Consideration of whether the disease caused by Wuhan novel coronavirus (WN-CoV) should be classified as a High Consequence Infectious Disease in the UK

Outcome of an extra-ordinary meeting of the 4 nations HCID definition and list group 16:00h on 10 Jan 2020, by teleconference

We recommend that the disease caused by Wuhan Novel coronavirus is classified as an Airborne HCID and, therefore, it should be added to the list of Airborne HCIDs with immediate effect. **This is an interim recommendation** that recognises current uncertainties, the evolving situation in China, and the limited data that have been made available. As such, the group will continue to monitor the outbreak and emerging data, and will keep the assigned HCID status under review.

Notes from the extra-ordinary meeting of the 4 nations HCID definition and list group 16:00h on 10 Jan 2020, by teleconference

Participants
PHE: Jake Dunning (apologies from NR
HPS: Gill Hawkins (apologies from Tom Evans)
PHW: Chris Williams and Giri Shankar
PHA NI: NR and Gillian Armstrong

Important caveats:

1. The novel coronavirus, detected in at least one patient in the Wuhan cluster, is assumed to be the cause of multiple cases of human disease; Koch's postulates and other causation criteria not demonstrated yet
2. It is assumed to have a zoonotic reservoir, but there is no evidence an animal reservoir for this virus yet, nor has a specific zoonotic exposure risk been identified to date
3. WHO has stated no *significant* human to human transmission to date, but we are still in the early days of the outbreak and the associated epidemiological investigations
4. Transmission routes unknown (human-to-human and animal-to-human), but it is reasonable to assume airborne transmission (droplets and aerosols) is possible, consistent with what we know about transmission routes for other coronaviruses

For the purposes of this discussion, it is being assumed that Wn-CoV is the cause of acute illness in at least some of the 59 cases in Wuhan reported as of 05 Jan 2020.

Existing UK HCID criteria:

- acute infectious disease
- typically has a high case-fatality rate
- may not have effective prophylaxis or treatment
- often difficult to recognise and detect rapidly
- ability to spread in the community and within healthcare settings
- requires an enhanced individual, population and system response to ensure it is managed effectively, efficiently and safely

Application of the UK HCID criteria to WN-CoV

1. **Acute infectious disease – YES**
   Epidemiological data are limited currently, but the implication from reports from China is that this is an acute infectious disease.
2. **Typically has a high case-fatality rate – UNCERTAIN**

Too early to say as early days of outbreak and initial cases remain hospitalised, but appears to be capable of causing critical illness (e.g. 7/59 in one report, but it is not clear if these all had a non-seasonal coronavirus or WN-CoV detected or met the probable or confirmed case definitions being used in Wuhan). If WN-CoV causes hospitalisation and/or severe disease/critical illness, it is reasonable to also assume it could also cause fatalities.

3. **May not have effective prophylaxis or treatment – YES**
   While it is possible that experimental agents for the treatment of MERS or SARS could also have an effect in WN-CoV disease, particularly antivirals, there is no current known treatment or prophylaxis for WN-CoV disease. Based on experience from MERS and SARS, it is unlikely that proven effective treatments or vaccines will emerge quickly.
4. **Often difficult to recognise and detect rapidly – YES**
   The outbreak is novel, as is the assumed causative pathogen. Current awareness across the clinical community is likely to be low, despite media coverage and attempts to raise awareness/make information available to healthcare professionals, which may limit clinical recognition of imported or secondary cases should they occur in the UK. Currently there is no specific diagnostic laboratory test for WN-CoV. The diagnostic strategies for the UK are being developed, but in England it is likely that screening for coronavirus will be offered by one or more PHE laboratories (by a gel-based pan-coronavirus PCR), with subsequent exclusion of 4 seasonal coronaviruses by PCR and sequencing of any samples that are positive on the pan-coronavirus PCR. These assays will take a longer time than performing an in-house one-step PCR in an NHS laboratory, such as a rapid influenza PCR.
5. **Ability to spread in the community and within healthcare settings – UNCERTAIN**
   WHO stated on 05 Jan that there is no evidence of significant human-to-human transmission and no health care worker infections have been reported. However, investigations are ongoing and it would be unusual, but not impossible, for all transmissions to be zoonotic in the Wuhan outbreak (59 cases reported as of 05 Jan). There is also no information about the IPC and PPE used in Wuhan and whether it is similar or better than PPE/IPC measures used by UK HCWs assessing acute respiratory illness in a traveller from China. Characterisation of the novel coronavirus is ongoing, but there is unverified information that it is a beta coronavirus, possibly in the same lineage as SARS-CoV. We know that both MERS and SARS coronaviruses have been associated with h2h transmission events in community and hospital settings, including super-spreading events. It appears reasonable at this stage to assume some human-to-human transmission may have occurred or could occur, or even be identified retrospectively as investigations continue. It may be a suitably cautious approach to assume that at least some h2h transmission can occur, with the potential for super-spreading events under certain circumstances, even if there is no evidence of sustained transmission more generally.
6. **Requires an enhanced individual, population and system response to ensure it is managed effectively, efficiently and safely – YES**
   The incident in Wuhan is already being managed by PHE as a national enhanced incident, despite not having any cases in the UK. This reflects concerns about this being a novel pathogen, an unquantified potential for in-country, regional and international spread especially as the Lunar New Year approaches in China, and previous experiences with other novel coronaviruses (MERS and SARS) and how they were managed. Given the lack of clinical awareness and experience for this novel disease/pathogen, and a potential risk of nosocomial and community transmission with coronaviruses, significant coordination of activities would be required across public health, the clinical service and government departments.