# Develop – DeVos Cardiovascular Research Program's Emergency Letter on the Pandemic

Scientific Stream Update on the COVID-19 Pandemic – 5.22.20 1338

Spectrum Health contact: Stefan Jovinge, MD

## Inf Dis Soc of America Management Guidelines - Updated

Article Title: Infectious Diseases Society of America Guidelines on the Treatment and Management of Patients with COVID-19

www.idsociety.org/practice-guideline/covid-19-guideline-treatment-and-management/

Source: IDSA

Clinical Field: Infectious Disease

Article Type: National Document

Study Type: Other

Patient Group: COVID-19

Intervention: Guideline

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| Reviewer | Stefan Jovinge |
| Study Design | N/A |
| Study Design Concerns | _____ |
| Main Results | Recommendations:<br>1. Among patients who have been admitted to the hospital with COVID-19 hydroxychloroquine/chloroquine in the context of a clinical trial. Recommendation<br>2. Among patients who have been admitted to the hospital with COVID-19, hydroxychloroquine/chloroquine plus azithromycin only in the context of a clinical trial.<br>3. Among patients who have been admitted to the hospital with COVID-19, combination of lopinavir/ritonavir only in the context of a clinical trial.<br>4. Among patients who have been admitted to the hospital with COVID-19 pneumonia, the IDSA guideline panel suggests against the use of corticosteroids.<br>5. Among patients who have been admitted to the hospital with ARDS due to COVID-19, recommends the use of corticosteroids in the context of a clinical trial.<br>6. Among patients who have been admitted to the hospital with COVID-19, the IDSA guideline panel recommends tocilizumab only in the context of a clinical trial. |

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| | 7. Among patients who have been admitted to the hospital with COVID-19, the IDSA guideline panel recommends COVID-19 convalescent plasma in the context of a clinical trial. |
| Comments | Cautious recommendations and in the outdateed on the HCQ azithromycin |

## Inf Dis Soc of America Diagnose Guidelines - Updated

Article Information

Article Title: Infectious Diseases Society of America Guidelines on the Diagnosis of COVID-19

www.idsociety.org/practice-guideline/covid-19-guideline-diagnostics/

Source: IDSA

Clinical Field: Infectious Disease

Article Type: International Document

Study Type: Other

Patient Group: COVID-19

Intervention: Guideline

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| Reviewer | Stefan Jovinge |
| Study Design | N/A |
| Study Design Concerns | _____ |
| Main Results | Recommendations<br>1. SARS-CoV-2 nucleic acid amplification test (NAAT) in symptomatic individuals in the community suspected of having COVID-19, even when the clinical suspicion for COVID-19 is low .<br>2: Collecting nasal swabs rather than oropharyngeal swabs or saliva alone for SARS-CoV-2 RNA testing in symptomatic individuals with upper respiratory tract infection (URTI) or influenza like illness (ILI) suspected of having COVID-19 .<br>3. Nasal and mid-turbinate (MT) swab specimens may be collected for SARS-CoV-2 RNA testing by either patients or healthcare providers, in symptomatic individuals with upper respiratory tract infection (URTI) or influenza like illness (ILI) suspected of having COVID-19.<br>4: Recommended strategy is to first obtain an upper respiratory tract sample (e.g., nasopharyngeal swab) rather than a lower respiratory sample for SARS-CoV-2 RNA testing in hospitalized patients with suspected COVID-19 lower respiratory tract infection. If the initial upper respiratory sample result is negative, and the suspicion for disease remains high, then to follow-up with a lower respiratory tract sample (e.g., sputum, bronchoalveolar lavage fluid, tracheal aspirate) rather than collecting another upper respiratory sample<br>5: Perform a single viral RNA test and not repeating testing in symptomatic individuals with a low clinical suspicion of COVID-19.<br>6. When the individual is of intermediate or high suspicion of being SARS-CoV-2 infected repeating viral RNA testing when the initial test is negative (versus performing a single test) in symptomatic individuals is recommended.<br>7:No recommendations for or against using rapid (i.e., test time ≤ 1hour) |

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| | versus standard RNA testing in symptomatic individuals suspected of having COVID-19 (knowledge gap).<br>8: SARS-CoV-2 RNA testing in asymptomatic individuals who are either known or suspected to have been exposed to COVID-19 is recommended.<br>9: SARS-CoV-2 RNA testing in asymptomatic individuals with no known contact with COVID-19 who are being hospitalized in areas with a low prevalence of COVID-19 in the community are NOT recommended to undergo testing<br>10: However, direct SARS-CoV-2 RNA testing in asymptomatic individuals with no known contact with COVID-19 who are being hospitalized in areas with a high prevalence of COVID-19 in the community is recommended.<br>11: SARS-CoV-2 RNA testing in immunocompromised asymptomatic individuals who are being admitted to the hospital regardless of exposure to COVID-19 and the community status of disease spread. 12: SARS-CoV-2 RNA testing (versus no testing) in asymptomatic individuals before immunosuppressive procedures regardless of a known exposure to COVID-19 is recommended.<br>13: SARS-COV-2 RNA testing in asymptomatic individuals (without known exposure to COVID-19) who are undergoing major time-sensitive surgeries is recommended.<br>14: SARS-CoV-2 RNA testing in asymptomatic individuals without a known exposure to COVID-19 who are undergoing a time-sensitive aerosol generating procedure (e.g., bronchoscopy) when PPE is available is NOT recommended.<br>15: SARS-CoV-2 RNA testing in asymptomatic individuals without a known exposure to COVID-19 who are undergoing a time-sensitive aerosol generating procedure (e.g., bronchoscopy) when PPE is limited, and testing is available is recommended. |
| Comments | Few solid evidences to back- up recommendations but based on leading expertise and the experiences we have so far. |

## A Patient Simulator for COVID-19 Management

Article Title: Covid-19 Rx: Treatment Simulations

https://covid19rx.nejm.org/landing/index.html

Source: NEJM

Clinical Field: Infectious Disease

Article Type: Other

Study Type: Other

Patient Group: N/A

Intervention: Treatment Simulator

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| Reviewer | Stefan Jovinge |
| Study Design | N/A |
| Study Design Concerns | _____ |
| Main Results | This is a treatment simulator for the use of understanding the recommendations in a clinical setting. |
| Comments | Could serve as an initial introduction to providers of strategies to manage COVID-19 patients or patients with suspected COVID-19. It does not replace the judgement needed for actual patients where details most likely are different from the cases prewsented in this platform |

## First Report of Possible Successful mRNA Vaccine

Article Title: Moderna Announces Positive Interim Phase 1 Data for its mRNA Vaccine (mRNA-1273) Against Novel Coronavirus

https://investors.modernatx.com/news-releases/news-release-details/moderna-announces-positive-interim-phase-1-data-its-mrna-vaccine

Source: Moderna

Clinical Field: Infectious Disease

Article Type: Other

Study Type: Other

Patient Group: Healthy Individuals

Intervention: SARS-CoV-2 Vaccine

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| Reviewer | Stefan Jovinge |
| Study Design | Major Concerns |
| Study Design Concerns | This is just an early report out by the company. Mainly directed toward investors. No guidelines for treatments should be impacted by it. |
| Main Results | Indicates that an RNA vaccine might work. The recipients developed virus neutralizing Abs. |
| Comments | Hopeful report for the future. Not only in addressing the COVID-19 pandemic but also to address future pandemics. RNA vaccines can be generated and set up for trials and being manufactured much quicker than traditional vaccines. |

## B-Cell Clone From SARS Patient Seems to Generate Abs Effecvtrive Against SARS-CoV-2

Article Title: Cross-neutralization of SARS-CoV-2 by a human monoclonal SARS-CoV antibody

www.nature.com/articles/s41586-020-2349-y

Source: Nature

Clinical Field: Infectious Disease

Article Type: Clinical Report

Study Type: Other

Patient Group: SARS

Intervention: _____

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| Reviewer | Stefan Jovinge |
| Study Design | Well Designed |
| Study Design Concerns | This is a study based on Abs from one patient. |
| Main Results | Multiple monoclonal antibodies targeting SARS-CoV-2 S identified from memory B cells of an individual who was infected with SARS-CoV in 2003. One antibody, named S309, potently neutralizes SARS-CoV-2 and SARS-CoV pseudoviruses as well as authentic SARS-CoV-2 by engaging the S receptor-binding domain. |
| Comments | That is ok to prove the proof of concept though. This clone of Abs could potentially be used to manufacture SARS-CoV-2 |

## Prone Positioning Effective In Non-Ventilated Patients with Only 3h of Prone Positioning

Article Title: Use of Prone Positioning in Nonintubated Patients With COVID-19 and Hypoxemic Acute Respiratory Failure

https://jamanetwork.com/journals/jama/fullarticle/2766292

Source: JAMA

Clinical Field: Infectious Disease

Article Type: Clinical Study

Study Type: Non-Randomized Controlled Trial

Patient Group: COVID-19 non-ventilated pats

Intervention: Prone Positioning in Non-ventilated

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| Reviewer | Vinu Perinjelil |
| Study Design | Minor concerns |
| Study Design Concerns | 1) small sample size, out of 88 COV + pts, 25 were deemed eligible and only 24 agreed to participate<br>2) only evaluated a single episode of their prone positioning (PP). this significantly limits the impact of PP and potential for benefit in responders<br>3) limited info on clinical outcomes after the episodes of PP |
| Main Results | This is a prospective study evaluating effects of prone positioning (PP) in awake non-intubated COVID + pts who were in hypoxemic respiratory failure requiring oxygen. Main outcome was the proportion of "responders" deemed as those who saw a partial pressure of arterial oxygen increase ≥20% between before and during PP.<br><br>24 patients were eligible and willing to be evaluated in the study out of the 88 possible covid + positive patients. 4 (17%) did not tolerate PP for more than 1 hour, 5 (21%) tolerated it for 1 to 3 hours, and 15 (63%) tolerated it for more than 3 hours. 6 patients were responders representing 25% of the 24 patients, and these 6 pts represented 40% of the group who sustained PP for 3 hours or longer. In those who sustained more than 3 hours, Pao2 increased from a mean (SD) of 73.6 (15.9) mm Hg before PP to 94.9 (28.3) mm Hg during PP (difference, 21.3 mm Hg [95% CI, 6.3-36.3]; P = .006) . Back pain was reported in 42% of population and 5 patients required mechanical ventilation after the 10 day f/u ended.<br><br>This essentially shows the evident value of PP - but seemingly selective since a majority of patients could not sustain sufficient lengths of PP which would limit its effectiveness. Also in those who demonstrated over 25% increase in oxygenation after PP, only half of those could sustain that level of oxygenation after resupination meaning either this maneuver is only significantly useful in a handful of select patients or the limited use of PP in |

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| | this group creates a transient effect and longer episodes of PP is required for effective recruitment of lung tissue |
| Comments | Awake prone positioning is a cost effective maneuver increasingly being deployed in COVID patients. In this study it seemed transient but it was likely due to the limited use of PP (only 1 episode) so longer duration would have a sustained benefit.<br><br>Also it would be useful to evaluate clinical outcomes of those who were proned. |

## Prone Positioning for 3 h Effective in COVID-19

Article Title: Respiratory Parameters in Patients With COVID-19 After Using Noninvasive Ventilation in the Prone Position Outside the Intensive Care Unit

https://jamanetwork.com/journals/jama/fullarticle/2766291

Source: JAMA

Clinical Field: Critical Care

Article Type: Clinical Report

Study Type: Non-Randomized Controlled Trial

Patient Group: COVID-19 Sat<94 on O2

Intervention: Prone Position

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| Reviewer | Ambaris Singh |
| Study Design | Minor concerns |
| Study Design Concerns | -Number of patients too small (n=15)<br>-Short duration of experimentation<br>-No control group |
| Main Results | -All patient had reduction in respiratory rate during and after pronation<br>-All patients had improvement in SpO2 and PaO2:FiO2 during pronation<br>-80% had improvement in SpO2 and PaO2:FiO2 after pronation<br>-73% had improvement in comfort during pronation<br>-At 14-day follow-up, 9 patients discharged home, 1 improved and stopped pronation, 3 continued pronation, 1 patient was intubated and admitted to ICU, 1 patient died. |
| Comments | While this was not a blind study nor was there a control group, the staggering percentage of patients who did better with prone intervention during non-invasive ventilation should at the very least warrant continuing this intervention and further investigation in replicable studies. |