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“Better health, better futures”

From: WOOLHOUSE Mark <I&S>

Sent: 26 January 2020 11:37

To: Catherine.Calderwood@gov.scot

Cc: Gregor.Smith@gov.scot; CMO@gov.scot

Subject: Re: novel coronavirus CONFIDENTIAL

Catherine,

I am here extending my briefing. Again, this advice is closely aligned to the advice that Chris Whitty and Patrick Vallance have received from Jeremy Farrar and Neil Ferguson.

We continue to have three scenarios in play.

First, there is containment of any introductions/outbreaks within Scotland/UK. You do not need advice from me as to how to implement that as effectively as humanly possible. I'd put 2 caveats on it though.

1) This strategy is to a large extent dependent on every other country that receives imported cases achieving the same thing. If the virus becomes widespread outside China the challenge could quickly become insurmountable. In the longer term it depends on China bringing their outbreak under control. They are far from achieving that as of today.

2) Coordinated international action would be facilitated by WHO declaring a PHEIC. The sooner they do that the better in my view.

The key point is, however, that we would be very unwise to bank on this scenario.

Second, there is the not-much-worse-than-a-bad-flu-season scenario. This would be the scenario if indeed there are large numbers of unreported, mild cases in China and the true case fatality rate is far lower than current WHO estimates. Much of the preparedness planning for an influenza epidemic would be relevant and appropriate here, but we'd have to cope without a vaccine or a treatment (see below).

The measures that would be important are much the same as for the third scenario.

Third, the SARS scenario. This is the scenario that I outlined for you yesterday (though I didn't give you the worst case version of it). This is what we have to expect if the current case fatality rates are roughly correct.

The measures we could consider are:

A vaccine. There is general agreement that having a vaccine ready to deploy against a novel virus in anything under a year would be an extraordinary achievement. In the meantime, we have to manage without.

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WHO reported 2 key numbers in their statement last week. The basic reproduction number (central estimate $R_0=2.0$) and the case fatality rate ($CF=4\%$). Another relevant number is the generation time (we have only incomplete data for that at the moment, but it's not crucial for the main result).

If you were to put those numbers into an epidemiological model for Scotland (and many other countries) you would likely predict that, over about a year, at least half the population will become infected, the gross mortality rate will triple (more at the epidemic peak) and the health system will become completely overwhelmed. We can formalise those predictions (and there are many caveats to them) but those are the ballpark numbers based on information from WHO. Please note that this is NOT a worst case scenario, this is based on WHO's central estimates and currently available evidence. The worst case scenario is considerably worse.

There are very good reasons to suppose it might not be as bad as that, but we need additional evidence (not currently available, but hopefully coming soon) to move the dial on those predictions. The key number is the case fatality rate. If that has been overestimated because of a preponderance of undetected cases that would make a substantial difference.

Your reply to my earlier e-mail did not give any indication that here in Scotland we are preparing for a $R_0=2$, $CF=0.04$ event. And I don't have the sense that we are from my networks here either.

It is still possible that this outbreak can be contained and that Scotland and the rest of the UK escapes relatively lightly. But I, and others, consider this more of a hope than an expectation at this stage.

Kind regards,
Mark Woolhouse

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From: CMO@gov.scot <CMO@gov.scot>

Sent: 21 January 2020 13:52

To: WOOLHOUSE Mark I&S

Subject: RE: novel coronavirus

Dear Mark,

Many thanks for your email.

I wanted to reassure you that I am well aware of developments regarding the novel coronavirus associated with Wuhan (WnCoV). I am receiving information from various sources including HPS. However, I am very grateful for your comments and reflections.

I am not surprised by the announcement of human to human transmission and am awaiting news from the surveillance developments in order that we can better gauge the impact of this novel virus. I am grateful for your views that this could become a widespread epidemic fuelled by mild cases but with mortality among vulnerable patients. I can reassure you that both Health Protection and Health Resilience colleagues are closely monitoring the situation and keeping me informed.

I will bear in mind your views on the potential surveillance difficulties facing us with WnCoV. I know that PHE and HPS are actively considering the detailed surveillance needs and investigations required for this novel virus and have no doubt that they, like you, feel surveillance systems need to be in place before the arrival of any cases. I am very much aware of the public health value of such systems and the need to prevent or control any epidemic if it becomes established.

I note your fears that this might develop into a potential pandemic and can assure you that response plans are in place. Colleagues are monitoring the situation and any developments closely and we will respond as required. I am assured by my advisers that, as far as we can judge, the potential public health impact of WnCoV is being appropriately assessed.

Kind regards

PD

Dr Catherine Calderwood MA Cantab FRCOG FRCP Edin

Chief Medical Officer for Scotland

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From: WOOLHOUSE Mark

I&S

Sent: 21 January 2020 09:19

To: Chief Medical Officer <CMO@gov.scot>

Subject: re: novel coronavirus

Dear Catherine,

You will be well aware of developments to the ongoing outbreak of respiratory disease caused by a novel coronavirus and currently centred on Wuhan, China.

I expect that my comments here will reflect and repeat what you are hearing from our colleagues in HPS and NHSS. But I am writing in the spirit that this is better said twice.