

## University of Southampton expert group on COVID-19 response

### Leading experts:

1. Andy Tatem, Prof of Spatial Demography and Epidemiology. Prof Tatem is Director of WorldPop project, which provides high resolution, contemporary data on human population distributions across national and regional scales. In particular, WorldPop's spatial databases of human populations are used in disease burden estimation and epidemic modelling. The project team's latest work is on effects of non-pharmaceutical interventions for containing the COVID-19 outbreak.
2. Prof William Keevil, Professor of Environmental Healthcare and the Head of Microbiology Group, who worked on coronavirus previously, including precursor to COVID-19, coronavirus 229E
3. Dr Michael Head, Senior Research Fellow in Global Health at the University of Southampton. He has a background in global health and infectious diseases, focused around public health, policy epidemiology research. In terms of the Commonwealth, his main overseas research expertise is in Ghana. He also leads on the Research Investments in Global Health study, which reviews the funding landscape.
4. Prof James Batchelor, Director of the Clinical Informatics Research Unit at the University of Southampton and Lead on the Commonwealth Digital Health Hub.

### Expert support available:

1. **Prof Tatem** and his team are currently collaborating with WHO and the Centers for Disease Control in China, US, Africa, EU and are able to support Commonwealth Governments with spatial data analysis of populations at national and sub-national levels to allow policymakers to make right and effective interventions.

Prof Tatem and his team started to put together a database for the Commonwealth 54 member countries in terms of COVID-19 and population age distribution.

#### **2. Prof Bill Keevil**

- RT-PCR detection kits were initially developed by China, UK PHE and US CDC – the latter encountered problems when under pressure they finally trialled them in regional labs and CDC had to reformulate them, thus US was seriously under reporting numbers of infections for weeks. In the meantime, many private companies are rolling out their own commercial kits e.g. Primer Design, Chandlers Ford. So the market depends on availability to supply the kits

worldwide and the cost – difficult when you think of poorer African countries. These tests in theory can give same day results but large numbers waiting analysis, creating a backlog, cause several days or longer delay for results to become available. Not good in a rapidly expanding numbers of cases in a country and between countries.

- Essential to have plentiful supply of preferably cheap, simple to use test kits that do not require skilled clinical staff and technicians. These can be supplied to poorer countries and remoter areas to understand where the disease is, and where spreading to try and contain.
- Also, serodiagnostics tests measuring antibody production in infected patients are essential to understand who has had and recovered from the disease so they can return to work safely. The first kits have just been announced. Also if all the patient have had was a cold or flu then they are still at risk of a future COVID-19 infection and should take precautions.
- Good hygiene measures such as washing hands with soap and, ideally, warm water for 20 seconds are essential; use >60% alcohol hand rub if not. Problem is that these are readily stolen, particularly in poor countries.
- Good education of the population is essential so that they understand the disease, how it is spread and how it can be prevented by, for example, good hygiene (wash hands for 20 seconds and regularly throughout the day, especially after returning home). Reliance on face masks is a cultural phenomenon, particularly in Asia, and these cause more harm than good because people touch them continuously, do not know how to remove and dispose of them safely and then touch their eyes, nose and mouth with their contaminated hands. Surgical face masks do not even fit properly and are made of poor fabrics, become wet very easily from the patient's moist breath cough mucus, and offer little filtration efficiency for viruses. Hand washing is key, not wearing masks.

3. **Prof Batchelor** and his team are able to:

- provide some insights to modeling disease and impact on health systems from clinical data and capacity planning.
- provide some emerging information about critical clinical data that would be needed to collect in digital platforms such as Electronic Medical Records or provide an environment which could collect out break clinical data rather than just results from a COVID-19 test.
- Identify minimum lab data to stratify risk in patients.
- Provide guidance some advice on how to stratify burden on disease within the population to identify those at risk by using government data or the global burden of disease study.
- Offer to review plans or policies in light of possible digital interventions.

#### **4. Dr Michael Head**

- Public communication is vital. In the UK (and elsewhere in the Commonwealth, including New Zealand and South Africa) there is a Science Media Centre. This promotes effective communications between experts and the media, thus better quality public health messages make it into the radio, TV and written media.
- Easy data collection around symptoms can take place during Mass Drug Administrations which many Commonwealth countries will carry out once or twice a year (where community volunteers hand out medicines to everyone in their local community to reduce prevalence of various neglected tropical diseases). Easy to update their data collection forms to ensure, for example, questions around 'have you had a prolonged cough' and 'any fever'?

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