

Archived Editions (COVID-19 Genomics and Precision Public Health Weekly Update)

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COVID-19 Genomics and Precision Public Health Weekly Update Content

- Pathogen and Human Genomics Studies
- Non-Genomics Precision Health Studies
- News, Reviews and Commentaries

Pathogen and Human Genomics Studies

- Efficient high-throughput SARS-CoV-2 testing to detect asymptomatic carriers (</PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=117>)
N Shental et al, Science Advances, August 2020

We developed P-BEST - a method for Pooling-Based Efficient SARS-CoV-2 Testing which identifies all positive subjects within a large set of samples using a single round of testing. Each sample is assigned into multiple pools using a combinatorial pooling strategy based on compressed sensing designed for maximizing carrier detection.

- Development and evaluation of a rapid CRISPR-based diagnostic for COVID-19. (</PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=118>)
Hou Tieying et al. PLoS pathogens 2020 Aug (8) e1008705

We developed a rapid and sensitive diagnostic for SARS-CoV-2 infection, and compared it to sequencing-based metagenomic and RT-PCR-based assays in a clinical cohort. The test demonstrated a sensitivity level of near single copy and was highly specific without cross reacting to related pathogens. It takes only 40 mins and provides a valuable alternative to the conventional RT-PCR assay to circumvent the bottlenecks in assay turnaround time.

- Saliva or Nasopharyngeal Swab Specimens for Detection of SARS-CoV-2. (</PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=127>)
Wyllie Anne L et al. The New England journal of medicine 2020 Aug

Given the growing need for testing, our findings provide support for the potential of saliva specimens in the diagnosis of SARS-CoV-2 infection. Collection of saliva samples by patients negates the need for interaction with health care workers, a source of testing bottlenecks. This also alleviates demands for supplies of swabs and personal protective equipment.

- Clinical, immunological and virological characterization of COVID-19 patients that test re-positive for SARS-CoV-2 by RT-PCR. (</PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=129>)
Lu Jing et al. EBioMedicine 2020 Aug 102960

Among 619 discharged COVID-19 cases, 87 re-tested (14%) as SARS-CoV-2 positive in circumstances of social isolation. No infectious strain could be obtained by culture and no full-length viral genomes could be sequenced from re-positive cases.

- Prolonged Persistence of PCR-detectable Virus During an Outbreak of SARS-CoV-2 in an Inpatient Geriatric Psychiatry Unit in King County, Washington. (</PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=131>)
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- COVID-19 patients in earlier stages exhaled millions of SARS-CoV-2 per hour. (</PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=132>)
Ma Jianxin et al. Clinical infectious diseases : an official publication of the Infectious Diseases Society of America 2020 Aug
- A SARS-CoV-2 vaccine candidate would likely match all currently circulating variants (</PHGKB/phgHome.action?action=forward&dbsource=covUpdate&id=135>)
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Non-Genomics Precision Health Studies

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