

Question: If there is evidence of a cluster of Covid-19 cases in the UK, what will the PHE proposal be to:

1. **Contain outbreak in the UK?**
2. **Slow the spread of the outbreak in the UK, if containment is not possible?**

Assumptions

1. An outbreak is assumed to mean an epidemiologically linked group of cases, and **not** a group of sporadic imported cases or sporadic indigenous cases detected by surveillance. An outbreak is identified through PHE/NHS current detection approaches of screening, contact tracing and testing in closed settings or through community contacts.
2. These scenarios occur in the current detection/containment phase, with no sustained community transmission in the UK. This assumes that containment phase public health and health infrastructure is in place, incorporating current port health, NHS and health protection pathways and current recommendations on travel and self-isolation.
3. 'Slowing the spread' of the outbreak is interpreted as minimising the number of new cases each day
4. Asymptomatic infection is now well documented, but there is very limited evidence of transmission from asymptomatic cases. It is assumed that the substantial majority of transmission is from symptomatic individuals with COVID-19.

Three scenarios have been considered: a community-based outbreak, a nosocomial outbreak, and an outbreak on a ship in a UK port.

Scenario 1: Community-based outbreak

1A - Containment: PHE will adhere to its current protocol for containment of single case or small clusters, incorporating:

- Contact tracing (contacts from the symptomatic period only)
- Isolation of high risk contacts and daily active health monitoring
- Community cleaning and decontamination
- Wider health advice to group settings such as conferences
- Working with NHSE to provide rapid access to assessment and testing; rapid turn-around of testing
- Requesting activation of the HCID network to transfer any PCR-positive cases, even those who are asymptomatic, into HCID unit isolation

In addition, PHE will consider

- Special measures for settings related to the outbreak such as closure of an individual school or residential setting depending on the level of exposure
- Testing of asymptomatic high-risk contacts

Further questions that require modelling:

- In the context of a single cluster, are there circumstances in which wider area school closures should be considered?
- What would be the potential benefit of testing close contacts who are asymptomatic?

1B Slowing spread

- 'Warn and inform' approach to known contacts, but limited investigation and contact tracing
- Contacts self-isolate at home with no health monitoring
- Raising awareness in local health care services
- Maintain appropriate protection for healthcare staff
- Reinforce regular environmental cleaning messages
- Public awareness campaign regarding respiratory hygiene

Scenario 1 Questions

- Would closing public gathering events on a rolling basis (such as attendance at sport events) has significant benefit to slowing spread beyond a short period?
- Would there be a significant benefit from general social distancing measures, such as minimising movement outside homes, workplaces and schools?
- What additional advantage would there be for household quarantines of contacts rather than individuals?
- Would there be significant benefit in domestic travel restriction?

Scenario 2: Nosocomial outbreak**2A - Containment:**

We assume an outbreak of 5-25 cases (including 25% healthcare workers) at the time of detection, which may subsequently expand. In general, containment in a nosocomial setting requires strict adherence to the airborne HCID approach:

- Strict HCID isolation of cases
- Airborne HCID treatment PPE and infection control approach; consider requesting support from an HCID centre for the affected hospital
- Cohorting of staff (one group looking after infected cohort, one looking after uninfected)
- HCID protocol decontamination
- Active health monitoring for staff +/- supported isolation (for example in hospital staff accommodation, away from families) for those in highest risk groups
- Passive health monitoring of staff who work in the outbreak affected areas
- No discharges to care or residential homes
- Patients who are not cases, do not have COVID-19 compatible symptoms and are medically fit for discharge could be discharged to own home with isolation/ household quarantine
- Restriction of all visiting and non-essential personnel on site
- Cancellation of non-essential health service provision (such as elective surgery, outpatients appointments) which are operated from the same site
- Relocation of health service provision to alternative sites where possible
- Provision of local facilities for assessment of contacts who become symptomatic (to avoid systems becoming overwhelmed and cross-infection)
- Surge capacity to locality in relation to support services such as ambulances

2B - Slowing spread

Slowing spread may be attempted with a conventional respiratory isolation approach:

- Use of designated cohort wards incorporating rigorous adherence to standard infection prevention and control measures
- Standard respiratory PPE, incorporating FFP3 mask to maintain protection of healthcare workers if possible
- Restrictions on visitor attendances
- Avoidance of all non-urgent health service provision (such as outpatient appointments) during this phase
- Remaining health services to use telehealth delivery as far as practicable

Scenario 3: Outbreak on a ship in a UK port

3A – Containment:

Evidence from recent incidents has demonstrated that this scenario can lead to high numbers of secondary cases. A key concern in ship quarantine is the potential lack of isolation and air filtration between each room on the ship and thus the potential of airborne transmission through the ventilation network.

Containment activities would include:

- Port health support to ship prior to docking to allow early identification of the presence of ill persons onboard
- Symptom screening approach to identify possible cases
- Rapid confirmation of diagnosis at appropriate laboratory and transfer of confirmed cases to HCID centre
- Contact tracing and active health monitoring of identified contacts
- All individuals (passengers and crew) who have been on board the ship would be subject to self-isolation for 14 days after their last exposure
- Passengers and crew should not remain on the ship for self-isolation as there is uncertainty whether the ventilation systems could support full isolation between individual rooms; adequate infection control and decontamination is challenging while delivering food and other residential packages across a closed environment by potentially symptomatic crew members.
- Passengers and crew should be transferred to an appropriate supported isolation facility location elsewhere
- Decontamination protocol on the ship
- Repatriation of nationals to other countries at the relevant point after end of self-isolation

3B - Slowing spread:

In this scenario, cases would be identified as above, but cared for in standard respiratory isolation in an appropriate hospital. Asymptomatic passengers and crew would be allowed to disembark with advice to self-isolate at home for 14 days. International passengers could be repatriated whilst asymptomatic, subject to arrangements with their home country.