# Use of Nasopharyngeal Swabs to test for COVID19

# Date search conducted

25 May 2020

# Source(s)

All though [HDAS](http://hdas.nice.org.uk)

MEDLINE

CINAHL

EMBASE

EMCARE

Google / Microsoft Academic Search for additional sources.

# Search strategy

|  |  |
| --- | --- |
| (('wuhan coronavirus').ti,ab OR ('wuhan seafood market pneumonia virus').ti,ab OR ('covid19\*').ti,ab OR ('covid-19\*').ti,ab OR ('COVID-2019\*').ti,ab OR ('sars-cov-2').ti,ab OR (sars2).ti,ab OR ('2019-ncov').ti,ab OR ('2019 novel coronavirus').ti,ab OR ('severe acute respiratory syndrome coronavirus 2').ti,ab OR ('2019 novel coronavirus infection').ti,ab OR ('coronavirus disease 2019').ti,ab OR ('coronavirus disease-19').ti,ab OR ('novel coronavirus').ti,ab OR (coronavirus).ti,ab OR ('SARS-CoV-2019').ti,ab OR ('SARS-CoV-19').ti,ab OR ('SARS-CoV-2019').ti,ab) AND (2020).dp |  |
|  | AND |
| ("Naso pharyngeal swab\*" OR "Nasopharyngeal swab\*" OR (Nasopharyngeal ADJ3 swab\*) OR ("Naso pharyngeal" ADJ3 swab\*)).ti,ab |  |
|  | AND |
| (Sensitiv\* OR "false positive\*" OR "false negative\*" OR accura\* OR interpret\* OR diagnos\* OR detect\* OR sampl\* OR test\*).ti,ab |  |

All results limited to years 2004-2020. In addition they were hand sorted to eliminate erroneous material.

# Audience/Context

Medical Directors, Ambulance Service Managers and Research Paramedics.

# Additional material

Search Google, Microsoft Academic Search.

Guidelines

Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens for COVID-19. Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Persons for Coronavirus Disease 2019 (COVID-19). [ <https://www.cdc.gov/coronavirus/2019-ncov/lab/guidelines-clinical-specimens.html> ]

Guidance: COVID-19: guidance for taking swab samples [ <https://www.gov.uk/government/publications/covid-19-guidance-for-taking-swab-samples> ]

Resources

Coronavirus disease 2019 (COVID-19): Epidemiology, virology, clinical features, diagnosis, and prevention – Up to Date [ <https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19-epidemiology-virology-clinical-features-diagnosis-and-prevention> ]

Additional References

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Comparative accuracy of oropharyngeal and nasopharyngeal swabs for diagnosis of COVID-19. <https://www.cebm.net/covid-19/comparative-accuracy-of-oropharyngeal-and-nasopharyngeal-swabs-for-diagnosis-of-covid-19/>

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Loeffelholz MJ, Tang YW. Laboratory diagnosis of emerging human coronavirus infections - the state of the art. Emerg Microbes Infect. 2020;9(1):747–756. <http://doi.org/10.1080/22221751.2020.1745095>

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IDCases, Volume 20, <https://doi.org/10.1016/j.idcr.2020.e00791>

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West, Colin P. et al. COVID-19 Testing: The Threat of False-Negative Results <https://www.mayoclinicproceedings.org/article/S0025-6196(20)30365-7/pdf>

Negative Nasopharyngeal and Oropharyngeal Swabs Do Not Rule Out COVID-19

Poramed Winichakoon, Romanee Chaiwarith, Chalerm Liwsrisakun, Parichat Salee, Aree Goonna, Atikun Limsukon, Quanhathai Kaewpoowat

Journal of Clinical Microbiology Apr 2020, 58 (5) e00297-20; DOI: <http://doi.org/10.1128/JCM.00297-20>

Xie, Chaojun, et al. 2020, False negative rate of COVID-19 is eliminated by using nasal swab test, Travel Medicine and Infectious Disease, <https://doi.org/10.1016/j.tmaid.2020.101668>

Xiao, A.T., Tong, Y.X. and Zhang, S. (2020), False‐negative of RT‐PCR and prolonged nucleic acid conversion in COVID‐19: Rather than recurrence. J Med Virol. Accepted Author Manuscript. doi: <http://doi.org/10.1002/jmv.25855>

Yang Y, Yang M, Shen C, Wang F, Yuan J, Li J, et al. Evaluating the accuracy of different respiratory specimens in the laboratory diagnosis and monitoring the viral shedding of 2019-nCoV infections. medRxiv. 2020 Feb 17;2020.02.11.20021493 <https://doi.org/10.1101/2020.02.11.20021493>

Ye B, Fan C, Pan Y, Ding R, Hu HX, Xiang ML. *Zhonghua Er Bi Yan Hou Tou Jing Wai Ke Za Zhi*. [Discussion on sampling of secretions in the upper respiratory tract in patients with new coronary virus infection] 2020;55(0):E003. doi: <http://doi.org/10.3760/cma.j.cn115330-20200223-00116> Article in Chinese. Abstract in English.

Zou L, Ruan F, Huang M, et al. SARS-CoV-2 Viral Load in Upper Respiratory Specimens of Infected Patients. N Engl J Med. 2020;382(12):1177‐1179. <http://doi.org/10.1056/NEJMc2001737>

# MEDLINE, CINAHL, EMBASE, EMCARE, PUBMED (HDAS)

**53** of **53 saved results**

**1. Evaluation of SARS-CoV-2 RNA shedding in clinical specimens and clinical characteristics of 10 patients with COVID-19 in Macau.**

**Author(s):** Lo, Iek Long; Lio, Chon Fu; Cheong, Hou Hon; Lei, Chin Ion; Cheong, Tak Hong; Zhong, Xu; Tian, Yakun; Sin, Nin Ngan

**Source:** International journal of biological sciences; 2020; vol. 16 (no. 10); p. 1698-1707

**Publication Date:** 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.7150/ijbs.45357](http://doi.org/10.7150/ijbs.45357)

**ISSN:** 1449-2288

**Place of Publication:** Australia

**PubMedID:** 32226287

**Accession Number:** 32226287

Available at [International journal of biological sciences](http://europepmc.org/search?query=(DOI:10.7150/ijbs.45357)) - from Europe PubMed Central - Open Access

Available at [International journal of biological sciences](https://www.ijbs.com/v16p1698.pdf) - from Unpaywall

**Abstract:** As a city famous for tourism, the public healthcare system of Macau SAR has been under great pressure during the outbreak of the Coronavirus Disease 2019 (COVID-19). In this study, we report clinical and microbiological features of ten COVID-19 patients enrolled in the Centro Hospitalar Conde de São Januário (CHCSJ) between January 21 to February 16, 2020. Clinical samples from all patients including nasopharyngeal swab (NPS)/sputum, urine, and feces were collected for serial virus RNA testing by standard qRT-PCR assay. In total, seven were imported cases and three were local cases. The median duration from Macau arrival to admission in imported cases was 3 days. Four patients required oxygen therapy but none of them needed machinal ventilation. No fatal cases were noted. The most common symptoms were fever (80%) and diarrhea (80%). In the "Severe" group, there was significantly more elderly patients (p=0.045), higher lactate dehydrogenase levels (p=0.002), and elevated C-Reactive protein levels compared to the "Mild to Moderate" group (p<0.001). There were positive SARS-CoV-2 RNA signals in all patients' NPS and stool specimens but negative in all urine specimens. Based on our data on SARS-CoV-2 RNA shedding in stool and the possibility of a lag in viral detection in NPS specimens, the assessment of both fecal and respiratory specimen is recommended to enhance diagnostic sensitivity, and also to aid discharge decision before the role of viral RNA shedding in stool is clarified.

**Primary Author Affiliation:** Physician, Consultant, Department of respiratory medicine, Centro Hospitalar Conde de São Januário, Macau Health Bureau, Macau SAR, China.

**Database:** Medline

**2. Laboratory diagnosis of emerging human coronavirus infections - the state of the art.**

**Author(s):** Loeffelholz, Michael J; Tang, Yi-Wei

**Source:** Emerging microbes & infections; Dec 2020; vol. 9 (no. 1); p. 747-756

**Publication Date:** Dec 2020

**Publication Type(s):** Journal Article Review

**DOI:** [http://dx.doi.org/10.1080/22221751.2020.1745095](http://doi.org/10.1080/22221751.2020.1745095)

**ISSN:** 2222-1751

**Place of Publication:** United States

**PubMedID:** 32196430

**Accession Number:** 32196430

Available at [Emerging microbes & infections](http://europepmc.org/search?query=(DOI:10.1080/22221751.2020.1745095)) - from Europe PubMed Central - Open Access

Available at [Emerging microbes & infections](http://www.nature.com/articles/doi:10.1080/22221751.2020.1745095) - from Nature (Open Access)

Available at [Emerging microbes & infections](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=2222-1751&volume=9&issue=1&spage=747) - from ProQuest (Health Research Premium) - NHS Version

Available at [Emerging microbes & infections](https://www.tandfonline.com/doi/pdf/10.1080/22221751.2020.1745095?needAccess=true) - from Unpaywall

**Abstract:**The three unprecedented outbreaks of emerging human coronavirus (HCoV) infections at the beginning of the twenty-first century have highlighted the necessity for readily available, accurate and fast diagnostic testing methods. The laboratory diagnostic methods for human coronavirus infections have evolved substantially, with the development of novel assays as well as the availability of updated tests for emerging ones. Newer laboratory methods are fast, highly sensitive and specific, and are gradually replacing the conventional gold standards. This presentation reviews the current laboratory methods available for testing coronaviruses by focusing on the coronavirus disease 2019 (COVID-19) outbreak going on in Wuhan. Viral pneumonias typically do not result in the production of purulent sputum. Thus, a nasopharyngeal swab is usually the collection method used to obtain a specimen for testing. Nasopharyngeal specimens may miss some infections; a deeper specimen may need to be obtained by bronchoscopy. Alternatively, repeated testing can be used because over time, the likelihood of the SARS-CoV-2 being present in the nasopharynx increases. Several integrated, random-access, point-of-care molecular devices are currently under development for fast and accurate diagnosis of SARS-CoV-2 infections. These assays are simple, fast and safe and can be used in the local hospitals and clinics bearing the burden of identifying and treating patients.

**Primary Author Affiliation:** Cepheid, Sunnyvale, CA, USA.

**Database:** Medline

**3. The use of COVID-19 IgM rapid test in the setting of negative RTPCR to diagnose infection by SARS-CoV-2: A challenging case.**

**Author(s):** Gamboa; Duran, Melanie; Araiza, Alan; Varon, Daryelle; Mohiuddin, Mariya; Gathe Jr, Joseph C.; Varon, Joseph

**Source:** Critical Care & Shock; May 2020; vol. 23 (no. 3); p. 148-153

**Publication Date:** May 2020

**Publication Type(s):** Academic Journal

**ISSN:** 14107767

**Place of Publication:** Houston, Texas

**Publisher:** Critical Care & Shock Journal

**Accession Number:** 143305738

Available at [Critical Care & Shock](http://openurl.ebscohost.com/linksvc/linking.aspx?genre=article&issn=1410-7767&volume=23&issue=3&spage=148&atitle=The%20use%20of%20COVID-19%20IgM%20rapid%20test%20in%20the%20setting%20of%20negative%20RTPCR%20to%20diagnose%20infection%20by%20SARS-CoV-2:%20A%20challenging%20case) - from EBSCO (CINAHL Plus with Full Text)

**Abstract:**In December 2019, a novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) caused an outbreak of respiratory disease in Wuhan, China, that quickly spread to other countries causing a global pandemic. Although the reverse transcriptase polymerase chain reaction (RT-PCR) test for SARS-CoV-2 infection has become the standard method of diagnosis, this test has limitations that cause false negative results. The sudden onset, and spread of this virus, has created an urgency to find reliable screening and diagnostic tools to identify infect- . ed patients, prevent further transmission, and provide treatment for these patients. A rapid and accurate diagnostic tool, the COVID-19 combined IgG and IgM "Rapid" test can detect these antibodies against SARS-CoV-2 using a finger prick blood sample detecting infection in 15 minutes. We report the use of the COVID-19 IgM Rapid Test in the presence of high clinical suspicion, along with typical chest computed tomography findings suggestive of COVID-19 infection, in a patient who tested negative twice for the nasopharyngeal swab specimen RT-PCR test.

**Primary Author Affiliation:** United Memorial Medical Center, Houston, Texas, USA, Universidad Xochicalco, Ensenada, México

**Database:** CINAHL

**4. Temporal profiles of viral load in posterior oropharyngeal saliva samples and serum antibody responses during infection by SARS-CoV-2: an observational cohort study.**

**Author(s):** To; Tsang, Owen Tak-Yin; Leung, Wai-Shing; Tam, Anthony Raymond; Wu, Tak-Chiu; Lung, David Christopher; Yip, Cyril Chik-Yan; Cai, Jian-Piao; Chan, Jacky Man-Chun; Chik, Thomas Shiu-Hong; Lau, Daphne Pui-Ling; Choi, Chris Yau-Chung; Chen, Lin-Lei; Chan, Wan-Mui; Chan, Kwok-Hung; Ip, Jonathan Daniel; Ng, Anthony Chin-Ki; Poon, Rosana Wing-Shan; Luo, Cui-Ting; Cheng, Vincent Chi-Chung

**Source:** Lancet Infectious Diseases; May 2020; vol. 20 (no. 5); p. 565-574

**Publication Date:** May 2020

**Publication Type(s):** Academic Journal

**DOI:** [http://dx.doi.org/10.1016/S1473-3099(20)30196-1](http://doi.org/10.1016/S1473-3099(20)30196-1)

**ISSN:** 14733099

**Place of Publication:** New York, New York

**Publisher:** Elsevier B.V.

**PubMedID:** NLM32213337

**Accession Number:** 142980822

Available at [The Lancet Infectious Diseases](https://doi.org/10.1016/s1473-3099(20)30196-1) - from Unpaywall

**Abstract:**Background: Coronavirus disease 2019 (COVID-19) causes severe community and nosocomial outbreaks. Comprehensive data for serial respiratory viral load and serum antibody responses from patients infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are not yet available. Nasopharyngeal and throat swabs are usually obtained for serial viral load monitoring of respiratory infections but gathering these specimens can cause discomfort for patients and put health-care workers at risk. We aimed to ascertain the serial respiratory viral load of SARS-CoV-2 in posterior oropharyngeal (deep throat) saliva samples from patients with COVID-19, and serum antibody responses.Methods: We did a cohort study at two hospitals in Hong Kong. We included patients with laboratory-confirmed COVID-19. We obtained samples of blood, urine, posterior oropharyngeal saliva, and rectal swabs. Serial viral load was ascertained by reverse transcriptase quantitative PCR (RT-qPCR). Antibody levels against the SARS-CoV-2 internal nucleoprotein (NP) and surface spike protein receptor binding domain (RBD) were measured using EIA. Whole-genome sequencing was done to identify possible mutations arising during infection.Findings: Between Jan 22, 2020, and Feb 12, 2020, 30 patients were screened for inclusion, of whom 23 were included (median age 62 years [range 37-75]). The median viral load in posterior oropharyngeal saliva or other respiratory specimens at presentation was 5·2 log10 copies per mL (IQR 4·1-7·0). Salivary viral load was highest during the first week after symptom onset and subsequently declined with time (slope -0·15, 95% CI -0·19 to -0·11; R2=0·71). In one patient, viral RNA was detected 25 days after symptom onset. Older age was correlated with higher viral load (Spearman's ρ=0·48, 95% CI 0·074-0·75; p=0·020). For 16 patients with serum samples available 14 days or longer after symptom onset, rates of seropositivity were 94% for anti-NP IgG (n=15), 88% for anti-NP IgM (n=14), 100% for anti-RBD IgG (n=16), and 94% for anti-RBD IgM (n=15). Anti-SARS-CoV-2-NP or anti-SARS-CoV-2-RBD IgG levels correlated with virus neutralisation titre (R2>0·9). No genome mutations were detected on serial samples.Interpretation: Posterior oropharyngeal saliva samples are a non-invasive specimen more acceptable to patients and health-care workers. Unlike severe acute respiratory syndrome, patients with COVID-19 had the highest viral load near presentation, which could account for the fast-spreading nature of this epidemic. This finding emphasises the importance of stringent infection control and early use of potent antiviral agents, alone or in combination, for high-risk individuals. Serological assay can complement RT-qPCR for diagnosis.Funding: Richard and Carol Yu, May Tam Mak Mei Yin, The Shaw Foundation Hong Kong, Michael Tong, Marina Lee, Government Consultancy Service, and Sanming Project of Medicine.

**Primary Author Affiliation:** State Key Laboratory for Emerging Infectious Diseases, Carol Yu Centre for Infection, Department of Microbiology, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Pokfulam, Hong Kong Special Administrative Region, China

**Database:** CINAHL

**5. The Appropriate Use of Testing for COVID-19.**

**Author(s):** Zitek

**Source:** Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health; May 2020; vol. 21 (no. 3); p. 470-472

**Publication Date:** May 2020

**Publication Type(s):** Academic Journal

**DOI:** [http://dx.doi.org/10.5811/westjem.2020.4.47370](http://doi.org/10.5811/westjem.2020.4.47370)

**ISSN:** 1936900X

**Place of Publication:** Orange, California

**Publisher:** Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

**Accession Number:** 143165096

Available at [Western Journal of Emergency Medicine](http://europepmc.org/search?query=(DOI:10.5811/westjem.2020.4.47370)) - from Europe PubMed Central - Open Access

Available at [Western Journal of Emergency Medicine](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=1936-900X&volume=21&issue=3&spage=470) - from ProQuest (Health Research Premium) - NHS Version

Available at [Western Journal of Emergency Medicine](https://escholarship.org/content/qt1gh0z5t0/qt1gh0z5t0.pdf?t=qabkjr) - from Unpaywall

**Abstract:**Many public officials are calling for increased testing for the 2019 novel coronavirus disease (COVID-19), and some governments have taken extraordinary measures to increase the availability of testing. However, little has been published about the sensitivity and specificity of the reverse transcriptase-polymerase chain reaction (RT-PCR) nasopharyngeal swabs that are commonly used for testing. This narrative review evaluates the literature regarding the accuracy of these tests, and makes recommendations based on this literature. In brief, a negative RT-PCR nasopharyngeal swab test is insufficient to rule out COVID-19. Thus, over-reliance on the results of the test may be dangerous, and the push for widespread testing may be overstated.

**Primary Author Affiliation:** Kendall Regional Medical Center, Department of Emergency Medicine, Miami, Florida Nova Southeastern University, Dr. Kiran C. Patel College of Allopathic Medicine, Davie, Florida

**Database:** CINAHL

**6. Saliva sample as a non-invasive specimen for the diagnosis of coronavirus disease-2019 (COVID-19): a cross-sectional study.**

**Author(s):** Pasomsub, Ekawat; Watcharananan, Siriorn P; Boonyawat, Kochawan; Janchompoo, Pareena; Wongtabtim, Garanyuta; Suksuwan, Worramin; Sungkanuparph, Somnuek; Phuphuakrat, Angsana

**Source:** Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases; May 2020

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1016/j.cmi.2020.05.001](http://doi.org/10.1016/j.cmi.2020.05.001)

**ISSN:** 1469-0691

**Place of Publication:** England

**PubMedID:** 32422408

**Accession Number:** 32422408

Available at [Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases](https://doi.org/10.1016/j.cmi.2020.05.001) - from Unpaywall

**Abstract:**OBJECTIVESAmid the increasing number of pandemic coronavirus disease 2019 (COVID-19) cases, there is a need for a quick and easy method to obtain a non-invasive sample for the detection of this novel coronavirus 2019 (SARS-CoV-2). We aimed to investigate the potential use of saliva samples as a non-invasive tool for the diagnosis of COVID-19.METHODSFrom 27 March to 4 April, 2020, we prospectively collected saliva samples and a standard nasopharyngeal and throat swab in persons seeking care at an acute respiratory infection clinic in a university hospital during the outbreak of COVID-19. Real-time polymerase chain reaction (RT-PCR) was performed, and the results of the two specimens were compared.RESULTSTwo-hundred pairs of the samples were collected. Sixty-nine (34.5%) patients were male, and the median (interquartile) age was 36 (28-48) years. Using nasopharyngeal and throat swab RT-PCR as the reference standard, the prevalence of COVID-19 diagnosed by nasopharyngeal and throat swab RT-PCR was 9.5%. The sensitivity and specificity of the saliva sample RT-PCR were 84.2% [95% confidence interval (CI) 60.4%-96.6%], and 98.9% (95% CI 96.1%-99.9%), respectively. An analysis of the agreement between the two specimens demonstrated 97.5% observed agreement (kappa coefficient 0.851, 95% CI 0.723-0.979; p <0.001).CONCLUSIONSSaliva might be an alternative specimen for the diagnosis of COVID-19. The collection is non-invasive, and non-aerosol generating. This method could facilitate the diagnosis of the disease, given the simplicity of specimen collection and good diagnostic performance.

**Primary Author Affiliation:** Department of Pathology, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand.

**Database:** Medline

**7. The impacts of viral inactivating methods on quantitative RT-PCR for COVID-19.**

**Author(s):** Wang, Yueying; Song, Wei; Zhao, Zuguo; Chen, Ping; Liu, Jian; Li, Chende

**Source:** Virus research; May 2020; vol. 285 ; p. 197988

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1016/j.virusres.2020.197988](http://doi.org/10.1016/j.virusres.2020.197988)

**ISSN:** 1872-7492

**Place of Publication:** Netherlands

**PubMedID:** 32380210

**Accession Number:** 32380210

Available at [Virus research](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7198166) - from Unpaywall

**Abstract:**OBJECTIVEThis paper aims to explore the effect of four virus inactivation methods on the rapid detection results of COVID-19 nucleic acid.METHODSCollected samples of nasopharyngeal swabs from 2 patients diagnosed with COVID-19 at the First People's Hospital of Zhaoqing City, each of sample was divided into 5 groups (groupA∼E): A:Non-inactivated raw sample; B:75 % ethanol inactivation; C:56 ℃ incubation for 30 min inactivation; D:65 ℃ incubation for 10 min inactivation; E:Pre-inactivation using RNA virus special preservation fluid added into the sampling tube to treated the nasopharyngeal swab sample separately, using real-time fluorescent RT-PCR to detect the N gene of COVID-19 and the ORF1ab gene simultaneously. All the groups are diluted in 1:2, 1:4, 1:8 ratios. The objectives are to compare the effect of the varied inactivation method on CT(Cycle Threshold)results in PCR, conduct correlation and Bland-Altman analysis.RESULTSFor the N gene and ORF1ab gene, the CT values of 4 inactivated and Non-inactivated treatment were correlated (P＜0.001). The results of the four treatment methods and specimens without inactivated treatment have shown good consistency.CONCLUSIONThe treatment of nasopharyngeal swab specimens using mentioned four inactivated methods had no significant effect on the subsequent detection of the new COVID-19 nucleic acid test. Lab test-persons can flexibly adopt pre-inactivation methods to ensure the accuracy of virus nucleic acid test results, meanwhile guarantee the safety of lab test-persons.

**Primary Author Affiliation:** Clinical Laboratory of the First People's Hospital of Zhaoqing, Zhao Qing City, Donggang East Road No.9, Zhaoqing City, Guangdong Province, 526000, China. Electronic address: wangyueyinggd@126.com.

**Database:** Medline

**8. Letter to the Editor: Three cases of re-detectable positive SARS-CoV-2 RNA in recovered COVID-19 patients with antibodies.**

**Author(s):** Fu, Wei; Chen, Qian; Wang, Tao

**Source:** Journal of medical virology; May 2020

**Publication Date:** May 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.1002/jmv.25968](http://doi.org/10.1002/jmv.25968)

**ISSN:** 1096-9071

**Place of Publication:** United States

**PubMedID:** 32369214

**Accession Number:** 32369214

Available at [Journal of medical virology](https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/jmv.25968) - from Unpaywall

**Abstract:**The number of hospitalized cases has declined significantly in Wuhan. However, there have been reports that several cases of re-detectable positive SARS-CoV-2 RNA in recovered COVID-19 patients, the potential reasons of re-detectable positive patients remained elusive. Here, we report three confirmed cases of COVID-19 whose IgM was negative and IgG was positive before the first discharge, while nasopharyngeal swab test of SARS-CoV-2 RNA turned positive again during hotel isolation. In addition, all three cases presented negative results for IgM antibodies and positive results for IgG antibodies during re-admission period. These cases suggested that the reasons for re-detectable positive patients with profile of antibodies may be related to several factors. It is necessary to quarantine COVID-19 patients for 14 days after discharge, and the role of antibodies in anti-SARS-CoV-2 warrants further investigation. This article is protected by copyright. All rights reserved.

**Primary Author Affiliation:** Department of Pharmacy, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, 430030, Hubei, China.

**Database:** Medline

**9. Rapid and sensitive detection of SARS-CoV-2 RNA using the Simplexa™ COVID-19 direct assay.**

**Author(s):** Bordi, Licia; Piralla, Antonio; Lalle, Eleonora; Giardina, Federica; Colavita, Francesca; Tallarita, Monica; Sberna, Giuseppe; Novazzi, Federica; Meschi, Silvia; Castilletti, Concetta; Brisci, Angela; Minnucci, Giulia; Tettamanzi, Veronica; Baldanti, Fausto; Capobianchi, Maria Rosaria

**Source:** Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology; May 2020; vol. 128 ; p. 104416

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1016/j.jcv.2020.104416](http://doi.org/10.1016/j.jcv.2020.104416)

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**Place of Publication:** Netherlands

**PubMedID:** 32388470

**Accession Number:** 32388470

Available at [Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7198196) - from Unpaywall

**Abstract:**BACKGROUNDSo far, one of the major drawbacks of the available molecular assays for the diagnosis of severe acute respiratory syndrome Coronavirus-2 (SARS-CoV-2) is the need for viral nucleic acid extraction from clinical specimens.OBJECTIVEThe aim of this study was to evaluate the performances of a newly designed real-time RT-PCR (Simplexa™ COVID-19 Direct assay), that is established with an all-in-one reagent mix and no separate extraction required.RESULTSThe lower limit of detection (LOD) for both target genes resulted the same: 3.2 (CI: 2.9-3.8) log10 cp/mL and 0.40 (CI: 0.2-1.5) TCID50/mL for S gene while 3.2 log10 (CI: 2.9-3.7) log10 cp/mL and 0.4 (CI: 0.2-1.3) TCID50/mL for ORF1ab. The LOD obtained with extracted viral RNA for both S gene or ORF1ab was 2.7 log10 cp/mL. Crossreactive analysis performed in 20 nasopharyngeal swabs confirmed a 100% of clinical specificity of the assay. Clinical performances of Simplexa™ COVID-19 Direct assay were assessed in 278 nasopharyngeal swabs tested in parallel with Corman's method. Concordance analysis showed an "almost perfect" agreement in SARS-CoV-2 RNA detection between the two assays, being κ = 0.938; SE = 0.021; 95% CI = 0.896-0.980.CONCLUSIONSThe high sensitivity and specificity of this new assay indicate that it is promising for laboratory diagnosis, enabling highspeed detection in just over one hour, which is significantly faster than the up to five hours currently required by traditional extraction followed by amplification technologies, thus allowing prompt decision making regarding isolation of infected patients.

**Primary Author Affiliation:** Laboratory of Virology, National Institute for Infectious Diseases "L. Spallanzani" IRCCS, Rome, Italy.

**Database:** Medline

**10. Comparison of nasopharyngeal and oropharyngeal swabs for SARS-CoV-2 detection in 353 patients received tests with both specimens simultaneously.**

**Author(s):** Wang, Xiong; Tan, Li; Wang, Xu; Liu, Weiyong; Lu, Yanjun; Cheng, Liming; Sun, Ziyong

**Source:** International journal of infectious diseases : IJID : official publication of the International Society for Infectious Diseases; May 2020; vol. 94 ; p. 107-109

**Publication Date:** May 2020

**Publication Type(s):** Comparative Study Journal Article

**DOI:** [http://dx.doi.org/10.1016/j.ijid.2020.04.023](http://doi.org/10.1016/j.ijid.2020.04.023)

**ISSN:** 1878-3511

**Place of Publication:** Canada

**PubMedID:** 32315809

**Accession Number:** 32315809

Available at [International journal of infectious diseases : IJID : official publication of the International Society for Infectious Diseases](https://doi.org/10.1016/j.ijid.2020.04.023) - from Unpaywall

**Abstract:**BACKGROUNDSince the outbreak of coronavirus disease (COVID-19) in Wuhan in December 2019, by March 10, 2020, a total of 80,932 confirmed cases have been reported in China. Two consecutively negative RT-PCR test results in respiratory tract specimens is required for the evaluation of discharge from hospital, and oropharyngeal swabs were the most common sample. However, false negative results occurred in the late stage of hospitalization, and avoiding false negative result is critical essential.METHODSWe reviewed the medical record of 353 patients who received tests with both specimens simultaneously, and compared the performance between nasopharyngeal and oropharyngeal swabs.RESULTSOf the 353 patients (outpatients, 192; inpatients, 161) studied, the median age was 54 years, and 177 (50.1%) were women. Higher positive rate (positive tests/total tests) was observed in nasopharyngeal swabs than oropharyngeal swabs, especially in inpatients. Nasopharyngeal swabs from inpatients showed higher positive rate than outpatients. Nasopharyngeal swabs from male showed higher positive rate than female, especially in outpatients. Detection with both specimens slightly increased the positive rate than nasopharyngeal swab only. Moreover, the consistency between from nasopharyngeal and oropharyngeal swabs were poor (Kappa=0.308).CONCLUSIONIn conclusion, our study suggests that nasopharyngeal swabs may be more suitable than oropharyngeal swab at this stage of COVID-19 outbreak.

**Primary Author Affiliation:** Department of Laboratory Medicine, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China.

**Database:** Medline

**11. Evaluating the efficiency of specimen pooling for PCR-based detection of COVID-19.**

**Author(s):** Wacharapluesadee, Supaporn; Kaewpom, Thongchai; Ampoot, Weenassarin; Ghai, Siriporn; Khamhang, Worrawat; Worachotsueptrakun, Kanthita; Wanthong, Phanni; Nopvichai, Chatchai; Supharatpariyakorn, Thirawat; Putcharoen, Opass; Paitoonpong, Leilani; Suwanpimolkul, Gompol; Jantarabenjakul, Watsamon; Hemachudha, Pasin; Krichphiphat, Artit; Buathong, Rome; Plipat, Tanarak; Hemachudha, Thiravat

**Source:** Journal of medical virology; May 2020

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1002/jmv.26005](http://doi.org/10.1002/jmv.26005)

**ISSN:** 1096-9071

**Place of Publication:** United States

**PubMedID:** 32401343

**Accession Number:** 32401343

**Abstract:**In the age of a pandemic, such as the ongoing one caused by SARS-CoV-2, the world faces a limited supply of tests, personal protective equipment, and factories and supply chains are struggling to meet the growing demands. This study aimed to evaluate the efficacy of specimen pooling for testing of SARS-CoV-2 virus, to determine whether costs and resource savings could be achieved without impacting the sensitivity of the testing. Ten previously tested nasopharyngeal and throat swab specimens by real-time PCR, were pooled for testing, containing either one or two known positive specimens of varying viral concentrations. Specimen pooling did not affect the sensitivity of detecting SARS-CoV-2 when the PCR cycle threshold (Ct) of original specimen was lower than 35. In specimens with low viral load (Ct>35), 2 out of 15 pools (13.3%) were false negative. Pooling specimens to test for COVID-19 infection in low prevalence (≤1%) areas or in low risk populations can dramatically decrease the resource burden on laboratory operations by up to 80%. This paves the way for large-scale population screening, allowing for assured policy decisions by governmental bodies to ease lockdown restrictions in areas with a low incidence of infection, or with lower risk populations. This article is protected by copyright. All rights reserved.

**Primary Author Affiliation:** Thai Red Cross Emerging Infectious Diseases Health Science Centre, World Health Organization Collaborating Centre for Research and Training on Viral Zoonoses, King Chulalongkorn Memorial Hospital, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand.

**Database:** Medline

**12. Open Development and Clinical Validation Of Multiple 3D-Printed Nasopharyngeal Collection Swabs: Rapid Resolution of a Critical COVID-19 Testing Bottleneck.**

**Author(s):** Callahan, Cody J; Lee, Rose; Zulauf, Katelyn E; Tamburello, Lauren; Smith, Kenneth P; Previtera, Joe; Cheng, Annie; Green, Alex; Azim, Ahmed Abdul; Yano, Amanda; Doraiswami, Nancy; Kirby, James E; Arnaout, Ramy A

**Source:** Journal of clinical microbiology; May 2020

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1128/JCM.00876-20](http://doi.org/10.1128/JCM.00876-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32393482

**Accession Number:** 32393482

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/05/11/JCM.00876-20.full.pdf) - from Unpaywall

**Abstract:**The SARS-CoV-2 pandemic has caused a severe international shortage of the nasopharyngeal swabs that are required for collection of optimal specimens, creating a critical bottleneck blocking clinical laboratories' ability to perform high-sensitivity virological testing for SARS-CoV-2. To address this crisis, we designed and executed an innovative, cooperative, rapid-response translational-research program that brought together healthcare workers, manufacturers, and scientists to emergently develop and clinically validate new swabs for immediate mass production by 3D printing. We performed a multi-step preclinical evaluation on 160 swab designs and 48 materials from 24 companies, laboratories, and individuals, and shared results and other feedback via a public data repository (http://github.com/rarnaout/Covidswab/) We validated four prototypes through an institutional review board (IRB)-approved clinical trial that involved 276 outpatient volunteers who presented to our hospital's drive-through testing center with symptoms suspicious for COVID-19. Each participant was swabbed with a reference swab (the control) and a prototype, and SARS-CoV-2 reverse-transcriptase polymerase chain reaction (RT-PCR) results were compared. All prototypes displayed excellent concordance with the control (κ=0.85-0.89). Cycle-threshold (Ct) values were not significantly different between each prototype and the control, supporting the new swabs' non-inferiority (Mann-Whitney U [MWU] p>0.05). Study staff preferred one of the prototypes over the others and the control swab overall. The total time elapsed between identification of the problem and validation of the first prototype was 22 days. Contact information for ordering can be found at http://printedswabs.org Our experience holds lessons for the rapid development, validation, and deployment of new technology for this pandemic and beyond.

**Primary Author Affiliation:** Department of Radiology, Beth Israel Deaconess Medical Center, Boston, MA, USA 02215.

**Database:** Medline

**13. A combined oropharyngeal/nares swab is a suitable alternative to nasopharyngeal swabs for the detection of SARS-CoV-2.**

**Author(s):** LeBlanc, Jason J; Heinstein, Charles; MacDonald, Jimmy; Pettipas, Janice; Hatchette, Todd F; Patriquin, Glenn

**Source:** Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology; May 2020 ; p. 104442

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1016/j.jcv.2020.104442](http://doi.org/10.1016/j.jcv.2020.104442)

**ISSN:** 1873-5967

**Place of Publication:** Netherlands

**PubMedID:** 32425660

**Accession Number:** 32425660

Available at [Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology](https://doi.org/10.1016/j.jcv.2020.104442) - from Unpaywall

**Abstract:**Given the global shortage of nasopharyngeal (NP) swabs typically used for respiratory virus detection, alternative collection methods were evaluated during the COVID-19 pandemic. This study showed that a combined oropharyngeal/nares swab is a suitable alternative to NP swabs for the detection of SARS-CoV-2, with sensitivities of 91.7% and 94.4%, respectively.

**Primary Author Affiliation:** Division of Microbiology, Department of Pathology and Laboratory Medicine, Nova Scotia Health Authority (NSHA), Halifax, Nova Scotia, Canada.

**Database:** Medline

**14. Evaluation of a rapid diagnostic assay for detection of SARS CoV-2 antigen in nasopharyngeal swab.**

**Author(s):** Lambert-Niclot, Sidonie; Cuffel, Alexis; Le Pape, Samuel; Vauloup-Fellous, Christelle; Morand-Joubert, Laurence; Roque-Afonso, Anne-Marie; Le Goff, Jérôme; Delaugerre, Constance; AP-HP/Universities/Inserm COVID-19 research collaboration

**Source:** Journal of clinical microbiology; May 2020

**Publication Date:** May 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.1128/JCM.00977-20](http://doi.org/10.1128/JCM.00977-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32404480

**Accession Number:** 32404480

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/05/11/JCM.00977-20.full.pdf) - from Unpaywall

**Abstract:**Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2), the virus causing causing Coronavirus disease 2019 (COVID-19) was reported for the first time in Wuhan (Hubei, China) in December 2019 (1, 2) and has become a major public health concern all over the world.….

**Primary Author Affiliation:** INSERM-Sorbonne Universités UPMC Univ Paris 06, UMR\_S 1136, Institut Pierre Louis d'Epidémiologie et de Santé Publique (iPLESP) sidonie.lambert@aphp.fr.

**Database:** Medline

**15. SARS-CoV-2: Olfaction, Brain Infection, and the Urgent Need for Clinical Samples Allowing Earlier Virus Detection.**

**Author(s):** Butowt, Rafal; Bilinska, Katarzyna

**Source:** ACS chemical neuroscience; May 2020; vol. 11 (no. 9); p. 1200-1203

**Publication Date:** May 2020

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**DOI:** [http://dx.doi.org/10.1021/acschemneuro.0c00172](http://doi.org/10.1021/acschemneuro.0c00172)

**ISSN:** 1948-7193

**Place of Publication:** United States

**PubMedID:** 32283006

**Accession Number:** 32283006

Available at [ACS chemical neuroscience](https://pubs.acs.org/doi/pdf/10.1021/acschemneuro.0c00172) - from Unpaywall

**Abstract:**The novel SARS-CoV-2 virus has very high infectivity, which allows it to spread rapidly around the world. Attempts at slowing the pandemic at this stage depend on the number and quality of diagnostic tests performed. We propose that the olfactory epithelium from the nasal cavity may be a more appropriate tissue for detection of SARS-CoV-2 virus at the earliest stages, prior to onset of symptoms or even in asymptomatic people, as compared to commonly used sputum or nasopharyngeal swabs. Here we emphasize that the nasal cavity olfactory epithelium is the likely site of enhanced binding of SARS-CoV-2. Multiple non-neuronal cell types present in the olfactory epithelium express two host receptors, ACE2 and TMPRSS2 proteases, that facilitate SARS-CoV-2 binding, replication, and accumulation. This may be the underlying mechanism for the recently reported cases of smell dysfunction in patients with COVID-19. Moreover, the possibility of subsequent brain infection should be considered which begins in olfactory neurons. In addition, we discuss the possibility that olfactory receptor neurons may initiate rapid immune responses at early stages of the disease. We emphasize the need to undertake research focused on additional aspects of SARS-CoV-2 actions in the nervous system, especially in the olfactory pathway.

**Primary Author Affiliation:** L. Rydygier Collegium Medicum, Nicolaus Copernicus University, Ul. CurieSklodowskiej 9, 85-94 Bydgoszcz, Poland.

**Database:** Medline

**16. Understanding, verifying and implementing Emergency Use Authorization molecular diagnostics for the detection of SARS-CoV-2 RNA.**

**Author(s):** Mitchell, Stephanie L; St George, Kirsten; Rhoads, Daniel D; Butler-Wu, Susan M; Dharmarha, Vaishali; McNult, Peggy; Miller, Melissa B; American Society for Microbiology Clinical and Public Health Microbiology Committee

**Source:** Journal of clinical microbiology; May 2020

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1128/JCM.00796-20](http://doi.org/10.1128/JCM.00796-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

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**Accession Number:** 32381642

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/05/07/JCM.00796-20.full.pdf) - from Unpaywall

**Abstract:**The SARS-CoV-2 pandemic has brought a new wave of challenges to health care, particularly in the area of rapid diagnostic test development and implementation. Acute diagnosis of COVID-19 infection is critically dependent on detection of SARS-CoV-2 RNA from clinical specimens (e.g. nasopharyngeal swabs). While laboratory-developed testing for SARS-CoV-2 is an essential component of diagnostic testing for this virus, the majority of clinical microbiology laboratories are dependent on commercially available SARS-CoV-2 molecular assays. In contrast to assays approved or cleared by the Food and Drug Administration for in vitro diagnostic use, assays for the detection of SARS-CoV-2 nucleic acids have Emergency Use Authorization (EUA) from the FDA. Outside of highly specialized academic and commercial laboratory settings, clinical microbiology laboratories are likely unfamiliar with EUA classification and thus assay verification can be daunting. Further compounding anxiety for laboratories are major issues with supply chain that are dramatically affecting the availability of test reagents and requiring laboratories to implement multiple commercial EUA tests. Here, we describe guidance for the verification of assays with EUA for the detection of SARS-CoV-2 nucleic acid from clinical specimens.

**Primary Author Affiliation:** Department of Pathology, University of Pittsburgh School of Medicine, Pittsburgh, PA.

**Database:** Medline

**17. Self-collection: An appropriate alternative during the SARS-CoV-2 pandemic.**

**Author(s):** Wehrhahn, Michael C; Robson, Jennifer; Brown, Suzanne; Bursle, Evan; Byrne, Shane; New, David; Chong, Smathi; Newcombe, James P; Siversten, Terri; Hadlow, Narelle

**Source:** Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology; May 2020; vol. 128 ; p. 104417

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

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**ISSN:** 1873-5967

**Place of Publication:** Netherlands

**PubMedID:** 32403007

**Accession Number:** 32403007

Available at [Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7198188) - from Unpaywall

**Abstract:**OBJECTIVESTo evaluate the reliability of self-collection for SARS-CoV-2 and other respiratory viruses because swab collections for SARS-CoV-2 put health workers at risk of infection and require use of personal protective equipment (PPE).METHODSIn a prospective study, patients from two states in Australia attending dedicated COVID-19 collection clinics were offered the option to first self-collect (SC) nasal and throat swabs (SCNT) prior to health worker collect (HC) using throat and nasal swabs (Site 1) or throat and nasopharyngeal swabs (Site 2). Samples were analysed for SARS-CoV-2 as well as common respiratory viruses. Concordance of results between methods was assessed using Cohen's kappa (κ) and Cycle threshold (Ct) values were recorded for all positive results as a surrogate measure for viral load.RESULTSOf 236 patients sampled by HC and SC, 25 had SARS-CoV-2 (24 by HC and 25 by SC) and 63 had other respiratory viruses (56 by HC and 58 by SC). SC was highly concordant with HC (κ = 0.890) for all viruses including SARS-CoV-2 and more concordant than HC to positive results by any method (κ = 0.959 vs 0.933). Mean SARS-CoV-2 E-gene and N-gene, rhinovirus and parainfluenza Ct values did not differ between HC and SCNT.CONCLUSIONSSelf-collection of nasal and throat swabs offers a reliable alternative to health worker collection for the diagnosis of SARS-CoV-2 and other respiratory viruses and provides patients with easier access to testing, reduces exposure of the community and health workers to those being tested and reduces requirement for PPE.

**Primary Author Affiliation:** Douglass Hanly Moir Pathology, 14 Giffnock Ave, Macquarie Park, NSW, 2113, Australia. Electronic address: mwehrhahn@dhm.com.au.

**Database:** Medline

**18. Nasopharyngeal and Oropharyngeal Swabs, And/Or Serology for SARS COVID-19: What Are We Looking For?**

**Author(s):** Sanduzzi, Alessandro; Zamparelli, Stefano Sanduzzi

**Source:** International journal of environmental research and public health; May 2020; vol. 17 (no. 9)

**Publication Date:** May 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.3390/ijerph17093289](http://doi.org/10.3390/ijerph17093289)

**ISSN:** 1660-4601

**Place of Publication:** Switzerland

**PubMedID:** 32397262

**Accession Number:** 32397262

Available at [International journal of environmental research and public health](http://europepmc.org/search?query=(DOI:10.3390/ijerph17093289)) - from Europe PubMed Central - Open Access

Available at [International journal of environmental research and public health](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=32397262) - from EBSCO (MEDLINE Complete)

Available at [International journal of environmental research and public health](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=1661-7827&volume=17&issue=9&spage=3289) - from ProQuest (Health Research Premium) - NHS Version

Available at [International journal of environmental research and public health](https://www.mdpi.com/1660-4601/17/9/3289/pdf) - from Unpaywall

**Abstract:**Governments and clinicians that were fully involved in the dramatic SARS-CoV-2 outbreak during the last few weeks in Italy (and more or less all over the world) are fiercely debating the use of methods for screening this viral infection. Thus, all countries are employing a lot of resources in order to test more and more subjects. For this purpose, there are different strategies, based on either direct or indirect tests. Among the first category, the main assays used for SARS-CoV-2 are based on a real-time reverse transcriptase polymerase chain reaction (RT-PCR). Such tests can be performed on nasopharyngeal and oropharyngeal swabs for the categories of those with symptoms and those potentially exposed. In order to integrate the molecular assays in the diagnosis of SARS-CoV-2, a wide range of serology immunoassays (IAs) have also been developed. If we want to identify "immune" people in order to let them to come back to work, serology is the best (and probably the only) approach.

**Primary Author Affiliation:** Section of Respiratory Disease, Department of Clinical Medicine and Surgery, Monaldi Hospital, Federico II University, 80138 Naples, Italy.

**Database:** Medline

**19. Comparison of SARS-CoV-2 Detection from Nasopharyngeal Swab Samples by the Roche cobas® 6800 SARS-CoV-2 Test and a Laboratory-Developed Real-Time RT-PCR test.**

**Author(s):** Pujadas, Elisabet; Ibeh, Nnaemeka; Hernandez, Matthew M; Waluszko, Aneta; Sidorenko, Tatyana; Flores, Vanessa; Shiffrin, Biana; Chiu, Numthip; Young-Francois, Alicia; Nowak, Michael D; Paniz-Mondolfi, Alberto E; Sordillo, Emilia M; Cordon-Cardo, Carlos; Houldsworth, Jane; Gitman, Melissa R

**Source:** Journal of medical virology; May 2020

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1002/jmv.25988](http://doi.org/10.1002/jmv.25988)

**ISSN:** 1096-9071

**Place of Publication:** United States

**PubMedID:** 32383179

**Accession Number:** 32383179

Available at [Journal of medical virology](https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/jmv.25988) - from Unpaywall

**Abstract:**The urgent need to implement and rapidly expand testing for Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) infection has led to development of multiple assays. How these tests perform relative to one another is poorly understood. We evaluated the concordance between the Roche Diagnostics cobas® 6800 SARS-CoV-2 Test and a laboratory- developed Real-Time RT-PCR test (LDT) based on a modified Centers for Disease Control and Prevention (CDC) protocol, for the detection of SARS-CoV-2 in samples submitted to the Clinical Laboratories of the Mount Sinai Health System. 1006 Nasopharyngeal swabs in universal transport medium from persons under investigation were tested for SARS-CoV-2 as part of routine clinical care using the cobas SARS-CoV2 test with subsequent evaluation by the LDT. Cycle threshold values were analyzed and interpreted as either positive ('Detected' or 'Presumptive Positive'), negative ('Not Detected'), inconclusive, or invalid. Statistical analysis was performed using GraphPad Prism 8. The cobas SARS-CoV2 test reported 706 positives and 300 negatives. The LDT reported 640 positives, 323 negatives, 34 inconclusive, and 9 invalids. When excluding inconclusive and invalid results, the overall percent agreement between the two platforms was 95.8%. Cohen's kappa coefficient (κ) was 0.904 (95 % CI 0.875-0.933), suggesting almost perfect agreement between both platforms. An overall discordance rate of 4.2% between the two systems may reflect differences in primer sequences, assay limit of detection, or other factors, highlighting the importance of comparing the performance of different testing platforms. This article is protected by copyright. All rights reserved.

**Primary Author Affiliation:** Department of Pathology, Molecular, and Cell-Based Medicine, Icahn School of Medicine at Mount Sinai, New York, NY, 10029, USA.

**Database:** Medline

**20. Pooling of Nasopharyngeal Swab Specimens for SARS-CoV-2 detection by RT-PCR.**

**Author(s):** Torres, Ignacio; Albert, Eliseo; Navarro, David

**Source:** Journal of medical virology; May 2020

**Publication Date:** May 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.1002/jmv.25971](http://doi.org/10.1002/jmv.25971)

**ISSN:** 1096-9071

**Place of Publication:** United States

**PubMedID:** 32369202

**Accession Number:** 32369202

Available at [Journal of medical virology](https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/jmv.25971) - from Unpaywall

**Abstract:**Until an effective vaccine is available, interruption of community circulation of SARS- CoV-2 is crucial to control virus spread. To this end, systematic testing of large population groups by RT-PCR is mandatory to case identification and contact tracing thereby minimizing the likelihood of resurgence in contagion.1 This article is protected by copyright. All rights reserved.

**Primary Author Affiliation:** Microbiology Service, Hospital Clínico Universitario, Institute for Research INCLIVA, Valencia, Spain.

**Database:** Medline

**21. How to increase the SARS-CoV-2 detection rate through the nasopharyngeal swab?**

**Author(s):** De Virgilio, Armando; Costantino, Andrea; Mercante, Giuseppe; Spriano, Giuseppe

**Source:** Oral oncology; May 2020 ; p. 104802

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1016/j.oraloncology.2020.104802](http://doi.org/10.1016/j.oraloncology.2020.104802)

**ISSN:** 1879-0593

**Place of Publication:** England

**PubMedID:** 32410825

**Accession Number:** 32410825

Available at [Oral oncology](https://doi.org/10.1016/j.oraloncology.2020.104802) - from Unpaywall

**Primary Author Affiliation:** Otorhinolaryngology Unit, IRCCS Humanitas Clinical and Research Center, Via Manzoni 56, Rozzano (MI), Italy.

**Database:** Medline

**22. Multicenter Evaluation of the Cepheid Xpert Xpress SARS-CoV-2 Test.**

**Author(s):** Loeffelholz, Michael J; Alland, David; Butler-Wu, Susan M; Pandey, Utsav; Perno, Carlo Frederico; Nava, Alice; Carroll, Karen C; Mostafa, Heba; Davies, Emma; McEwan, Ashley; Rakeman, Jennifer L; Fowler, Randal C; Pawlotsky, Jean-Michel; Fourati, Slim; Banik, Sukalyani; Banada, Padmapriya P; Swaminathan, Shobha; Chakravorty, Soumitesh; Kwiatkowski, Robert W; Chu, Victor C; Kop, JoAnn; Gaur, Rajiv; Sin, Mandy L Y; Nguyen, Duy; Singh, Simranjit; Zhang, Na; Persing, David H

**Source:** Journal of clinical microbiology; May 2020

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1128/JCM.00926-20](http://doi.org/10.1128/JCM.00926-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32366669

**Accession Number:** 32366669

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/04/30/JCM.00926-20.full.pdf) - from Unpaywall

**Abstract:**Background. Nucleic acid amplification tests (NAATs) are the primary means of identifying acute infections caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Accurate and fast test results may permit more efficient use of protective and isolation resources and allow for rapid therapeutic interventions.Methods. We evaluated the analytical and clinical performance characteristics of the Xpert® Xpress SARS-CoV-2 (Xpert) test, a rapid, automated molecular test for SARS-CoV-2. Analytical sensitivity and specificity/interference were assessed with infectious SARS-CoV-2, other infectious coronavirus species including SARS-CoV, and 85 nasopharyngeal swab specimens positive for other respiratory viruses including endemic human coronaviruses (hCoVs). Clinical performance was assessed using 483 remnant upper and lower respiratory specimens previously analyzed by standard of care (SOC) NAATs.Results. The limit of detection of the Xpert test was 0.01 plaque forming units (PFU)/mL. Other hCoVs, including Middle East Respiratory Syndrome coronavirus, were not detected by the Xpert test. SARS-CoV, a closely related species in the Sarbecovirus subgenus, was detected by a broad-range target (E) but was distinguished from SARS-CoV-2 (SARS-CoV-2-specific N2 target). Compared to SOC NAATs, the positive agreement of the Xpert test was 219/220 (99.5%) and the negative agreement was 250/261 (95.8%). A third tie-breaker NAAT resolved all but three of the discordant results in favor the Xpert test.Conclusions. The Xpert test provided sensitive and accurate detection of SARS-CoV-2 in a variety of upper and lower respiratory tract specimens. The high sensitivity and fast time to results of approximately 45 minutes may impact patient management.

**Primary Author Affiliation:** Cepheid, 904 Caribbean Dr, Sunnyvale, CA 94089, USA Michael.loeffelholz@cepheid.com.

**Database:** Medline

**23. Comparison of Cepheid Xpert Xpress and Abbott ID Now to Roche cobas for the Rapid Detection of SARS-CoV-2.**

**Author(s):** Smithgall, Marie C; Scherberkova, Ioana; Whittier, Susan; Green, Daniel A

**Source:** Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology; May 2020; vol. 128 ; p. 104428

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1016/j.jcv.2020.104428](http://doi.org/10.1016/j.jcv.2020.104428)

**ISSN:** 1873-5967

**Place of Publication:** Netherlands

**PubMedID:** 32434706

**Accession Number:** 32434706

Available at [Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology](https://doi.org/10.1016/j.jcv.2020.104428) - from Unpaywall

**Abstract:**BACKGROUNDThe SARS-CoV-2 pandemic has created an urgent and unprecedented need for rapid large-scale diagnostic testing to inform timely patient management. However, robust data are lacking on the relative performance of available rapid molecular tests across a full range of viral concentrations.OBJECTIVEThis study aimed to compare two recently-authorized rapid tests, Cepheid Xpert Xpress SARS-CoV-2 and Abbott ID Now SARS-CoV-2, to the Roche cobas SARS-CoV-2 assay for samples with low, medium, and high viral concentrations.STUDY DESIGNA total of 113 nasopharyngeal swabs from remnant patient samples were tested, including 88 positives spanning the full range of observed Ct values on the cobas assay.RESULTSCompared to cobas, the overall positive agreement was 73.9% with ID Now and 98.9% with Xpert. Negative agreement was 100% and 92.0% for ID Now and Xpert, respectively. Both ID Now and Xpert showed 100% positive agreement for medium and high viral concentrations (Ct value 30, positive agreement was 34.3% for ID Now and 97.1% for Xpert.CONCLUSIONSWhile Xpert showed high agreement with cobas across a wide range of viral concentrations, this study highlights an important limitation of ID Now for specimens collected in viral or universal transport media with low viral concentrations. Further studies are needed to evaluate the performance of ID Now for direct swabs.

**Primary Author Affiliation:** Department of Pathology &amp; Cell Biology, Columbia University Irving Medical Center, New York, NY, USA.

**Database:** Medline

**24. Performing the nasopharyngeal and oropharyngeal swab for 2019-novel coronavirus (SARS-CoV-2) safely: How to dress, undress, and technical notes.**

**Author(s):** Di Maio, Pasquale; Iocca, Oreste; Cavallero, Antonio; Giudice, Marco

**Source:** Head & neck; May 2020

**Publication Date:** May 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1002/hed.26230](http://doi.org/10.1002/hed.26230)

**ISSN:** 1097-0347

**Place of Publication:** United States

**PubMedID:** 32357377

**Accession Number:** 32357377

Available at [Head & neck](https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/hed.26230) - from Unpaywall

**Abstract:**BACKGROUNDTo show how to safely perform nasopharyngeal and/or oropharyngeal swabs for 2019-novel coronavirus.METHODSThe video describes in detail the dressing and undressing procedures of health personnel, with the appropriate personal protective equipment. Technical notes for the execution of the nasopharyngeal and oropharyngeal swab are also provided to avoid sampling errors.RESULTSThe undressing phase is the procedure with the highest risk of self-contamination for the health worker. Following the various steps as shown in the video, there were no cases of contagion among the otolaryngology team appointed to perform the swabs for SARS-CoV-2 testing.CONCLUSIONSThis study demonstrates the technical feasibility of safely performing nasopharyngeal and/or oropharyngeal swabs for identification of SARS-CoV-2 viral RNA.

**Primary Author Affiliation:** Department of Otolaryngology-Head and Neck Surgery, Giovanni Borea Civil Hospital, Sanremo, Italy.

**Database:** Medline

**25. The novel coronavirus (COVID-19) pneumonia with negative detection of viral ribonucleic acid from nasopharyngeal swabs: a case report.**

**Author(s):** Zhang; Cai, Zhao; Wu, Weibo; Peng, Ling; Li, Yinfeng; Chen, Chuming; Chen, Li; Li, Jianming; Cao, Mengli; Feng, Shiyan; Jiang, Xiao; Yuan, Jing; Liu, Yingxia; Yang, Liang; Wang, Fuxiang

**Source:** BMC Infectious Diseases; Apr 2020; vol. 20 (no. 1); p. 1-7

**Publication Date:** Apr 2020

**Publication Type(s):** Academic Journal

**DOI:** [http://dx.doi.org/10.1186/s12879-020-05045-z](http://doi.org/10.1186/s12879-020-05045-z)

**ISSN:** 14712334

**Publisher:** BioMed Central

**PubMedID:** NLM32354369

**Accession Number:** 142998384

Available at [BMC Infectious Diseases](https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-020-05045-z) - from BioMed Central

Available at [BMC Infectious Diseases](https://link.springer.com/10.1186/s12879-020-05045-z) - from SpringerLink - Open Access

Available at [BMC Infectious Diseases](http://europepmc.org/search?query=(DOI:10.1186/s12879-020-05045-z)) - from Europe PubMed Central - Open Access

Available at [BMC Infectious Diseases](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=32354369) - from EBSCO (MEDLINE Complete)

Available at [BMC Infectious Diseases](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=1471-2334&volume=20&issue=1&spage=317) - from ProQuest (Health Research Premium) - NHS Version

Available at [BMC Infectious Diseases](https://bmcinfectdis.biomedcentral.com/track/pdf/10.1186/s12879-020-05045-z) - from Unpaywall

**Abstract:**Background: The novel coronavirus disease 2019 (COVID-19) outbreak started in Wuhan, Hubei, China since Dec 2019 and cases of infection have been continuously reported in various countries. It is now clear that the SARS-COV-2 coronavirus is transmissible from human to human. Nucleic acid detection is considered as the gold standard for the diagnosis of COVID-19. In this case report, we describe our experience in detection of SARS-COV-2 from a confirmed patient using nucleic acid test of bronchoalveolar-lavage fluid (BALF) samples but not nasopharyngeal swabs.Case Presentation: We present a case of severely ill SARS-COV-2 infected 46-year-old man with fever, coughing and chest tightness. We performed viral detection using his BALF samples and imaging method (CT) for confirmation. The patient received combination of interferonalfa-1b and ribavirin, lopinavir and ritonavir for antiviral treatment at different stages. Other medication was also given to him in combination for anti-inflammation, intestinal microbial regulation, phlegm elimination, liver protection and pulmonary fibrosis prevention purposes. We provided oxygen supply to him using BIPAP ventilator and high-flow humidification oxygen therapy instrument to facilitate respiration. The patient was cured and discharged.Conclusion: This case report described an effective supportive medication scheme to treat SARS-COV-2 infected patient and emphasized the necessity of detection of the viral genome using BALF samples and its significance in the diagnosis and prognosis of the disease.

**Primary Author Affiliation:** Shenzhen Third People's Hospital, Second Hospital Affiliated to Southern University of science and Technology, Shenzhen, Guangdong Province, China

**Database:** CINAHL

**26. Rapid Detection of COVID-19 Causative Virus (SARS-CoV-2) in Human Nasopharyngeal Swab Specimens Using Field-Effect Transistor-Based Biosensor.**

**Author(s):** Seo, Giwan; Lee, Geonhee; Kim, Mi Jeong; Baek, Seung-Hwa; Choi, Minsuk; Ku, Keun Bon; Lee, Chang-Seop; Jun, Sangmi; Park, Daeui; Kim, Hong Gi; Kim, Seong-Jun; Lee, Jeong-O; Kim, Bum Tae; Park, Edmond Changkyun; Kim, Seung Il

**Source:** ACS nano; Apr 2020; vol. 14 (no. 4); p. 5135-5142

**Publication Date:** Apr 2020

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**DOI:** [http://dx.doi.org/10.1021/acsnano.0c02823](http://doi.org/10.1021/acsnano.0c02823)

**ISSN:** 1936-086X

**Place of Publication:** United States

**PubMedID:** 32293168

**Accession Number:** 32293168

Available at [ACS nano](https://pubs.acs.org/doi/pdf/10.1021/acsnano.0c02823) - from Unpaywall

**Abstract:**Coronavirus disease 2019 (COVID-19) is a newly emerging human infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, previously called 2019-nCoV). Based on the rapid increase in the rate of human infection, the World Health Organization (WHO) has classified the COVID-19 outbreak as a pandemic. Because no specific drugs or vaccines for COVID-19 are yet available, early diagnosis and management are crucial for containing the outbreak. Here, we report a field-effect transistor (FET)-based biosensing device for detecting SARS-CoV-2 in clinical samples. The sensor was produced by coating graphene sheets of the FET with a specific antibody against SARS-CoV-2 spike protein. The performance of the sensor was determined using antigen protein, cultured virus, and nasopharyngeal swab specimens from COVID-19 patients. Our FET device could detect the SARS-CoV-2 spike protein at concentrations of 1 fg/mL in phosphate-buffered saline and 100 fg/mL clinical transport medium. In addition, the FET sensor successfully detected SARS-CoV-2 in culture medium (limit of detection [LOD]: 1.6 × 101 pfu/mL) and clinical samples (LOD: 2.42 × 102 copies/mL). Thus, we have successfully fabricated a promising FET biosensor for SARS-CoV-2; our device is a highly sensitive immunological diagnostic method for COVID-19 that requires no sample pretreatment or labeling.

**Primary Author Affiliation:** Research Center for Bioconvergence Analysis, Korea Basic Science Institute, Cheongju 28119, Republic of Korea.

**Database:** Medline

**27. Detection and analysis of nucleic acid in various biological samples of COVID-19 patients.**

**Author(s):** Wu, Jianguo; Liu, Jiasheng; Li, Shijun; Peng, Zhiyang; Xiao, Zhe; Wang, Xufeng; Yan, Ruicheng; Luo, Jianfei

**Source:** Travel medicine and infectious disease; Apr 2020 ; p. 101673

**Publication Date:** Apr 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.1016/j.tmaid.2020.101673](http://doi.org/10.1016/j.tmaid.2020.101673)

**ISSN:** 1873-0442

**Place of Publication:** Netherlands

**PubMedID:** 32311437

**Accession Number:** 32311437

Available at [Travel medicine and infectious disease](https://doi.org/10.1016/j.tmaid.2020.101673) - from Unpaywall

**Abstract:**COVID-19 (corona virus disease 2019) is a kind of acute severe pneumonia caused by 2019-nCoV (2019-nCoV) infection. Since December 2019, it has been found in Wuhan, Hubei Province, and then spread to the whole country. Some parts of the world also showed an outbreak trend [1-3]. Real-time fluorescence quantitative reverse transcriptase polymerase chain reaction (reverse transcriptase-polymerase chain reaction,RT-PCR) and viral gene sequencing are the gold standard for the diagnosis of COVID-19. At present, upper respiratory tract nasopharyngeal swabs are mostly used as nucleic acid detection samples in China, but the positive rate is low. However, there are few reports on clinical application of 2019-nCoV nucleic acid detection in other biological samples. METHODS: | The East Section of Renmin Hospital of Wuhan University is a designated COVID-19 hospital in Wuhan City, Hubei Province, China. This observation study included 132 patients diagnosed with COVID-19 in the infectious disease areas of the East Section of Renmin Hospital of Wuhan University from 2020.1.31 to 2020.2.29. COVID-19 diagnostic criteria: according to China's ⟪pneumonia diagnosis and treatment Program of novel coronavirus infection (trial version 7) ⟫, in accordance with the relevant epidemiological and clinical manifestations, nasopharyngeal swabs real-time fluorescence RT-PCR detection of 2019-nCoV nucleic acid positive, COVID-19 cases were divided into mild, ordinary, severe and severe [1]. The nasopharyngeal swabs of 132 cases of COVID-19 were positive for 2019-nCoV nucleic acid on admission, including 72 males and 60 females, with an average age of 66.7 ± 9.1 years, including 80 cases of common type, 44 cases of severe type and 8 cases of critical type. During the period of admission, under the condition of tertiary protection, nasopharyngeal swabs, sputum, blood, feces and anal swabs of COVID-19 cases were collected many times in the isolation ward for 2019-nCoV nucleic acid detection. All biological samples are sealed and transferred to the laboratory in strict accordance with the standard process. The RT-PCR test kits (BioGerm) were recommended by the Chinese Center for Disease Control and Prevention. The same technician and brand of test kit was used for all RT-PCR testing reported; both internal controls and negative controls were routinely performed with each batch of tests. RESULTS: | 132 the results of 2019-nCoV nucleic acid test of various biological samples during the treatment of confirmed COVID-19 cases are as follows: the positive rate of 2019-nCoV nucleic acid test of nasopharyngeal swab is 38.13% (180/472 times), the positive rate of 2019-nCoV nucleic acid test of sputum is 48.68% (148/304 times), the positive rate of blood 2019-nCoV nucleic acid test is 3.03% (4/132 times), and the positive rate of 2019-nCoV nucleic acid test of feces is 9.83% (24/244 times). The positive rate of 2019-nCoV nucleic acid detection in anal swabs is 10.00% (12/120 times). DISCUSSION|: In this study, it was found that the positive rate of 2019-nCoV nucleic acid in sputum of 132 patients with COVID-19 was higher than that of nasopharyngeal swabs, and viral nucleic acids were also detected in blood and digestive tract (fecal/anal swabs). Simple detection of nasopharyngeal swab 2019-nCoV nucleic acid detection positive rate is not high, multi-sample 2019-nCoV nucleic acid detection can improve the accuracy, reduce the false negative rate, better guide clinical treatment and evaluate the therapeutic effect.

**Primary Author Affiliation:** Department of Infection Disease Ward Five, Renmin Hospital of Wuhan University, Wuhan, 430060, Hubei province, China; Department of Gastrointestinal Surgery, Renmin Hospital of Wuhan University, Wuhan, 430060, Hubei province, China. Electronic address: sangui2020@hotmail.com.

**Database:** Medline

**28. [Covid-19 diagnosis : clinical recommendations and performance of nasopharyngeal swab-PCR].**

**Author(s):** Kokkinakis, Ioannis; Selby, Kevin; Favrat, Bernard; Genton, Blaise; Cornuz, Jacques

**Source:** Revue medicale suisse; Apr 2020; vol. 16 (no. 689); p. 699-701

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article Review

**ISSN:** 1660-9379

**Place of Publication:** Switzerland

**PubMedID:** 32270938

**Accession Number:** 32270938

**Abstract:**The Covid-19 pandemic imposes new diagnostic strategies in order to optimize the medical care of our patients. The current biblio-graphy, although of low quality, shows a sensitivity of 56 to 83 % for the Covid-19 PCR. Even though one negative test can exclude a Covid-19 in the majority of cases, the NPV (Negative Predictive Value) decreases with increasing prevalence (pre-test probability). This finding suggests the need for strict auto-isolation of patients until the resolution of their symptoms. For patients that present with typical symptoms, who have a presumed Covid-19 prevalence of -40-50 %, a negative test should be interpreted with caution and a repeat test may be needed.

**Primary Author Affiliation:** Unisanté, Centre universitaire de médecine générale et de santé publique, Rue du Bugnon 44, 1011 Lausanne.

**Database:** Medline

**29. A Review of Salivary Diagnostics and Its Potential Implication in Detection of Covid-19.**

**Author(s):** Sri Santosh, Tatikonda; Parmar, Reshu; Anand, Hanish; Srikanth, Konkati; Saritha, Madham

**Source:** Cureus; Apr 2020; vol. 12 (no. 4); p. e7708

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article Review

**DOI:** [http://dx.doi.org/10.7759/cureus.7708](http://doi.org/10.7759/cureus.7708)

**ISSN:** 2168-8184

**Place of Publication:** United States

**PubMedID:** 32313785

**Accession Number:** 32313785

Available at [Cureus](http://europepmc.org/search?query=(DOI:10.7759/cureus.7708)) - from Europe PubMed Central - Open Access

Available at [Cureus](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=2168-8184&volume=12&issue=4&spage=e7708) - from ProQuest (Health Research Premium) - NHS Version

Available at [Cureus](https://assets.cureus.com/uploads/review_article/pdf/30081/1589338169-20200513-21300-basfx5.pdf) - from Unpaywall

**Abstract:**Saliva is an exocrine secretion produced from the salivary glands and has numerous functions, such as cleansing and protection of the oral cavity, antimicrobial effects and aids in digestion. Due to the speedy development in the field of salivaomics, saliva is now well accepted as a pool of biological markers that vary from changes in biochemicals, nucleic acids and proteins to the microflora. Saliva has an immense potential as a diagnostic fluid and offers an edge over other biological fluids as its collection method does not require invasive procedure, economical and is useful for monitoring systemic health. Development of sensitive and precise salivary diagnostic tools and the formulation of defined guidelines following meticulous testing will allow salivary diagnostics to be utilised as chair side tests for various oral and systemic diseases in the near future. The coronavirus disease (Covid-19) pandemic is the biggest challenge and global health crisis for the world since World War Two. Rapid and accurate diagnosis of Covid-19 is crucial in controlling the outbreak in the community and in hospitals. Nasopharyngeal and oropharyngeal swabs are the recommended specimen types for Covid-19 diagnostic testing. The collection of these specimen types requires close contact between healthcare workers and patients and poses a risk of transmission of the virus, causes discomfort and may cause bleeding, especially in patients with condition such as thrombocytopenia. Hence, nasopharyngeal or oropharyngeal swabs are not desirable for sequential monitoring of viral load. Saliva specimens can be obtained easily as the patient is asked to spit into a sterile bottle. The collection of saliva is non-invasive and greatly minimizes the exposure of healthcare workers to Covid-19. Saliva has a high consistency rate of greater than 90% with nasopharyngeal specimens in the detection of respiratory viruses, including coronaviruses. Saliva has also been used in screening respiratory viruses among hospitalized patients without pyrexia or respiratory symptoms. SARS-CoV can be detected in saliva at high titers. Salivary diagnostics is a dynamic field that is being incorporated as part of disease diagnosis, clinical monitoring of systemic health and to make significant clinical decisions for patient care. More research is required to analyze the potential diagnostic of Covid-19 in saliva to develop rapid chair side tests for the detection of Covid-19 and it is also pivotal to improve and develop successful strategies for prevention, especially for dentists and healthcare professionals who are involved in performing aerosol-generating procedures.

**Primary Author Affiliation:** Orthodontics and Dentofacial Orthopaedics, Malla Reddy Institute of Dental Sciences, Hyderabad, IND.

**Database:** Medline

**30. Diagnostic performance of COVID-19 serology assays.**

**Author(s):** Zainol Rashid, Z; Othman, S N; Abdul Samat, M N; Ali, U K; Wong, K K

**Source:** The Malaysian journal of pathology; Apr 2020; vol. 42 (no. 1); p. 13-21

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article Review

**ISSN:** 0126-8635

**Place of Publication:** Malaysia

**PubMedID:** 32342927

**Accession Number:** 32342927

Available at [The Malaysian journal of pathology](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=32342927) - from EBSCO (MEDLINE Complete)

Available at [The Malaysian journal of pathology](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=0126-8635&volume=42&issue=1&spage=13) - from ProQuest (Health Research Premium) - NHS Version

**Abstract:**INTRODUCTIONThe World Health Organization (WHO) declared COVID-19 outbreak as a world pandemic on 12th March 2020. Diagnosis of suspected cases is confirmed by nucleic acid assays with real-time PCR, using respiratory samples. Serology tests are comparatively easier to perform, but their utility may be limited by the performance and the fact that antibodies appear later during the disease course. We aimed to describe the performance data on serological assays for COVID-19.MATERIALS AND METHODSA review of multiple reports and kit inserts on the diagnostic performance of rapid tests from various manufacturers that are commercially available were performed. Only preliminary data are available currently.RESULTSFrom a total of nine rapid detection test (RDT) kits, three kits offer total antibody detection, while six kits offer combination SARS-CoV-2 IgM and IgG detection in two separate test lines. All kits are based on colloidal gold-labeled immunochromatography principle and one-step method with results obtained within 15 minutes, using whole blood, serum or plasma samples. The sensitivity for both IgM and IgG tests ranges between 72.7% and 100%, while specificity ranges between 98.7% to 100%. Two immunochromatography using nasopharyngeal or throat swab for detection of COVID-19 specific antigen are also reviewed.CONCLUSIONSThere is much to determine regarding the value of serological testing in COVID-19 diagnosis and monitoring. More comprehensive evaluations of their performance are rapidly underway. The use of serology methods requires appropriate interpretations of the results and understanding the strengths and limitations of such tests.

**Primary Author Affiliation:** Universiti Kebangsaan Malaysia Medical Centre, Faculty of Medicine, Department of Medical Microbiology &amp; Immunology, 56000 Kuala Lumpur, Malaysia. ctnorlia@ppukm.ukm.edu.my.

**Database:** Medline

**31. Upper respiratory tract sampling in COVID-19.**

**Author(s):** Mawaddah, A; Gendeh, H S; Lum, S G; Marina, M B

**Source:** The Malaysian journal of pathology; Apr 2020; vol. 42 (no. 1); p. 23-35

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article Review

**ISSN:** 0126-8635

**Place of Publication:** Malaysia

**PubMedID:** 32342928

**Accession Number:** 32342928

Available at [The Malaysian journal of pathology](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=32342928) - from EBSCO (MEDLINE Complete)

Available at [The Malaysian journal of pathology](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=0126-8635&volume=42&issue=1&spage=23) - from ProQuest (Health Research Premium) - NHS Version

**Abstract:**INTRODUCTIONTo review the present literature on upper respiratory tract sampling in COVID-19 and provide recommendations to improve healthcare practices and directions in future studies.METHODSTwelve relevant manuscripts were sourced from a total of 7288 search results obtained using PubMed, Medline and Google Scholar. The search keywords used were COVID-19, nasopharyngeal, oropharyngeal, swabs, SARS and CoV2. Original manuscripts were obtained and analysed by all authors. The review included manuscripts which have not undergone rigorous peer-review process in view of the magnitude of the topic discussed.RESULTSThe viral load of SARS-CoV-2 RNA in the upper respiratory tract was significantly higher during the first week and peaked at 4-6 days after onset of symptoms, during which it can be potentially sampled. Nasopharyngeal swab has demonstrated higher viral load than oropharyngeal swab, where the difference in paired samples is best seen at 0-9 days after the onset of illness. Sensitivity of nasopharyngeal swab was higher than oropharyngeal swabs in COVID-19 patients. Patient self-collected throat washing has been shown to contain higher viral load than nasopharyngeal or oropharyngeal swab, with significantly higher sensitivity when compared with paired nasopharyngeal swab.RECOMMENDATIONSRoutine nasopharyngeal swab of suspected COVID-19 infection should take anatomy of the nasal cavity into consideration to increase patient comfort and diagnostic yield. Routine oropharyngeal swab should be replaced by throat washing which has demonstrated better diagnostic accuracy, and it is safe towards others.

**Primary Author Affiliation:** Universiti Kebangsaan Malaysia Medical Centre, Faculty of Medicine, Department of Otorhinolaryngology, Head and Neck Surgery, Malaysia. marinamatbaki@ppukm.ukm.edu.my.

**Database:** Medline

**32. Comparison of Four Molecular In Vitro Diagnostic Assays for the Detection of SARS-CoV-2 in Nasopharyngeal Specimens.**

**Author(s):** Zhen, Wei; Manji, Ryhana; Smith, Elizabeth; Berry, Gregory J

**Source:** Journal of clinical microbiology; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1128/JCM.00743-20](http://doi.org/10.1128/JCM.00743-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32341143

**Accession Number:** 32341143

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/04/24/JCM.00743-20.full.pdf) - from Unpaywall

**Abstract:**Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the novel human coronavirus that causes coronavirus disease 2019 (COVID-19), was first discovered in December 2019 as the cause of an outbreak of pneumonia in the city of Wuhan, Hubei province, China. The clinical presentation of COVID-19 is fairly non-specific, and symptoms overlap with other seasonal respiratory infections concurrently circulating in the population. Furthermore, it is estimated that up to 80% of infected individuals experience mild symptoms or are asymptomatic, confounding efforts to reliably diagnose COVID-19 empirically. To support infection control measures, there is an urgent need for rapid and accurate molecular diagnostics to identify COVID-19 positive patients. In the present study, we have evaluated the analytical sensitivity and clinical performance of four SARS-CoV-2 molecular diagnostic assays granted Emergency Use Authorization by the FDA using nasopharyngeal swabs from symptomatic patients: the New York SARS-CoV-2 Real-time Reverse Transcriptase (RT)-PCR Diagnostic Panel (Modified CDC), the Simplexa COVID-19 Direct (Diasorin Molecular), GenMark ePlex SARS-CoV-2 assay (GenMark) and the Hologic Panther Fusion® SARS-CoV-2 assay (Hologic). This information is crucial for both laboratories and clinical teams, as decisions on which testing platform to implement are made.

**Primary Author Affiliation:** Infectious Disease Diagnostics, Northwell Health Laboratories, Lake Success, NY.

**Database:** Medline

**33. Comparison of Copan Eswab and FLOQswab for COVID-19 PCR diagnosis: working around a supply shortage.**

**Author(s):** Vermeiren, Christie; Marchand-Senécal, Xavier; Sheldrake, Elena; Bulir, David; Smieja, Marek; Chong, Sylvia; Forbes, Jessica D; Katz, Kevin

**Source:** Journal of clinical microbiology; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.1128/JCM.00669-20](http://doi.org/10.1128/JCM.00669-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32295895

**Accession Number:** 32295895

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/04/10/JCM.00669-20.full.pdf) - from Unpaywall

**Abstract:**On March 16th 2020, WHO Director-General stated "You cannot fight a fire blindfolded. And we cannot stop this [COVID-19] pandemic if we don't know who is infected. We have a simple message for all countries: test, test, test. Test every suspected case." (https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---16-march-2020) This strategy hinges on the availability of appropriate, validated collection and transport systems to ensure preservation of nucleic acids and compatibility with downstream molecular testing - an acute challenge in the current pandemic. We present direct comparison of COVID-19 specimens collected with FLOQswab Nasopharyngeal Swab preserved in universal transport medium (Copan UTM System, Copan, Italy, catalog No.305C), optimized for viral specimens, and flocked regular nylon tip swab preserved in liquid amies (Eswab Collection system, Copan, Italy, catalog No. 480C), optimized for bacterial specimens.

**Primary Author Affiliation:** Shared Hospital Laboratory, Toronto, ON, Canada cvermeiren@shn.ca.

**Database:** Medline

**34. COVID-19: Nasal and oropharyngeal swab.**

**Author(s):** Petruzzi, Gerardo; De Virgilio, Armando; Pichi, Barbara; Mazzola, Francesco; Zocchi, Jacopo; Mercante, Giuseppe; Spriano, Giuseppe; Pellini, Raul

**Source:** Head & neck; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1002/hed.26212](http://doi.org/10.1002/hed.26212)

**ISSN:** 1097-0347

**Place of Publication:** United States

**PubMedID:** 32352180

**Accession Number:** 32352180

Available at [Head & neck](https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/hed.26212) - from Unpaywall

**Abstract:**Performing a proper nasal and oropharyngeal swab procedure is essential in the screening of COVID-19 infection. The video illustration of nasal and oropharyngeal swab is presented (Video S1). To correctly perform the nasopharyngeal swab, the patient must be seated comfortably with the back of their head against the headrest. The swab is inserted in the nose horizontally, along an imaginary line between the nostril and the ear. Oropharyngeal sampling is easier to perform. The swab is directed toward the rear wall of the oropharynx and it is rotated a few times before removal. After taking the sample, it is necessary to insert both swabs in the same tube, breaking the rod with one swift and controlled movement. Finally, carefully reset the cap. It appears to be extremely important to properly collect nasopharyngeal and oropharyngeal swabs in order to minimize the false negative rate among COVID-19 positive patients.

**Primary Author Affiliation:** Department of Otolaryngology-Head and Neck Surgery, IRCCS Regina Elena National Cancer Institute, Rome, Italy.

**Database:** Medline

**35. Serological tests facilitate identification of asymptomatic SARS-CoV-2 infection in Wuhan, China.**

**Author(s):** Wu, Xiaodong; Fu, Bo; Chen, Lang; Feng, Yong

**Source:** Journal of medical virology; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.1002/jmv.25904](http://doi.org/10.1002/jmv.25904)

**ISSN:** 1096-9071

**Place of Publication:** United States

**PubMedID:** 32311142

**Accession Number:** 32311142

Available at [Journal of medical virology](https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/jmv.25904) - from Unpaywall

**Abstract:**The Wuhan City has ended the lockdown and people have been allowed to resume working since April 8 if meeting a set of COVID-19-associated tests including SARS-CoV-2 nucleic acid test (NAT) of nasopharyngeal swabs, chest CT scan or a SARS-CoV-2-specific serological test. Here, we reported the positive rate of COVID-19 tests based on NAT, chest CT scan and a serological SARS-CoV-2 test, from April 3 to 15 in one hospital in Qingshan Destrict, Wuhan. We observed a ~10% SARS-CoV-2-specific IgG positive rate from 1,402 tests. Combination of SARS-CoV-2 NAT and a specific serological test might facilitate the detection of COVID-19 infection, or the asymptomatic SARS-CoV-2-infected subjects. Large-scale investigation is required to evaluate the herd immunity of the city, for the resuming people and for the re-opened city. This article is protected by copyright. All rights reserved.

**Primary Author Affiliation:** Department of Respiratory and Critical Care Medicine, CR &amp; WISCO General Hospital, Wuhan, 430080, Hubei, China.

**Database:** Medline

**36. Asymptomatic SARS-CoV-2 infected case with viral detection positive in stool but negative in nasopharyngeal samples lasts for 42 days.**

**Author(s):** Jiang, Xuejun; Luo, Mei; Zou, Zhen; Wang, Xu; Chen, Chengzhi; Qiu, Jingfu

**Source:** Journal of medical virology; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.1002/jmv.25941](http://doi.org/10.1002/jmv.25941)

**ISSN:** 1096-9071

**Place of Publication:** United States

**PubMedID:** 32330309

**Accession Number:** 32330309

Available at [Journal of medical virology](https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/jmv.25941) - from Unpaywall

**Abstract:**Coronavirus disease 2019 (COVID-19), caused by a novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has spread rapidly around the world. Currently, the identification of this disease is mainly conducted by using nasopharyngeal swabs[1] , but the presence of SARS-CoV-2 RNA in feces of COVID-19 patients indicates the possibility of transmission via fecal-oral route[2-4] . This article is protected by copyright. All rights reserved.

**Primary Author Affiliation:** School of Public Health and Management, Chongqing Medical University, Chongqing, 400016, People's Republic of China.

**Database:** Medline

**37. Interpret with caution: An evaluation of the commercial AusDiagnostics versus in-house developed assays for the detection of SARS-CoV-2 virus.**

**Author(s):** Rahman, H; Carter, I; Basile, K; Donovan, L; Kumar, S; Tran, T; Ko, D; Alderson, S; Sivaruban, T; Eden, J-S; Rockett, R; O'Sullivan, M V; Sintchenko, V; Chen, S C-A; Maddocks, S; Dwyer, D E; Kok, J

**Source:** Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology; Apr 2020; vol. 127 ; p. 104374

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1016/j.jcv.2020.104374](http://doi.org/10.1016/j.jcv.2020.104374)

**ISSN:** 1873-5967

**Place of Publication:** Netherlands

**PubMedID:** 32361322

**Accession Number:** 32361322

Available at [Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7195305) - from Unpaywall

**Abstract:**INTRODUCTIONThere is limited data on the analytical performance of commercial nucleic acid tests (NATs) for laboratory confirmation of COVID-19 infection.METHODSNasopharyngeal, combined nose and throat swabs, nasopharyngeal aspirates and sputum was collected from persons with suspected SARS-CoV-2 infection, serial dilutions of SARS-CoV-2 viral cultures and synthetic positive controls (gBlocks, Integrated DNA Technologies) were tested using i) AusDiagnostics assay (AusDiagnostics Pty Ltd); ii) in-house developed assays targeting the E and RdRp genes; iii) multiplex PCR assay targeting endemic respiratory viruses. Discrepant SARS-CoV-2 results were resolved by testing the N, ORF1b, ORF1ab and M genes.RESULTSOf 52 clinical samples collected from 50 persons tested, respiratory viruses were detected in 22 samples (42 %), including SARS CoV-2 (n = 5), rhinovirus (n = 7), enterovirus (n = 5), influenza B (n = 4), hMPV (n = 5), influenza A (n = 2), PIV-2 (n = 1), RSV (n = 2), CoV-NL63 (n = 1) and CoV-229E (n = 1). SARS-CoV-2 was detected in four additional samples by the AusDiagnostics assay. Using the in-house assays as the "gold standard", the sensitivity, specificity, positive and negative predictive values of the AusDiagnostics assay was 100 %, 92.16 %, 55.56 % and 100 % respectively. The Ct values of the real-time in-house-developed PCR assay targeting the E gene was significantly lower than the corresponding RdRp gene assay when applied to clinical samples, viral culture and positive controls (mean 21.75 vs 28.1, p = 0.0031).CONCLUSIONSThe AusDiagnostics assay is not specific for the detection SARS-CoV-2. Any positive results should be confirmed using another NAT or sequencing. The case definition used to investigate persons with suspected COVID-19 infection is not specific.

**Primary Author Affiliation:** Centre for Infectious Diseases and Microbiology Laboratory Services, NSW Health Pathology-Institute of Clinical Pathology and Medical Research, Westmead Hospital, Westmead, NSW, 2145, Australia.

**Database:** Medline

**38. Detection of SARS-CoV-2 RNA and Antibodies in Diverse Samples: Protocol to Validate the Sufficiency of Provider-Observed, Home-Collected Blood, Saliva, and Oropharyngeal Samples.**

**Author(s):** Sullivan, Patrick Sean; Sailey, Charles; Guest, Jodie Lynn; Guarner, Jeannette; Kelley, Colleen; Siegler, Aaron Julius; Valentine-Graves, Mariah; Gravens, Laura; Del Rio, Carlos; Sanchez, Travis Howard

**Source:** JMIR public health and surveillance; Apr 2020; vol. 6 (no. 2); p. e19054

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.2196/19054](http://doi.org/10.2196/19054)

**ISSN:** 2369-2960

**Place of Publication:** Canada

**PubMedID:** 32310815

**Accession Number:** 32310815

Available at [JMIR public health and surveillance](http://europepmc.org/search?query=(DOI:10.2196/19054)) - from Europe PubMed Central - Open Access

Available at [JMIR public health and surveillance](https://publichealth.jmir.org/api/download?filename=fe559db0f3d53aeb021174fa244ea217.pdf&alt_name=19054-354916-3-SP.pdf) - from Unpaywall

**Abstract:**BACKGROUNDThe response in the United States to the coronavirus disease (COVID-19) pandemic has been hampered by a lack of aggressive testing for the infection. Testing for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the cornerstone of an effective public health response. However, efforts to test have been hampered by limited reagents, limitations in the availability of swabs used for the collection of nasopharyngeal swab (NPS) specimens, limitations in personal protective equipment (PPE) for health care providers collecting the NPS specimens, and limitations in viral transport media for transporting the specimens. Therefore, more flexible options for screening for SARS-CoV-2 RNA and serologic responses are critical to inform clinical and public health responses.OBJECTIVEWe aim to document the ability of patients to self-collect sufficient specimens for SARS-CoV-2 viral detection and serology.METHODSPatient self-collection of samples will be done with observation by a health care provider during a telemedicine session. Participants will be mailed a specimen collection kit, engage in a telehealth session with a provider through a HIPPA (Health Insurance Portability and Accountability Act of 1996)-compliant video meeting, and collect specimens while being observed by the provider. Providers will record whether they are confident in the suitability of the specimen for laboratory testing that would inform clinical decision making. We will objectively assess the sufficiency of biological material in the mailed-in specimens.RESULTSThe protocol was approved by the Emory University Institutional Review Board (IRB) on March 30, 2020 (Protocol number 371). To date, we have enrolled 159 participants.CONCLUSIONSDefining a conceptual framework for assessing the sufficiency of patient-collected samples for the detection of SARS-CoV-2 RNA and serologic responses to infection is critical for facilitating public health responses and providing PPE-sparing options to increase testing. Validation of alternative methods of specimen collection should include objective measures of the sufficiency of specimens for testing. A strong evidence base for diversifying testing modalities will improve tools to guide public health responses to the COVID-19 pandemic.

**Primary Author Affiliation:** Department of Epidemiology, Rollins School of Public Health, Emory University, Atlanta, GA, United States.

**Database:** Medline

**39. Clinical evaluation of the cobas SARS-CoV-2 test and a diagnostic platform switch during 48 hours in the midst of the COVID-19 pandemic.**

**Author(s):** Poljak, Mario; Korva, Miša; Knap Gašper, Nataša; Fujs Komloš, Kristina; Sagadin, Martin; Uršič, Tina; Avšič Županc, Tatjana; Petrovec, Miroslav

**Source:** Journal of clinical microbiology; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1128/JCM.00599-20](http://doi.org/10.1128/JCM.00599-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32277022

**Accession Number:** 32277022

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/04/09/JCM.00599-20.full.pdf) - from Unpaywall

**Abstract:**Laboratories are currently witnessing extraordinary demand globally for sampling devices, reagents, consumables, and diagnostic instruments needed for timely diagnosis of SARS-CoV-2 infection. To meet diagnostic needs as the pandemic grows, the US Food and Drug Administration (FDA) recently granted several commercial SARS-CoV-2 tests Emergency Use Authorization (EUA), but manufacturer-independent evaluation data are scarce. We performed the first manufacturer-independent evaluation of the fully automated sample-to-result two-target test cobas 6800 SARS-CoV-2 (cobas) (Roche Molecular Systems, Branchburg, NJ), which received US FDA EUA on March 12, 2020. The comparator was a standardized 3-hour SARS-CoV-2 protocol, consisting of RNA extraction using an automated portable instrument, followed by a two-target RT-PCR, which our laboratory has routinely used since January 2020 (Corman VM et al. EuroSurveill 25 (3):2000045). Cobas and the comparator showed overall agreement of 98.1% and a kappa value of 0.95 on an in-house validation panel consisting of 217 well-characterized retrospective samples. Immediate prospective head-to-head comparative evaluation followed on 502 samples, and the diagnostic approaches showed overall percent agreement of 99.6% and a kappa value of 0.98. A good correlation (r 2 = 0.96) between cycle threshold values for SARS-CoV-2 specific targets obtained by cobas and the comparator was observed. Our results showed that cobas is a reliable assay for qualitative detection of SARS-CoV-2 in nasopharyngeal swab samples collected in the UTM-RT system. Under the extraordinary circumstances that laboratories are facing worldwide, a safe diagnostic platform switch is feasible in only 48 hours and in the midst of the COVID-19 pandemic if carefully planned and executed.

**Primary Author Affiliation:** Institute of Microbiology and Immunology, Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia.

**Database:** Medline

**40. Comparison of Abbott ID Now and Abbott m2000 methods for the detection of SARS-CoV-2 from nasopharyngeal and nasal swabs from symptomatic patients.**

**Author(s):** Harrington, Amanda; Cox, Brian; Snowdon, Jennifer; Bakst, Jonathan; Ley, Erin; Grajales, Patricia; Maggiore, Jack; Kahn, Stephen

**Source:** Journal of clinical microbiology; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.1128/JCM.00798-20](http://doi.org/10.1128/JCM.00798-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32327448

**Accession Number:** 32327448

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/04/23/JCM.00798-20.full.pdf) - from Unpaywall

**Abstract:**The ID NOW COVID-19 (IDNCOV) assay performed on the ID Now Instrument (Abbott Diagnostics, Scarborough, Inc. Scarborough, ME) is a rapid diagnostic test that can be performed in a point of care setting equivalent to CLIA waived testing.….

**Primary Author Affiliation:** Department of Pathology and Laboratory Medicine, Loyola University Medical Center amanda.harrington@lumc.edu.

**Database:** Medline

**41. Evaluation of Transport Media and Specimen Transport Conditions for the Detection of SARS-CoV-2 Using Real Time Reverse Transcription PCR.**

**Author(s):** Rogers, Amy A; Baumann, Russell E; Borillo, Gwynngelle A; Kagan, Ron M; Batterman, Hollis J; Galdzicka, Marzena; Marlowe, Elizabeth M

**Source:** Journal of clinical microbiology; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1128/JCM.00708-20](http://doi.org/10.1128/JCM.00708-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32341141

**Accession Number:** 32341141

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/04/23/JCM.00708-20.full.pdf) - from Unpaywall

**Abstract:**The global COVID-19 pandemic has resulted in a worldwide shortage of viral transport media and raised questions about specimen stability. The objective of this study was to determine the stability of SARS-CoV-2 virus RNA in specimen transport media under various storage conditions. Transport medium tested included: VCM, UTM®-RT, ESwab™, M4 and saline (0.9% NaCl). Specimen types tested included Nasopharyngeal/Oropharyngeal (NP/OP) swabs in the above transport media, bronchoalveolar lavage (BAL) and Sputum. A high-titer SARS-CoV-2 remnant patient specimen was spiked into pooled SARS-CoV-2 RNA-negative specimen remnants for the various media types. Aliquots of samples were stored at 18°C to 25°C, 2°C to 8°C and -10°C to -30°C and then tested at time points up to 14 days. Specimens consistently yielded amplifiable RNA with mean Ct differences of <3 over the various conditions assayed, thus supporting the use and transport of alternative collection media and specimen types under a variety of temperature storage conditions.

**Primary Author Affiliation:** Quest Diagnostics Infectious Disease, San Juan Capistrano, CA USA.

**Database:** Medline

**42. Study of SARS-CoV-2 in semen and urine samples of a volunteer with positive naso-pharyngeal swab.**

**Author(s):** Paoli, D; Pallotti, F; Colangelo, S; Basilico, F; Mazzuti, L; Turriziani, O; Antonelli, G; Lenzi, A; Lombardo, F

**Source:** Journal of endocrinological investigation; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1007/s40618-020-01261-1](http://doi.org/10.1007/s40618-020-01261-1)

**ISSN:** 1720-8386

**Place of Publication:** Italy

**PubMedID:** 32329026

**Accession Number:** 32329026

Available at [Journal of endocrinological investigation](https://link.springer.com/content/pdf/10.1007/s40618-020-01261-1.pdf) - from Unpaywall

**Abstract:**INTRODUCTIONThe recent appearance of SARS-CoV-2 in Wuhan in 2019 has started a pandemic which has involved over a million people worldwide. A matter of debate is the possible viral detection in different body fluids than respiratory droplets. Thus, we evaluated the possible presence of SARS-CoV-2 in semen and urine samples of a volunteer with confirmed COVID-19.MATERIALS AND METHODSA 31-year-old man with fever, myalgia, anosmia, and ageusia was tested and found positive for SARS-CoV-2 through a pharyngeal swab. Eight days after he provided semen and urine samples in which viral RNA presence was measured using a Real time RT PCR system (RealStar SARS-CoV-2 RT-PCR, Altona Diagnostics) targeting E and S viral genes.RESULTS AND DISCUSSIONSemen and urine samples search for SARS-CoV-2 RNA was negative. Although this should be interpreted cautiously, it may be possible that either the viral clearance kinetics in these matrices matches the progressive clinical recovery of the patient or that the virus was never present in these fluids at the time of the laboratory diagnosis.

**Primary Author Affiliation:** Laboratory of Seminology-Sperm Bank "Loredana Gandini", Department of Experimental Medicine, "Sapienza" University of Rome, Viale del Policlinico 155, 00161, Rome, Italy.

**Database:** Medline

**43. Detection of low levels of SARS-CoV-2 RNA from nasopharyngeal swabs using three commercial molecular assays.**

**Author(s):** Lowe, Christopher F; Matic, Nancy; Ritchie, Gordon; Lawson, Tanya; Stefanovic, Aleksandra; Champagne, Sylvie; Leung, Victor; Romney, Marc G

**Source:** Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology; Apr 2020; vol. 128 ; p. 104387

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1016/j.jcv.2020.104387](http://doi.org/10.1016/j.jcv.2020.104387)

**ISSN:** 1873-5967

**Place of Publication:** Netherlands

**PubMedID:** 32380382

**Accession Number:** 32380382

Available at [Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology](https://doi.org/10.1016/j.jcv.2020.104387) - from Unpaywall

**Abstract:**In response to the COVID-19 pandemic, commercial molecular assays for SARS-CoV-2 testing have been rapidly developed and broadly deployed in laboratories worldwide. Although these assays have been reported to correlate well, we sought to compare the Xpert® Xpress SARS-CoV-2 to the cobas® SARS-CoV-2 or the Lightmix® Modular SARS and Wuhan CoV E-gene assay for nasopharyngeal (NP) swabs with low levels of SARS-CoV-2 RNA. Thirty-seven NP swabs were studied, including 10 samples with a moderate cycle threshold (Ct) between 30-33.9, and 22 with Ct≥34, and 5 negative for SARS-CoV-2. Overall concordance on initial comparison was 86.5 % (32/37), which was 100 % concordance for samples with Ct values ranging between 30-33.9. Discordance amongst samples showing a Ct ≥34 was 22.7 % (5/22). Endpoint value analysis on the Xpress SARS-CoV-2 within the discordant samples noted two with an endpoint value >5, which were detected by the cobas® or Lightmix®. Testing of SARS-CoV-2 on the three commercial assays was comparable for NP swabs with moderate Ct values, while high Ct values were less concordant. Importantly, analysis of Xpert® endpoint values improved interpretation of discrepant results.

**Primary Author Affiliation:** Division of Medical Microbiology and Virology, St. Paul's Hospital, Vancouver, Canada; Department of Pathology and Laboratory Medicine, University of British Columbia, Vancouver, Canada. Electronic address: clowe@providencehealth.bc.ca.

**Database:** Medline

**44. Clinical Evaluation of Three Sample-To-Answer Platforms for the Detection of SARS-CoV-2.**

**Author(s):** Zhen, Wei; Smith, Elizabeth; Manji, Ryhana; Schron, Deborah; Berry, Gregory J

**Source:** Journal of clinical microbiology; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1128/JCM.00783-20](http://doi.org/10.1128/JCM.00783-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32332061

**Accession Number:** 32332061

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/04/23/JCM.00783-20.full.pdf) - from Unpaywall

**Abstract:**Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has now spread across the globe. As part of the worldwide response, many molecular diagnostic platforms have been granted Emergency Use Authorization (EUA) by the Food and Drug Administration (FDA) to identify SARS-CoV-2 positive patients. Our objective was to evaluate three sample-to-answer molecular diagnostic platforms (Cepheid Xpert® Xpress SARS-CoV-2 [Xpert Xpress], Abbott ID NOW™ COVID-19 [ID NOW], GenMark ePlex® SARS-CoV-2 Test [ePlex]) to determine analytical sensitivity, clinical performance, and workflow for the detection of SARS-CoV-2 in nasopharyngeal swabs from 108 symptomatic patients. We found that the Xpert Xpress had the lowest limit of detection (100% detection at 100 copies/mL), followed by the ePlex (100% detection at 1,000 copies/mL), and the ID NOW (20,000 copies/mL). The Xpert Xpress also had highest positive percent agreement (PPA) when compared to our reference standard (98.3%) followed by the ePlex (91.4%) and ID now (87.7%). All three assays showed 100% negative percent agreement (NPA). In the workflow analysis, the ID NOW produced the most rapid time to result per specimen (∼17 minutes) as compared to the Xpert Xpress (∼46 minutes) and the ePlex (∼1.5 hours), but what the ID NOW gained in rapid results, it lost in analytical and clinical performance. The ePlex had the longest time to results and showed a slight improvement in PPA over the ID NOW. Information about the clinical and analytical performance of these assays, as well as workflow, will be critical in making informed and timely decisions on testing platform.

**Primary Author Affiliation:** Infectious Disease Diagnostics, Northwell Health Laboratories, Lake Success, NY.

**Database:** Medline

**45. Comparison of Abbott ID Now, Diasorin Simplexa, and CDC FDA EUA methods for the detection of SARS-CoV-2 from nasopharyngeal and nasal swabs from individuals diagnosed with COVID-19.**

**Author(s):** Rhoads, Daniel D; Cherian, Sree S; Roman, Katharine; Stempak, Lisa M; Schmotzer, Christine L; Sadri, Navid

**Source:** Journal of clinical microbiology; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.1128/JCM.00760-20](http://doi.org/10.1128/JCM.00760-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32303564

**Accession Number:** 32303564

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/04/17/JCM.00760-20.full.pdf) - from Unpaywall

**Abstract:**Dozens of in vitro diagnostics (IVDs) have received emergency use authorization (EUA) from the U.S. Food & Drug Administration (FDA) for the detection of SARS-CoV-2, but little has been studied to determine how well these assays perform using clinical specimens.….

**Primary Author Affiliation:** Department of Pathology, University Hospitals Cleveland Medical Center ddr26@case.edu.

**Database:** Medline

**46. [Clinical application effect of modified nasopharyngeal swab sampling for 2019 novel coronavirus nucleic acid detection].**

**Author(s):** Ma, S Y; Luo, Y M; Hu, T Y; You, Z C; Sun, J G; Yu, S Y; Yuan, Z Q; Peng, Y Z; Luo, G X; Xu, Z

**Source:** Zhonghua shao shang za zhi = Zhonghua shaoshang zazhi = Chinese journal of burns; Apr 2020; vol. 36 (no. 0); p. E009

**Publication Date:** Apr 2020

**Publication Type(s):** English Abstract Journal Article

**DOI:** [http://dx.doi.org/10.3760/cma.j.cn501120-20200312-00153](http://doi.org/10.3760/cma.j.cn501120-20200312-00153)

**ISSN:** 1009-2587

**Place of Publication:** China

**PubMedID:** 32268456

**Accession Number:** 32268456

**Abstract:**Objective: To study the clinical application effect of modified nasopharyngeal swab sampling for 2019 novel coronavirus nucleic acid detection. Methods: This study covered the period from January 14 to March 1, 2020. From February 24 on, the supine position method and the protective face screen were used to collect nasopharyngeal swabs, before which, the nasopharyngeal swabs were collected by sitting position method. All the patients were diagnosed with suspected/confirmed 2019 novel coronavirus infection, who were admitted from February 19 on, before which, the nasopharyngeal swabs were collected outside the hospital. (1) Thirty-four operators meeting the inclusion criteria of the study were recruited in this retrospective cohort study. They were grouped according to the collection method of nasopharyngeal swabs. Sixteen operators of Wuhan Taikang Tongji Hospital who used the supine position method and the protective face screen were included in supine position method+protective face screen group (15 males and 1 female, aged 34-49 years); 18 operators (12 from the First Affiliated Hospital of Army Medical University (the Third Military Medical University), 1 from Wuhan Jiangxia Mobile Cabin Hospital, 5 from the East District of People's Hospital of Wuhan University) who used the traditional sitting position method were included in sitting position method group (2 males and 16 females, aged 25-49 years). In supine position method+protective face screen group, when collecting sample, the patient lay flat and wore a special protective face screen for nasopharyngeal swab sampling, with neck slightly extending and face turning to the opposite side of the operator about 10°. The self-designed questionnaire was used to investigate the cooperation, the incidence of nausea, coughing, sneezing, and struggling of patients evaluated by the operators, the operation time of single sampling, the fear of operation and the perceived exposure risk of operators of the two groups. (2) Sixty-five patients (22 males and 43 females, aged 25-91 years) admitted to Wuhan Taikang Tongji Hospital who successively received the sitting position method and supine position method+protective face screen for nasopharyngeal swabs sampling and with complete nucleic acid detection results were included. The positive rates of nucleic acid detection by the two sampling methods of nasopharyngeal swabs of the patients were statistically analyzed. (3) Forty-one patients who could express their feelings accurately were selected from the above 65 patients (12 males and 29 females, aged 27-83 years). The comfort of patients in the process of sampling by the two methods was investigated. (4) Thirty-four patients (10 males and 24 females, aged 25-83 years) with two or more consecutive negative results of nucleic acid detection of nasopharyngeal swabs by sitting position method were selected from the above 65 patients. The positive rate of nucleic acid detection of nasopharyngeal swab of patients by supine position method+protective face screen, i.e. negative to positive rate was statistically analyzed. Data were statistically analyzed with Wilcoxon's sign rank test, t test, and chi-square test. Results: (1) The cooperation score of patients evaluated by the operators in supine position method+protective face screen group was significantly higher than that in sitting position method group (Z=-4.928, P<0.01), the incidence of nausea, choking cough, sneezing, and struggling of patients evaluated by the operators, and the fear of operation score and the perceived exposure risk score of operators were significantly lower than those of sitting position method group (Z=-5.071, -5.046, -4.095, -4.397, -4.174, -5.049, P<0.01), and the operation time of single sampling was significantly longer than that of sitting position method group (t=23.17, P<0.01). (2) The positive rate of nucleic acid detection of nasopharyngeal swabs by supine position method+protective face screen was 60.00% (39/65), which was obviously higher than 41.54% (27/65) by sitting position method (χ(2)=4.432, P<0.05). (3) The comfort score of the 41 patients during nasopharyngeal swabs sampling by supine position method+protective face screen was significantly higher than that by sitting position method (Z=-5.319, P<0.01). (4) Of the 34 patients with two or more consecutive negative results of nucleic acid detection of nasopharyngeal swabs by sitting position method, the rate of negative to positive of nucleic acid detection was 26.47% (9/34) after sampling by supine position method+protective face screen. Conclusions: Compared with the traditional sitting position method, detection of 2019 novel coronavirus nucleic acids of nasopharyngeal swabs collected by supine method combined with protective face screen is worth promoting, because of its better comfort of patients, low exposure risk for operators, in addition to reducing in the false negative result to some extent, which may help reduce false recurrence of discharged patients.

**Primary Author Affiliation:** State Key Laboratory of Trauma, Burns and Combined Injury, Institute of Burn Research, the First Affiliated Hospital of Army Medical University (the Third Military Medical University), Chongqing 400038, China.

**Database:** Medline

**47. Nasal swab sampling for SARS-CoV-2: A convenient alternative in time of nasopharyngeal swab shortage.**

**Author(s):** Péré, Hélène; Podglajen, Isabelle; Wack, Maxime; Flamarion, Edouard; Mirault, Tristan; Goudot, Guillaume; Hauw-Berlemont, Caroline; Le, Laetitia; Caudron, Eric; Carrabin, Sophie; Rodary, Julien; Ribeyre, Tatiana; Bélec, Laurent; Veyer, David

**Source:** Journal of clinical microbiology; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.1128/JCM.00721-20](http://doi.org/10.1128/JCM.00721-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32295896

**Accession Number:** 32295896

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/04/10/JCM.00721-20.full.pdf) - from Unpaywall

**Abstract:**Nasopharyngeal swab is the reference sampling method to detect SARS CoV2, as recommended by world Health Organization (WHO) (1).….

**Primary Author Affiliation:** Laboratoire de Virologie, Hôpital Européen Georges Pompidou, Assistance Publique-Hôpitaux de Paris, Paris, France.

**Database:** Medline

**48. Multicenter Evaluation of the QIAstat-Dx Respiratory Panel for Detection of Viruses and Bacteria in Nasopharyngeal Swab Specimens.**

**Author(s):** Leber, Amy L; Lisby, Jan Gorm; Hansen, Glen; Relich, Ryan F; Schneider, Uffe Vest; Granato, Paul; Young, Stephen; Pareja, Josep; Hannet, Irene

**Source:** Journal of clinical microbiology; Apr 2020; vol. 58 (no. 5)

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**PubMedID:** 32132186

**Accession Number:** 32132186

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/58/5/e00155-20.full.pdf) - from Unpaywall

**Abstract:**The QIAstat-Dx Respiratory Panel (QIAstat-Dx RP) is a multiplex in vitro diagnostic test for the qualitative detection of 20 pathogens directly from nasopharyngeal swab (NPS) specimens. The assay is performed using a simple sample-to-answer platform with results available in approximately 69 min. The pathogens identified are adenovirus, coronavirus 229E, coronavirus HKU1, coronavirus NL63, coronavirus OC43, human metapneumovirus A and B, influenza A, influenza A H1, influenza A H3, influenza A H1N1/2009, influenza B, parainfluenza virus 1, parainfluenza virus 2, parainfluenza virus 3, parainfluenza virus 4, rhinovirus/enterovirus, respiratory syncytial virus A and B, Bordetella pertussis, Chlamydophila pneumoniae, and Mycoplasma pneumoniae This multicenter evaluation provides data obtained from 1,994 prospectively collected and 310 retrospectively collected (archived) NPS specimens with performance compared to that of the BioFire FilmArray Respiratory Panel, version 1.7. The overall percent agreement between QIAstat-Dx RP and the comparator testing was 99.5%. In the prospective cohort, the QIAstat-Dx RP demonstrated a positive percent agreement of 94.0% or greater for the detection of all but four analytes: coronaviruses 229E, NL63, and OC43 and rhinovirus/enterovirus. The test also demonstrated a negative percent agreement of ≥97.9% for all analytes. The QIAstat-Dx RP is a robust and accurate assay for rapid, comprehensive testing for respiratory pathogens.

**Primary Author Affiliation:** Nationwide Children's Hospital, Columbus, Ohio, USA amy.leber@nationwidechildrens.org.

**Database:** Medline

**49. Effect of throat washings on detection of 2019 novel coronavirus.**

**Author(s):** Guo, Wen-Liang; Jiang, Qian; Ye, Feng; Li, Shao-Qiang; Hong, Cheng; Chen, Li-Yan; Li, Shi-Yue

**Source:** Clinical infectious diseases : an official publication of the Infectious Diseases Society of America; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1093/cid/ciaa416](http://doi.org/10.1093/cid/ciaa416)

**ISSN:** 1537-6591

**Place of Publication:** United States

**PubMedID:** 32271374

**Accession Number:** 32271374

Available at [Clinical infectious diseases : an official publication of the Infectious Diseases Society of America](https://academic.oup.com/cid/article-pdf/doi/10.1093/cid/ciaa416/33030230/ciaa416.pdf) - from Unpaywall

**Abstract:**The 2019 novel coronavirus was detected in the self-collected throat washings. Positive testing rate of throat washing was much higher than that of Nasopharyngeal swabs. Throat washing is a promising candidate for 2019-nCoV screening and monitoring due to its noninvasive and reliability.

**Primary Author Affiliation:** State Key Laboratory of Respiratory Diseases, National Clinical Research Center for Respiratory Disease, Guangzhou Institute of Respiratory Health, The First Affiliated Hospital of Guangzhou Medical University, Guangzhou, China.

**Database:** Medline

**50. Comparison of Commercially Available and Laboratory Developed Assays for in vitro Detection of SARS-CoV-2 in Clinical Laboratories.**

**Author(s):** Lieberman, Joshua A; Pepper, Gregory; Naccache, Samia N; Huang, Meei-Li; Jerome, Keith R; Greninger, Alexander L

**Source:** Journal of clinical microbiology; Apr 2020

**Publication Date:** Apr 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1128/JCM.00821-20](http://doi.org/10.1128/JCM.00821-20)

**ISSN:** 1098-660X

**Place of Publication:** United States

**PubMedID:** 32350048

**Accession Number:** 32350048

Available at [Journal of clinical microbiology](https://jcm.asm.org/content/jcm/early/2020/04/27/JCM.00821-20.full.pdf) - from Unpaywall

**Abstract:**Multiple laboratory developed tests and commercially available assays have emerged to meet diagnostic needs related to the SARS-CoV-2 pandemic. To date, there is limited comparison data for these different testing platforms. We compared the analytical performance of a laboratory developed test (LDT) developed in our clinical laboratory based on CDC primer sets and four commercially available, FDA emergency use authorized assays for SARS-CoV-2 (Cepheid, DiaSorin, Hologic Panther, and Roche Cobas) on a total of 169 nasopharyngeal swabs. The LDT and Cepheid Xpert Xpress SARS-CoV-2 assays were the most sensitive assays for SARS-CoV-2 with 100% agreement across specimens. The Hologic Panther Fusion, DiaSorin Simplexa, and Roche Cobas 6800 only failed to detect positive specimens near the limit of detection of our CDC-based LDT assay. All assays were 100% specific, using our CDC-based LDT as the gold standard. Our results provide initial test performance characteristics for SARS-CoV-2 RT-PCR and highlight the importance of having multiple viral detection testing platforms available in a public health emergency.

**Primary Author Affiliation:** Department of Laboratory Medicine, University of Washington Medical Center, Seattle, WA.

**Database:** Medline

**51. Characteristics of pediatric SARS-CoV-2 infection and potential evidence for persistent fecal viral shedding.**

**Author(s):** Xu, Yi; Li, Xufang; Zhu, Bing; Liang, Huiying; Fang, Chunxiao; Gong, Yu; Guo, Qiaozhi; Sun, Xin; Zhao, Danyang; Shen, Jun; Zhang, Huayan; Liu, Hongsheng; Xia, Huimin; Tang, Jinling; Zhang, Kang; Gong, Sitang

**Source:** Nature medicine; Apr 2020; vol. 26 (no. 4); p. 502-505

**Publication Date:** Apr 2020

**Publication Type(s):** Research Support, Non-u.s. Gov't Case Reports Journal Article Observational Study

**DOI:** [http://dx.doi.org/10.1038/s41591-020-0817-4](http://doi.org/10.1038/s41591-020-0817-4)

**ISSN:** 1546-170X

**Place of Publication:** United States

**PubMedID:** 32284613

**Accession Number:** 32284613

Available at [Nature medicine](https://www.nature.com/articles/s41591-020-0817-4.pdf) - from Unpaywall

**Abstract:**We report epidemiological and clinical investigations on ten pediatric SARS-CoV-2 infection cases confirmed by real-time reverse transcription PCR assay of SARS-CoV-2 RNA. Symptoms in these cases were nonspecific and no children required respiratory support or intensive care. Chest X-rays lacked definite signs of pneumonia, a defining feature of the infection in adult cases. Notably, eight children persistently tested positive on rectal swabs even after nasopharyngeal testing was negative, raising the possibility of fecal-oral transmission.

**Primary Author Affiliation:** Department of Pediatric, Guangzhou Women and Children's Medical Center, Guangzhou Medical University, Guangzhou, China.

**Database:** Medline

**52. Why Don't We Have a Mail-order COVID-19 Test Yet?**

**Author(s):** Fratantoro, Mike

**Source:** RT: The Journal for Respiratory Care Practitioners; Mar 2020; vol. 33 (no. 2); p. 4-4

**Publication Date:** Mar 2020

**Publication Type(s):** Academic Journal

**ISSN:** 10406050

**Place of Publication:** Overland Park, Kansas

**Publisher:** MEDQOR

**Accession Number:** 142962986

Available at [RT: The Journal for Respiratory Care Practitioners](http://openurl.ebscohost.com/linksvc/linking.aspx?genre=article&issn=1040-6050&volume=33&issue=2&spage=4&atitle=Why%20Dont%20We%20Have%20a%20Mail-order%20COVID-19%20Test%20Yet?) - from EBSCO (CINAHL Plus with Full Text)

**Abstract:**The article offers information on Liberty Insurance. Topics include saliva-based COVID-19 diagnostic as equivalent to tests using nasopharyngeal or oropharyngeal swabs; and saliva testing allows for self-administered sample collection, such as people in quarantine or self-isolation; and healthcare workers to be tested regularly with no concern over rationing limited tests.

**Database:** CINAHL

**53. Self-swabbing in coronavirus pandemic- A game changer which can be introduced in field.**

**Author(s):** Bhandary; Aroor, Rajeshwary; Sreesan P.; Mark Jittu V.; Bhat, Vadisha

**Source:** Indian Journal of Community Health; Jan 2020; vol. 32 (no. 2); p. 309-310

**Publication Date:** Jan 2020

**Publication Type(s):** Academic Journal

**ISSN:** 22489509

**Publisher:** Indian Journal of Community Health

**Accession Number:** 143065546

**Abstract:**COVID-19, the disease caused by the novel coronavirus, SARS-CoV-2, is a highly contagious infection known to spread rapidly, leading to severe consequences and disasters. Health care workers are at higher risk of getting the infection, during the process of diagnosis and treatment of patients with the disease. Worldwide, a lot of health care workers have lost their lives because of COVID-19 infection. Managing the COVID-19 caseload is a real challenge to the health care system. For the diagnosis of COVID-19, both nasopharyngeal and oropharyngeal swabs are obtained to detect viral RNA. (1). A nasopharyngeal swab is more sensitive due to higher viral load in nasal secretions than oral secretions, which is similar to that of Influenza (2). Taking nasopharyngeal swab is a real challenge to the health care workers and also is uncomfortable for the patient. It also exposes the health care workers to aerosols. Moreover, the scarcity of personal protective equipment (PPE) is a real burden to the health care system.

**Primary Author Affiliation:** Professor, Department of ENT, K S Hegde Medical Academy, Mangalore

**Database:** CINAHL

Strategy 856898

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| --- | --- | --- | --- |
| **#** | **Database** | **Search term** | **Results** |
| 4 | CINAHL | (('wuhan coronavirus').ti,ab OR ('wuhan seafood market pneumonia virus').ti,ab OR ('covid19\*').ti,ab OR ('covid-19\*').ti,ab OR ('COVID-2019\*').ti,ab OR ('sars-cov-2').ti,ab OR (sars2).ti,ab OR ('2019-ncov').ti,ab OR ('2019 novel coronavirus').ti,ab OR ('severe acute respiratory syndrome coronavirus 2').ti,ab OR ('2019 novel coronavirus infection').ti,ab OR ('coronavirus disease 2019').ti,ab OR ('coronavirus disease-19').ti,ab OR ('novel coronavirus').ti,ab OR (coronavirus).ti,ab OR ('SARS-CoV-2019').ti,ab OR ('SARS-CoV-19').ti,ab OR ('SARS-CoV-2019').ti,ab) AND (2020).dp | 2916 |
| 6 | CINAHL | ("Naso pharyngeal swab\*" OR "Nasopharyngeal swab\*" OR (Nasopharyngeal ADJ3 swab\*) OR ("Naso pharyngeal" ADJ3 swab\*)).ti,ab | 429 |
| 7 | CINAHL | (Sensitiv\* OR "false positive\*" OR "false negative\*" OR accura\* OR interpret\* OR diagnos\* OR detect\* OR sampl\* OR test\*).ti,ab | 1596026 |
| 8 | CINAHL | (4 AND 6 AND 7) | 15 |
| 9 | Medline | (('wuhan coronavirus').ti,ab OR ('wuhan seafood market pneumonia virus').ti,ab OR ('covid19\*').ti,ab OR ('covid-19\*').ti,ab OR ('COVID-2019\*').ti,ab OR ('sars-cov-2').ti,ab OR (sars2).ti,ab OR ('2019-ncov').ti,ab OR ('2019 novel coronavirus').ti,ab OR ('severe acute respiratory syndrome coronavirus 2').ti,ab OR ('2019 novel coronavirus infection').ti,ab OR ('coronavirus disease 2019').ti,ab OR ('coronavirus disease-19').ti,ab OR ('novel coronavirus').ti,ab OR (coronavirus).ti,ab OR ('SARS-CoV-2019').ti,ab OR ('SARS-CoV-19').ti,ab OR ('SARS-CoV-2019').ti,ab) AND (2020).dp | 15700 |
| 10 | Medline | ("Naso pharyngeal swab\*" OR "Nasopharyngeal swab\*" OR (Nasopharyngeal ADJ3 swab\*) OR ("Naso pharyngeal" ADJ3 swab\*)).ti,ab | 2328 |
| 11 | Medline | (Sensitiv\* OR "false positive\*" OR "false negative\*" OR accura\* OR interpret\* OR diagnos\* OR detect\* OR sampl\* OR test\*).ti,ab | 8762287 |
| 12 | Medline | (9 AND 10 AND 11) | 113 |
| 13 | EMBASE | ("Naso pharyngeal swab\*" OR "Nasopharyngeal swab\*" OR (Nasopharyngeal ADJ3 swab\*) OR ("Naso pharyngeal" ADJ3 swab\*)).ti,ab | 3129 |
| 14 | EMBASE | (Sensitiv\* OR "false positive\*" OR "false negative\*" OR accura\* OR interpret\* OR diagnos\* OR detect\* OR sampl\* OR test\*).ti,ab | 11443951 |
| 16 | EMBASE | (\*CORONAVIRINAE/ OR ('wuhan coronavirus').ti,ab OR ('wuhan seafood market pneumonia virus').ti,ab OR ('covid19\*').ti,ab OR ('covid-19\*').ti,ab OR ('COVID-2019\*').ti,ab OR ('sars-cov-2').ti,ab OR (sars2).ti,ab OR ('2019-ncov').ti,ab OR ('2019 novel coronavirus').ti,ab OR ('severe acute respiratory syndrome coronavirus 2').ti,ab OR ('2019 novel coronavirus infection').ti,ab OR ('coronavirus disease 2019').ti,ab OR ('coronavirus disease-19').ti,ab OR ('novel coronavirus').ti,ab OR (coronavirus).ti,ab OR ('SARS-CoV-2019').ti,ab OR ('SARS-CoV-19').ti,ab OR ('SARS-CoV-2019').ti,ab) AND (2020).yr | 13221 |
| 17 | EMBASE | (13 AND 14 AND 16) | 89 |
| 18 | EMCARE | ("Naso pharyngeal swab\*" OR "Nasopharyngeal swab\*" OR (Nasopharyngeal ADJ3 swab\*) OR ("Naso pharyngeal" ADJ3 swab\*)).ti,ab | 556 |
| 19 | EMCARE | (Sensitiv\* OR "false positive\*" OR "false negative\*" OR accura\* OR interpret\* OR diagnos\* OR detect\* OR sampl\* OR test\*).ti,ab | 2219648 |
| 20 | EMCARE | (\*CORONAVIRINAE/ OR ('wuhan coronavirus').ti,ab OR ('wuhan seafood market pneumonia virus').ti,ab OR ('covid19\*').ti,ab OR ('covid-19\*').ti,ab OR ('COVID-2019\*').ti,ab OR ('sars-cov-2').ti,ab OR (sars2).ti,ab OR ('2019-ncov').ti,ab OR ('2019 novel coronavirus').ti,ab OR ('severe acute respiratory syndrome coronavirus 2').ti,ab OR ('2019 novel coronavirus infection').ti,ab OR ('coronavirus disease 2019').ti,ab OR ('coronavirus disease-19').ti,ab OR ('novel coronavirus').ti,ab OR (coronavirus).ti,ab OR ('SARS-CoV-2019').ti,ab OR ('SARS-CoV-19').ti,ab OR ('SARS-CoV-2019').ti,ab) AND (2020).yr | 1984 |
| 21 | EMCARE | (18 AND 19 AND 20) | 6 |