

Rapid review: Isolation of the dying during the COVID-19 pandemic

Dr Karen Wright, Public Health Medicine Specialist. April 18, 2020

Te Rōpū Whakakaupapa Urutā National Māori Pandemic group research question

What is the evidence for isolation of an individual dying with or without COVID-19 during the COVID-19 pandemic?

Additional questions:

- What is the risk of COVID-19 transmission to visitors of an individual dying with or without COVID-19 during the COVID-19 pandemic?
- What is the risk to health care providers from individuals dying with or without COVID-19 having visitors during the COVID-19 pandemic?

Key findings

- Emergent research suggests that viral load may reflect severity of disease and that SARS-CoV-2 may be detectable until death in non-survivors
- Evidence from case studies in Hong Kong and China suggests that it is possible to implement effective infection control measures in hospitals to prevent nosocomial infections
- Effective infection control strategies are comprehensive, including both hospital-wide and case management measures, and enforced
- The impacts of restricting visitors to patients receiving palliative care during a pandemic extend beyond infection control, affecting how both patients and visitors cope with loss and dying

Context

Following the move to COVID-19 Alert Level 4 health care services have implemented several measures to increase physical distancing. DHBs, including the Northern region and Waikato DHB, have implemented no visitor hospital policies with variable exceptions such as a parent or guardian supporting children, a partner being present during delivery/maternity, and essential or compassionate grounds including end-of-life support. Some palliative services are restricting visitors to one whānau/support person for the duration of the palliation time. As such, palliative care services are having to manage both patient and visitor distress resulting from COVID-19 related visiting restrictions. The Unite against COVID-19 website¹ indicates that one member of a household “bubble” can attend a medical appointment as a support person. Specific guidance with regards to end-of-life support is not provided.

Method

Rapid search on April 14-15, 2020 of LitCovid, PubMed, WHO COVID-19 database, COVID-19 database, and UpToDate COVID-19 for literature relating to the isolation of patients or people dying during COVID-19 pandemic, or nosocomial transmission of COVID-19. This is not a systematic review and has not been peer reviewed.

¹ <https://covid19.govt.nz/individuals-and-households/health-and-wellbeing/how-to-access-healthcare/>

Summary of literature

The disease COVID-19 is caused by transmission of the novel coronavirus SARS-CoV-2. Evidence is emergent and much remains unknown regarding transmission and infectivity. Based on the current evidence, the mode of transmission is thought to be primarily via respiratory droplet. Airborne spread has not been reported by the World Health Organization at the time of writing (1), however, appropriate personal protective equipment (PPE) is recommended for aerosol-generating procedures (2). The evidence surrounding faecal-oral transmission is less clear but appears to be low (1). Virus can remain viable on surfaces for up to three days, suggesting that fomites can transmit SARS-CoV-2 (3).

The period of transmission is also unclear. Current research suggests the period of transmissibility may start before the onset of symptoms (4-6) and extend beyond resolution of symptoms (7). There is some evidence to suggest that viral load may vary by disease severity. One study found severe cases had higher viral loads and remained positive for longer than mild cases (8). A retrospective cohort study found SARS-CoV-2 to be detectable until death in non-survivors (9).

There is limited literature addressing end-of-life visiting. A Canadian guide to best practice end-of-life care for a patient with COVID-19 acknowledges that the pandemic has resulted in visitation restrictions in most centres (10). The guide recommends, based on evidence where available and by clinician consensus, that visitors must adhere to droplet and contact precautions including wearing PPE (procedure mask with face shield, isolation gown, gloves) and performing hand hygiene. Literature specifically addressing the isolation of individuals dying in hospital during the COVID-19 pandemic was not identified.

In response to the limited literature, additional questions as outlined above, have been generated to address the following presumed underlying assumptions for the restriction of visitors and isolation of the dying. First, the visitor may themselves pose a risk to patients, health care workers (HCWs) and other visitors through transmission of COVID-19 infection; second, visitors may be at risk of becoming infected by either the patient or from the hospital environment.

Literature exploring nosocomial infection – infection caught in hospital – has been used as a proxy for the risk of visitors acquiring or transmitting COVID-19. It is acknowledged that there are limitations to this assumption as there are likely to be significant differences in the ability of visitors and HCWs to adhere to infection controls measures, therefore, care must be taken when applying some of the following discussion to hospital visitors.

Nosocomial infection literature is emergent and is limited to case study and commentary in peer reviewed journals. Two case studies in Hong Kong describe the infection controls implemented in hospitals with no identified nosocomial transmission. Cheng et al (11) describe the infection control measures implemented by the Hong Kong Hospital Authority immediately after the official announcement of the pneumonia cluster of unknown aetiology in Wuhan, China on December 31, 2019, 23 days before the first imported case in Hong Kong. Proactive measures, implemented across 43 public hospitals responsible for 90% of inpatient services in Hong Kong, included hospital wide and specific case management measures. Case management included early recognition, testing and isolation of cases with contact, droplet and airborne precautions. When airborne infection isolation rooms were unavailable, patients received care in wards with 1 metre spacing between patients. Exposed close contacts of cases were quarantined for 14 days. Hospital-wide measures included the provision of surgical masks to all HCWs, patients and visitors in clinical areas in addition to promoting and enforcing hand hygiene. PPE was used by HCWs for all aerosol-generating

procedures, regardless of COVID-19 status. At 6 weeks 42 confirmed cases had been admitted to Hong Kong hospitals and no nosocomial cases identified. Environmental surveillance detected viral load on surfaces but not in air samples.

Wong et al describe the infection control measures around a single case diagnosed after being on an open ward (12). In addition to contact tracing, quarantine, medical surveillance and testing, vigilant basic infection control measures (wearing surgical face masks, hand and environmental hygiene) were implemented. Although only a single case, 49 patients and 71 HCW were exposed and no cases were identified at the end of 28-day surveillance.

In China, an 'eagle-eyed observer' approach is described in a hospital that had 35 confirmed cases and no nosocomial infection (13). Observers acted at three stages to support novel infection control measures: before HCWs entered wards, while in the ward, and on leaving. Measures included medical surveillance, ensuring adherence to infection control measures such as guiding donning of PPE, and identifying occupational exposure.

Detailed exploration of the impacts of isolating and restricting visitors to people receiving palliative care during a pandemic is outside the scope of this review. However, it is acknowledged that impacts extend beyond transmission of an infectious disease. For example, previous research in Singapore during the SARS outbreak suggests that the adopted disease containment strategies disrupted patient connectedness, created difficulties in helping patients and their families prepare for death, and disturbed the process of bereavement (14).

Evidence suggests, albeit weak, that SARS CoV-2 is not transmitted via airborne route and nosocomial infection can be prevented through infection control measures. There are limitations to the studies identified and implications for relevance in New Zealand. First, it is possible that asymptomatic or mild cases were not identified through testing and therefore nosocomial infection undetected. Second, these infection control strategies were implemented in countries with previous exposure to novel outbreaks of disease, such as SARS, and may be more familiar and, therefore, more likely to adhere with such measures.

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