Minutes of the NERVTAG Wuhan Novel Coronavirus Meeting: 13 January 2020

Date & Location:	10:00 – 11:00 (12:00), 13 January 2020 Via telecon only
In attendance:	Peter Horby (Chair), Camille Tsang (Secretariat). NERVTAG Members: Wendy Barclay (WB), John Edmunds (JE), Andrew Hayward (AH),), Ben Killingley (BK), Peter Openshaw (PO), Calum Semple (CSm), Jim McMenamin (JMM), Cariad Evans (CE), Neil Ferguson (NF) PHE Observers: Gavin Dabrera (GD), Meera Chand (MC), Robert Sookoo (RS) DHSC Observers: Jonathan Van-Tam (JVT), [redacted] NHS-E: Chloe Sellwood (CSw). Go-Science: [redacted]
Apologies:	Ian Brown (IB), Wei Shen Lim (WSL), James Rubin (JR), Maria Zambon (MZ), Robert Dingwall (RD),

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1. Introductions

1.1 The Chair welcomed Dr Cariad Evans to the committee as a new virology expert member. There are no other changes to the committee. The Chair welcomed the observers.

2. Purpose and scope of the extraordinary NERVTAG meeting

2.1 The DCMO outlined the purpose and scope of the meeting. There is a new event in Wuhan City, China and in the past few days this has been relatively fast moving. Due to the evolving situation and the confirmed emergence of a novel coronavirus, DHSC has requested that NERVTAG hold a teleconference to ensure the expert advisory group is updated on the situation; briefed on what is being done across government; and to specifically provide advice on the issue of port of entry screening.

2.2 DCMO also stated that were the situation to escalate, there would be a wide variety of considerations for example around the role of SAGE hence there are two observers from the GO-Science (Government office of science) present who would convene SAGE.

3. Wuhan Novel Coronavirus- current epidemiology and background including associated risk assessments

3.1 PHE summarised the current epidemiology and background paper that was circulated to members. Key points below:

WHO was informed by the People's Republic of China of cases of pneumonia of unknown microbial aetiology associated with Wuhan City, Hubei Province, China on 31 December 2019. The last WHO statement on 09 January 2020, confirmed that a novel coronavirus has been identified as the cause.

Wuhan has a population of 19 million and is the capital city of Hubei province - population 58 million. Some but not all cases were associated with Wuhan South China Seafood City market, which sells meat, poultry, seafood and live animals. The market was closed on 1 January 2020 and sanitised.

The last official report from China regarding number of cases is from the Wuhan Municipal Health Commission (update on 11 January) who have reported 41 cases of illness due to the novel coronavirus. Of the hospitalised patients, 2 have been discharged, 7 are severely ill and 1 has died. The first case became unwell on 12 December 2019 and the onset date of the last case was 29

December 2019. They also report 739 close contacts including 419 medical staff who have been followed up, and to date no related cases have been found.

Limited clinical information available suggests some cases have bilateral pulmonary infiltrates. There are further clinical details reported in the media but not included in the official reports from China or WHO.

Post meeting note: WHO's update on 12 January reported symptom onset of the 41 confirmed Wuhan Novel Coronavirus cases ranges from 8 December 2019 to 2 January 2020. No additional cases have been detected since 3 January 2020. The clinical signs and symptoms reported are mainly fever, with a few cases having difficulty in breathing, and chest radiographs showing invasive pneumonic infiltrates in both lungs.

Current reports describe no evidence of significant human to human transmission, including no infections of healthcare workers. Cases of pneumonia possibly linked to Wuhan City have been assessed in Hong Kong and some of the surrounding countries. WHO have stated that "According to Chinese authorities, the virus in question can cause severe illness in some patients and does not transmit readily between people."

Reports suggest airport entry screening has been introduced by Hong Kong, Taiwan, Thailand, Malaysia, Vietnam, the Philippines and Singapore. There is a direct flight from Wuhan to the UK three times a week.

As the situation is evolving, since the papers were circulated, there have been additional developments. A case has been reported from Thailand (ex China) this morning (described below).

3.2 Members noted that it has been stated that there has been no 'significant' human to human transmission, which implies there may be some evidence of limited human to human transmission which has not yet been made available. Given that the onset dates are over a period of almost one month, and now the case in Thailand, we should be cautious at this point in making conclusions about the absence human to human transmission.

3.3 NERVTAG members asked if there was an epi-curve for the incidence. There is currently no official or unofficial epi-curve or excess mortality data published to date. With the evidence that is currently available, the novel virus does not look to be very transmissible.

Post meeting note: JMM has requested that data on excess mortality be added to the list of requests to Chinese authorities to respond to via the PHE National Incident Coordination Centre.

3.4 NERVTAG members asked if there were any demographics available for the cases, there is nothing official but unofficially it has been reported that all cases are in adults. NERVTAG members discussed whether there could be under-reporting in children or perhaps that infection in children may be mild or asymptomatic. There is currently no information on this.

3.5 GD provided updated virology from Maria Zambon, PHE 13/01/2020, following recent developments:

Release of WGS sequences allows the development of specific diagnostics, which will be undertaken by PHE Colindale Respiratory Virus Unit & Virus Reference department.

Preliminary assessment of the genomic information places the novel coronavirus in group 2b of coronaviruses. There are already some sequence discrepancies between various Chinese groups releasing virus sequence information. In the rush to get information out this may be due to some assembly errors. Therefore, it may take a few days to sort out exactly the closest neighbour to this virus, and possibly indeed the actual grouping. Recombination is common amongst these viruses and verified information about the virus receptor, which is a major determinant of pathogenesis, will require a bit more work. There is ONLY speculation at this point about virus receptor, this needs experimental verification.

Development of specific acute illness diagnostics will be fairly fast, and will proceed much along the lines that was done for MERS-CoV, working with European partners, to ensure a robust set of diagnostics are developed, with the intention that these are centred on some highly sensitive and specific screening assays, which can then be supplemented in a hierarchy of back up testing.

PHE expect to start evaluating specific diagnostics in the coming week, but in the interim before having a validated specific test available, we have good "tried and tested" UK solutions for pan corona assays, which allowed PHE to detect the MERS-CoV for the first time, and which PHE know from extensive experience, will actually pick up a huge range of coronaviruses (PHE have not found a coronavirus yet that is not recognised). Expected timescale to a specific and verified solution is weeks.

Development of serology will take somewhat longer, and will be dependent on release of virus.

Overall, WHO have indicated that PHE will likely be asked to act as one of several global reference labs for this virus.

Current diagnostic pathway has been agreed for the UK, with clinical algorithm/case definition and risk assessment.

3.6 NERVTAG members asked if the genomic sequences were publicly available. At least one of the genomic sequences is publicly available and there are a number of other genomes that are available but PHE are unsure who has access to these and whether they are public. However, the phylogenies are public and are widely circulated.

ACTION 1: PHE to provide a diagnostic update when information is available.

3.7 Summary of the imported Thailand case:

In the meeting, PHE colleagues received a notification from the IHR National Focal Point that confirmed the newly announced case in Thailand.

On the 13th January 2020, the Ministry of Public Health Thailand announced its first imported case of lab-confirmed novel coronavirus 2019 from Wuhan, China. The case was detected from thermal surveillance and interviewed by port health authorities at Suvarnabhumi Airport (BKK). She had been symptomatic a couple of days before her departure date and during her travel from Wuhan to Thailand.

The case is a 61-year woman living in Wuhan City and has a history of buying food from local fresh markets everyday but did not go to the Huanan Sea food market. She has hypertension as a comorbidity. There is no indication of the case being in contact with healthcare institutions as an exposure risk. She is a house wife living in Wuhan city so no indication they are a healthcare worker. In terms of onward exposure, she did go to a healthcare facility in Wuhan.

Symptom onset was on the 5th January 2020, she developed fever with a chill, sore throat and headache. She then went to the local health facility and received some medication. On the 8th January, she took a direct flight from Wuhan to Thailand together with her 5 family members in a tour group of 16 tourists including the imported case. She was transferred to Bamrasnaradura Infectious Disease Institute for isolation.

3.8 NERVTAG members asked that as the Thailand case did not visit the Huanan seafood market, is there evidence of an animal source that is widely dispersed and as such individual zoonotic events will continue happening from said animals? PHE do not have that level of detail but there could be a wide range of possibilities. For example. the Huanan seafood market could still be the source as it is primarily used as a wholesale market and was closed on the 1st January 2020. The onset of symptoms of the case was the 5th January 2020 and therefore it is possible that

there could have been some cross over of produce from the Huanan seafood market via whole sales to the local fresh market in Wuhan. NERVTAG members commented that this could be a possibility especially considering the long incubation period experienced with coronaviruses.

3.9 The current PHE risk assessment for this virus was presented:

- *Based on current available information, the current impact of the disease is considered:* ***Low/Moderate***
- *Risk to the UK population is considered:* ***Very Low***
- *Risk to UK travellers is:* ***Low***
- *The probability that a cluster in the UK of cases of severe acute respiratory infection of unexplained aetiology requiring intensive care admission is due to WN-CoV remains* ***very low****, but warrants investigation and testing.*
- *The risk to contacts of confirmed cases of WN-CoV infection is* ***low*** *but contacts should be followed up for 14 days following last exposure and any new febrile or respiratory illness investigated urgently.*
- *To note this risk assessment will be reviewed as new information becomes available and any potential risks that may become present.*

The Committee endorsed the PHE risk assessment.

4. PHE and DHSC Actions to Date

4.1 PHE is monitoring the situation and is treating it as an enhanced incident which includes representation from the devolved administrations public health agencies.

4.2 PHE activities include publishing the PHE guidance documents, including the Wuhan novel coronavirus case management algorithm and infection prevention and control guidelines that are publicly available on the GOV.UK website. These will be updated as and when new information becomes available.

4.3 Should a significant outbreak occur, mechanisms to alert clinicians exist, including PHE briefing notes, and supporting the CMO in producing CAS alerts. These have been successfully used in the past in relation to MERS-CoV outbreaks.

4.4 DHSC actions include alerting the CMO, the ministers, the Government Office of Science (that would convene SAGE), and requesting the NERVTAG meeting to discuss the information to hand and provide advice on port of entry screening, and have asked and been accepted as members of the SRG. The SRG is the PHE Strategic Response Group that sits above the management team supporting the enhanced incident.

5. NERVTAG risk assessment and discussion

5.1 The current PHE travel advice was presented:

> Travellers should practice good general hygiene measures, such as regular hand washing with soap and water at all times, but especially before and after visiting farms, barns or wet market areas. More generally, travellers are also advised to avoid consumption of any food that may be contaminated with animal secretions unless peeled and cleaned and/or thoroughly cooked. Travellers should follow the advice of local health authorities. There are currently no travel restrictions to or from Wuhan City, China.
>
> Travellers developing fever and a cough within 14 days of travel from Wuhan City, China should seek medical advice and must report their travel history so that appropriate infection control measures and testing can be undertaken. People who are acutely ill with an infectious disease are advised not to travel but to seek health advice immediately.

The Committee endorsed the PHE travel advice.

5.2 PHE are highlighting the current incident in Wuhan as part of information that is normally sent out for avian influenza for Chinese New Year and this includes avoiding visits to live animal markets.

5.5 Previous advice and scientific data on port of entry screening for SARS, pandemic influenza and Ebola were presented and discussed.

5.6 NERVTAG members noted that data and guidance on pandemic influenza is not directly relevant for this novel coronavirus because pandemic influenza is efficiently transmitted from person to person and has a short incubation period. The incubation period distribution is likely to be relatively long for this novel coronavirus when taking into account the long incubation period seen in both SARS and MERS. Pitman et al (2005) and others have looked at port screening for SARS, which is a more appropriate model in this circumstance. The modelling study by Pitman et al (2005) commented that when exit screening is implemented in a country with a known SARS outbreak or influenza epidemic, entry screening in England would not be effective in preventing the importation of SARS or influenza. If there is already exit screening in place in Wuhan, additional entrance screening in the UK is likely to have a low yield. Therefore, NERVTAG would like to know whether exit screening is taking place in China. If exit screening is in place, NERVTAG noted that the benefit of entry screening would be extremely low.

ACTION 2: DHSC to endeavour to establish if exit screening is taking place in Wuhan.

5.7 NERVTAG members asked whether advice posters for port of entry are available. RS reported that currently such posters are not available. This was noted by DHSC and will take the lead from the Strategic Response Group and will be a definitive ask from DHSC to PHE.

ACTION 3: DHSC to raise issue of advice posters at port of entry with SRG.

5.8 NERVTAG noted that the body of scientific evidence and previous experiences indicate that port of entry screening, whilst not having zero effect, has very low efficacy and the benefit is very unlikely to outweigh the substantial effort, cost and disruption.

Post-meeting note: Notes from the GHSI information sharing call that the UK participated in on the afternoon of 13th January stated that "According to the WHO, regular exit travel measures are in place in Wuhan, where officials are verifying travellers' temperature, but no enhanced measures have been added."

Based on the currently available evidence, taking particular note of SARS rather than influenza and also what we currently know about the novel coronavirus, NERVTAG does support the current position that port of entry screening is not advised. NERVTAG is fully aware of the single case in Thailand detected by a thermal image scan but, in spite of that, the NERVTAG recommendation does not change.

5.10 There were no specific points to raise on the following points of the agenda and agreed to move to AOB: Case and contact definitions (suspected, probable); IPC; Diagnosis; Case and contact management.

6. AOB: HCID interim status

6.1 NERVTAG were briefed that the novel coronavirus has been reviewed by the 4 Nations Public Health Agencies who have recommended it is designated as an interim airborne HCID, although this now has to be considered by other bodies. The group had requested that this information was provided to the Chair of NERVTAG. NERVTAG have noted this and has not raised any specific problems around this precautionary measure.

6.2. Next meeting will be in 2 weeks' time.

ACTION 4 Secretariat to arrange another meeting in around 2 weeks' time.

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