

Minutes of the NERVTAG Wuhan Novel Coronavirus Third Meeting: 28 January 2020

Date & Location:	10:30 – 12:00, 28 January 2020 Via telecon only
In attendance:	<p>Peter Horby (Chair), Camille Tsang (Secretariat).</p> <p>NERVTAG Members: Wendy Barclay (WB), Andrew Hayward (AH), Ben Killingley (BK), Peter Openshaw (PO), Calum Semple (CSm), Jim McMenamin (JMM), Cariad Evans (CE), Neil Ferguson (NF), Ian Brown (IB), Wei Shen Lim (WSL), James Rubin (JR), Robert Dingwall (RD), James Rubin (JR)</p> <p>PHE Observers: Gavin Dabrera (GD), Meera Chand (MC), Jake Dunning (JD), Megan Akodu (MA)</p> <p>DHSC Observers: Chris Witty (CW), Jonathan Van-Tam (JVT), Jennie Harries (JH), Cheryl Cavanagh (CC), NR</p> <p>NHS-E: Chloe Sellwood (CSw) Keith Willet</p> <p>HPS: Lisa Ritchie (LR)</p> <p>Co-opted clinicians: David Connell (DC), Kevin Rooney (KR)</p>
Apologies:	John Edmunds (JE)

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NERVTAG WUHAN NOVEL CORONAVIRUS

THIRD MEETING

1 Introductions

- 1.1 The Chair welcomed everyone to the meeting and apologies were received from John Edmunds.

Current Epidemiology and Case Definition

2 Epi-update

- 2.1 GD summarised the current epidemiology and background paper that was circulated to members. Updated figures as of this morning were also verbally given to the committee. Key points below:
- 2.2 As of 09:00 27th January 2020 there were 2,800 cases globally, 2,744 of these have been reported in 30 provinces of China. There has been an increase in the number of cases outside of China and person- to - person transmission has been identified in Viet Nam.
- 2.3 GD gave the committee an update on the current case numbers. 4,585 cases have been reported in mainland China, with 70 reported outside the country. A case was confirmed overnight by Germany, this is the first case confirmed in Germany. The German national may have had contact with a confirmed Shanghai contact. It was clarified that the contact was made in Germany and the Shanghai contact then flew back to China where it was confirmed that they had WN-CoV.
- 2.4 PH asked if there were any reports of asymptomatic transmission of the WN-CoV. PHE confirmed that no official or published evidence has yet been obtained regarding asymptomatic transmission.

- 2.5 There are media reports of a Wuhan resident who had travelled to a conference outside of the city and was reportedly asymptomatic at the time and then on return to Wuhan, developed symptoms and was confirmed with WN-CoV. It was reported that contacts of this case at the conference also developed symptoms and later were confirmed to have WN-CoV infection. The details of this case should be treated with caution as nothing has been documented officially.
- 2.6 An asymptomatic child as part of a family cluster was reported in the Huang, C. et al. 2020 Lancet publication. The child underwent a computed tomography scan (CT scan) of the chest because of family concern as other members of the family were symptomatic and confirmed with WN-CoV. The CT scan of the chest showed bilateral consolidation at the bases despite a lack of symptoms. Although reported as an asymptomatic child, they were also able to obtain a sputum sample but It is not clear how the sputum sample was obtained if the child was asymptomatic. That sputum sample had an RT-PCR cycle threshold (ct) value of 26 and the upper respiratory tract sample had a ct value of about 40. The lower the ct number, the more virus RNA is present.
- 2.7 Members commented that there was evidence that the child was sub-clinical but not that the child transmitted infection to anyone else. Members thought it was strange to CT scan a child who is asymptomatic and then also be able to obtain a sputum sample. Members commented that there is a difference between a patient who has mild-symptoms and one who is asymptomatic.
- 2.8 CW asked NERVTAG if they agree with the working assumption that asymptomatic people are likely to be less infectious than symptomatic persons, and highly symptomatic people are likely to be more infectious than mildly symptomatic people.
- 2.9 CS commented that we cannot make that assumption safely, given our past experience with other respiratory viruses where children with robust but naïve immune systems have been shown to be mildly affected but very effective spreaders. However, a highly symptomatic child who is coughing everywhere will likely be more infectious than a child who is mildly symptomatic. This is based on prior experience of respiratory viruses in school age children.
- 2.10 AH commented that with influenza, we know that potentially we shed virus prior symptoms starting and even after decades of research there is uncertainty about the importance of asymptomatic transmission. AH asked whether we know of any cases that are very minimally symptomatic. The Committee members felt there were insufficient data of the spectrum of severity at this stage.

- 2.11 PH asked the committee again if people agree with the working assumption that asymptomatic people are likely to be less infectious than symptomatic people.
- 2.12 WB did not agree with this assumption as we do not know that this is the case. WB commented that WN-CoV seems to be behaving very differently to SARS.
- 2.13 Following further scientific discussion, views of NERVTAG members were not unanimous but the predominant view was that the force of infection from asymptomatic individuals, if present at all, is likely to be lower than symptomatic individuals.
- 2.14 The epi-update included the estimated reproduction number from a WHO Emergency Committee meeting on 22 January 2020 where they stated that “Human-to-human transmission is occurring and a preliminary R_0 estimate of 1.4-2.5 was presented. Amplification has occurred in one health care facility. Of confirmed cases, 25% are reported to be severe. The source is still unknown (most likely an animal reservoir) and the extent of human-to-human transmission is still not clear.”
- 2.15 SPI-M group met yesterday and TI reported that the literature that was reviewed by SPI-M was of data from earlier in the epidemic and the R_0 ranged from 2.2 to 3.1. The impact of the recent interventions by the Chinese Government on the R_0 is not yet known. However, there seems to be a broad consensus across modelling groups worldwide that R_0 seems to be ranging from 2.5 – 3.0 based on the most up to date data.
- 2.16 The committee noted that China had use the term “accelerating” in relation to the R_0 but members noted that this was likely to be just a description of the method used in the calculation rather than an acceleration of the disease’s transmissibility.
- 2.17 NF noted that the case numbers seem to be doubling every three to four days. There is no evidence of it slowing so far but it is hard to tell given the delay in the incubation period and how long it is taking to confirm cases at the moment.

- 2.18 NF noted that we are witnessing much greater variability in transmissibility between people than we would expect with influenza but this is expected with these types of virus. Although extensive person-to-person transmission outside of China has not yet been seen, in the early days of the influenza pandemic in 2009 it was difficult to detect onward transmission and it is likely that more information on nCoV person-to-person transmission outside of China will come out in the next few weeks.

3 Case Definition

- 3.1 DHSC explained that this agenda item relates to the current advice for the NHS in terms of the possible case management algorithm and flow diagram issued by PHE.
- 3.2 GD outlined the current possible case definition as follows:
*in the 14 days before the onset of illness: travel to Wuhan, Hubei Province, China
OR contact with confirmed cases of WN-CoV*
- The geographical element of the case definition is currently Wuhan city or contact with a known case.*
- 3.3 The clinical criteria of the case definition is fairly broad covering upper and lower respiratory tract infections, from relatively mild symptoms through to pneumonic symptoms.
- 3.4 Following the review of the geographical distribution of the provisional province level data from China, there is emerging evidence of an increasing geographical distribution of confirmed WN-CoV cases both within mainland China and Hubei Province.
- 3.5 GD explained that PHE has reviewed the official information at a provincial level but there was a large amount of data where province was not available. Therefore, the PHE Guidance Cell reviewed additional sources¹ of data to compile daily case counts of confirmed case in mainland China by province. Please note that the following proportions should be should be interpreted with caution.

¹ All calculations are based on the latest publicly available data and may not be wholly accurate of the epidemiology of WN-CoV in mainland China. The following should be taken as an approximation of the provincial distribution of cases until an official source of these data is identified.

- 3.6 The proportion of confirmed WN-CoV cases in mainland China that were from Hubei Province decreased from 57% (729/1,287) on 24 January 2020 to 53% (1,052/1,975) on 25 January 2020
- 3.7 Within Hubei Province, the proportion of cases from Wuhan City decreased from 90% (495/549) on 23 January 2020, to 79% (572/729) of 24 January 2020 to 59% (618/1,052) on 25 January 2020
- 3.8 There are now at least 30 provinces with confirmed WN-CoV cases.
- 3.9 NERVTAG was asked to discuss the information and to recommend whether the geographical aspect of the case definition should be expanded to include either the whole of Hubei Province or alternatively, mainland China.
- 3.10 JVT outlined the problem that DHSC have with remaining with the current definition. Although direct flights from Wuhan were stopped about 5 days ago, we are now coming up to a typical end of incubation period since the last people came off a direct flight from Wuhan to the UK. Therefore, there is no longer a direct route from Wuhan to the UK as long as flights from Wuhan don't resume. Now that direct routes from Wuhan are no longer a risk, keeping Wuhan in the definition seems to be inconsistent with reality of the changing geographical spread of the virus.
- 3.11 JMM asked whether DHSC wanted to identify individuals who are potentially infectious or, because international travel will continue to occur, there was an alternative objective in mind. Was there a more rational approach whereby we focus our attention on those who present at a hospital? The reason that JMM brought this up is to highlight the known issues about the limited laboratory detection capability to make diagnosis and the large increase of travellers from a wider geographical area.
- 3.12 NF asked DHSC whether the rationale of the aim is to attempt to control the spread and limit it, in which case it would be logical to extend the definition to the whole of China regardless of testing capability. If it is for surveillance purposes then it is fine to keep it more limited.

- 3.13 CMO and DCMO commented that there would need to be a pragmatic balance between the sensitivity of the case definition and the capacity of the health system under the winter pressures. CW added that at this point in the epidemic the purpose of the case definition is to identify individuals so that they do not transmit the virus.
- 3.14 PH expanded on this further and summarised that the purpose is to identify all symptomatic cases if possible and to interrupt transmission.
- 3.15 The committee contemplated the prospect of broadening the geographical area of the case definition to Hubei province or the whole of mainland China. NERVTAG agreed that expanding the case definition to the whole of mainland China at this moment in time was not feasible and did not seem appropriate with the information at hand.
- 3.16 The consensus by NERVTAG was to expand the case definition beyond Wuhan and Hubei province to a wider number of provinces. This could be based on incidence of confirmed infections by provinces. Additional data on traveller volumes from provinces would assist with judging the volume of screening that would arise. NF and his team at Imperial College London are able to calculate this information for the next meeting for consideration. Then it will be for DHSC and PHE to take the decision on which provinces will be used in the case definition.
- 3.17 NERVTAG acknowledged that the expansion of the case definition to those geographical provinces based on risk could change over time and that this should be kept under review.
- 3.18 WB commented that this was a very elaborate solution and the list of confirmed numbers of the provinces is a very long. DC commented that this may not be that feasible for clinicians on the ground to look up the provinces.
- 3.19 JH commented that a similar thing was done for Zika virus but it was hugely complex and there were issues from airlines about where they're flying and the risk of transmission and insurance.
- 3.20 JH also commented that any information and any update to the case definition will need wider coordination in DHSC for example with the Foreign Commonwealth Office. KW also noted that NHS 111 would also benefit from this information.

3.21 The clinical aspects of the case definition were briefly discussed. PH noted that there may be scope for increasing the specificity of the clinical component of the case definition. This will be taken up by DHSC outside of this meeting.

Action 1: PHE to send daily provincial level numbers to NF and his team for the risk calculations.

Action 2: NF and his team to calculate the risk of the provinces, weighted by travel information. This will be distributed to DHSC and PHE to incorporate directly into a new algorithm.

Action 3: PHE to add a link on the GOV.UK page on Wuhan Novel Coronavirus to either a list or map of the provinces affected.

Action 4: NF and PHE to share figures with DHSC and NHS-E for wider coordination and dissemination of updated case definitions.

PPE

4 Respiratory PPE in a variety of settings

Specific Questions for NERVTAG to provide comment and/or recommendation:

In a circumstance where the UK experiences sustained P2P transmission, the extant advice to UK Govt (for pandemic flu) is that face mask wearing by the general public is NOT recommended. Does NERVTAG see any reason why this advice should change?

4.1 Despite China making it mandatory in some cities for the public to wear face masks, this recommendation is not in place in the UK. NERVTAG discussed whether face masks reduce transmission within the community or within households. The Committee reported that there is no evidence to support that the wearing of face masks by the general public reduces transmission. It was also noted that this may add to fear and anxiety.

4.2 NERVTAG endorses PHE advice that no changes to this recommendation should be made. Instead the emphasis on hand hygiene should continue.

- 4.3 PHE clarified that, this recommendation is for the public and is separate to the guidance on symptomatic patients wearing facemasks when they are being moved within a healthcare environment. In England, there is also guidance specific for people with mild symptoms and are self-isolated to wear facemasks however this should be considered on a case by case basis.

At present the plan is for the first cases of 2019-nCoV is that these patients will be managed on airborne HCID wards cared for by staff using high-level PPE. In the event of an escalation the next stage of surge for places of care for cases would be across the broader IDU network, again using high-level PPE. If sustained community transmission became established it is likely that IDU capacity would be exceeded and cases would then need to be managed on standard medical or respiratory wards for potentially a sustained period of time. This would entail deployment and use of the UK's pandemic influenza PPE stockpiles. NERVTAG has previously opined that high-level PPE (FFP3 respirators) would be reserved for ICU settings and AGPs and SFMs for normal ward settings; this is for a pandemic influenza virus.

What is NERVTAG's opinion about the suitability of these PPE recommendations in the event of sustained community transmission and prolonged HC surge for 2019-nCoV?

- 4.4 NERVTAG concluded that the current PPE recommendations for pandemic flu are acceptable for use should there be evidence of sustained community transmission of WN-CoV.

5 Adoption of new airborne HCID PPE and potential risks

- 5.1 JD presented a paper on the new HCID PPE ensemble versus the current MERS PPE recommendation. The current MERS recommended PPE leaves areas of the head and neck exposed and does not provide total skin coverage unlike the PPE images coming from China.

- 5.2 The new HCID PPE ensemble has been developed based on the scientific evidence and has been commented by academic and clinical experts over the past year. The aim of this new HCID PPE is to standardise the PPE recommendations across the all HCIDs and PHE would like to ask NERVTAG if the new HCID ensemble should be activated. This would be an acceleration of the roll out of the new HCID PPE guidance rather than singling out WN-CoV over other viruses or HCIDs. *The new HCID PPE ensemble would apply to HCWs in secondary care who would reasonably expect to encounter suspected HCID cases, including (but not limited to) emergency department clinical staff, acute medical teams, infection specialists and critical care staff.*
- 5.3 The new HCID PPE ensemble is more complicated and some components are not currently available within the NHS e.g. the hood. It was noted that WN-CoV is considered an interim airborne HCID.
- 5.4 Accelerating the roll of the HCIDs was proposed at this time as people are aware of the PPE images coming from China and other countries; it is an improvement on the current PPE recommendations; and maybe able to overcome the availability of the hood specific to the new ensemble.
- 5.5 Members noted that this may be the wrong time to bring in this new HCID PPE recommendation as it may create more problems and risks especially where staff may need to be conduct complex medical procedures in this new HCID PPE. Members noted the value of familiarity of NHS staff with the current PPE standards and that roll out of a more complex system at a time of potentially intense NHS activity could be counterproductive. However, all HCID units are trained appropriately to use this kind of equipment. It was also noted that the hoods are being brought up globally and should a decision be made later this could pose a risk in terms of availability.
- 5.6 PH asked DHSC if it was possible to purchase the hoods without NERVTAG recommending them at this time? DHSC asked if there was any scientific basis for accelerating introduction of the new HCID PPE guidance at present? There was not any clear evidence at this time that would suggest that hoods may be needed now or in the future of this incident.
- 5.7 At present NERVTAG do not support an accelerated roll out of the new HCID PPE ensemble.

6 PPE in primary care

At present, there is no recommendation for PPE to be worn in primary care, as it assumed that patients will be isolated. However, it may be necessary for GP/Community staff to carry out emergency/essential review treatment. Many GPs will not have respiratory PPE so a solution is required. Does NERVTAG have a view on this?

- 6.1 LR reported that in Scotland, there is clear guidance for those in primary care where staff are able to identify and isolate patients and then inform the local health protection team. If needed primary care in Scotland is equipped with appropriate PPE for this scenario as per standard infection control guidance in Scotland.
- 6.2 NHS-E were not aware of any similar recommendations in England.
- 6.3 NERVTAG recommended that NHS-E review the Scottish guidance and consider applicability in primary care in England.

7 PPE advice for border force staff and FCO/Embassy staff in China

- 7.1 Another query from across government asked whether PPE should be in place for airline staff, border force staff and any FCO personnel in China. DHSC explained that staff in China who may be involved in the repatriation of British citizens from China will also have been exposed to the same level of community threat. JVT expressed the view that any symptomatic persons should not board the flight.
- 7.2 PH summarised the query as: What is the PPE recommendation for professional staff exposed to healthy individuals from at-risk areas?
- 7.3 Members commented that if those who are symptomatic are not boarding the planes, there is very little justification for PPE unless passengers develop symptoms in the flight but passengers can become unwell in flight for various reasons.
- 7.4 NERVTAG does not recommend PPE for professional staff exposed to healthy individuals from at-risk areas.

8 AOB: Next meeting

- 8.1 6.1 The meeting has overrun and the items listed for this meeting namely the items in relation to clinical management of severe cases and novel therapeutics will continue at another full NERVTAG meeting to be convened this Thursday.

Action 5 Secretariat to arrange another meeting for Thursday.

9 Summary of Actions

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