Global vaccine market

Global Vaccine and Immunization Research Forum

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March 2016
Agenda

• Overview of global vaccine market
  • Demand
  • Supply
  • Financing
• Vaccine development and vaccine markets
• Product life-cycle
Demand – critical factors

- Epidemiology:
  - Global and local;
  - Individual and community
- Perceived safety – vaccine hesitancy
- Perceived value for money
- Fit with delivery system
Demand – growing market

Vaccine Market Growth

Vaccine Market Share 2014 (US$ Approximate Value)

Source: Global Vaccine Market Model preliminary routine immunization market value analysis, March 2016
Global vaccine markets

Note: Only non-PAHO countries with >250,000 annual birth cohort included.
Global vaccine markets

GAVI/UN POOLED PROCUREMENT
- Characteristics to fit in delivery system
- Value for money

MIC/LMIC PUBLIC

US/EUROPE/JAPAN
Vaccine hesitancy

Note: Only non-PAHO countries with >250,000 annual birth cohort included.
Supply

- Regulatory requirements: national and WHO PQ
- Predictability of demand
- Reliability and scale of production
Vaccine manufacturers

Scale matters in vaccine manufacturing: larger production can help drive down unit costs.

Illustrative only

OECD
12M doses

Gavi
57M doses

*Assuming 80% coverage

Financing

- Perceived value for money by market
- Tiered pricing
- Perceived reliability and timeliness of payor
The GAVI/UNICEF procurement has doubled in value in the last 5 years alone.

Source: UNICEF public data
As countries transition from Gavi and ODA, vaccines will be increasingly financed by domestic budgets.

Gavi transitions 2015-2030

Source: PATH Global Vaccines Market Model. Provided for illustrative purposes only.
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Vaccine Development – why markets matter

- Demand and financing depends on characteristics of vaccine
  - Fit with delivery system and schedule
  - Value for money

- Significant investment
Investments in vaccine development and production are significant. The expected market size is a critical factor.

*All costs sourced from Light, Donald W., Jon Kim Andrus, and Rebecca N. Warburton. "Estimated research and development costs of rotavirus vaccines." Vaccine 27.47 (2009): 6627-6633, updated to 2016 USD*
## Product life-cycle

<table>
<thead>
<tr>
<th></th>
<th>Product launch</th>
<th>Early market penetration</th>
<th>Maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of products</strong></td>
<td>1</td>
<td>1-2</td>
<td>Several</td>
</tr>
<tr>
<td><strong>Product capacity</strong></td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td><strong>Cost/unit</strong></td>
<td>High</td>
<td>Relatively high</td>
<td>Yield and learning curve gains</td>
</tr>
<tr>
<td><strong>Price</strong></td>
<td>High</td>
<td>Tiers (High/middle income)</td>
<td>Competitive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Multiple tiers</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>- Lowest tier for the poorest</td>
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</tbody>
</table>
Changing landscape - 2006

Source: UNICEF public data
Changing landscape - 2007

Source: UNICEF public data
Changing landscape - 2008

Source: UNICEF public data
Changing landscape - 2009

Source: UNICEF public data
Changing landscape - 2010

Source: UNICEF public data
Changing landscape - 2011
Changing landscape - 2012

Source: UNICEF public data
Changing landscape - 2013

Source: UNICEF public data
Changing landscape - 2014

Source: UNICEF public data
Hib vaccine introduction: high- and low-income markets

PCV vaccine introduction: high- and low-income markets

Note: Limited projections are available for PCV introduction in high-income countries

New vaccines are reaching children in developing countries much more rapidly.

Note: Limited projections are available for PCV introduction in high-income countries

Tiered pricing enabled GAVI countries to access PCV earlier in the products lifecycles

**Source:** Global Vaccines Market Model, March 2016
Price tiering has also been critical in accelerating access to rotavirus vaccines.

Rotavirus vaccine price and volume by Market 2015

Source: Global Vaccines Market Model, March 2016
Vaccines without a dual market face other challenges. Meningitis A vaccine was developed through a public private partnership.

• DEMAND: African MOHs request conjugate Men A vaccine available at ~$0.50/dose

• DEVELOPMENT AND SUPPLY: PATH-WHO partnership with Serum Institute of India, FDA, NIH, and others

• FINANCING: BMGF invest $75 million; gov’ts and donors purchase doses

• Vaccine available on market in 2010; TODAY – 235 million people protected

• By 2020, expect to protect ~ 400 million
The challenges – managing the vicious cycle:

Uncertainty about demand leads to limited investments in capacity.

Low capacity results in limited supply which creates shortages and keeps prices relatively high.

Higher prices raise questions about value for money and increase uncertainty about demand and financing.
The challenges – creating a virtuous cycle:

- **Financing**: Reliable demand leads to investment in adequate capacity and efficiently managed production.
- **Supply**: Appropriately sized capacity increases efficiency of production - benefit from economies of scale and supply all markets.
- **Demand**: Lower costs translate into affordable prices for different markets stimulating demand.

Reliable demand leads to investment in adequate capacity and efficiently managed production.
Thank you!
www.path.org
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