That degree of control is also too late for the rest of the world. There are likely several hundred cases in Iran, and likely the similar numbers in Italy. And very likely in several of not most large European countries. Many more in Japan and Korea.

So I am reminded of the BSE enquiry conclusion of >30 years ago that governments should not view absence of evidence as evidence of absence. I think the epidemiological data - while patchy - suggests that we should be acting on the assumption that sustained transmission is happening now in the UK. And only de-escalate if we can demonstrate - through surveillance - that it is not.

Best,

Neil

From: Whitty, Chris <Chris.Whitty@dhsc.gov.uk>
Sent: Friday, February 21, 2020 7:04:06 PM
To: Ferguson, Neil M <neil.ferguson@imperial.ac.uk>; Patrick Vallance <P.Vallance1@go-science.gov.uk>; Van Tam, Jonathan <Jonathan.VanTam@dhsc.gov.uk>
Cc: Jeremy Farrar <J.Farrar@wellcome.ac.uk>; john.edmunds@lshtm.ac.uk <john.edmunds@lshtm.ac.uk>; NR NR >; Van Tam, Jonathan <Jonathan.VanTam@dhsc.gov.uk>; NR NR dhsc.gov.uk>
Subject: RE: Local spread in Europe

Dear Neil and John

Thanks for previous emails, and this from Neil v useful on the data. Patrick and I have discussed.

An event like this in the UK could obviously happen at any point. It is not easy to predict when; it may be very soon, in weeks or (if the epidemic recedes in Asia and elsewhere) never. Failure of contact tracing is obviously one possible reason, but failure of people with minimal symptoms to identify their importance, or choosing not to come forward even if they do (eg because of risk of stigmatisation) is another. This becomes more difficult as the geographical spread makes targeting both case identification and messaging about what to do with symptoms based on geography less useful.

It is important we separate out issues of science, issues of informed opinion/speculation, and issues of policy or operations. SAGE is about science, including uncertainty. How we should respond if/when we get such an outbreak will depend on multiple factors including in particular whether we are still in a global containment phase (still the current global stance), and the scale and location of any outbreak in the UK.

There will as you imply be a tradeoff between epidemiological effectiveness of an intervention to an outbreak, and the social and economic costs of these. We are going to rely on SAGE, and modelling specifically, for the epidemiological effects of different interventions, as without understanding this it is not possible to balance these against the negative social impacts. SAGE behavioural science may help with some, but not all, of the other side of the equation (eg social costs); SAGE it is not constituted to determine economic or operational costs which are considered elsewhere. At the end the decisions on the tradeoffs between these will have to be a policy one, probably by Ministers informed by the science. The clearer the science is (including the degree of uncertainty) the easier it will be to make rational policy decisions. But I am keen to keep science and informed speculation reasonably clearly separated.

I am very much of the view we should be making clear what we know, and where we are less certain, to the public, as well as laying out our tactical aims (contain, delay, research, mitigate) which are clearly predicated on the idea that containment may not work. I have said explicitly in the media both that this could become an uncontained global epidemic (but also may not), and that even if not we could have some onward transmission in the UK. I am however not convinced that presenting speculative scenarios are always helpful in public understanding.

To John's point about surveillance – Patrick and I agree about the need to look at pneumonia and agreed with PHE (Sharon) early this morning to start this in Brighton and London as soon as feasible. We also are going to do what we can to accelerate accurate serology, as this is likely to be very helpful in mapping any spread accurately provided it has good UK specificity.

I hope this is helpful.

Best wishes

Chris

From: Ferguson, Neil M <Irrelevant & Sensitive>
Sent: 21 February 2020 18:37

[See recipients listed above]

Subject: RE: Local spread in Europe

A little more detail on Italy & Iran, from our internal daily sitrep. It is particularly concerning that the Italian cases are severe, given it implies that there are many more mild cases as yet undetected. Same for Iran.

South Korea:
Daily case counts:

- 18/02 – 31 cases
- 19/02 – 51 cases
- 20/02 – 104 cases
- 21/02 – 204 cases

Clusters:

- Shincheonji – 124 cases
- Cheongdo Daenam hospital – 16 cases
    - 5 health care workers
    - 11 patients including 1 fatality in a patient with comorbidities
    - All related to same hospital ward.

Italy:

- 16 new cases – 7 in intensive care
- None have any travel history to China. One had dinner with a friend who returned from China at the start of January, but how that fits with onset of symptoms I'm not sure.
- 1 of these cases is pregnant
- At least one is on life support
- Seeing reports that this includes 5 health care workers among those infected and all the new cases are located in Northern Italy. This information has come out in the last ~ 30 mins so will try and keep as up to date as possible
- https://www.ansa.it/canale_saluteebenessere/notizie/sanita/2020/02/21/coronavirus-sono-tre-i-primi-contagiati-in-italia.-uno-e-molto-grave_4566075c-ee89-411d-8b3a-56b6b8246fc9.html this link has the most up to date information that I've found.

Iran:

- 18 cases, seeing mixed reports as to whether there is 4 or 5 deaths. (first cases were only reported on Wednesday which was 2 post-mortem diagnoses).
- There is some indication from **confidential sources that there may be 100+ cases**. This would also link up to previous reports (~2.5 weeks ago) from Iran saying they had cases but weren't reporting them.
- There is also one case in Canada from someone recently returned from Iran and an importation to Lebanon.