Last mile vaccine distribution to rural health centres

Faheem Merchant
New Global Immunization Goals

2000 - Millennium Development Goal # 4

- Reduce under 5 child mortality by 2/3 between 1990 and 2015.

2002 - UN General Assembly Special Session

- 90% of children fully immunized in all countries and 80% DPT3 coverage in all districts by 2010

May 2005 – World Health Assembly

- Adoption of the GIVS – The Global Immunization Vision and Strategy

* Source: Optimize, PATH and WHO.
Village Reach

The VillageReach model strengthens health systems in developing countries, particularly for remote, underserved communities. VillageReach partners with the Ministry of Health and other local organizations to deliver two interconnected solutions:

1. A logistics platform
2. An incubation platform

Its current achievements are:

1. Mozambique Program
2. VidaGas Social Business
The vaccine supply chain
Current Supply Chain

- Airport
- National
- Sub-national 1
- Sub-national 2
- Sub-national 3
Current Supply Chain

- Port of Entry
- Primary Store (National Level)
- Intermediate Store
- District Storage
- District Storage
- District Storage
- Manufacturer 1
- Manufacturer 2

- Airport
- National
- Sub-national 1
- Sub-national 2
- Sub-national 3
Current Supply Chain

Push System

Collection System
Collection based model
Delivery based model
The Full Vaccine Horizon ....

<table>
<thead>
<tr>
<th>Pre-qualified vaccines</th>
<th>Approved but not pre-qualified</th>
<th>Possible new vaccines By 2015</th>
<th>Possible new vaccines By 2025</th>
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<tr>
<td><strong>2008</strong></td>
<td><strong>2008</strong></td>
<td>By 2015</td>
<td>By 2025</td>
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<tr>
<td>BCG</td>
<td>DTP-HepB-Hib-IPV</td>
<td>Dengue</td>
<td>Cytomegalovirus</td>
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<td>Cholera</td>
<td>Hep A</td>
<td>DTP-HepB-Hib-IPV</td>
<td>Flu-pandemic</td>
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<td>DT/dT,</td>
<td>HPV</td>
<td>ETEC</td>
<td>Malaria</td>
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<td>DTP-HepB</td>
<td>Flu-pandemic</td>
<td>Flu-pandemic</td>
<td>Respiratory syncytial virus</td>
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<td>DTP-HepB-Hib</td>
<td>Flu-seasonal</td>
<td>Flu-seasonal</td>
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<td>Hep B</td>
<td>JE</td>
<td>Hep E</td>
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<td>Measles, MR, MMR</td>
<td>mOPV3</td>
<td>HPV (2nd gen.)</td>
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<td>MenAC, MenACW135</td>
<td>Pneumo-conjugate</td>
<td>Malaria</td>
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<tr>
<td>mOPV1, OPV, IPV</td>
<td>Pneumo-unconjugated</td>
<td>Measles, MR (powder)</td>
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<tr>
<td>Rotavirus</td>
<td>Varicella zoster</td>
<td>MenACWY-TT</td>
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<tr>
<td>Tetanus</td>
<td></td>
<td>Pneumo-conjugate</td>
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<td>Yellow fever</td>
<td></td>
<td>Rotavirus (2nd gen)</td>
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</table>

* Source: Optimize, PATH and WHO.
The stakes are higher

Newer vaccines are much bulkier and much more costly

* UNICEF and PAHO Revolving Fund Vaccine Prices

** GAVI Price Estimate (2008)
Example: Rotavirus vaccine

- **$635.50**
  - 4100 doses of Polio and Measles Vaccines
  - Rural hospital storage, Mozambique

- **$4,687.50**
  - 625 doses of Rotavirus Vaccine
  - District vaccine store, Brazil

* Source: WHO. Guidelines on the international packaging and shipping of vaccines. 2002; WHO/V&B/01.05.

** Based on $7.50/dose for Rotarix and $0.155 per dose for polio and measles
In summary

• The system developed in the 80's was very successful
  – Simple
  – Effective

• Limits are being reached
  – New vaccines
  – More volume
  – More costly

• Innovative supply chain and logistic solutions and technologies exist
  – Learn from other sectors
  – Long term, energy efficient solutions
  – Synergies and integration of health programmes

* Source: Optimize, PATH and WHO.
“You can always achieve results over a long period of time, but every time you do that you damage a generation. And every time you move more quickly, you bring hope to an earlier generation. This is why this notion of time is so important in my mind.”

- Aga Khan
  December 2008