

SAMPLE ABSTRACT

Incidence of COVID-19 in Quarantined Health Care Workers: A Single-Centre Retrospective Analysis of Hospital-Based Contact Tracing during Australia's Second Wave

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Background

Hospital-based contact tracing aims to prevent the spread of COVID-19 within healthcare facilities. In large outbreaks, this can be resource intensive, and planners may have to consider workforce impacts of quarantining staff. To inform strategies for defining, quarantining, and testing health care worker (HCW) contacts, we aimed to determine the rate and timing of COVID-19 among quarantined HCWs, and to examine factors associated with infection.

Methods

We extracted data on HCW quarantined through hospital-based contact tracing from the contact tracing database of a large public healthcare facility in Melbourne, Australia, for the period June-September 2020. Close contacts were quarantined for 14 days following exposure and tested routinely on day 11. We used multivariate logistic regression to examine factors associated with diagnosis in quarantine. We fit gamma, lognormal, and Weibull distributions to symptom onset data for quarantined HCWs.

Results

COVID-19 was diagnosed in 11% (52/483) of instances in which HCW were quarantined due to close contact, accounting for 19% of all 270 HCW cases. In 361 instances with a clear index case, higher odds of infection were associated with contact with an infectious patient compared to an infectious HCW (OR: 4.69, 95% CI: 1.98–12.14). Contact external to the workplace was associated with higher odds of infection compared to workplace contact only (OR: 7.70, 95% CI: 2.63–23.05). We estimated 16–46%, 65–92% and 88–100% of symptomatic cases would develop symptoms by 3, 7, and 11 days since last close contact, respectively.

Conclusions

In our setting, hospital-based contact tracing detected and effectively contained a significant proportion of HCW cases, without resulting in furlough of an excessive number of non-infected staff. Contact between HCWs outside of the workplace must be recognized and responded to. Case detection strategies relying solely on routine testing of quarantined HCWs before 11 days since last exposure may be insensitive.