Vaccine Hesitancy: A Global perspective

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Globalization of vaccine hesitancy
Thimerosal: from US fears to a global concern

Costs, storage and waste

- World thiomersal production is about 2,500 kg, 64% of which goes to vaccines, possibly from one single producer
- Development costs and time are substantial and the increased storage volume requirements are of the order of a 2 to 3-fold
- Waste management implications are of the order of a tripling of impact.
- Cheaper vaccines have a disproportionately greater impact

A shift to preservative-free vaccines would have major implications including:
- Multi-fold increases in costs of vaccines, storage and waste
- Potential disruptions to supply of vaccines
- Other operational disruption with potential for fewer children vaccinated

Need for multi-dose formulations will continue
- Strengthen support for current preservative supply
- Continue long-term search for alternative preservatives as part of ‘due diligence’ in light of anticipated increased regulation of thiomersal

Communications are important and need careful coordination to emphasize
- Country and agency concerns expressed in this meeting
- Work for a unified position rather than country by country
- That the position on safety of Thiomersal remains unchanged, although monitoring will continue
- Removing Thiomersal could have major negative impact on vaccine supply and global public health
From fringe to mainstream
Decade of Vaccines (DoV)

**Consultation Feedback**
The DoV Collaboration held approximately 20 consultations in Asia, Africa, Americas, Europe, Middle East and Western Pacific regions as well as an online consultation. More than 1,100 people from 142 countries and 297 organizations provided input as part of the consultation process to develop the

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Vaccine hesitancy: Health care workers and other immunization champions feel unprepared to address misguided criticism of vaccines and immunization. Research is needed to understand the factors that contribute to vaccine hesitancy and training is needed to enable programme managers and champions to proactively address these factors. The impact and use of social media needs to be understood in this context.
Decade of vaccines (DoV)  
Global Vaccine Action Plan

Draft global vaccine action plan

(ii) Individuals and communities understand the value of vaccines and demand immunization as both their right and responsibility. Progress towards increased understanding and demand can be evaluated by monitoring the level of public trust in immunization, measured by surveys on knowledge, attitudes, beliefs and practices.\(^1\)

(iii) The benefits of immunization are equitably extended to all people. Progress towards greater equity can be evaluated by monitoring the percentage of districts with less than 80% coverage with three doses of diphtheria-tetanus-pertussis-containing vaccine and coverage gaps between lowest and highest wealth quintile (or another appropriate equity indicator).

\(^1\) The Strategic Advisory Group of Experts working group on vaccine hesitancy will develop a definition of vaccine hesitancy and recommend specific questions from surveys (either existing or new) to fully formulate this indicator.
SAGE working group on
(dealing with) vaccine hesitancy

Terms of Reference:
Prepare for a SAGE review and advice on how to address vaccine hesitancy and its determinants.
Define vaccine hesitancy and its scope
Undertake a review of vaccine hesitancy in different settings including its context-specific causes, its expression and its impact.
Suggest one or several indicator(s) of vaccine hesitancy that could be used to monitor progress in the context of the Decade of Vaccines Global vaccine Action Plan.

At global, regional and national levels:
Perform a landscape analysis of who/what organizations are working on this issue
Identify activities and strategies that could have a positive impact
Identify strategies and activities that did not work well;
Prioritize existing and new activities/strategies based on an assessment of their potential impact;
Outline the specific role of WHO in addressing vaccine hesitancy;
Identify the specific role of regional and country advisory committees.
Reviewing of various models

Parental Use of Childhood Vaccination Services

- Access to and Availability of Vaccination
- Characteristics and Appeal of Vaccination Points
- Vaccine Attributes
- Institutional Norms for Vaccination
- Factual Knowledge of VPD, Vaccines and Immunisation
- Support from Health Workers

- Vaccine Safety
- Beliefs related to VPD, Vaccines and Vaccination
- Attitudes related to VPD, Vaccines and Vaccination
- Risk-Benefit Analysis “Omission Bias”
- Perceived Personal Susceptibility to VPD
- Perceived Severity and “Treatability” of VPD
- Perceived Likelihood of VPD in the Community
- Intention to Vaccinate

Environmental Opportunity Factors
Supportive Ability Factors
Personal Motivation Factors

Developing a model to analyse drivers of vaccine hesitancy

<table>
<thead>
<tr>
<th>Contextual/group influences</th>
<th>Vaccine specific issues</th>
<th>Individual beliefs/perceptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-economic</td>
<td>History of AEFI (eg. Rotavirus and intussusceptions)</td>
<td>Individual experience with past vaccination</td>
</tr>
<tr>
<td>Religious/cultural</td>
<td>Risk/benefit</td>
<td>Risk/benefit (individual perceived)</td>
</tr>
<tr>
<td>Politics/policies (eg. mandates)</td>
<td>Vaccination schedule (evidence based, relevant to context)</td>
<td>Preference to separate, delay vaccines due to perceptions of overload</td>
</tr>
<tr>
<td>Immunisation is a social norm vs. immunization is not needed/harmful</td>
<td>Mode of administration (oral/nasal/syringe)</td>
<td>Personal experience (good/unpleasant/bad) with health system and health provider</td>
</tr>
<tr>
<td></td>
<td>Mode of delivery: Routine/health centre-based; campaign; door-to-door</td>
<td>Individual knowledge/awareness of why/where/what/when vaccines are needed</td>
</tr>
</tbody>
</table>
Database
Launched in May 2010
Data categories of Public Concern

- Additives
- AEFI (Autism, Death, Other, Paralysis, Rash/Fever, Seizures)
- Awareness/Lack of info
- Beliefs (Philosophical, Religious, Socio-Cultural)
- Conflict/War
- Contamination
- Cost
- Disease Burden
- Drop Outs
- Fertility
- Marginalised Populations

- Mass Campaign
- Motives (Business, Political)
- New Product
- Outbreaks
- Policy/Recommendation
- Programmatic Error
- Research
- Risk/Benefit
- Strategy
- Supply
- Tampering
- Vaccine Refusals
- Vaccine Schedule
Reports globally
(Updated 4th February 2011)

Number of countries with associated reports: 172
Number of reports with no country mentioned: 994
Total number of reports: 10,417
Sum of reports: 12,831
Average number of countries mentioned by report: 1.2

British Crown Dependency: 14
British Overseas Territory: 9
French Overseas Territory: 86
Netherlands Overseas Territory: 1
US Overseas Territory: 11
Reports by vaccine-preventable disease
Understanding the gap to address it

Opportunity Factors

Ability Factors

Motivational Factors

Identify key determinants of trust/distrust over time and factors that influence vaccine decision-making

Isolate predictors of problems

Design engagement strategies

Anti-vaccine

Vaccine hesitancy

Immunisation as ‘norm’

Pro-vaccine

Where are the tipping points?
Developing a Vaccine Confidence Index (VCI)

The Vaccine Confidence Project
monitoring public confidence in immunisation programmes

About the VCI

The team at LSHTM is developing a Vaccine Confidence Index (VCI) to gauge public confidence with respect to a vaccine or vaccines within a given geographical region or country. The VCI is a quantitative representation of the myriad factors which influence or determine confidence. The VCI distinguishes confidence from the other factors which affect the vaccine take up such as supply and infrastructure. Consequently, the VCI is indicative of public concern in that it is a representation of the aggregate decision making process of a population who might accept or refuse vaccination.

To construct and calculate the VCI, we integrate multiple data streams spanning diverse temporal and geographical resolutions. These include (but are not limited to) survey, coverage, sociopolitical metrics and real-time media surveillance. We can utilise historic (e.g. survey or coverage) data to calibrate available fast moving (e.g. media) data streams to use the latter when the former is unavailable. This is typically the case at the (fine) spatial resolutions of interested. Additionally, we require up-to-date measures of confidence for which the timescales associated with coverage data are incompatible.

The VCI will be an aid to immunization programmes at both design and execution levels for new and routine vaccines, directing more explicitly where to target both human and financial resources. We expect the index to provide an early warning signal of areas of decreased confidence where public concern could potentially disrupt an immunization programme. Through further analysis and identification of the contributing factors to public concern, we expect the VCI to provide guidance for early response strategies (such as public engagement) to ensure sustained confidence in vaccines and immunization.