



Aligning vaccine supply with demand: unmet needs

Current supply status (against demand) for WHO recommended antigens and gaps



Source: WHO 2016, UNICEF 2017

Note: The antigens listed are those funded by Gavi. The manufacturers listed represent all prequalified vaccines for each antigen but not necessarily suppliers to Gavi

Intellectual property regime – impact on innovation Example: Prevnar

Australia

patent granted in 2013

Europe

- patent granted in 2015
- grant of patent opposed
- final decision pending

India

patent granted in 2017

Pfizer Gets Patent For Pneumonia Vaccine From Indian Patent Office

Indian patent office grants Pfizer a patent for their pneumonia vaccine Prevnar 13. Though Mdecins Sans Frontires (MSF), a non-profit health group had filed the patent opposition to prevent Pfizer from getting its pneumococcal conjugate vaccine (PCV 13) patented.

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India grants Pfizer patent for pneumonia vaccine

India has granted Pfizer a patent for Prevnar 13 pneumonia vaccine, in spite of opposition from the heath group Médecins Sans Frontières (MSF)

Teena Thacker

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Stagnating global immunisation coverage rates





Low polio3 coverage a risk to achieving and sustaining eradication



• WPV type 1 • cVDPV type 2

Endemic country

Onset of paralysis 6 March 2017 – 5 September 2017 Data source: DTP3 WUENIC 2016



Low polio3 coverage a risk to achieving & sustaining eradication





Persisting challenge of measles outbreaks



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Number of reported measles cases (over a 6 month period)

Based on data received 2017-10 Surveillance data 2017-3 to 2017-8 * Countries with highest cases for the period (Source: WHO 2017)



Supporting product innovation and new partnerships



Accelerating product innovation to better meet country programmatic needs and improve coverage and equity



Align product innovation priorities and definitions across marketshaping partners



Weigh benefits of **long-term product innovations** to support investment decisions



Shape cold chain equipment markets

Delivery options

- Transdermal micro-array patch
- Needle free jet injectors
- Blow-filled seal technology
- Solar Direct Drive refrigerators

Product Presentations







Zipline – reaching the last mile in Rwanda





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Reaching the fifth child



Number of children globally not receiving the third dose of DTP-containing vaccine, 2016. Source: WHO/UNICEF Estimates of National Immunization Coverage, 2016

Thank you





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