

# Herd Immunity/Protection: an Important Indirect Benefit of Vaccination

Fondation Mérieux Conference Centre  
“Les Pensières”  
Veyrier-du-Lac - France

October 25-27, 2010

## Steering Committee:

- Marie-Claude BONNET
- John CLEMENS
- Jacques LOUIS
- Peter SMITH

## Coordination:

- Katia MIELCZAREK



# Background

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One of the aims of this conference is to share cross-functional knowledge and to increase awareness of the diverse range of benefits that result from successful vaccination programs with a specific focus on herd immunity / protection.

Vaccination is a very powerful public health tool for preventing many infectious diseases. In addition to the well-documented direct benefit to the vaccinated individual there are multiple indirect benefits to the close contacts, neighbors, and at the community level as well as for society as a whole. It is well known that not everyone in a population needs to be immunized to eliminate disease, because successful immunization has an effect on the transmission of disease. How can we define this benefit? How can we measure it? What are the different methodologies?

The economic impact of vaccination is a rare example of a health intervention that can be not only cost beneficial but also cost saving. Herd immunity / protection are very relevant factors to consider before introducing a new vaccine in an immunization program and are also very important for monitoring and assessing / evaluating this program.

The indirect benefit of vaccination should also be considered in the context of diverse cultural, epidemiological, socio-economical, climatic and geographical as well as political situations in different areas of the world. This will be illustrated with different case studies for different diseases in different contexts. In addition, animal vaccination should also be considered when evaluating the overall benefit of vaccination to human public health.

This conference will bring together vaccinologists, epidemiologists, immunologists, veterinarians, health economists, representatives from regulatory agencies and from non governmental organizations, and decision makers to present the different aspects of these benefits and to discuss their perspectives.



# Scientific Programme

Monday 25 October 2010

17.30 - 18.30	Registration	
18.30 - 18.45	Welcome Address	Fondation Mérieux
18.45 - 19.30	<b>Historical perspective on herd immunity/protection</b>	Paul FINE
19.45	<i>Welcome dinner</i>	

Tuesday 26 October 2010

**Session 1**      **Herd immunity/protection: general concept and methodological approaches to measurement**  
08.30-11.40      Chaired by Jacob John

08.30 - 08.50	<b>General concept</b>	Peter SMITH
08.50 - 09.10	Discussion	
09.10 - 09.30	<b>Ethical perspective on herd immunity</b>	Jacob JOHN
09.30 - 09.50	Discussion	
09.50 - 10.10	<b>Experimental studies: individually randomized trials</b>	Mohammad ALI
10.10 - 10.30	Discussion	
10.30 - 11.00	<i>Coffee break</i>	
11.00 - 11.20	<b>Experimental studies: cluster randomized trials</b>	John CLEMENS
11.20 - 11.40	Discussion	



# Scientific Programme

## Session 2      General approaches to infectious diseases modelling

11.40 - 16.30      Chaired by Daniel Levy-Bruhl

11.40 - 12.00	<b>Approaches and examples of modelling herd immunity/protection</b>	Ira LONGINI
12.00 - 12.20	Discussion	
12.30 - 14.00	<i>Lunch</i>	
14.00 - 14.20	<b>Examples of vaccines where mathematical modelling was used as a tool for decision making</b>	Daniel LEVY-BRUHL
14.20 - 14.40	Discussion	
14.40 - 15.00	<b>The benefits and limits of modelling infectious diseases</b>	Déirdre HOLLINGSWORTH
15.00 - 15.20	Discussion	
15.20 - 15.40	<b>Herd immunity in economic analysis of vaccines</b>	Brian MASKERY
15.40 - 16.00	Discussion	
16.00 - 16.30	<i>Coffee break</i>	

## Session 3      Herd immunity/protection: case studies

16.30 - 18.30      Chaired by Marie-Claude Bonnet & Kim Mulholland

16.30 - 16.50	<b>Hib vaccines</b>	Richard ADEGBOLA
16.50 - 17.10	Discussion	
17.10 - 17.30	<b>Pneumococcal vaccines</b>	Kim MULHOLLAND
17.30 - 17.50	Discussion	
17.50 - 18.10	<b>Pertussis vaccines</b>	Anders HVIID
18.10 - 18.30	Discussion	



# Scientific Programme

19.30

*Dinner*

Wednesday 27 October 2010

## Session 3

### Continued

08.30 - 10.30

08.30 - 08.50	<b>Hepatitis A vaccines</b>	Ron DAGAN
08.50 - 09.10	Discussion	
09.10 - 09.30	<b>Dengue vaccines</b>	Derek CUMMINGS
09.30 - 09.50	Discussion	
09.50 - 10.10	<b>A veterinary vaccine: rabies</b>	Katharina STAERK
10.10 - 10.30	Discussion	
10.30 - 11.00	<i>Coffee break</i>	

## Session 4

### Herd immunity and decision making

11.00 - 13.00

Chaired by John Clemens

11.00 - 11.20	<b>A WHO perspective</b>	Ana Maria HENAO-RESTREPO
11.20 - 11.40	Discussion	
11.40 - 12.00	<b>A donor perspective: GAVI</b>	Jon PEARMAN
12.00 - 12.20	Discussion	



# Scientific Programme

12.20 - 12.40	<b>A country perspective: India</b>	Nirmal Kumar GANGULY
12.40 - 13.00	Discussion	
13.00 - 14.30	<i>Lunch</i>	

**Session 5**      **An example of herd effect in the context of non-vaccine interventions**  
14.30 - 16.00      Chaired by Peter Smith

14.30 - 14.50	<b>Achieving herd effects through strategies other than vaccination</b>	Simon BROOKER
14.50 - 15.10	Discussion	
15.10 - 15.30	<b>TB control</b>	TBD
15.30 - 15.50	Discussion	
15.50 - 16.00	<b>Conclusions and end of the meeting</b>	
16.00 - 16.30	<i>Coffee before departure</i>	

