Briefing on contact tracing and management recommendations for Wuhan Novel Coronavirus (WN-CoV)

Purpose

To inform discussion on contact tracing guidance to respond to WN-CoV cases for agreement by the Incident management team

Questions for DHSC

1. Does DHSC support the recommendations for contact tracing and management of confirmed cases?

2. Does DHSC support the recommendations for contact tracing and management of severely ill possible cases?

Background

Although there is ~~growing~~ clear evidence for human to human transmission for the 2019-Novel Coronavirus also referred to as Wuhan Novel Coronavirus (WN-CoV), detailed epidemiological information about transmissibility and high- risk exposure are limited. Therefore, recommendations are informed by previous experiences from other epidemic-prone coronaviruses as well as other viruses known to be highly transmissible via the airborne route. The following contact categories have been discussed by epidemiology representation from the 4 nations public health agencies and the recommendations below have been agreed by this group and by the PHE national Incident Management Team.

Household-level contact

There is significant evidence from SARS and MERS that household contacts of an index case are at high risk of infection; both diseases have considerable evidence of household and family clusters. Therefore, contacts in this category are considered a high risk group for contact tracing and monitoring.

Representatives of the 4 Nations public health agencies agreed that existing definitions used for household-level contact in public health practice would be appropriate for defining contacts in this group with the benefit of being familiar enough to operationalise.

Healthcare settings

Both SARS and MERS have previously caused significant healthcare outbreaks which have infected healthcare workers, other patients and visitors and caused super-spreading events.

The highest risk exposures will be for those with direct contact with cases (such as undertaking medical observations, clinical examinations, taking samples, etc) as well as

Commented [VTJ1]: The evidence does not ned to grow any more. It is already quite clear.

Commented [VTJ2]: Very much the correct approach

Commented [VTJ3]: yes

Commented [VTJ4]: You don't need extra evidence but for info HKU have been into China and are clearly reporting back to WHO on several nosocomial amplifications of 2019-N-CoV in hospitals and clinics not officially reported

close exposure to fine particles ~~for transmission~~ via the airborne route. The latter will include exposures such as being within the same room when aerosol-generating ~~he testing~~ procedures are undertaken on the case. Such exposures are already established for categorisation of contacts for other infectious diseases.

It is recognised that correctly worn personal protective equipment (PPE) significantly reduces the risks of infection for healthcare workers when managing cases. This is also an important aspect to provide reassurance to healthcare workers and to protect vital healthcare capacity. It is also recognised that correct use of PPE (including removal) reduces the risk of infection although there will remain a very low but background risk. This is acknowledged and managed by providing the healthcare worker with information on symptoms compatible with infection with advice to self-isolate if these develop, exclude from work and emergency contact details to report this. This is recommended to maintain a balance between prevention of transmission in healthcare settings and to allow healthcare workers to continue to work safely. If this was not supported, then every healthcare worker looking after cases would need to be excluded after exposure even if after wearing PPE, raising the question of how this vital care would be delivered.

Commented [VTJ5]: Very pragmatic

For those healthcare workers with a suspected or observed breach of PPE while exposed to a case, these individuals would be placed under daily health monitoring (active follow-up) and self-isolation.

Aircraft

These recommendations are based on newly issued RAGIDA guidance documents[1] published by ECDC on 22nd January 2020 relating to MERS-CoV but which specifically states that "*the approach proposed in this guidance could also be used for contact tracing of novel coronavirus cases associated with the 2019-nCoV outbreak in China or other novel coronavirus infections, until further evidence warrants a new review*". In the absence of other advice, the recommended RAGIDA approach will be adopted including contact tracing of cabin crew serving the area where the passenger ~~crew member~~ of interest was located and a 2 seat radius around the case. These individuals would be placed under passive follow-up and discouraged from travelling abroad during their follow-up period.

Other exposures

The recommendations for other settings are based on evidence from other epidemic prone coronaviruses. Findings from community settings during the SARS outbreak in Canada demonstrates an increased risk of being a case for contacts who have been within 1 metre of ~~with~~ a case for 30 minutes or more[2]. Since the SARS outbreak, the growing body of evidence indicates that a distance of 2 metres should now be used when considering airborne spread.

Commented [VTJ6]: agreed

[1] European Centre for Disease Prevention and Control. Risk assessment guidelines for infectious diseases transmitted on aircraft (RAGIDA). ECDC: Stockholm; 2020.

[2] Rea E, Laflèche J, Stalker S, et al. Duration and distance of exposure are important predictors of transmission among community contacts of Ontario SARS cases. Epidemiol Infect. 2007

CDC has defined close contacts of SARS cases as

"*Close contact is defined as having cared for or lived with a person known to have SARS or having a high likelihood of direct contact with respiratory secretions and/or body fluids of a patient known to have SARS. Examples of close contact include kissing or embracing, sharing eating or drinking utensils, close conversation (<3 feet), physical examination, and any other direct physical contact between persons. Close contact does not include activities such as walking by a person or briefly sitting across a waiting room or office*."

Given the limited information available, a precautionary approach was also considered for these exposures, using an airborne infection with a high basic reproduction number such as Measles, for which R_0 which has ranged from 11-18. This is far higher than that estimated by WHO for WN-CoV (1.4-2.5). Therefore considering a similar contact tracing approach to Measles should account for the potential for significant transmissibility of WN-CoV outside of households, healthcare settings and aircraft, where many uncertainties exist.

Accounting for the above considerations, a precautionary but graduated approach was adopted with the highest risk considered to be those with direct exposure or face-to-face contact with discrete recommendations further away but still within 2 metres. This phrasing was agreed as this reflects regularly used terminology by local health protection teams.

Commented [VTJ7]: The WHO official R0 estimates are quite a bit lower than the modelling experts globally are advising: R0 = 2.5 – 3.5.

Commented [VTJ8]: Seems precautionary and pragmatic

Commented [VTJ9]: Not entirely sure what a discrete recommendation is. Do we mean bespoke?

Recommendations for management of contacts of confirmed cases

The recommendations for public health follow-up are related to the different risk categories and include:

- Active follow-up and self-isolation:

  This includes provision of health advice to the contact regarding the potential symptoms of infection, daily communication with the contact to check on health status, self-isolation for the 14 days after exposure and emergency contact details to call to report the development of any potential symptoms.

- Passive follow-up:

  This includes provision of health advice to the contact regarding the potential symptoms of infection, clear instructions to self-isolate in the event of becoming symptomatic in the 14 days after exposure, and emergency contact details to call to report this.

  There is advice against travel for all contacts during the 14 day follow-up period.

The recommendations for each group are categorised in Table 1

Table 1: Summary of follow-up recommendations.

Category	Description	Follow-up	Self-isolation
A	Household contact- living or spending significant time in the same household *e.g. living and sleeping in the same home, students in university accommodation sharing kitchen or bathroom facilities, sexual partners.*	Active follow-up for 14 days after last exposure in this category	Yes
B	Persons in healthcare settings (e.g. healthcare workers, visitors) who **have not** worn recommended PPE (or suffered a PPE breach) OR laboratory workers who **have not** used appropriate laboratory precautions*, during the following exposures to the patient: Direct contact with the case or their body fluids or their laboratory specimens OR presence in the same room of a healthcare setting when an aerosol generating procedure is undertaken on the case	Active follow-up for 14 days after last unprotected exposure	Yes
C	Persons in healthcare settings (e.g. healthcare workers) who have worn recommended PPE (without breaches) during all the following exposures to the patient: Direct contact with the case or their body fluids or their laboratory specimens, OR presence in the same room of a healthcare setting when an aerosol generating procedure is undertaken on the case	Passive follow-up for 14 days after last exposure	No

D	**For any other (non-aircraft) exposure not satisfying in categories A-C:** Direct contact or face to face contact with case e.g. talking, being coughed on **for** any length of time *NB: this can include healthcare settings and community settings if exposures do not meet the above categories* .	For exposures in this category **without recommended PPE (e.g. visitors in healthcare setting):** Active follow-up for 14 days after last unprotected exposure For exposures in this category **with recommended PPE** (e.g. for healthcare workers in healthcare setting): Passive follow-up for 14 days after last exposure	Active follow-up group: Yes Passive follow-up group: No
E	**For any other (non-aircraft) exposure not satisfying categories A-D:** being ≤2 metres of the case for >15 minutes. *NB: this can include healthcare settings and community settings if exposures do not meet the above categories*	Passive follow-up for 14 days after last exposure	No
F	**Aircraft-specific:** Passengers in 2 seats in all directions around the case AND Cabin crew serving the area where case seated	Passive follow-up for 14 days after last exposure	No

For all above contact exposure categories: Advise against travel outside the UK. Contact ICC if travel is planned during the 14 days after exposure.

** Laboratory workers are normally managed under their own laboratory safety systems. However, it is recognised that if laboratory precautions are not followed as required, then these individuals may have had a significant exposure and should qualify for follow-up*

Recommendations for management of contacts of severely ill possible cases

As previously indicated by DHSC, a precautionary approach has been adopted in relation to severely ill contacts of possible cases. H~~, with h~~ousehold-level contacts and healthcare

setting contacts (such as staff and other visitors) not wearing full PPE will be advised to self-isolate with a daily symptom check (active follow-up).

In this scenario, the recommendation will be that self-isolation should be advised for the following groups of contacts of possible cases who required high dependency unit or intensive care unit level support:

- Household-level contacts (as described in Table 1)
- Healthcare setting contacts who did not wear the recommended PPE during direct contact with the case, their body fluids or their laboratory specimens, or have been in the same room of a healthcare setting without wearing full recommended PPE when an aerosol generating procedure was undertaken on the case

This self-isolation should continue until WN-CoV results for the case are available. These contacts should be contacted to check for any symptoms on a daily basis if the self-isolation period extends beyond 1 day from the date of exposure.

No other contacts of possible cases who require high dependency unit or intensive care unit level support, would require any public health action as the above contacts are considered to be the highest risk exposures.

Feedback received from devolved administration public health agency colleagues when writing this proposed guidance, is that this would be practically challenging to implement if the possible case was a child and the parent had to self-isolate. Additionally, severely ill patients who are considered unlikely to survive could not be visited by members of the same household.

In relation to the healthcare setting staff, concerns have been raised about potential impacts on continuity of services if staff members exposed without adequate PPE are required to self-isolate. Self-isolation of non-staff members in healthcare settings (e.g. visitors) may also have significant impacts on the individual in relation to a possible case.

PHE

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