

K1. Keynote Lecture

Using statistical and mathematical models for infectious diseases at the science – public policy interface



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Professor Christl Donnelly studied mathematics at Oberlin College (USA), before studying biostatistics at Harvard School of Public Health (MSc 1990 and DSc 1992). She then lectured statistics at the University of Edinburgh, before in 1995 joining the Wellcome Trust Centre for Epidemiology of Infectious Disease at the University of Oxford. She moved in 2000 with a diverse group of like-minded colleagues (mathematical modellers, statisticians, field workers and laboratory scientists) to form the Department of Infectious Disease Epidemiology at Imperial College London. Within the department, she is a PI in the MRC Centre for Outbreak Analysis and Modelling and was the deputy chair of the Independent Scientific Group on Cattle TB (1998 to 2007).

The analysis of a newly identified disease, or a new strain of a familiar one, is particularly challenging as the data are not always sufficient to provide early answers to key scientific and policy questions. This talk will examine how epidemiologists can help public policy makers control disease without too much disruption to society. Risk communication is a key component of the scientist-policy maker interaction as well as an important interactive process which ideally actively involves stakeholder groups from the outset. A different challenge arises in the management of expectations. Mathematics, or indeed science, cannot make decisions for us. However, quantifying risks and uncertainties allows decisions to be made from the most informed perspective possible at a given point in time. Thus, there is much scope for epidemiologists to inform and engage policy makers as well as stakeholders and the public more generally.