



Current challenges and new methodological approaches to assess vaccine effectiveness and vaccination impact

Annecy, Les Pensières, September 28-30, 2009

Draft, 31 August 2009

Background

After a vaccine has proven to provide significant clinical protective efficacy against the targeted infectious disease, through pre-licensure randomized controlled trials, and is used as a public health control measure, there are increasing needs for post licensure monitoring of effectiveness - and their associated challenges. This is particularly true when no correlate of protection has been demonstrated for the vaccine and thus evaluation must be based upon clinical outcomes.

Linked to the early successes of vaccination programs against smallpox, polio, yellow fever, childhood and toxic diseases, and subsequent loss of social memory of their related mortality and morbidity risks, there has been increased emphasis in recent decades on issues on vaccine safety. The development of pharmaco-epidemiology, although with an academic scope dealing with benefits and risks and their balance, has been concerned primarily with the safety plateau of the balance. This is echoed by focus of the regulatory agencies on safety for post marketing surveillance, and on risk management plans. Recent years have witnessed numerous concerns related both to 'old' and new vaccine preventable diseases including the need to monitor effectiveness of new vaccines in epidemic or pandemic contexts, and issues with RCTs, their ethics, their feasibility, and their known limitations. How does efficacy measured within RCTs in selected populations translate into effectiveness in real programs, when factors at the individual level such as age, susceptibility, and co morbidities, at the population level such as vaccination policy, coverage and cold chain, or pathogen and disease level (types, epidemiology) are taken into consideration? What are the implication for vaccine effectiveness when time, ie duration of protection related to the disease and to the vaccine, as well as epidemiological changes induced by vaccination (incidence, age distribution, clinical severity, infectivity, herd immunity, pathogen type evolution) are considered let alone changes in other parallel preventive control measures? What are the implications for new vaccine formulation when previous vaccines were used against the same disease or when the timing of boosting has to be defined? Who is responsible for economic evaluation of vaccination policies?

Contrasting with the experimental design of RCTs in selected populations, the observational nature of vaccine effectiveness studies, with their potential intrinsic weaknesses, add to the multiplicity of possible confounding factors and effect modifiers which obstruct a thorough understanding of vaccine or vaccination effectiveness. This situation may be worsened by the post hoc nature of such studies, in population with no prospective surveillance or records of vaccination. Under such circumstances, it is not always clear which organizations should be responsible for monitoring and evaluation

This seminar will bring together speakers to exchange viewpoints on these issues including methodology, disease specific examples from industrialized and low income countries, and regulatory and ethical perspectives.

The Conference's strategic objectives include:

1. To explore the implication of various measures: vaccine efficacy, effectiveness, vaccination impact and efficiency; What do we need?

2. To explore strengths and limitations of various methods for evaluating vaccine effectiveness and vaccination impact in observational epidemiology.
3. To discuss recent developments in characterization of exposure to vaccines
4. To discuss recent developments in characterization of outcomes
5. To determine research priorities relating to contemporary challenges in monitoring vaccine efficacy, effectiveness and impact.

Each speaker has been asked to specifically address one or more of these objectives in their presentation. There will be a professionally prepared report of the Conference's presentations and discussions including specific responses to the above objectives

MONDAY, September 28, 2009

WELCOME SESSION		
17h30-18h30	►Registration	
18h30-18h45	Welcome Address	C. LONGUET
18h45-19h15	Keynote lecture: <i>From vaccine clinical efficacy and efficacies to vaccine effectiveness and vaccination impact</i>	I. LONGINI
19h45	►Welcome Dinner	

TUESDAY, September 29, 2009

SESSION I	KEY ISSUES IN VACCINE EFFECTIVENESS EVALUATION	
	►Chaired by: D. N. TAYLOR ; M. LEHTINEN	
08h30-08h50	<i>Influenza: observational methods for VE</i>	A. MOREN
08h50-09h10	Discussion	
09h10-09h30	<i>Influenza: analysis of confounding factors for VE</i>	L. SIMONSEN
09h30-09h50	Discussion	
09h50-10h10	<i>Pneumococcal vaccination effectiveness</i>	S. BLACK
10h10-10h30	Discussion	
10h30-11h00	►Coffee Break	
11h-11h20	<i>Oral Polio vaccination vaccine effectiveness</i>	P. FINE
11h20-11h40	Discussion	
11h40 - 12h00	<i>Rotavirus vaccination effectiveness</i>	U. PARASHAR
12h-12h20	Discussion	
12h20-14h00	►Lunch	

14h00-14h20	<i>Selection of outcomes in vaccine effectiveness trials</i>	J. CLEMENS
14h20-14h40	<i>Discussion</i>	

SESSION II	VACCINATIONS IMPACT ▶Chaired by: J. CLEMENS; F. CUTTS	
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14h40-15h00	<i>Population vaccination impact: Hib UK insights from models</i>	J. Mc VERNON
15h00-15h20	<i>Discussion</i>	
15h20-15h40	<i>Monitoring impact of HPV vaccination</i>	J. DILLNER
15h40-16h00	<i>Discussion</i>	
16h00-16h20	▶Coffee Break	
16h20-16h40	<i>Monitoring of Vaccine impact in developing countries</i>	K. MULHOLLAND
16h40-17h00	<i>Discussion</i>	

SESSION III	IMPROVING TOOLS ▶Chaired by: P. SMITH ; K. MULHOLLAND	
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17h00-17h20	<i>Participative epidemiology: Patient declarations: vaccine status and clinical outcome, web based questionnaires</i>	M. LEHTINEN
17h20-17h40	<i>Discussion</i>	
17h40-18h00	<i>Potential for vaccination registries</i>	BE. MAHON
18h00-18h20	<i>Discussion</i>	

19h00 ▶Dinner

WEDNESDAY, September 30, 2009

SESSION III Cnt'd	IMPROVING TOOLS ▶Chaired by: P. SMITH ; K. MULHOLLAND	
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08h30-08h50	<i>Cohort and registries link: the Danish experience</i>	M. MELBYE
08h50-09h10	<i>Discussion</i>	

09h10-09h30	<i>What can be learned from vaccine adverse events surveillance for vaccine positive events?</i>	R. CHEN
09h30-09h50	<i>Discussion</i>	
09h50-10h20	► <i>Coffee Break</i>	
10h20-10h40	<i>New vaccines technology: can it help? example of vaccines against leishmaniosis</i>	JL LEMESRE
10h40-11h00	<i>Discussion</i>	
11h00-11h20	<i>What can be learned from veterinary vaccines? The DIVA concept</i>	P.P. PASTORET
11h20-11h40	<i>Discussion</i>	
12h00-14h00	► <i>Lunch</i>	
SESSION IV	POINT OF VIEW FROM REGULATORY AGENCY ► <i>Chaired by: P. FINE</i>	
14h00-14h20	<i>ECDC point of view</i>	J. GIESECKE
14h20-14h40	<i>Discussion</i>	
14h40-15h00	<i>Regulatory point of view: AFSSAPS</i>	C.WEIL-OLIVIER
15h00-15h20	<i>Discussion</i>	
15h20-15h50	CONCLUDING REMARKS	J. CLEMENS
16h00	► <i>End of the meeting</i>	