

## **Preliminary summary of results: real-time infectious disease modelling stakeholder workshop, 29 April 2016**

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### **Aim:**

To determine the needs of stakeholders to be considered in the design and deployment of real-time infectious disease modelling tools.

### **Attendees:**

There were 59 invitations requesting participants sent to representatives of national, regional and local jurisdictions and peak bodies from the following sectors: microbiology, general practice, government (health protection, population health and epidemiology) and defence. There were 22 (19 external, 3 internal) participants on the day. The workshop was facilitated by staff from the School. Ethics approval was obtained from the UNSW Human Ethics Committee (HC16171).

### **Preliminary findings:**

*Current use of modelling tools:* Despite awareness of infectious disease modelling and a positive perception of its value, there was little use of modelling in the organisations represented. National government participants reported some use of modelling for long-term planning and policy development. Current lack of technical expertise and confidence among the existing public health workforce, and lack of clarity about suitable modelling tools, remain barriers to modelling.

*Information requirements for epidemics and pandemics:* Clinical, laboratory and public health sectors are all stakeholders and include primary care/GPs, emergency department, hospital, intensive care, and morgues. Information needed includes comparing the impact of interventions, epidemic characterisation and risk assessment, planning (both short and longer term) for health service demand, capacity, human resources, work flow, physical resource requirements and stockpile management. Decision support tools would be helpful for options and policies, and simulation of the population and health service impact of those decisions is desirable. Competing priorities are a concern, when events occur simultaneously and resources have to be traded off.

*Considerations in planning a response:* Factors that influence planning, in addition to published evidence, include organisational, jurisdictional, and stakeholders factors such as communication channels, decision-making mechanisms, politics, and management hierarchies which can extend across jurisdictions and stakeholders. All sectors experience substantial uncertainty at the beginning of an outbreak, with unknown parameters, rapid changes in information, knowledge, and priorities.

*Practical considerations in deploying modelling:* Challenges to be resolved include data and information security and confidentiality, platform choices such as self-managed versus an internal or remote service provider, work force development in both using tools and interpreting results, improving model transparency and providing mechanisms for determining unknown parameter values. Modelling expertise needs to be present within the emergency management team.

*The ideal modelling tool:* The ideal modelling tool depends on the context in which it would be used, and would provide the information needs outlined above that are suitable questions for modelling. For practical purposes, it would be easy to use, transparent and would provide a clear interpretation of the results. It would allow rapid re-parameterisation to adapt to local and current conditions.

### **Conclusion:**

Real-time modelling needs vary according to role in outbreak response, but include some common themes and ideally should be simple, easily understood and transparent. Workforce development is needed to make the most of modelling.