

## SYNOPSIS

03/17/2020

# Review of “Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, 2020”

**Article citation:** Mizumoto K, Kagaya K, Zarebski A, Chowell G. Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, 2020. Euro Surveill. 2020;25(10):2000180. Available from:

<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.10.2000180>

## One-Minute Summary

- This article summarizes coronavirus disease 2019 (COVID-19) infections among passengers of the Diamond Princess cruise ship.
- On February 5, 2020, the cruise ship, hosting 3,711 people, underwent a two-week quarantine after a former passenger was found to have COVID-19 after disembarking.
- Between February 5 and 21, a total of 3,063 tests were conducted among people on board and **634 persons tested positive**. Of these, 476 (75.1%) of cases were  $\geq 60$  years old and 313 (49.3%) were female.
- Of the 634 patients that tested positive, 306 (48.3%) were reported as symptomatic and 328 (51.7%) were reported as asymptomatic at the time they were tested.
  - The authors used a statistical model to infer the proportion of asymptomatic infections.
  - It was estimated that 197 of the 328 (60.6%) asymptomatic cases would eventually develop symptoms. As such, they estimate that **17.9% of infected cases would be truly asymptomatic** through the entire course of infection.

## Additional Information

- The authors did not observe asymptomatic cases after their positive test, as patients that tested positive were removed from the cruise ship; therefore, the number who went on to develop symptoms is uncertain.
- Testing was prioritized among those with symptoms and high-risk groups, which may have led to an underestimation of the proportion of asymptomatic infections.
- Individuals testing positive included one quarantine officer, one administrative officer, and one nurse.

## PHO Reviewer’s Comments

- Cruise ships tend to host older-than-average populations, so the estimated proportions of asymptomatic cases reported in this study may not be generalizable to all age groups.
- The authors mention that high-risk groups were prioritized for screening, but do not specify the criteria for being classified as high-risk.

## Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Review of “Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, 2020”. Toronto, ON: Queen’s Printer for Ontario; 2020.

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