

Author Contribution Statements:

Michael K. Porter (MKP)- Conceptualization of nested study with AVW and RFI. Literature review with AVW. Co-wrote biosafety protocols for receipt and processing of live specimens with AVW. Reagent and supply acquisition. Determined and validated live specimen collection methods with AVW. Received, logged and aliquoted live specimens with AVW. Established academic collaboration with colleagues at University of Washington. Performed nucleic acid extractions and *RNaseP*, *N*, *E*, and *RdRP* gene RT-qPCR. Coordinated and prepared shipments of live specimens to collaborators. Interpreted paired viral load and culture data with AVW and LH. Outlined and co-wrote manuscript with AVW. Prepared Figures 1, S1, S2, and S3. Validated underlying data with AVW. Managed author citations and references.

Alexander Vioria Winnett (AVW)- Conceptualization of nested study with MKP and RFI. Literature review with MKP. Co-wrote biosafety protocols for receipt and processing of live specimens with MKP. Reagent and supply acquisition. Determined and validated live specimen collection methods with MKP. Received, logged and aliquoted live specimens with MKP. Performed nucleic acid extractions and *RNaseP* and *N* gene RT-qPCR. Coordinated and prepared shipments of nucleic acids for viral sequencing. Coordinated and prepared shipments of live specimens to collaborators for viral culture. Interpreted paired viral load and culture data with MKP and LH. Outlined and co-wrote manuscript with MKP. Provided feedback on the design of Figures 1, S1, and S2. Validated underlying data with MKP.

Linhui Hao (LH)- Received live specimens for viral culture. Performed viral culture at BSL3 and analyzed viral culture data. Interpreted paired viral load and culture data with AVW and MKP. Wrote viral culture methods section. Edited the manuscript.

Natasha Shelby (NS)- Study Administrator; collaborated on study design and recruitment strategies; created instructions for live viral-load sampling with JAR; enrolled and maintained study participants with JAR and NS. Edited the manuscript.

Jessica A. Reyes (JAR)- Lead Study Coordinator; created instructions for live viral-load sampling with NS; enrolled and maintained study participants with NS and NWS.

Noah W. Schlenker (NWS)- Study Coordinator; enrolled and maintained study participants with NS and JAR.

Anna E. Romano (AER)- Analyzed and summarized viral sequencing data.

Colton Tognazzini (CT)- Coordinated the recruitment efforts at PPHD with case investigators and contact tracers and provided guidance and expertise on SARS-CoV-2 epidemiology and local trends.

Matthew Feaster (MF)- Co-investigator; collaborated on study design and recruitment strategies; provided guidance and expertise on SARS-CoV-2 epidemiology and local trends.

Ying-Ying Goh (YYG)- Co-investigator; collaborated on study design and recruitment strategies; provided guidance and expertise on SARS-CoV-2 epidemiology and local trends.

Michael Gale (MG)- Co-investigator; coordinated and oversaw viral culture method development and execution. Edited the manuscript.

Rustem F. Ismagilov (RFI)- Co-investigator; collaborated on study design and recruitment strategies; provided leadership, technical guidance, oversight, and was responsible for obtaining funding for the study.