

Immunization and Vaccines related Implementation Research (IVIR) Advisory Committee

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SAGE meeting

6-8 November 2012

Introduction

- **Sixth meeting of the IVIR advisory committee was held 25-26 September 2012 in Geneva, Switzerland.**
- **Transition meeting with broadened scope of IVIR including implementation research**
- **Broadened scope leads to expanded size**
- **New IVIR Chair announced as of 2013**

Robert F. Breiman,MD

New Chair of IVIR –

- **Director, of Global Disease Detection Division of CDC-Kenya from 2004-2012**
 - **CDC-Kenya Country Director from 2010-present**
- **Head of Programme on Infectious Diseases and Vaccine Sciences, ICDDR,B, Dhaka, Bangladesh 2000 – 2004**
- **Director, US National Vaccine Program Office 1995 – 2000**
- **Areas of focus include: pneumococcal, influenza, and rotavirus vaccine studies; pneumonia and diarrhea burden of disease**

IVIR agenda

- **Implementation Research priority setting**
- **Value of Statistical Life (VSL)**
- **Broader economic impact of vaccines (BEIV)**
- **Measles investment case for eradication**
- **Costing and CEA for HPV vaccines**
- **Proposed dynamic method for static models**
- **Varicella and herpes zoster burden of disease**
- **Yellow fever burden of disease**
- **Grading evidence**

Implementation Research priority setting

- **WHO is developing a priority setting framework by setting up an *ad hoc* working group to prioritize the research questions.**
- **Consultation and documentation process:**
 - **Soliciting inputs: WHO HQ, RO, national EPI, key informants, etc.**
 - **Review of available documents: SAGE reports, Epid of unvaccinated child, COHRED, etc.**
 - ***Ad hoc* working group: teleconferences, email discussions, face-to-face meetings, etc.**
 - **Recommendation: Positive on approach and methods, but the priority questions may need to be reduced and/or reformatted and a wider number of stakeholders should be involved.**

Value of Statistical Life (1)

- **Value of Statistical Life (VSL) values a fatality or injury prevented through vaccination in monetary terms. Metric for Cost-Benefit Analysis (CBA)**
- **Cost-Effectiveness Analysis (CEA) expresses value of vaccines in terms of cost per death or case prevented or per DALY**

Advantages vs disadvantages VSL

	Value of Statistical Life/Cost-benefit analysis	Cost-effectiveness analysis
Advantages	<ul style="list-style-type: none">• Used to compare health interventions to non-health interventions• CBA results are additive• Easy to communicate results to MoF and used for regulatory decision-making	<ul style="list-style-type: none">• Includes quality of life measures• Can make relative comparisons across vaccines• Easy to communicate to MoH and useful for health policy
Disadvantages	<ul style="list-style-type: none">• Methodological challenges• Ethical considerations since may overvalue benefits based on wages• Empirical VSL evidence is lacking in children and LMICs• Wage markets are imperfect hence VSL does not fully reflect value of life	<ul style="list-style-type: none">• Methodological challenges• Ethical considerations since implicitly puts a value on life• Not based in Welfare Economics (extra-Welfarist) hence does not allow comparison with non-health interventions• WHO CE-thresholds are arbitrary

Value of Statistical Life (2)

- **Recommendation: While VSL may provide valuable complementary information, there are technical challenges to the measures and VSL only should not be used as the basis for priority setting for vaccines at this time.**
- **More empirical evidence in LMICs needs to be collected in order to use VSL**

Broader economic impact of vaccines (BEIV)

- **Intent is to develop tools and methods to capture broader impacts of vaccination beyond traditional measures such as cost per QALY/DALY.**
 - **Recommendation: While the theoretical framework is appropriate, there should be continued effort to find better mechanisms to measure causal relations and better data by developing study variables to improve likelihood that indirect effects can be evaluated.**

Measles investment case for eradication

- **WHO continues to support an investment case for measles and rubella eradication.**
 - **Recommendations**
 - **Consider heterogeneity of vaccine uptake**
 - **Assess**
 - **risks associated with elimination campaigns**
 - **issues associated with first dose vs. second dose**
 - **costs associated with outbreaks.**

Costing and CEA for HPV vaccines

- **WHO has developed a cervical cancer prevention and control costing (C4P) tool intended to assist in planning for vaccine introduction.**
 - **Recommendation: The costing tool could be very helpful, but needs to:**
 - **include module for capturing societal costs**
 - **provide sensitivity or scenario analysis**
 - **include more M&E costs**
 - **include module for local data collection**
 - **add more information on cost calculations to the user guide.**

Proposed dynamic method for static models

- **Use emulation to incorporate transmission dynamics into static models of immunization (such as WHO-CHOICE's PopMod, PAHO's TriVac, and LiST).**
 - **Recommendation: Merging the emulator with the static model has promise, but also drawbacks. It should be pilot tested and there should be exploration of what would be required to provide a modeling tool that will incorporate benefits of both static and dynamic modeling.**

Varicella and herpes zoster burden of disease

- **WHO commissioned a study on the burden of disease of varicella and herpes zoster.**
 - **Recommendation:**
 - **While proposed methods are appropriate, there is a considerable lack of data, especially in Africa**
 - **medium-term solutions are to:**
 - **include zoster in existing surveillance systems**
 - **test for varicella antibodies in existing serum samples in Kenya and other countries.**

Yellow Fever burden of disease (for information)

- **WHO established a working group to assess yellow fever disease burden. There are two proposed approaches:**
 - **Estimate the annual risk of infection from the age distribution of observed cases**
 - **Estimate the basic reproduction number from reported outbreak sizes.**

Grading evidence

- **WHO Advisory Committees are increasingly using GRADE**
- **Should IVIR? Considerations include:**
 - **GRADE initially designed for clinical studies with RCT as gold standard**
 - **Public health interventions typically not studied by RCT**
 - **Modeling approaches may not be amenable to GRADE**
 - **Further discussion about possible modifications is needed.**

Reflections of outgoing Chair

- **Expansion of mandate to include implementation research is appropriate**
- **Expanded mandate requires expanded skill sets of members (e.g., behavioral science)**
- **Expanded mandate will result in increased requests for review**
 - **Probably will require 2 meetings/year**
- **QUIVER/IVIR has primarily been reactive. I suggest the Committee engage in some strategic thinking at its next meeting.**