



Advances in infectious diseases modelling

Annecy, Les Pensières, December 10-12, 2007

Infectious disease modelling has a long history. The first model was developed for smallpox by Bernoulli in 1760. Infectious disease models have first been used to understand the temporal and spatial dynamics of an epidemic and then to estimate treatment or control strategy.

Currently, infectious disease models have been more and more used to predict a variety of different futures, to help and support the knowledge development and the decision process at the scientific, medical and public health level. To achieve these objectives, new methodologies have been developed or adapted from other fields and studies have been performed for model validation, for different infectious diseases or focusing on vaccines.

The aim of this conference is to give an overview of the different questions that modelling approach can resolve, using recent applications examples in different infectious diseases

Monday, December 10, 2007

17h30-18h30	<i>Registration</i>	
18h30-18h45	Welcome Address	B. Miribel
18h45-19h15	Keynote lecture :	K.J. Linthicum
19h45	<i>Welcome Dinner</i>	

Tuesday, December 11, 2007

Session I: What is a model?

Models: What are they, what can they do, how do we choose which to use, what data are needed and how do we validate them?

Chairperson : Odo DIEKMANN

08h30-08h50	What is a model and why use one?	R. Anderson
08h50-09h05	<i>Discussion</i>	
09h05-09h25	Applications of models: roles and approaches	N. Ferguson
09h25-09h40	<i>Discussion</i>	
09h40-10h00	Simulations: what level of complexity is appropriate?	S. Eubank
10h00-10h15	<i>Discussion</i>	
10h15-10h45	<i>Coffee break</i>	
10h45-11h05	Model parameterisation and validation: Methods and data needs	A. Ghani
11h05-11h20	<i>Discussion</i>	
11h20-11h40	Existence of a dominant network: From global pandemics to small-scale disease spread	M. Barthélémy
11h40-11h55	<i>Discussion</i>	
11h55-14h00	<i>Lunch</i>	
14h00-14h20	From model to public health decision: Chikungunya story	A. Flahault
14h20-14h35	<i>Discussion</i>	

Session II: - What is the expected public health impact of the model approach?

Contribution of modelling to the evaluation of possible vaccination strategies

Chairperson : Daniel Barth-Jones

14h35-14h55	Impact of a wide vaccination strategy against meningococcal infection in Africa	M.P Preziosi
14h55-15h10	<i>Discussion</i>	

15h10-15h40	Impact of combined effect of vaccine and decrease antibiotic use on <i>S. pneumoniae</i> susceptibility to antibiotic	D.Guillemot
15h40-16h00	<i>Coffee break</i>	
16h00-16h20	HPV vaccination using dynamic and static models	J. Kim
16h20-16h40	<i>Discussion</i>	
16h40-17h00	Health economic evaluation of vaccine: the example of varicella-zoster virus	B. Dervaux
17h00-17h20	<i>Discussion</i>	
17h20-17h40	Evaluation of different vaccination strategies against pertussis in adults	A. Van Rie
17h40-18.00	<i>Discussion</i>	
18.00	End of the session	
19h00	<i>Dinner</i>	

Wednesday, December 12, 2007

Session III: - Predicting impact of interventions

Modelling enables to scientists to estimate interventions impact (i) at the population level with limited resources, comparatively to epidemiological studies;(ii) for the long term;and (iii)in complex interaction system.

Chairperson : P. Beutels

08h30-08h50	Strategies for detecting and containing an emerging H5N1 pandemic	I. Longini
08h50-09h05	<i>Discussion</i>	
09h05-09h25	Long-term impact of potential interventions: Malaria	M.Eichner
09h25-09h40	<i>Discussion</i>	
09h40-10h00	Modelling HIV vaccines	D. Bath-Jones
10h00-10h15	<i>Discussion</i>	
10h15-10h45	<i>Coffee break</i>	
10h45-11h05	Mixing patterns and the spread of infectious diseases: the results of a large multi-country study	J. Edmunds
11h05-11h20	<i>Discussion</i>	
11h20-11h40-	Modelling options for economic analysis: realism versus pragmatism and fiction	P. Beutels

11h40-12h05	<i>Discussion</i>	
12h05-14h00	<i>Lunch</i>	
Session IV: - The future of infection diseases modelling		
Chairperson : Martin Eichnerl, Ira Longini		
14h00-14h20	Public health authorities point of view: needs and requirements	R. Hutubessy
14h20-14h35	<i>Discussion</i>	
14h35-14h55	Modelling nosocomial diseases	B. Cooper
14h55-15h10	<i>Discussion</i>	
15h10-15h30	Modelling zoonotic infections and cross-species transfer	
15h30-15h45	<i>Discussion</i>	
15h35-16h15	<i>Coffee break</i>	
16h15-16h35	Development of the modelling and consequences on the research network organisation	AJ Valleron
16h35-16h50	<i>Discussion</i>	
16h50	<i>Closing remarks</i>	J. Edmunds
17h30	End of the meeting	