

## SYNOPSIS

02/04/2020

# Review of “First case of 2019 novel coronavirus in the United States”

**Article citation:** Holshue ML, DeBolt C, Lindquist S, Lofy KH, Wiesman J, Bruce H, et al. First case of 2019 novel coronavirus in the United States. *N Engl J Med.* 2020 Jan 31 [Epub ahead of print]. Available from:

<https://www.nejm.org/doi/full/10.1056/NEJMoa2001191>

## One-Minute Summary

- This article presents a detailed clinical case report of the first case of 2019-nCoV infection confirmed in the United States. A 35-year old healthy male with a **four-day history of cough and subjective fever** presented to a clinic in Washington State after returning from Wuhan, China four days earlier.
- **Exposure:** He reported no exposure to ill people or to the Huanan seafood market while in Wuhan.
- **Infection control precautions:** Although he was initially sent home, the following day his nasopharyngeal and oropharyngeal swabs **tested positive for 2019-nCoV**. He was admitted to an **airborne-isolation unit** and put on **contact, droplet, and airborne precautions with eye protection**.
- **Pneumonia:** Although the patient had a cough on admission, his chest X-ray was normal on admission and on his third day post-admission (illness day seven); however, his chest X-ray showed evidence of pneumonia on illness day nine and 10, coinciding with a fall in his oxygen saturation. He was investigated and treated for a hospital-acquired pneumonia, but tests were negative and antibiotic treatment was discontinued.
- **Diarrhea and positive stool sample:** The patient had diarrhea on illness day six and seven. The only stool sample, which was collected on day seven, was positive for 2019-nCoV. The authors note that extrapulmonary RNA does not necessarily mean that infectious virus is present.
- **Treatment and recovery:** In addition to antibiotics, the patient was given the investigational antiviral therapy, remdesivir, on illness day 11. The patient’s clinical condition improved on illness day 12 and on illness day 15, the patient was afebrile, with a persistent cough that was decreasing in severity.
- **Viral load in respiratory samples:** Specimen testing by RT-PCR revealed **high levels of virus in nasopharyngeal and oropharyngeal specimens on illness day four**, despite the patient’s initial mild symptoms. Viral load **remained high on illness day seven** and trended downwards to low (but still detectable) on illness days 11 and 12.

## Additional Information

- The authors note that the early signs and symptoms may be indistinguishable from other infections, particularly during the seasonal respiratory virus season.

- Symptoms noted for this patient include the following:
  - **Respiratory symptoms:** cough (day one to 15); rhinorrhea (day 12-13)
  - **Gastrointestinal symptoms:** nausea (day four to six; day 10); vomiting (day four to five); diarrhea (day six to seven); abdominal discomfort (day six)
  - **Systemic symptoms:** fever (or subjective fever) (day two to 11); fatigue (day two to 12)
- Additional testing performed include:
  - rRT-PCR for 2019-nCoV:
    - **stool (single test on day seven)—positive, (cycle threshold value, 36-38)**
    - serum (tested on days four and seven)—negative
    - urine (tested on day seven)—negative
  - chest radiograph:
    - days four and seven—no evidence of infiltrates or abnormalities
    - **days nine and 10—evidence of pneumonia**

## Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Review of “First case of 2019 novel coronavirus in the United States.” Toronto, ON: Queen’s Printer for Ontario; 2020.

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