

SYNOPSIS

04/22/2020

Review of “COVID-19 outbreak associated with air conditioning in restaurant, Guangzhou, China, 2020”

Article citation: Lu J, Gu J, Li K, Xu C, Su W, Lai Z, et al. COVID-19 outbreak associated with air conditioning in restaurant, Guangzhou, China, 2020. *Emerg Infect Dis.* 2020 Apr 2 [Epub ahead of print]. Available from: https://wwwnc.cdc.gov/eid/article/26/7/20-0764_article

One-Minute Summary

- The authors report on three COVID-19 family clusters that were linked back to a restaurant exposure on January 24th, 2020 in Guangzhou, China.
- Family A travelled from Wuhan on January 23rd and ate lunch at the restaurant on January 24th at a table located in between families B and C. The tables were each separated by one metre. Patient A1 developed symptoms later in the day on January 24th.
- A total of 10 individuals developed COVID-19 from these three families (five from family A, three from B, and two from C). Contact tracing did not find other exposures for families B and C, aside from lunch next to family A, which lasted approximately one hour.
- There were a total of 81 additional persons in the restaurant (73 customers and 8 staff) who were quarantined and monitored for 14 days. None developed symptoms and throat swabs were negative.
- The authors present a [figure](#) of seating arrangements and airflow from air conditioners in this restaurant. The authors concluded that the infection spread through droplets facilitated by air currents.

Additional Information

- A timeline is provided in the appendix. The authors postulate that three members from family B were infected in the restaurant directly from patient A1, however the incubation periods would also support within household transmission of two members of family B. For family C either both members could have been infected in the restaurant or the second infection may have occurred in the home.
- The restaurant tables were one metre apart; however, based on the seating arrangement patient A1 was more than one metre away from patients B1 and C1. Therefore the authors suggest the strong airflow may have propagated viral droplets beyond the one metre distance.

PHO Reviewer's Comments

- This study highlights pre-symptomatic transmission and provides some additional insight into disease transmission of COVID-19. The fact that only contacts seated within the closest tables along airflow lines became infected provides evidence of droplet transmission.
- This small case series does not definitively establish the route of transmission, however the finding that no other patrons or staff were infected aside from those seated at neighbouring tables, suggests a lack of airborne transmission, consistent with previous studies.
- This study has implications for mitigating transmission of infectious droplets through physical distancing of restaurant tables beyond one metre, as well as improving ventilation of indoor spaces.
- A weakness of this report is that the authors did not conduct any aerodynamic testing to support their hypothesis. In addition, the authors focused on potential droplet transmission at the restaurant and did not explore other possibilities, such as indirect transmission of fomites.

Citation

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