



## Letter to the Editor

### The early test catches the case. Why wait? Frequent testing of close contacts aids COVID-19 control



Sir,

One of the significant challenges in hospitals during the coronavirus disease 2019 (COVID-19) pandemic has been prevention of nosocomial transmission. As the pandemic evolved, the hospital infection prevention and control (IPC) approach has differed considerably from previously, including the implementation of universal SARS-CoV-2 admission testing and asymptomatic patient and staff testing as part of ward outbreak management [1,2]. As shared patient accommodation along with staff movement enhances SARS-CoV-2 transmission, timely identification and management of positive patients and close contacts has been key [3].

Of 820 beds in our institution, only 136 are single rooms, 77% with en-suite facilities and 12 airborne isolation rooms. Most accommodation is multi-occupancy; comprising six-, four- or two-bedded rooms, with one shared bathroom. All patients in a shared bay are considered COVID-19 close contacts when a positive 'index' patient is detected in that bay, day 0 being the date of index patient positivity. Close contacts are either isolated or cohorted for 14 days, or advised to restrict movements if discharged within 14 days. Up to November 2020, close contact patients were tested on day 0 and day 7 after index patient detection. Aside from close contact testing, indications for repeat SARS-CoV-2 testing included surgery, discharge to another healthcare facility and development of symptoms.

Because of the five-day median incubation period, we were concerned that undetected potentially infectious close contacts remained in multi-bedded bays until tested on day 7 [4]. Likewise, undetected patients who became positive thereafter could pose an IPC risk. Effective November 18<sup>th</sup>, 2020, we commenced testing inpatient close contacts every 48 h up to day 14 and now describe our experience to February 14<sup>th</sup>, 2021. Inpatients deemed a COVID-19 close contact in the community were excluded, as 'day 0' could not be reliably ascertained. For each close contact, day 0 was the date of exposure to the index patient. For any contact who became SARS-CoV-2 positive, the interval between day of index patient exposure and day of

positive result was recorded. For patients with more than one exposure, the interval was calculated as the date of first exposure to the date of positive polymerase chain reaction (PCR) result. Data on symptoms were not collected.

Of 340 close contacts, 53% ( $N = 180$ ) had a positive PCR result within 14 days of index patient exposure (Figure 1), the majority ( $N = 141$ , 78%) in the first six days with 16% positive within the first 48 h, enabling prompt IPC action in advance of a day 7 test. All patients had a negative admission screen. There were 26 contact patients (14.4%) detected as SARS-CoV-2 positive after day 8, who would have been missed without testing beyond day 7. The combination of frequent testing and rapid isolation of newly detected COVID-19 patients likely contributed to 47% (160) close contacts remaining PCR negative.

Previous studies have demonstrated the correlation between hospital ward design and nosocomial infection rates [5]. Limited isolation facilities are a reality across Europe, with the median proportion of hospital single rooms at 24.2% [6]. Patients with nosocomial COVID-19 tend to be older and frailer with higher mortality, highlighting the need to maximize IPC efforts to prevent cross-transmission [7]. Frequent testing of hospitalized close contact patients is especially important in our institution, because of our infrastructure. While we have no patient symptom data, IPC action is required irrespective, because of infectivity during the incubation period [4]. To date, there is surprisingly little in the literature regarding optimal testing schedules for inpatient close contacts. With the dominance of the delta variant with higher infectivity and

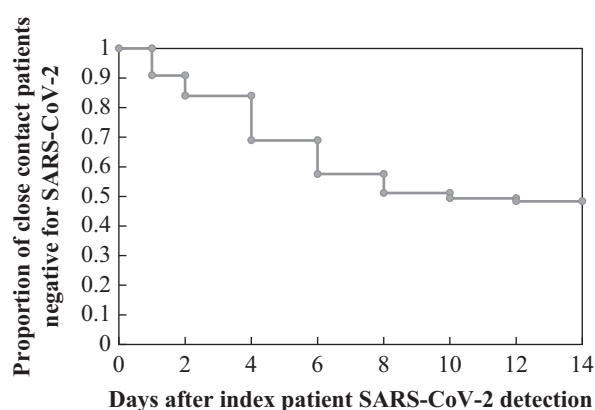


Figure 1. Time to positive SARS-CoV-2 results for 180 close contact inpatients.

shorter median incubation periods (four days), rapid detection and isolation of asymptomatic COVID-19 patients will become especially important as winter approaches [8].

#### Conflict of interest statement

None declared.

#### Funding sources

None.

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