A "Call to Action" was born

Immunization Supply Chain and Logistics
A neglected but essential system for national immunization programmes

Perspectives from an IPAC Member
Robert Steinglass (JSI)
IPAC & SAGE – Advisory Committees to WHO

**Strategic Advisory Group of Experts (SAGE)**
- Principal advisory group to WHO on vaccine and immunization
- Charged with advising WHO on global immunization policies and strategies
- SAGE reports directly to the Director General of WHO

**Immunization in Practice Advisory Committee (IPAC)**
- External and independent experts advising WHO on the formulation of immunization practices and operational standards to improve service delivery at country level
- Multi-dose Vial Policy (MDVP), VVMs, Use of Cool-Water Packs
- IPAC reports directly to the Director of Immunization in WHO and provides updates to SAGE
Growing concerns from IPAC

• Recurrent discussion during IPAC meetings
• Realization that vaccine supply systems have not kept pace with new challenges:
  o More doses of more and bulkier vaccines protecting against more diseases, administered to expanding populations
  o Increased scope and complexity of storage and transport
• Knowledge of a piecemeal rather than strategic approach to strengthening systems
• Serious consequences documented
  o Gaps in coverage and quality of service provision
  o Inefficiencies and wastage in resource utilization
1. Accelerating pace of vaccine introductions

<table>
<thead>
<tr>
<th>Period</th>
<th>Total no. of vaccine introductions</th>
<th>Cumulative vaccine introductions since 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2005</td>
<td>62</td>
<td>62</td>
</tr>
<tr>
<td>HepB/Hib/YF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2010</td>
<td>140</td>
<td>202</td>
</tr>
<tr>
<td>MenA/MSD/PCV/Rota</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011-2013</td>
<td>141</td>
<td>343</td>
</tr>
<tr>
<td>PCV/Rota/HPV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014-2015</td>
<td>227</td>
<td>570</td>
</tr>
<tr>
<td>HPV/Rubella/JE/IPV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: WHO
### Volume of vaccine per fully immunized child*

<table>
<thead>
<tr>
<th>Vaccine Type</th>
<th>Year</th>
<th>Volume Increase</th>
<th>Total Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentavalent</td>
<td>2004</td>
<td>+41 cm³</td>
<td>69 cm³</td>
</tr>
<tr>
<td>Basic EPI6 vaccines</td>
<td>&lt;2000</td>
<td></td>
<td>28 cm³</td>
</tr>
<tr>
<td>Pneumococcal (1st generation)</td>
<td>2009</td>
<td>+41 cm³</td>
<td>110 cm³</td>
</tr>
<tr>
<td>Pneumococcal (1st generation)</td>
<td>2011</td>
<td>+156 cm³</td>
<td>266 cm³</td>
</tr>
<tr>
<td>Rotavirus (1st generation)</td>
<td></td>
<td>+16 cm³</td>
<td>327 cm³</td>
</tr>
<tr>
<td>HPV</td>
<td></td>
<td>+45 cm³</td>
<td>311 cm³</td>
</tr>
<tr>
<td>IPV</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Important increase in vaccine volume per FIC since 2000**
- **SAGE recommendations for vaccine introduction speak volumes**

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* Volume also needed for Measles second dose, Tetanus, Yellow-Fever, Meningitis A, JE and vaccines provided during campaigns.

** Illustrative. Based on 1 dose vial vaccine presentations and first generation of vaccines

Source: WHO/UNICEF
Availability of existing vaccines is a challenge

National Vaccine Stockouts – 194 countries

55-65 countries with chronic shortage

≈ 45 - 50% of LLMICs

Source: WHO (2015)
Basic vaccine management is a concern.

EVM Assessment Findings in 70 Countries

- Vaccine arrival: 24%
- Storage Capacity: 43%
- Temperature control: 14%
- Maintenance Systems: 8%
- Distribution and Transport: 15%
- Stock Management: 18%
- Vaccine Management Policies: 33%
- Data for Management: 29%

Source: WHO (2015)
New realities for today and the future

Immunization supply chains are having to manage

- Increasing cold chain storage to fully vaccinate a child
- More value at risk in the cold chain
- More doses to order, store, handle and transport
- Greater inventory at risk to manage
The inattention needs to be “Called-Out”

- Supply chain bottlenecks identified as a common constraint affecting many areas of immunization service delivery

- The inattention needed to be called-out!

- A working group of IPAC members led the development of a “Call-to-Action”

- Supporting change led by national programme managers and those working in global or regional agencies
Beyond fixing the basics

Need to consider tomorrow’s expanding needs

And introduce supply chain innovations based on proven approaches

- Supply Chain Redesign
- Supply Chain Modelling
- Vendor Managed Inventory
- Outsourcing
- Logistic Management Information Systems
- Incentive Pay
- Worker Training
The “Call to Action” Recommendations

Firstly for National Immunization Programmes

1. **Measure, monitor, and evaluate the health of the iSCL system**
   - Implement routine information systems to assess performance for availability, quality, and cost
   - Apply the *Effective Vaccine Management (EVM) tool and improvement process* to assess the state of supply systems and prioritize improvements

2. **Plan and implement improvements**
   - Based on EVM assessments, and strengthened monitoring, prepare and implement costed improvement plans that address system weaknesses
   - Introduce supply chain innovations that produce increased visibility and flexibility to manage future changes in iSCL systems
The “Call to Action” Recommendations

Secondly for the Global Community of Partners

1. **Increase awareness and investment**
   - Call attention to the complexities of immunization supply chains, culminating in the need to support SC systems with increased funding to invest in the vital elements of EPI programmes: people and data as well as infrastructure

2. **Address SC systems when formulating immunization recommendations**
   - Factor in the best available field evidence on implementation and ISCL system performance when formulating policy recommendations

3. **Harmonize SC systems**
   - In the context of a broader Health System, take more deliberate advantage of new vaccination initiatives to build upon and strengthen an integrated SC systems

4. **Identify & resolve knowledge gaps to accelerate learning & adoption of new solutions**
   - Need for further evidence on effectiveness of supply chain innovations. The global community of partners must highlight SC knowledge gaps, commission comparative studies of potential solutions, and accelerate the spread of proven approaches
Hearing the call?

Many manifestations that the call has been heard:

- Gavi Supply Chain Strategy
- Cold Chain Equipment Optimization Platform
- WHO-UNICEF Immunization Supply Chain Hub
- Growing menu of innovative technological and systems solutions
- More and more implementing partners on the ground
- The theme of the 14th TechNet to build a community of practice around immunization supply chain strengthening
But let’s hear more...

Evidence that gave IPAC cause for concern:

*Key immunization supply chain challenges in developing countries - a photo safari*

- Benjamin Schreiber (UNICEF)

*Key immunization supply chain challenges in developing countries - evidence from EVM assessments in 70 countries*

- Paul Colrain (WHO)

Evidence that the “Call to Action” has been heard:

*A global perspective on immunization supply chain prospects and opportunities for the future*

- Raja Rao (Gates Foundation)