April 15, 2020
Daily COVID-19 Literature Surveillance Summary

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Coming soon:

COVID-19 Daily Literature Surveillance

COVID19LST

Bringing you real time, distilled information for guiding best practices during the COVID-19 pandemic

The Swab

Jasmine Rah

The untold stories of the coronavirus (COVID-19) pandemic.

Executive Summary

Climate:

- Need for more discourse around a course of action:
  - Given the limited knowledge of the pathophysiology of SARS-CoV-2 how can experts provide evidence based guidelines?
  - But without guidelines, how do frontline providers make clinical decisions in a field driven by expert consensus to define the standard of care?
  - How to balance the potential harms of expediting vaccines and medications with the harms associated with withholding potentially lifesaving treatments

Epidemiology:

- More models predict second spike, one predicts multiple potential spikes during the winter months if social distancing measures are lifted before 2022.
- Other studies identifies the viral pathogenicity may be diminishing with each generation
- Multivariate analysis on cause of death in older patients with COVID-19 identified positive associations with male gender, comorbidities, time to care after onset of symptoms, abnormal kidney function and elevated procalcitonin.

Transmission & Prevention:

- Physical activity has been demonstrated to enhance immune function; all persons should be encouraged to stay active

Diagnosis:

- Pronounced morphological abnormalities of the granulocyte series observed in early phase of disease, may present diagnostic potential

Management:

- New Guidelines
  - Minimal Laboratory testing panels for prognosticating: CBC, PT, aPTT, Fib, D-dimer, CMP, CRP, LDH, CK, lipase, troponin I or T, BNP, ferritin, procalcitonin and persepsin
  - High protein nutritional support for malnourished patients with Covid19
  - Social distancing and sick plans for patients with diabetes or adrenal insufficiency
- Proceed with caution before drastically changing working medication regimens in patients with chronic disease
- Concern for missing lung cancer with presentations similar to COVID-19

Therapeutics

- Robust reverse genetic model for SARS-CoV-2 developed with full length infectious clone and reporter
- *In silico* studies identify known antiviral agents that can bind COVID-19 proteins

Mental Health and Resilience

- Social distancing continues to challenge mental illness
- Misinformation, stigma and isolation may increase suicide rate

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Mental Health & Resilience

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Levels of Evidence

Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence

Question	Step 1 (Level 1*)	Step 2 (Level 2*)	Step 3 (Level 3*)	Step 4 (Level 4*)	Step 5 (Level 5)
How common is the problem?	Local and current random sample surveys (or censuses)	Systematic review of surveys that allow matching to local circumstances**	Local non-random sample**	Case-series**	n/a
Is this diagnostic or monitoring test accurate? (Diagnosis)	Systematic review of cross sectional studies with consistently applied reference standard and blinding	Individual cross sectional studies with consistently applied reference standard and blinding	Non-consecutive studies, or studies without consistently applied reference standards**	Case-control studies, or "poor or non-independent reference standard**	Mechanism-based reasoning
What will happen if we do not add a therapy? (Prognosis)	Systematic review of inception cohort studies	Inception cohort studies	Cohort study or control arm of randomized trial*	Case-series or case-control studies, or poor quality prognostic cohort study**	n/a
Does this intervention help? (Treatment Benefits)	Systematic review of randomized trials or *n*-of-1 trials	Randomized trial or observational study with dramatic effect	Non-randomized controlled cohort/follow-up study**	Case-series, case-control studies, or historically controlled studies**	Mechanism-based reasoning
What are the COMMON harms? (Treatment Harms)	Systematic review of randomized trials, systematic review of nested case-control studies, *n*-of-1 trial with the patient you are raising the question about, or observational study with dramatic effect	Individual randomized trial or (exceptionally) observational study with dramatic effect	Non-randomized controlled cohort/follow-up study (post-marketing surveillance) provided there are sufficient numbers to rule out a common harm. (For long-term harms the duration of follow-up must be sufficient.)**	Case-series, case-control, or historically controlled studies**	Mechanism-based reasoning
What are the RARE harms? (Treatment Harms)	Systematic review of randomized trials or *n*-of-1 trial	Randomized trial or (exceptionally) observational study with dramatic effect			
Is this (early detection) test worthwhile? (Screening)	Systematic review of randomized trials	Randomized trial	Non -randomized controlled cohort/follow-up study**	Case-series, case-control, or historically controlled studies**	Mechanism-based reasoning

*** Level may be graded down on the basis of study quality, imprecision, indirectness (study PICO does not match questions PICO), because of inconsistency between studies, or because the absolute effect size is very small; Level may be graded up if there is a large or very large effect size.**

**** As always, a systematic review is generally better than an individual study.**

Credit: OCEBM Levels of Evidence Working Group*. "The Oxford 2011 Levels of Evidence". Oxford Centre for Evidence-Based Medicine. http://www.cebm.net/index.aspx?o=5653

Climate

Offline: COVID-19-bewilderment and candour.

PMID: 32278372
Publication date: Apr 11, 2020; Apr 13, 2020 (LitCovid)
Horton, Richard
Lancet
Level of Evidence: Level 5- Expert Opinion
Type of Article: Comment

Summarizing excerpt:

"We are therapeutically bereft (phrase borrowed from a colleague), and I am concerned that the push to do something, anything—which I fully share as I am on the wards with these patients too and it feels desperate—is resulting in suggestions of repurposed drugs too rapidly and without a cool look at plausibility or risks." The focus of the political debate about coronavirus disease 2019 (COVID-19) has so far been almost exclusively about the public health dimensions of this pandemic. But at the bedside there is another story, one that has so far been largely hidden—a story of terrible suffering, distress, and utter bewilderment.... The Lancet is receiving many messages from front-line health workers reporting "bullying"—bullying National Health Service (NHS) staff by threatening disciplinary action for raising concerns about workplace safety, testing, and access to personal protective equipment. "I never thought I lived in a country where freedom of speech is discouraged", wrote one doctor. The NHS is fortunate to have a Duty of Candour, endorsed by professional regulators: "As a doctor, nurse, or midwife, you must be open and honest with patients, colleagues, and your employers." For those who believe now is not the moment for criticism of government policies and promises, remember the words of Li Wenliang, who died in February, aged 33 years, fighting COVID-19 in China—"I think a healthy society should not have just one voice.""

We urgently need guidelines for managing COVID-19 in children with comorbidities.

PMID: 32279351
Publication Date: Apr 12, 2020; Apr 13, 2020 (LitCovid)
Dayal, Devi
Acta Paediatr
Level of Evidence: 5 – Expert opinion
Type of Article: Letter

Summary: In referencing "Systematic review of COVID-19 in children display milder cases and while encouraging, the author argues that it does not capture the breadth of the impact of COVID-19 on children. Other studies have shown that younger children, particularly infants, and children with comorbid conditions are more likely to progress to severe illness with reported mortality rate as high as 10.6% for infants. The author states that this warrants the need for the development of a task force for producing guidelines for high-risk pediatric patients with COVID-19 as in it has been done in high risk adult populations.

Creating Dermatology Guidelines for Covid-19: The Pitfalls of Applying Evidence Based Medicine to an Emerging Infectious Disease.

PMID: 32278795
Publication Date: Apr 1, 2020; Apr 13, 2020 (LitCovid)
Freeman, Esther E; McMahon, Devon E
J Am Acad Dermatol
Level of Evidence: 5 - Expert opinion
Type of Article: Letter to the editor
Summarizing excerpt: "The harms of potentially issuing incorrect guidance must be balanced with the ethical risks of issuing no guidance at all...with so much uncertainty in our medical practice, guidance is needed now more than ever. We should acknowledge the shift from evidence based medicine to reliance on expert guidance, and appreciate the potential for guideline reversal. But in a time of rapidly changing evidence, we must be willing to take on these risks to guide with the goal of maintaining the highest standard of patient care."

COVID-19 and risks to the supply and quality of tests, drugs, and vaccines.

PMID: 32278364
Publication Date: Apr 9, 2020; Apr 13, 2020 (LitCovid)
Newton, Paul N; Bond, Katherine C
Lancet Glob Health
Level of Evidence: 5 - Expert opinion
Type of Article: Comment
Summarizing excerpt: "Without preparation for the quality assurance of diagnostic tests, drugs, and vaccines, the world risks a parallel pandemic of substandard and falsified products. Interventions are needed globally to ensure access to safe, quality assured, and effective medical products on which the world's population will depend."

Delayed access or provision of care in Italy resulting from fear of COVID-19.

PMID: 32278365
Publication date: Apr 9, 2020; Apr 13, 2020 (LitCovid)
Lazzerini, Marzia; Barbi, Egidio; Apicella, Andrea; Marchetti, Federico; Cardinale, Fabio; Trobia, Gianluca
Lancet Child Adolesc Health
Level of Evidence: Level 5- Expert opinion
Type of Article: Correspondence
BLUF: Children need timely access to both routine and acute care during a pandemic to avoid devastating consequences.

Summary: During the Italian national quarantine, there was a precipitous drop in the number of pediatric clinical and emergency department visits, consistent with what was observed in China. The authors wonder if this is from less infectious diseases or accidental trauma because of school closures and limitations on activity, decreased availability of pediatric care due to resource redistribution or if this reflects parents being less willing to visit the pediatrician out of concern for exposure to SARS-CoV-2. They express concern for children with chronic conditions or special needs and the

consequences associated with decreased access to care. They then produce 12 cases where children with conditions are conditions unrelated to COVID-19 who suffered delayed access to care. They state that 6 of these children required ICU admissions and 4 children died. They report that parents of all 12 children had been avoiding the hospital because they were afraid of contracting SARS-CoV-2 infection. 5 families reached out to their health care provider prior to seeking care but reported that their providers were unavailable with increased clinical duties associated with the epidemic or that the hospital discouraged their visit because of the possible risk of infection .

Centring sexual and reproductive health and justice in the global COVID-19 response.

PMID: 32278371
Publication Date: April 11, 2020; Apr 13, 2020 (LitCovid)
Hall, Kelli Stidham; Samari, Goleen; Garbers, Samantha; Casey, Sara E; Diallo, Dazon Dixon; Orcutt, Miriam; Moresky, Rachel T; Martinez, Micaela Elvira; McGovern, Terry
The Lancet
Level of Evidence: 5 – Expert opinion
Type of Article: Comment
BLUF: Vulnerable groups need to be advocated for, so that their health and well-being is not overtly and disproportionately impacted by the pandemic response and policy changes.

Summary: Women and other vulnerable groups are in a position to be greatly impacted by the pandemic economically and socially. Women make-up a greater proportion of the healthcare workforce and are often providers at home, putting them in the position to be at risk for virus transmission. The virus' effect on pregnancy is also not concretely known. Lack of resources in reproductive health may increase mortality and morbidity in women. Low-cost clinic workers that serve vulnerable populations may be redistributed to the viral response. Policy changes that decrease access to abortion and immigration will have detrimental consequences. The well-being of vulnerable groups cannot be allowed to suffer during the broader pandemic response.

The gendered dimensions of COVID-19.

PMID: 32278370
Publication Date: Apr 11, 2020; Apr 13, 2020 (LitCovid)
The Lancet
Lancet
Level of Evidence: Level 5 – Expert Opinion
Type of Article: Editorial
Summary: The author urges all involved in collecting COVID-19 data to follow guidelines and include age and sex in demographic data. Men and women experience different kinds of health burdens from COVID-19. Obscuring sex and gender differences in treatment could result in harm. Addressing the health needs of men and women equally will help societies recover and resist future human tragedies.

COVID-19, Mental Health and Aging: A Need for New Knowledge to Bridge Science and Service.

PMID: 32278745
Publication Date: Mar 25, 2020; Apr 13, 2020 (LitCovid)
Vahia, Ipsit V; Blazer, Dan G; Smith, Gwenn S; Karp, Jordan F; Steffens, David C; Forester, Brent P; Tampi, Rajesh; Agronin, Marc; Jeste, Dilip V; Reynolds, Charles F 3rd
Am J Geriatr Psychiatry
Level of Evidence: 5 – Expert Opinion
Type of Article: Editorial
Summary: The COVID-19 pandemic has a disproportionate effect on geriatric populations, both from a mortality/morbidity standpoint as well as a mental health standpoint. The American Journal of Geriatric Psychiatry invites submissions related to COVID-19 and geriatric mental health and will expedite publication of those materials to guide care at this most critical time.

Correspondence from Northern Italy about our experience with COVID-19.

PMID: 32278542
Publication Date: Mar 30, 2020; Apr 13, 2020 (LitCovid)
Leva, Ernesto; Morandi, Anna; Sartori, Angelo; Macchini, Francesco; Berrettini, Alfredo; Manzoni, Gianantonio
J Pediatr Surg
Level of Evidence: 5 - Expert opinion
Type of Article: Correspondence
Summary: The pediatric surgery department in a major hospital in Milan has undergone significant changes in order to adapt to the demands of the current pandemic. The authors highlight necessary strategies employed by the hospital such as elective surgery cancellation and personnel redistribution, but also discuss future obstacles facing surgical departments including an anticipated surge of elective cases and associated financial constraints after the virus wains.

Virtual health care in the era of COVID-19.

PMID: 32278374
Publication Date: Apr 11, 2020; Apr 13, 2020 (LitCovid)
Webster, Paul
Lancet
Level of Evidence: 5 - Expert opinion
Type of Article: News
Summary: As social distancing and quarantine measures occur around the globe, healthcare systems are hurrying to meet the need for patient visits via virtual care. This brief article explores how different regions are implementing and addressing the obstacles associated with virtual care technologies. New and modified apps like WeChat and WhatsApp are being used to connect physicians with patients in China and India, while in the US modified rules and regulation waivers are allowing for broader functionality of telehealth applications. However, with cell phones being ubiquitous, hospitals in some countries' are not prepared for such a surge in demand. Overall, the COVID-19 pandemic presents the healthcare system with an opportunity to improve and greatly increase the use of virtual care going forward.

Palliative care and the COVID-19 pandemic.

PMID: 32278369
Publication Date: Apr 11, 2020; Apr 13, 2020 (LitCovid)
Authors Not Listed
The Lancet
Level of Evidence: 5 - Expert opinion
Type of Article: Editorial
Summary: Palliative care services are under-resourced under normal conditions, which has only been exacerbated by the COVID-19 pandemic. The author believes palliative care services during the pandemic are limited by the quick deterioration of COVID-19 patients, overworked healthcare workers, and mandated isolations. This will have the greatest impact on low-income and middle-income countries where services are already lacking. The author also brings attention to WHO issued guidance on maintaining essential health services lacking a mention of palliative care and argues that "...palliative care ought to be an explicit part of national and international response plans for COVID-19."

Education

Virtual Interviews in the Era of COVID-19: A Primer for Applicants.

PMID: 32278546
Publication date: Apr 9 2020; April 13, 2020 (LitCovid)
Jones, Ruth Ellen; Abdelfattah, Kareem R
J Surg Educ
Level of Evidence: Level 5- Expert opinion
Type of Article: Recommendation

BLUF: Preparatory steps to minimize technological malfunction, optimization of AV quality and minimizing local disruptions seem to facilitate online interviews.

Summary: The Department of Surgery at University of Texas Southwestern Medical Center has been offering online interviews since 2017 and draws upon their experience to guide fellowship applicants through online interviews.

1. Weeks/days prior to the interview
    a. Read the instructions from interviewers and follow directions to download the appropriate platform onto a reliable device
    b. Set up and test the platform
        i. Check if your platform has features to test and adjust webcam or microphone settings
        ii. If the sound or visual quality is poor, consider investing in external cameras or microphones
        iii. Make sure the internet connection is reliable and have a back up via a wired connection or cellular hotspot.
    c. Choose a quiet location with a neutral-light colored background for your interview location
        i. Test your lighting and pay attention to whether or not you
            1. appear washed out
            2. if your face is shadowed
            3. Glare from glasses- contacts will help you here
    d. Fill out the profile in the application with your professional name, title and headshot
    e. Check the privacy settings to allow those not already in your contacts to reach you
    f. Perform a mock virtual interview
        i. With a mentor who can give you feedback on your speech, tone and mannerisms. With specific attention to distracting behaviors such as
            1. Fidgeting, swiveling in the chair, adjusting glasses/tie/hair
            2. Interruptions or noise from pets or other people
            3. Loud background art or photos
        ii. Record your interview or just yourself speaking about something for about 20 min. Watch and look for any distracting behaviors.
        iii. Practice gazing into the webcam rather than looking at the interviewer's face on the screen to facilitate the sensation of eye contact
            1. If you are using the webcam on your computer and have a double screen set up or external monitor, consider positioning your laptop with the webcam directly in front of a separate screen where you will be observing your interviewer.

iv. Examine how professional your clothing appears on the screen - wear what you would normally wear to an in person interview

2. Day of interview
    a. Prior to the interview, close all other applications to preserve the bandwidth for the meeting to optimize video quality
    b. Switch your status within the application to “Do not disturb” to prevent interruptions by instant messaging or calls during interviews
        i. And if you have an apple computer, turn off imessages or at least the sound notification to minimize disruptions during your interview

Epidemiology

COVID-19 and dengue fever: A dangerous combination for the health system in Brazil

PMID: 32278756

Publication date: April 09, 2020; April 13, 2020 (LitCovid)

Lorenz, Camila; Azevedo, Thiago S; Chiaravalloti-Neto, Francisco

Travel Med Infect Dis

Level of Evidence: 5 – Expert opinion

Type of Article: Letter

Summary: Brazil is projected to reach its peak COVID-19 outbreak between late April and early May of 2020, which would occur simultaneously with an already higher than normal seasonal outbreak of dengue fever. Concurrent outbreaks are expected to create further problems in Brazil as both diseases present with similar symptoms and are therefore difficult to discern from one another. Authors outline their concerns for dealing with this potential crisis.

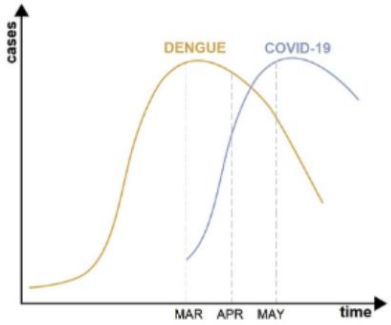


Fig. 1. Hypothetical scenario of dengue and COVID-19 emergence. The number of dengue cases is inclined to increase at the start of the year due to the hot, humid weather, and hit a peak between March and April. The outbreak of COVID-19 in Brazil is predicted to peak sometime in the most favourable season for respiratory diseases between late April and early May. As the two outbreaks have a high likelihood of coinciding in terms of time, the burden of diseases may boost, requiring the Unified Health System (SUS) to put their greatest efforts into the double-fight against the outbreaks. *The number of dengue cases is not proportional to that of COVID-19 cases; this is only an extrapolation to visualize each peak.

Clinical characteristics and outcomes of older patients with coronavirus disease 2019 (COVID-19) in Wuhan, China (2019): a single-centered, retrospective study

PMID: 32279081

Publication Date: Apr 11, 2020; Apr 13, 2020 (LitCovid)

Chen, TieLong; Dai, Zhe; Mo, Pingzheng; Li, Xinyu; Ma, Zhiyong; Song, Shihui; Chen, Xiaoping; Luo, Mingqi
Liang, Ke; Gao, Shicheng; Zhang, Yongxi; Deng, Liping; Xiong, Yong

J Gerontol A Biol Sci Med Sci

Level of Evidence: 4 - Case series

Type of Article: Research

BLUF: Patients 65 and older with COVID-19 had significantly more severe symptoms, greater comorbidities, and higher likelihood of progression to death as compared to young patients.

Abstract:

Background: In December 2019, the coronavirus disease 2019 (COVID-19) emerged in Wuhan city and spre rapidly throughout China and the world. In this study, we aimed to describe the clinical course and outcomes older patients with COVID-19.

Methods: This is a retrospective investigation of hospitalized older patients with confirmed COVID-19 at Zhongnan Hospital of Wuhan University from January 1, 2020, to February 10, 2020.

Results: In total, 203 patients were diagnosed with COVID-19, with a median age of 54 years (interquartile range, 41-68; range, 20-91 years). Men accounted for 108 (53.2%) of the cases, and 55 patients (27.1%) were > years of age. **Among patients who were 65 years and older, the mortality rate was 34.5% (19/55), which was significantly higher than that of younger patients at 4.7% (7/148).** Common symptoms older patients with COVID-19 included fever (94.5%; n=52), dry cough (69.1%; n=38), and chest distress (63.6%; n=35). Compared with young patients, older patients had more laboratory abnormalities and comorbidities. **Through a multivariate analysis of the causes of death in older patients, we found that males, comorbidities, time from disease onset to hospitalization, abnormal kidney function, and elevated procalcitonin levels were all significantly associated with death.** **Conclusions:** In the recent outbreak of COVID-19, our local hospital in Wuhan found that patients aged 65 and older had greater initial comorbidities, more severe symptoms, and were more likely to experience multi-organ involvement and death, as compared with younger patients.

A cross-sectional comparison of epidemiological and clinical features of patients with coronavirus disease (COVID-19) in Wuhan and outside Wuhan, China.

PMID: 3227875
Publication Date: Apr 9, 2020; Apr 13, 2020 (LitCovid)
Lei, Ziying; Cao, Huijuan; Jie, Yusheng; Huang, Zhanlian; Guo, Xiaoyan; Chen, Junfeng; Peng, Liang; Cao, Hong; Dai, Xiaoling; Liu, Jing; Li, Xuejun; Zhu, Jianyun; Xu, Wenxiong; Chen, Dabiao; Gao, Zhiliang; He, Jianrong; Lin, Bingliang
Travel Med Infect Dis
Level of Evidence: Level 4 – Case series
Type of Article: Research
Summarizing Excerpt: "We speculate that the differences [in mortality and disease severity] may be related to the diminishing pathogenicity of the virus after transmission of multiple generations, however, further studies are required to confirm this hypothesis."

Abstract:
BACKGROUND: Coronavirus disease 2019 (COVID-19) has spread outside the initial epicenter of Wuhan. We compared cases in Guangzhou and Wuhan to illustrate **potential changes in pathogenicity and epidemiological characteristics** as the epidemic has progressed.
METHODS**: We studied 20 patients** admitted to the Third Affiliated Hospital of Sun Yat-Sen University in **Guangzhou, China from January 22 to February 12, 2020**. Data were extracted from medical records. These cases **were compared with the 99 cases**, previously published in Lancet, from **Wuhan Jinyintan Hospital from January 1 to January 20, 2020.**
RESULTS: **Guangzhou patients were younger and had better prognosis** than Wuhan patients. The Wuhan patients were more likely to be admitted to the ICU (23% vs 5%) and had a higher mortality rate (11% vs 0%). Cases in Guangzhou tended to be more clustered. Diarrhea and vomiting were more common among Guangzhou patients and SARS-CoV-2 RNA was found in feces. Fecal SARA-CoV-2 RNA remained positive when nasopharyngeal swabs turned negative in some patients.
CONCLUSIONS: This study indicates possible diminishing virulence of the virus in the process of transmission. Yet persistent positive **RNA in feces after negative nasopharyngeal swabs suggests a possible prolonged transmission period** that challenges current quarantine practices.

Phase- and epidemic region-adjusted estimation of the number of coronavirus disease 2019 cases in China.

PMID: 32279219
Publication Date: Mar 31, 2020; Apr 13, 2020 (LitCovid)
Chang, Ruijie; Wang, Huwen; Zhang, Shuxian; Wang, Zezhou; Dong, Yinqiao; Tsamlag, Lhakpa; Yu, Xiaoyue; Xu, Chen; Yu, Yuelin; Long, Rusi; Liu, Ning-Ning; Chu, Qiao; Wang, Ying; Xu, Gang; Shen, Tian; Wang, Suping; Deng, Xiaobei; Huang, Jinyan; Zhang, Xinxin; Wang, Hui; Cai, Yong
Frontiers of Medicine
Level of Evidence: 5 – Expert opinion, mechanism-based findings
Type of Article: Research

BLUF: Epidemiological analysis of the COVID-19 pandemic in China necessitates differentiation based on region based on current data trends. This study estimates the pandemic peak in Hubei province to have occurred at the end of February and earlier in other regions. There is concern for a second outbreak and the need for control parameters before social distancing rules are lifted.

Abstract: The outbreak of the coronavirus disease 2019 was first reported in Wuhan in December 2019 and gradually spread to other areas in China. After implementation of prevention and control measures, the estimation of the epidemic trend is needed. A phase- **and region-adjusted SEIR model was applied for modeling and predicting the number of cases in Wuhan, Hubei Province and regions outside Hubei Province in China**. The estimated number of infections could reach its peak in late February 2020 in Wuhan and Hubei Province, which is 55,303-84,520 and 83,944-129,312, respectively, while the epidemic peaks in regions outside Hubei Province in China could appear on February 13, 2020 with the estimated 13,035-19,108 cases. **According to the estimation, the outbreak would abate in March and April all over China.** Current estimation provided evidence for planned work resumption under stringent prevention and control in China to further support the fight against the epidemic. **Nevertheless, there is still the possibility of the second outbreak** brought by the work resumption and population migration, especially from Hubei Province and high intensity cities outside Hubei Province. Strict prevention and control measures still need to be considered in the regions with high intensity of epidemic and densely-populated cities.

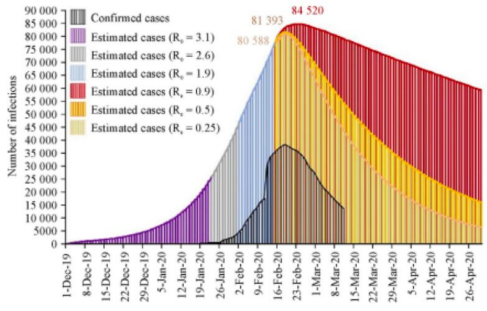


Fig. 2 Phase-adjusted estimation of the number of COVID-19 cases in Wuhan, China (December 1, 2019–April 30, 2020, E = 30I).

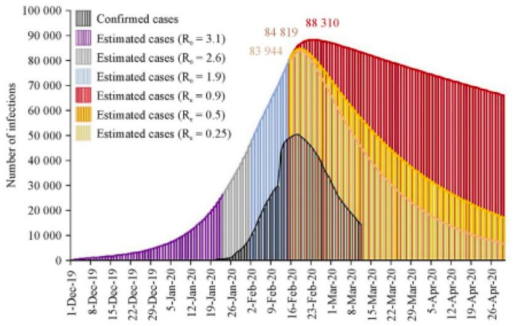


Fig. 4 Phase-adjusted estimation of the number of COVID-19 cases in Hubei Province, China (December 1, 2019–April 30, 2020, E = 30I)

Projecting the transmission dynamics of SARS-CoV-2 through the postpandemic period

PMID: NA, DOI: 10.1126/science.abb5793
Publication date: Apr 14, 2020; not yet published (LitCovid)
Kissler, Stephen M.; Tedijanto, Christine; Goldstein, Edward; Grad, Yonotan H.; Lipsitch, Marc
Science
Level of Evidence: 5- Mathematical modeling
Type of Article: Research

BLUF: Identification of some of the most important factors that may determine the outbreak dynamics of SARS-CoV-2 (such as viral pathogenesis, the environment, and human immunology). Authors integrate these factors into a mathematical model and **predict that there will likely be recurrent wintertime outbreaks of SARS-CoV-2 and that prolonged or intermittent social distancing may be necessary into 2022 if not other measures are placed.**

Abstract:
It is urgent to understand the future of severe acute respiratory syndrome–coronavirus 2 (SARS-CoV-2) transmission. We used estimates of seasonality, immunity, and cross-immunity for betacoronaviruses OC43 and HKU1 from time series data from the USA to inform a model of SARS-CoV-2 transmission. **We projected that recurrent wintertime outbreaks of SARS-CoV-2 will probably occur after the initial, most severe pandemic wave.** Absent other interventions, a key metric for the success of social distancing is whether critical care capacities are exceeded. **To avoid this, prolonged or intermittent social distancing may be necessary into 2022.** Additional interventions, including expanded critical care capacity and an effective therapeutic, would improve the success of intermittent distancing and hasten the acquisition of herd immunity. Longitudinal serological studies are urgently needed to determine the extent and duration of immunity to SARS-CoV-2. Even in the event of apparent elimination, SARS-CoV-2 surveillance should be maintained since a resurgence in contagion could be possible as late as 2024.

Transmission & Prevention

Upper airway symptoms in coronavirus disease 2019 (COVID-19).

PMID: 32278470
Publication Date: Apr 4, 2020; Apr 13, 2020 (LitCovid)
Lovato, Andrea; de Filippis, Cosimo; Marioni, Gino
American Journal of Otolaryngology
Level of Evidence: 5 – Expert opinion
Type of Article: Letter

BLUF: Otolaryngologists examine and perform procedures in the region of the body most likely responsible for viral transmission in COVID-19 and need to be protected. Additionally, anosmia should be used as a quarantinable symptom of possible COVID-19 infection.

Summary: Otolaryngologists are at high risk of COVID-19 infection due to the close proximity of their area of medical focus to the presumed transmission route of COVID-19. Reporting on upper respiratory symptoms in confirmed cases needs to be improved. Reports of patients developing anosmia or altered smell have gained traction and has been proposed as an additional diagnostic characteristic of the virus. Utilizing anosmia as a factor for initiating quarantine could enable otherwise asymptomatic patients to be isolated to decrease disease spread. PPE also needs to be readily available for otolaryngologists performing high risk procedures.

Physical activity for immunity protection: Inoculating populations with healthy living medicine in preparation for the next pandemic.

PMID: 32278694
Publication Date: Apr 9, 2020; Apr 13, 2020 (LitCovid)
Laddu, Deepika R; Lavie, Carl J; Phillips, Shane A; Arena, Ross
Prog Cardiovasc Dis
Level of Evidence: 5 - Expert opinion
Type of Article: Comment

Summarizing excerpt: "The major key points described in this commentary expand on the benefits of *physical activity*(PA) with **well supported evidence demonstrating the potency of regular PA in enhancing immune function and reducing the risk, duration or severity of viral infections.** The most consistent evidence suggests routine participation (~150 min per week) of moderate-intensity physical is necessary to achieve optimal immune support. However, even acute bouts of PA have shown to provide protection from viral infections, therefore supporting the notion that just moving more in the form of structured activity each day may be an important strategy for optimizing the functional integrity of the immune system to prevent or attenuate severity of infection, especially among vulnerable populations with immune-compromised conditions."

Editorial: Facemasks and the Covid 19 pandemic: What advice should health professionals be giving the general public about the wearing of facemasks?

PMID: 32279450
Publication Date: Apr 12, 2020; Apr 13, 2020 (LitCovid)
Stone, Teresa E; Kunaviktikul, Wipada; Omura, Mieko; Petrini, Marcia
Nurs Health Sci

Level of Evidence: 5 - Expert opinion
Type of Article: Editorial

Summary: The authors argue that surgical/disposable masks do not prevent transmission of microscopic molecules released in the air by a cough or sneeze due to their loose fit and can potentially increase the risk of transmission due to moisture retention, poor filtration, and reuse. **"**As health professionals, we have an obligation to model appropriate health behaviors and disseminate accurate health information based on curre evidence that the **use of surgical facemasks by the general public is not recommended** unless they looking after a sick person in a household setting or are themselves suffering an illness. Far more effective is through handwashing and maintaining a safe distance from other people."

Management

Recommendations for Minimal Laboratory Testing Panels in Patients with COVID-19: Potential for Prognostic Monitoring.

PMID: 32279286

Publication Date: Apr 12, 2020; Apr 13, 2020 (LitCovid)

Favaloro, Emmanuel J; Lippi, Giuseppe

Seminars in Thrombosis and Hemostasis

Level of Evidence: 5 – Expert opinion

Type of Article: Comment

Summarizing Excerpt: "Currently, [for COVID-19 patients] we recommend a minimum test panel for hematology comprising (1) a complete or full blood count (CBC/FBC, representing the United States, European, United Kingdom, Australian nomenclature), (2) routine coagulation tests(prothrombin time[PT] and activated partial thromboplastin time [APTT]), (3) fibrinogen, and (4) D-dimer [...] We also recommend a series of biochemistry and other tests (Table 1)."

Table 1 Recommendations for laboratory tests in patients with COVID-19[a]

Test	Abbreviation	Rationale for inclusion	Considerations
Hematology (including hemostasis/coagulation)			
Complete/full blood count	CBC/FBC	Identification of lymphopenia, neutrophilia, and thrombocytopenia	Include platelet count, differential for lymphocyte count
Prothrombin Time	PT	Identification of ongoing coagulopathy	
Activated partial thromboplastin time	APTT		
Fibrinogen	Fbg or Fib	Identification of ongoing (consumption) coagulopathy	
D-dimer		Identification of ongoing (consumption or thrombotic) coagulopathy	[b]
Biochemistry and other tests			
Electrolytes		Identification of metabolic derangement	
Glucose			
C-reactive protein	CRP	Monitoring of infection/ inflammatory response	[b]
Lactate dehydrogenase	LDH	Identification of lung injury and/or multiple organ failure	
Aspartate aminotransferase	AST	Identification of liver injury	
Alanine aminotransferase	ALT		
Bilirubin			
Albumin		Identification of liver failure	
Creatine kinase (also known as creatine phosphokinase or phosphocreatine kinase)	CK	Identification of muscle injury	
Lipase		Identification of pancreatic injury	
blood urea nitrogen	BUN	Identification of kidney injury and/or failure	
Creatinine			
Cardiac biomarkers (troponin I or T)		Identification of cardiac injury	[b]
Brain natriuretic peptide	BNP	Identification of cardiac failure	[c]
Ferritin		Monitoring of infection/inflammatory response	[b]
Procalcitonin	PCT	Identification of bacterial coinfections	[b]
Presepsin		Monitoring of severity of viral infection	[d]

Abbreviation: COVID-19, coronavirus disease 2019.

[a]These tests may have some prognostic value in COVID-19 patients. However, we recognize that such a list is time-relevant and potentially time-limited and may quickly change as new information emerges. Thus, at all times, local experts should be consulted as available and testing modified accordingly.

[b]"Gating rule": unless clinically justified, testing should not generally be reordered within 24 hours of an existing test.

[c]For selected patients with signs of MOF/SIRS; discuss with an expert (laboratory) clinician/senior or clinical scientist.

[d]For patients under intensive care.

CT features of SARS-CoV-2 pneumonia according to clinical presentation: a retrospective analysis of 120 consecutive patients from Wuhan city.

PMID: 32279115

Publication Date: Apr 11, 2020; Apr 13, 2020 (LitCovid)

Zhang, Rui; Ouyang, Huangqing; Fu, Lingli; Wang, Shijie; Han, Jianglong; Huang, Kejie; Jia, Mingfang; Song, Qibin; Fu, Zhenming

Eur Radiol
Level of Evidence: 4 – Case series
Type of Article: Research
BLUF (excerpt): "Overall, statistically significant associations with the risk of severe disease were observed among those with older age, those with symptoms of dyspnea, and … chest **CT findings of crazy-paving pattern and air bronchogram**."

Abstract:
OBJECTIVES: To characterize the chest computed tomography (CT) findings of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) according to clinical severity. We compared the CT features of common cases and severe cases, symptomatic patients and asymptomatic patients, and febrile and afebrile patients.
METHODS: This was a retrospective analysis of the clinical and thoracic CT features of 120 consecutive patients with confirmed SARS-CoV-2 pneumonia admitted to a tertiary university hospital between January 10 and February 10, 2020, in Wuhan city, China.
RESULTS: On admission, the patients generally complained of fever, cough, shortness of breath, and myalgia or fatigue, with diarrhea often present in severe cases. Severe patients were 20 years older on average and had comorbidities and an elevated lactate dehydrogenase (LDH) level. **There were no differences in the CT findings between asymptomatic and symptomatic common type patients or between afebrile and febrile patients,** defined according to Chinese National Health Commission guidelines.
CONCLUSIONS: The clinical and CT features at admission may enable clinicians to promptly evaluate the prognosis of patients with SARS-CoV-2 pneumonia. Clinicians should be aware that clinically silent cases may present with CT features similar to those of symptomatic common patients

Table 5 Final multivariate analysis of the association for selected characteristics with the severity of SARS-CoV-2 pneumonia

From: CT features of SARS-CoV-2 pneumonia according to clinical presentation: a retrospective analysis of 120 consecutive patients from Wuhan city

Characteristics	*n*, %		*p* value[1]	OR (95% CI)[1]
	Common (*n* = 90)	Severe (*n* = 30)		
Baseline[2]				
Age mean (SD)	40.2 (12.9)	61.2 (12.1)	0.003	1.1 (1.0–1.1)
Comorbidity mean (SD)	0.2 (0.6)	1.2 (0.9)	0.138	1.8 (0.8–3.8)
LDH > 250 U/L	18 (20%)	21 (70%)	0.116	2.5 (0.8–7.8)
Symptoms[3]				
Dyspnea	11 (12%)	27 (90%)	< 0.001	31.1 (6.5–148.8)
Headache	10 (11%)	18 (60%)	0.102	3.9 (0.8–19.6)
CT findings[4]				
Crazy paving	9 (10%)	21 (70%)	0.002	15.3 (2.6–89.5)
Air bronchogram	5 (6%)	19 (63%)	< 0.001	41.8 (5.9–298.4)

Attention should be paid to venous thromboembolism prophylaxis in the management of COVID-19.
PMID: 32278361

Publication Date: Apr 9, 2020; Apr 13, 2020 (LitCovid)
Wang, Tao; Chen, Ruchong; Liu, Chunli; Liang, Wenhua; Guan, Weijie; Tang, Ruidi; Tang, Chunli; Zhang, Nuofu; Zhong, Nanshan; Li, Shiyue
Lancet Haematology
Level of Evidence: 4 – Case Series
Type of Article: Research
Summarizing Excerpt: "**Anticoagulant drugs are the cornerstone for venous thromboembolism prophylaxis;** however, **among the patients with COVID-19 at high risk of venous thromboembolism in this cohort, 44 (11%) of 407 also had a high risk of bleeding**. For these patients, the dose and duration of anticoagulants should be adjusted, and mechanical compressions such as elastic compression stockings or intermittent pneumatic compression are warranted. Patients with COVID-19 can rapidly develop severe or critical disease, causing a series of complications such as renal failure, respiratory failure, or liver dysfunction,[2,3,10] which can affect both venous thromboembolism and bleeding status. Therefore, **assessing venous thromboembolism and bleeding risks regularly is essential**. Additionally, we found that patients with COVID-19 with a high risk of venous thromboembolism had poorer outcomes than patients with a low risk, suggesting that **these patients might require increased attention in case of rapid deterioration**."

COVID-19 and endocrine diseases. A statement from the European Society of Endocrinology.

PMID: 32279224
Publication date: Apr 11, 2020; Apr 13, 2020 (LitCovid)
Puig-Domingo, M; Marazuela, M; Giustina, A
Endocrine
Level of Evidence: Level 5- Expert Opinion
Type of Article: Recommendation
BLUF: Special consideration should be given to patients with signs and symptoms of COVID-19 with preexisting diabetes, malnutrition, obesity or adrenal insufficiency.

Summary: As with any infections, patients with preexisting chronic disease seem to have higher risk for complications from COVID-19 and a higher likelihood of dying from those complications.

1. Diabetes
    a. Strict adherence to social distancing measures for patients with diabetes.
    b. cancelation of routine appointments and a transition to telemedical care to maintain optimal glycemic control.
    c. Because infection is often related to disruption in glycemic control, they also encourage providers to have patients develop a plan for what they will do if they become ill, including having a stock of medications and blood glucose monitoring devices in case they need to self-isolate at home.
2. Malnutrition
    a. Nutrient dense diet for hospitalized, malnourished patients with COVID-19 with 2-3 intakes of at least 18g of supplemental protein a day.
    b. Supplemental vitamin D is recommended especially in regions where the prevalence of vitamin D deficiency is high
    c. If oral feeding is inadequate to meet 25-30 kcal/kg of weight and 1/5g protein/kg/day, complementary or complete enteral feeding should be initiated as outcomes are expected to improve with nutritional support
3. Adrenal insufficiency

a. Currently no evidence to suggest that adrenal insufficiency predisposes one to COVID-19; but they do have an increased overall risk of developing infections that has been well documented
b. Recommendation: when minor symptoms appear, begin treating it like a sick day
    i. Double the usual glucocorticoid replacement dose or more to avoid adrenal crisis.
    ii. Discuss having enough steroid pills/injects at home to maintain social distance

COVID-19 and Diabetes: Knowledge in Progress.

PMID: 32278764,
Publication Date: Apr 9, 2020; Apr 13, 2020 (LitCovid)
Hussain, Akhtar; Bhowmik, Bishwajit; Cristina do Vale Moreira, Nayla
Diabetes Research and Clinical Practice
Level of Evidence: 4 – Literature review of multiple study types
Type of Article: Letter

BLUF: Evidence is limited regarding changes to diabetic management in patients with COVID-19. Drug interactions must be monitored to prevent adverse events in diabetic patients.

Abstract:
AIMS: We aimed to briefly review the general characteristics of the novel coronavirus (SARS-CoV-2) and provide a better understanding of the **coronavirus disease (COVID-19) in people with diabetes, and its management**.
METHODS: We searched for articles in PubMed and Google Scholar databases till 02 April 2020, with the following keywords: "SARS-CoV-2", "COVID-19", "infection", "pathogenesis", "incubation period", "transmission", "clinical features", "diagnosis", "treatment", "diabetes", with interposition of the Boolean operator "AND".
RESULTS: The clinical spectrum of COVID-19 is heterogeneous, ranging from mild flu-like symptoms to acute respiratory distress syndrome, multiple organ failure and death. **Older age, diabetes and other comorbidities are reported as significant predictors of morbidity and mortality**. Chronic inflammation, increased coagulation activity, immune response impairment, and potential direct pancreatic damage by SARS-CoV-2 might be among the underlying mechanisms of the association between diabetes and COVID-19. **No conclusive evidence exists to support the discontinuation of angiotensin-converting enzyme inhibitors (ACEI) or angiotensin receptor blockers** because of COVID-19 in people with diabetes. **Caution should be taken to potential hypoglycemic events with the use of chloroquine in these subjects.** Patient tailored therapeutic strategies, rigorous glucose monitoring and careful consideration of drug interactions might reduce adverse outcomes.
CONCLUSIONS: Suggestions are made on the possible pathological mechanisms of the relationship between diabetes and COVID-19, and its management. **No definite conclusions can be made based on current limited evidence. Further research regarding this relationship and its clinical management is warranted.**

COVID-19 in long-term liver transplant patients: preliminary experience from an Italian transplant centre in Lombardy.

PMID: 32278366
Publication Date: Apr 9, 2020; Apr 13, 2020 (LitCovid)
Bhoori, Sherrie; Rossi, Roberta Elisa; Citterio, Davide; Mazzaferro, Vincenzo

Lancet Gastroenterol Hepatol
Level of Evidence: Level 4 – Case Series
Type of Article: Letter

Summarizing Excerpt:"Post-transplant metabolic complications (eg, arterial hypertension, chronic renal insufficiency, diabetes, hyperlipidaemia, and weight gain) might outweigh immunosuppression as a risk factor for development of severe COVID-19 disease in patients who have received liver transplants, in line with data from China, which suggest that comorbidities are associated with a worse prognosis. Of these metabolic complications, diabetes might be of particular concern, given its high prevalence (20–40%) in patients undergoing solid organ transplantation … In keeping with clinical insights from the American Association for the study of Liver Diseases **we suggest that immunosuppression should not be reduced or stopped in asymptomatic liver transplant recipients**."

	Long-term liver transplant recipient (>10 years, n=111)	Short-term liver transplant recipient (<2 years, n=40)	p value
Age older than 65 years	55 (50%)	12 (30%)	0·04
Overweight or obesity (body mass index >25 kg/m²)	89 (80%)	24 (60%)	0·02
Diabetes	67 (60%)	9 (23%)	0·0001
Hyperlipidaemia	50 (45%)	7 (18%)	0·002
Arterial hypertension	111 (100%)	27 (68%)	0·0001
History of cardiovascular event	39 (35%)	2 (5%)	0·0015
Chronic kidney disease	44 (40%)	8 (20%)	0·03
Full immunosuppression*	11 (10%)	28 (70%)	0·0001
COVID-19-related deaths	3 (3%)	0	0·57

COVID-19=coronavirus disease 2019. *Ciclosporin concentration more than 150 ng/mL or tacrolimus concentration more than 5 ng/mL.

Table: Characteristics of liver transplant recipients in Istituto Nazionale Tumori, Milan

Recommendations on management of the SARS-CoV-2 coronavirus pandemic (Covid-19) in kidney transplant patients.

PMID: 32278616
Publication Date: Apr 3, 2020; Apr 13, 2020 (LitCovid)
Lopez, Veronica; Vazquez, Teresa; Alonso-Titos, Juana; Cabello, Mercedes; Alonso, Angel; Beneyto, Isabel; Crespo, Marta; Diaz-Corte, Carmen; Franco, Antonio; Gonzalez-Roncero, Francisco; Gutierrez, Elena; Guirado, Luis; Jimenez, Carlos; Jironda, Cristina; Lauzurica, Ricardo; Llorente, Santiago; Mazuecos, Auxiliadora; Paul, Javier; Rodriguez-Benot, Alberto; Ruiz, Juan Carlos; Sanchez-Fructuoso, Ana; Sola, Eugenia; Torregrosa, Vicente; Zarraga, Sofia; Hernandez, Domingo
Nefrologia
Level of Evidence: 5 – Expert opinion
Type of Article: Special Article

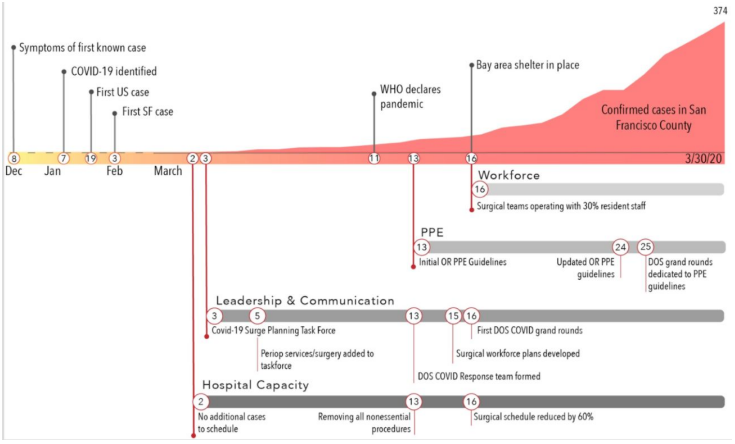
BLUF: Kidney transplant patients are advised to emphasize hygiene and utilize telemedicine. Transplant and donation services need to be maintained during the pandemic. Management should be guided by the clinical severity in each transplant patient with COVID-19.

Abstract: The SARS-CoV-2 (Covid-19) coronavirus pandemic is evolving very quickly and means a **special risk for both immunosuppressed and comorbid patients**. Knowledge about this growing infection is also increasing although many uncertainties remain, especially in the kidney transplant population. This manuscript presents a proposal for action with general and specific

recommendations to **protect and prevent infection in this vulnerable population such as kidney transplant recipients.**

Rapid Response of an Academic Surgical Department to the COVID-19 Pandemic: Implications for Patients, Surgeons, and the Community.

PMID: 32278726
Publication Date: Apr 2, 2020; Apr 13, 2020 (LitCovid)
Lancaster, Elizabeth M; Sosa, Julie A; Sammann, Amanda; Pierce, Logan; Shen, Wen; Conte, Michael; Wick, Elizabeth
J Am Coll Surg
Level of Evidence: Level 5 – Descriptive study
Type of Article: Research
BLUF: A key component of developing and enabling infrastructure that can nimbly respond to crises like COVID-19 was the development of a small, tightly knit leadership team that represented all COVID-19 working committees (PPE, virtual communication, clinical, COVID19 hospital planning, etc.).
Background: As the COVID-19 pandemic continues to spread, swift actions and preparation are critical for ensuring the best outcomes for patients and providers. We aim to describe our hospital and Department of Surgery's experience in preparing for the COVID-19 pandemic and caring for surgical patients during this unprecedented time.
Study Design: This is a descriptive study outlining the strategy of a single academic health system for addressing 4 critical issues facing surgical departments during the COVID-19 pandemic: (1) developing a cohesive leadership team and system for frequent communication throughout the department; (2) ensuring adequate hospital capacity to care for an anticipated influx of COVID-19 patients; (3) safeguarding supplies of blood products and personal protective equipment to protect patients and providers; and (4) preparing for an unstable workforce due to illness and competing personal priorities such as childcare.
Results: Through collaborative efforts within the Department of Surgery and Hospital, **we provided concise and regular communication, reduced operating room volume by 80%, secured a 4-week supply of personal protective equipment, and created reduced staffing protocols with back-up staffing plans.**
Conclusions: By developing an enabling infrastructure, a department can nimbly respond to crises like COVID-19 by promoting trust among colleagues and emphasizing an unwavering commitment to excellent patient care. Sharing principles and practical applications of these changes is important to optimize responses across the country and world.



Managing other conditions during COVID-19

The Restructuring of Structural Heart Disease Practice During The Covid-19 Pandemic.

PMID: 32278716
Publication Date: Apr 8; Apr 13, 2020 (LitCovid)
Chung, Christine J; Nazif, Tamim M; Wolbinski, Mariusz; Hakemi, Emad; Lebehn, Mark; Brandwein, Russell; Rezende, Carolina Pinheiro; Doolittle, James; Rabbani, Leroy; Uriel, Nir; Schwartz, Allan; Biviano, Angelo; Wan, Elaine; Hathaway, Lisa; Hahn, Rebecca; Khalique, Omar; Hamid, Nadira; Ng, Vivian; Patel, Amisha; Vahl, Torsten; Kirtane, Ajay; Bapat, Vinayak; George, Isaac; Leon, Martin B; Kodali, Susheel K
Journal of the American College of Cardiology
Level of Evidence: Level 5 – Expert Opinion
Type of Article: Guidelines
BLUF: The guidelines outline recommendations for **adaptations in outpatient management of structural heart disease** (how to transition to telemedicine, cancelling and re-prioritizing structural heart procedures, and selecting patients in an environment of resource constraints), **adaptations in the cardiac catheterization laboratory or hybrid operating room** (minimizing risk of COVID-19 exposure during structural heart procedures and optimizing procedural characteristics), and **how to restart structural practice**.

Abstract:
Patients with structural heart disease (SHD) are at increased risk of adverse outcomes from the coronavirus disease 19 (COVID-19) due to advanced age and comorbidity. In the midst of a global pandemic of a novel infectious disease, reality-based considerations comprise an important starting point for formulating clinical management pathways. The aim of these "crisis-driven" recommendations is **(1) to ensure appropriate and timely treatment of SHD patients, (2) to minimize the risk of COVID-19 exposure to patients and healthcare workers, and (3) to limit resource utilization under conditions of constraint.** While the degree of disruption to usual practice will vary across the United States and elsewhere, we hope that early experiences from a Heart Team operating in the current global epicenter of COVID-19 may prove useful for others adapting their practice in advance of local surges of COVID-19.

Triaging Structural Heart Disease Patients

Tier 1 Emergent/Urgent	Tier 2 Semi-Urgent	Tier 3 Elective
SEVERE AORTIC STENOSIS • Cardiac arrest or cardiogenic shock • NYHA Class IV symptoms • Recurrent Syncope • New or unstable chest pain • Acute bioprosthetic regurgitation SEVERE MITRAL REGURGITATION • Refractory heart failure requiring balloon pump • NYHA Class IV symptoms • Acute MR due to flail leaflet • Refractory MR requiring inotrope/pressor support • Acute bioprosthetic valve failure	SEVERE AORTIC STENOSIS • NYHA Class III symptoms with progression • Critical AS (PV > 5.0 m/s) with > NYHA Class II symptoms • Heart failure with recent decline in ejection fraction • Near syncope SEVERE MITRAL REGURGITATION • NYHA Class III symptoms with progression • Escalation of medical regimen including diuretics • Recent drop in ejection fraction SEVERE TRICUSPID REGURGITATION • Worsening NYHA Class IV symptoms and progressive organ system dysfunction	SEVERE AORTIC STENOSIS • NYHA Class I-II symptoms • Critical AS (PV > 5.0 m/s) with mild or no symptoms SEVERE MITRAL REGURGITATION • NYHA Class I-II Symptoms • Stable medication regimen SEVERE TRICUSPID REGURGITATION • NYHA Class I-III symptoms without evidence of end organ damage

Anticipated Number of Cases and Expected Impact on Hospital Resources

	Stage of Pandemic: Early	Peak/Plateau	Late
Low	• Continue outpatient visits • Continue to perform cases • Consider PPE* for all HCWs#	• Consider teleheath visits • Continue cases but delay tier 3 patients (especially if Covid -) • PPE for all HCWs	• Continue outpatient visits • Resume normal case schedule • PPE for all HCWs or testing based use
Moderate	• Early transition to telehealth • Continue cases but consider delaying tier 2 patients • Consider PPE for all HCWs	• Telehealth visits only • Continue tier 1 cases and selected tier 2 cases (favorable anatomy, younger) • PPE for all HCWs	• Resume outpatient visits • Resume cases with preference to tier 2 patients • PPE for all HCWs or testing based use
Severe	• Aggressive transition to telehealth • Continue tier 1 and selected tier 2 cases • PPE for all HCWs	• Telehealth visits only • Only perform selected tier 1 cases while avoiding extreme risk futile cases • PPE for all HCWs	• Continue telehealth with slow restart of in-person visits • As resources permit, restart tier 1 followed by tier 2 cases • PPE for all HCWs or testing based use

*PPE – Use of n95 respirators and face shields in addition to surgical gowns and gloves #HCWs – Health Care Workers

COVID-19 Guidance for Triage of Operations for Thoracic Malignancies: A Consensus Statement from Thoracic Surgery Outcomes Research Network.

PMID: 32278755
Publication Date: Apr 4 2020; Apr 13, 2020

Thoracic Surgery Outcomes Research Network, Inc: Mara Antonof, MD, eah Backhus MD, Daniel J. Bofa MD, Stephen R. Broderick MD, isa M Brown MD, MAS, Phillip Carrot, MD, James M. Clark MD, David Cooke, MD, Eliiabeth David, MD, Mat Facktor MD, Farhood Farjah, MD, MPH, Eric Grogan MD, James Isbell MD, David R. Jones MD, Biniam Kidane MD, Anthony W. Kim MD, Shaf Keshavjee MD, Seth Kranti MD, Natalie ui MD, inda Martn MD, Robert A. Meguid, MD, MPH, Shari . Meyerson MD, Tim Mullet, MD, Heidi Nelson MD, David D. Odell MD MPH, Joseph D. Phillips MD, Varun Puri MD, Valerie Rusch MD, awrence Shulman MD, Thomas K. Varghese MD, Elliot Wakeam MD, Douglas E. Wood MD

The Annals of Thoracic Surgery
Level of Evidence: Level 5 – Expert Opinion
Type of Article: Guidelines

BLUF (excerpt): "We have assembled a document to offer guidance, intended to facilitate these difficult decisions when caring for patients with thoracic malignancies during the COVID-19 pandemic (Table 1)."

Abstract:
The extraordinary demands of managing the COVID-19 pandemic has disrupted the world's ability to care for patients with thoracic malignancies. As a hospital's COVID-19 population increases and **hospital resources are depleted, the ability to provide surgical care is progressively restricted - forcing surgeons to prioritize** among their cancer populations. Representatives from multiple cancer, surgical and research organizations have come together to provide a **guide for triaging patients with thoracic malignancies**, as the impact of COVID-19 evolves as each hospital.

Phase I

- Few COVID 19 patients in hospital
- Hospital resources intact (e.g. ICU beds, ventilators, clinicians, Personal protective equipment PPE)
- COVID-19 trajectory not in rapid escalation phase

Compass Statement: Surgery restricted to patients whose survivorship likely to be compromised by surgical delay of 3 months

Surgery performed as soon as feasible	Surgery deferred (estimate 3 months)[a]	Alternative treatment CONSIDERED[b]
• Solid or predominantly solid (>50%) lung cancer or presumed lung cancer ≥2cm, clinical node negative • Node positive lung cancer • Post induction therapy cancer • Esophageal cancer T1b or greater • Chest wall tumors of high malignant potential • Stenting for obstructing esophageal tumor • Staging to start treatment (EBUS, mediastinoscopy, diagnostic VATS for pleural dissemination)[d] • Symptomatic mediastinal tumors – diagnosis not amenable to needle biopsy • Patients enrolled in therapeutic clinical trials	• Predominantly ground glass (<50% solid) nodules or cancers • Solid nodule or lung cancer < 2 cm • Indolent histology (e.g. carcinoid, slowly enlarging nodule) • Thymoma (non-bulky, asymptomatic) • Pulmonary Oligometastases - unless clinically necessary for pressing therapeutic or diagnostic indications (i.e. surgery will impact treatment) • Patients likely to require prolonged ICU needs (i.e. particularly high-risk patients) • Tracheal resection (unless aggressive histology) • Bronchoscopy[e] • Upper Endoscopy[e] • Tracheostomy[e]	• Endoscopic therapy for Early stage esophageal cancer (stage T1a/b superficial) • If eligible for adjuvant therapy, then consider neoadjuvant therapy (e.g. chemotherapy for 5cm lung cancer)[b] • Stereotactic Ablative Radiotherapy (SABR)[f] • Ablation (e.g. cryotherapy, radiofrequency ablation) • Stent for obstructing cancers then treat with chemoradiation • Debulking[e] (endobronchial tumor) only in circumstance where alternative therapy is not an option due to increased risk of aerosolization (e.g. stridor post obstructive pneumonia not responsive to antibiotics)
		• Nonsurgical staging (EBUS, Imaging, Interventional Radiology biopsy)[c] • Follow patients after their neoadjuvant for "local only failure" (i.e. salvage surgery)[g]

Phase II

- Many COVID 19 patients
- Resources limited (e.g. ICU beds, ventilators, clinicians, PPE),
- COVID trajectory within hospital in rapidly escalating phase

Compass Statement: Surgery restricted to patients likely to have survivorship compromised if surgery not performed within next few days

Surgery performed as soon as feasible	Surgery deferred (estimate 3 months)	Alternative treatment RECOMMENDED[h]
• Perforated cancer of esophagus – not septic • Tumor associated infection – compromising, but not septic (e.g. debulking for post obstructive pneumonia) • Tumor associated with hemorrhage, not amenable to nonsurgical treatment • Management of surgical complications (hemothorax, empyema, infected mesh) – in a hemodynamically stable patient	• All thoracic procedures typically scheduled as routine/elective	• Transfer patient to hospital that is in Phase I • If eligible for adjuvant therapy, then give neoadjuvant therapy • Stereotactic Ablative Radiotherapy (SABR) for • Ablation (e.g. cryotherapy, radiofrequency ablation) • Reconsider neoadjuvant as definitive chemo-radiation, and follow patients for "local only failure" (i.e. salvage surgery)

Phase III

- Hospital resources are predominately routed to COVID 19 patients
- Resources critically limited/exhausted

Compass Statement: Surgery restricted to patients likely to have survivorship compromised if surgery not performed within next few hours

Surgery performed as soon as feasible	Surgery deferred (estimate 3 months)	Alternative treatment AT ALTERNATE FASCILITY
• Perforated cancer of esophagus – septic patient • Threatened airway • Tumor associated sepsis • Management of surgical complications – unstable patient (active bleeding not amenable to nonsurgical management, dehiscence of airway, anastomotic leak with sepsis)	• All non-emergent surgeries	• See above

Challenges in lung cancer therapy during the COVID-19 pandemic.

PMID: 32278368

Publication Date: Apr 9, 2020; Apr 13, 2020 (LitCovid)

Calabro, Luana; Peters, Solange; Soria, Jean-Charles; Di Giacomo, Anna Maria; Barlesi, Fabrice; Covre, Alessia; Altomonte, Maresa; Vegni, Virginia; Gridelli, Cesare; Reck, Martin; Rizvi, Naiyer; Maio, Michele

The Lancet Respiratory Medicine

Level of Evidence: 5 – Expert opinion

Type of Article: Comment

BLUF: The COVID-19 pandemic has exposed unique challenges associated with the treatment of lung cancer as its presenting symptoms may mimic that of COVID-19, preventing them from receiving the appropriate treatment.

Summary: The redistribution of health services during the COVID-19 pandemic has impacted cancer patients. This has led to ethical challenges for physicians who have to choose who may and may not receive treatment. There is a concern that lung cancer patients who also have COVID-19 could be at even greater risk of not receiving all the care they need. In fact, cancer and/or immune checkpoint inhibitor-induced pneumonitis findings and symptoms can mimic that of a COVID-19 infection. Chemotherapy treatment during COVID-19 is complex and those who received chemotherapy months prior to developing a COVID infection were more likely to experience complications. Chemotherapy must continue due to the aggressive nature of lung cancer, however there may be a role for DOVID-19 testing of patients before and during treatment to ensure patients are being treated appropriately.

Testing for COVID-19 in lung cancer patients.

PMID: 32278879

Publication Date: Apr 9 2020; Apr 13, 2020 (LitCovid)

Passaro, Antonio; Peters, Solange; Mok, Tony S K; Attili, Ilaria; Mitsudomi, Tetsuya; de Marinis, Filippo

Annals of Oncology

Level of Evidence: 5 – Expert opinion

Type of Article: Editorial

Summarizing Excerpts:

- "We would like [to] stress the identification of **lung cancer patients** as a specific population for **testing prioritization** for COVID-19."
- "Comparing **smokers** and non-smokers, the **risk of severe symptoms is 1.4 times higher** (RR=1.4, 95% CI: 0.98–2.00), and risk of ICU admission, mechanical ventilation or death is 2.4 times higher (RR=2.4, 95% CI: 1.43–4.04).[9]"
- "Considering that **lung cancer patients show similar clinical symptoms** including cough, fever and dyspnea **with SARS-CoV-2** infection compared to other individuals, an **accurate COVID-19 screening model could allow for early detection** and potentially reduce the risk of severe complication and mortality."
- "A novel global registry (TERAVOLT - Thoracic cancERs international coVid 19 cOLlaboraTion) is now in action, collecting data worldwide with the objective of developing a tailored risk assessment strategy for lung cancer patients."

Immunosuppression during the COVID-19 pandemic in neuromyelitis optica spectrum disorders patients: A new challenge.

PMID: 32278860

Publication date: Apr 3, 2020 (online preprint); April 13, 2020 (LitCovid)

Carnero Contentti, Edgar; Correa, Jorge

Mult Scler Relat Disord

Level of Evidence: 5 – Expert opinion

Type of Article: Comment

Summary: Authors outline reasons why evidence about immunosuppressant treatments (IST) does not suggest that patients receiving these treatments represent a more vulnerable population and do not have higher risk of COVID-19 related complications. Specifically they indicated that COVID-19 does not increase risk in patients with neuromyelitis optica spectrum disorder (NMOSD). They are interested in future studies that examine the risk of using steroids and other NMOSD treatment options for treating COVID-19 in these patients.

Threatening drug-drug interaction in a kidney transplant patient with Coronavirus Disease 2019 (COVID-19).

PMID: 32279418

Publication Date: April 12, 2020; Apr 13, 2020 (LitCovid)

Bartiromo, Marilu; Borchi, Beatrice; Botta, Annarita; Bagala, Alfredo; Lugli, Gianmarco; Tilli, Marta; Cavallo, Annalisa; Xhaferi, Brunilda; Cutruzzula, Roberta; Vaglio, Augusto; Bresci, Silvia; Larti, Aida; Bartoloni, Alessandro; Cirami, Calogero

Transplant Infectious Disease

Level of Evidence: 4 – Case report

Type of Article: Research

BLUF: Immunosuppressed 36 year old kidney transplant patient was treated with antivirals and hydroxychloroquine after COVID-19 infection was confirmed. The authors believe that this likely caused changes in tacrolimus metabolism, highlighting the potential harms associated with the treatment.

Abstract:

During the novel coronavirus pandemic, **organ transplant recipients represent a frail susceptible category** due to long-term immunosuppressive therapy. For this reason, **clinical manifestations may differ** from general population and different treatment approaches may be needed. We present the case of a **36-year-old kidney transplanted woman** affected by Senior-Loken syndrome diagnosed with COVID-19 pneumonia after a contact with her positive mother. Initial **symptoms were fatigue, dry cough and coryza; she never had fever nor oxygen supplementation**. Hydroxychloroquine and lopinavir/ritonavir were started, and the antiviral drug was replaced with darunavir/cobicistat after two days for diarrhea. Immunosuppressant levels were closely monitored, and we observed very high tacrolimus trough levels despite initial dose reduction. The patient was left with steroid therapy alone. The peculiarity of clinical presentation and the management difficulties represent the flagship of our case-report. **We stress the need for guidelines in transplant recipients with COVID-19 infection with particular regard to the management of therapy.**

French Sarcoma Group proposals for management of sarcoma patients during COVID-19 outbreak.

PMID: 32278878

Publication Date: Apr 9, 2020; Apr 13, 2020 (LitCovid)

Penel, N; Bonvalot, S; Minard, V; Orbach, D; Gouin, F; Corradini, N; Brahmi, M; Marec-Berard, P; Briand, S; Gaspar, N; Llacer, C; Carrere, S; Dufresne, A; Le Cesne, A; Blay, J Y

Annals of Oncology

Level of Evidence: Level 5 – Expert Opinion

Type of Article: Letter

Summarizing Excerpt: "This letter proposes general recommendations for the management of sarcoma patients during the COVID-19 outbreak… Multidisciplinary tumor boards (MDT) with virtual discussion remain the best option when complex cases have to be discussed."

The use of Janus kinase inhibitors in the time of SARS-CoV-2.

PMID: 32278797

Publication Date: Apr 9, 2020; Apr 13, 2020 (LitCovid)

Peterson, Danielle; Damsky, William; King, Brett

J Am Acad Dermatol

Level of Evidence: 5 – Expert opinion

Type of Article: Letter

Summary: JAKi are routinely used for the treatment of numerous dermatological conditions, including alopecia areata, atopic dermatitis, vitiligo, etc., by targeting only pathologically elevated cytokines in autoimmune conditions. As such, immune response to infections stays intact. Previously performed phase II and phase III clinical trials of various JAKi have shown **no significant difference in respiratory infecti rates between JAKi-treated groups versus placebo groups as well as nearly no episodes of pulmonary toxicities secondary to JAKi use. Even then, the authors recommend cessation of JAKi use in patients with COVID due to the potential benefit given "the role of JAK-STAT dependent Type I (alpha/beta) and Type II (gamma) interferons in antiviral immunity.**"

R&D: Diagnosis & Treatments

Morphological anomalies of circulating blood cells in COVID-19.

PMID: 32279346
Publication date: Apr 12, 2020; April 13, 2020 (LitCovid)
Zini, Gina; Bellesi, Silvia; Ramundo, Francesco; d'Onofrio, Giuseppe
Am J Hematol
Level of Evidence: 5- mechanism-based observational study
Type of Article: Article

BLUF: Microscopic examination of peripheral blood samples from 40 patients in Italy. They observe what they describe as morphological abnormalities in different blood cell subsets, highlighting neutrophils as a subset of particular interest and potential abnormalities in granulopoiesis.

Abstract:
In patients with COIVD-19, in the early aggravation phase before treatment, observation of peripheral blood film shows the **presence of pronounced morphological anomalies of the granulocyte series**. One week after the start of treatment, such anomalies subside, and an increasing proportion of reactive lymphocytes dominates.

Favorable changes of CT findings in a patient with COVID-19 pneumonia after treatment with tocilizumab.

PMID: 32278585
Publication Date: Mar 31, 2020; Apr 13, 2020 (LitCovid)
Cellina, M; Orsi, M; Bombaci, F; Sala, M; Marino, P; Oliva, G
Diagn Interv Imaging
Level of Evidence: Level 4 - Case report
Type of Article: Case report

Summary: Given increased interest in repurposing drugs for COVID-19 treatment, this article presents a COVID-19 infected patient who received **two doses of tocilizumab** soon after being placed on a ventilator. The patient then progressively improved and was weaned from ventilation. **CT images from before and after treatment with tocilizumab support its use in treatment, as well as the use of CT in monitoring disease progression**.

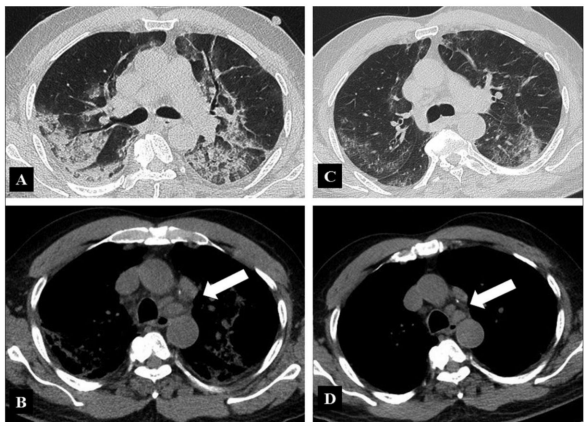


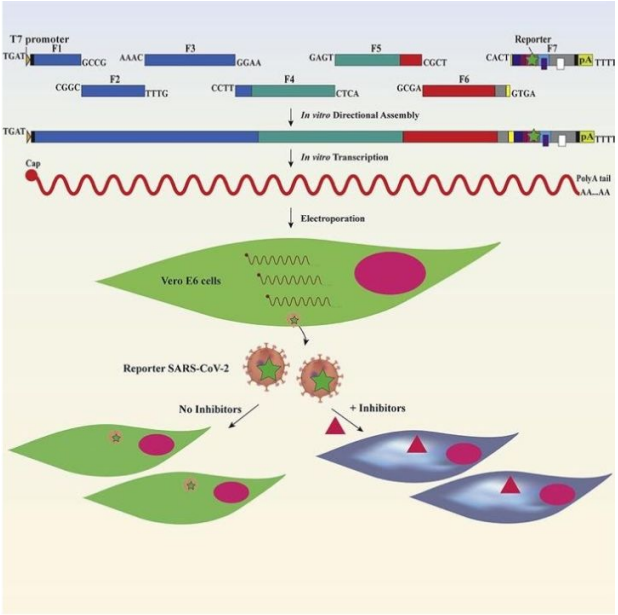
Figure 1. 64-year-old man who received tocilizumab as a treatment of COVID-19 pneumonia. A. Unenhanced CT image of the lungs in the transverse plane obtained at day 7 shows diffuse air space opacities, mainly consolidations, with poorly represented ground glass opacities. The distribution is bilateral, with predominant posterior location. Linear opacities are bilateral, even if more evident on the left side. Diffuse thickening of the bronchial walls is present, as well as mild bilateral pleural effusion. B. On mediastinal window, unenhanced CT image shows mediastinal lymphadenopathy (arrow). C. Unenhanced CT image of the lungs in the transverse plane obtained at day 14 shows marked improvement of CT findings, with bilateral reduction of consolidations. Some ground glass opacities are still visible, with predominant peripheral and posterior location. Peripheral linear striped opacities are visible. D. On mediastinal window, unenhanced CT image shows mild decrease in size of mediastinal lymphadenopathy.

An Infectious cDNA Clone of SARS-CoV-2

PMID: NA,
Publication date: Apr 13, 2020; not yet published (LitCovid)
Xie, Xuping; Muruato, Antonio; Lokugamage, Kumari G.; Narayanan, Krishna; Zhang, Xianwen Jing Zou; Liu, Jianying; Schindewolf, Craig; Bopp, Nathen E.; Aguilar, Patricia V.; Plante, Kenneth S.; Weaver, Scott C.; Makino, Shinji; LeDuc, James W.; Menachery, Vineet D.; Shi, Pei-Yong
Cell Host and Microbe
Level of Evidence: 5- Basic Research
Type of Article: Research

BLUF: One of the first publications describing the development of a robust reverse genetics system for SARS-CoV-2, resulting in a full-length infectious clone and reporter virus. Highly important for antiviral testing, the development of therapeutics and understanding viral pathogenesis. Represents a significant advancement for research, particularly if used in conjunction with animal models of COVID-19.

Abstract:
The ongoing pandemic of COVID-19, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), underscores the urgency to develop experimental systems for studying this virus and identifying countermeasures. **We report a reverse genetic system for SARS-CoV-2.** Seven complimentary DNA (cDNA) fragments spanning the SARS-CoV-2 genome were assembled into a full-genome cDNA. RNA transcribed from the full-genome cDNA was highly infectious after electroporation into cells, producing 2.9 × 10^6 plaque-forming unit (PFU)/mL of virus. **Compared with a clinical isolate, the infectious-clone-derived SARS-CoV-2 (icSARS-CoV-2) exhibited similar plaque morphology, viral RNA profile, and replication kinetics. Additionally, icSARS-CoV-2 retained engineered molecular markers and did not acquire other mutations**. We generated a stable mNeonGreen SARS-CoV-2 (icSARS-CoV-2-mNG) by introducing this reporter gene into ORF7 of the viral genome. icSARS-CoV-2-mNG was successfully used to evaluate the antiviral activities of interferon (IFN). Collectively, the reverse genetic system and reporter virus **provide key reagents to study SARS-CoV-2 and develop countermeasures.**



Drug repositioning an alternative for the treatment of coronavirus COVID-19.

PMID: 32278811
Publication Date: Apr 9, 2020; Apr 13, 2020 (LitCovid)
Serafin, Marissa B; Bottega, Angelita; Foletto, Vitoria S; da Rosa, Tacieli F; Horner, Andreas; Horner, Rosmari
Int J Antimicrob Agents
Level of Evidence: 4 – Literature review of multiple study types
Type of Article: Literature review
BLUF: More research is needed before deploying chloroquine, hydroxychloroquine and remdesivir for the treatment of COVID-19, but authors are optimistic based on the drugs' *in vitro* activity against COVID-19.

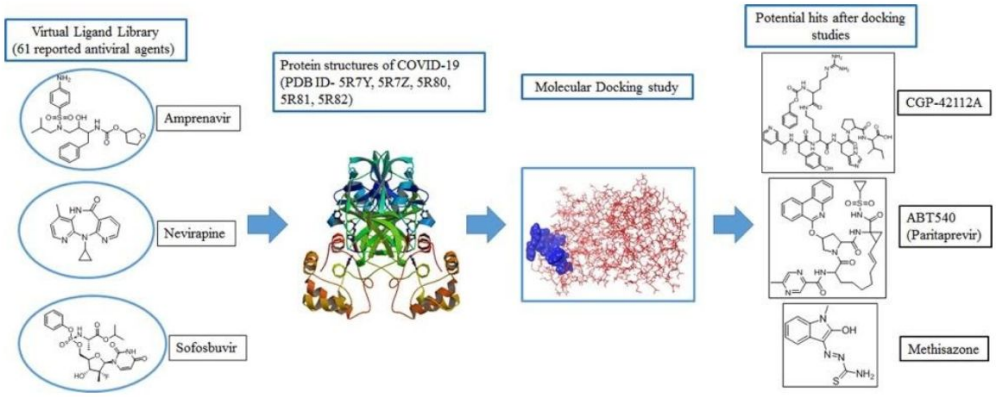
Abstract: Given the extreme importance of the current pandemic caused by COVID-19, and due to the fact that scientists agree that there is **no identified pharmacological treatment where possible therapeutic alternatives are raised through drug repositioning**. We present a selection of studies involving drugs from different pharmaceutical classes with activity against SARS-CoV-2 and SARS-Cov, with potential use in the treatment of COVID-19 disease.

In silico studies on therapeutic agents for COVID-19: Drug repurposing approach.

PMID: 32278693
Publication date: Apr 9, 2020 (in press); April 13, 2020 (LitCovid)
Shah, Bhumi; Modi, Palmi; Sagar, Sneha R
Life Sci
Level of Evidence: 5- Computer Modeling
Type of Article: Research
BLUF: *in silico* techniques to model the binding of 61+ antiviral agents with known structures that are either already approved or in on-going clinical trials. They identify a few potential candidates that showed promising results.

Abstract:
AIMS: The severe acute respiratory syndrome coronavirus 2, better known as COVID-19 has become the current health concern to the entire world. Initially appeared in Wuhan, China around December 2019, it had spread to almost 187 countries due to its high contagious nature. Precautionary measures remain the sole obliging tactic to cease the person to person transmissions till any effective method of treatment or vaccine is developed. Amidst the pandemic, research and development of new molecule is labour-intensive and tedious process. **Drug repurposing is the concept of identifying therapeutically potent molecule from the library of pre-existing molecules**.
MATERIALS AND METHODS: In the present study, **61 molecules that are already being used in clinics or under clinical scrutiny as antiviral agents** are surveyed via docking study. Docking study was performed using Maestro interface (Schrodinger Suite, LLC, NY).
KEY FINDINGS: Out of these 61 molecules, **37 molecules were found to interact with >2 protein structures of COVID-19**. The docking results indicate that amongst the reported molecules, HIV protease inhibitors and RNA-dependent RNA polymerase inhibitors showed promising features of binding to COVID-19 enzyme. Along with these, Methisazone an inhibitor of

protein synthesis, CGP42112A an angiotensin AT2 receptor agonist and ABT450 an inhibitor of the non-structural protein 3-4A might become convenient treatment option as well against COVID-19. SIGNIFICANCE: **The drug repurposing approach provide an insight about the therapeutics that might be helpful in treating corona virus disease.**



Mental Health & Resilience

First COVID-19 suicide case in Bangladesh due to fear of COVID-19 and xenophobia: Possible suicide prevention strategies.

PMID: 32278889
Publication Date: Apr 7, 2020; Apr 13, 2020 (LitCovid)
Mamun, Mohammed A; Griffiths, Mark D
Asian J Psychiatr
Level of Evidence: Level 5- Case study based on local news article
Type of Article: Case report
Summary: Pandemics can trigger exacerbate psychiatric disorders through social distancing, isolation, xenophobia, misinformation regarding the illness and result in suicde. They describe a case study of a 36 year old man who committed suicide after people in his village avoided him after he developed flu like symptoms and weight loss. On autopsy, it was found that he tested negative for COVID-19. The author believes that the patient committed suicide "out of moral duty" to prevent passing the virus on to the rest of his village. He argues for an urgent assessment and education of the general public to reduce fear, panic, anxiety and encourages the use of telemedicine offer support for pre-suicidal behavior; especially in underserved communities.

Epidemic psychiatry: The opportunities and challenges of COVID-19.

PMID: 32279023
Publication Date: Apr 3, 2020; Apr 13, 2020 (LitCovid)
Shalev, Daniel; Shapiro, Peter A
Gen Hosp Psychiatry
Level of Evidence: 5 - Expert opinion
Type of Article: Editorial
Summarizing excerpt: "Given the unprecedented scope of COVID-19, operationalizing the potential roles of psychiatrists in general, and CL psychiatrists in particular, is essential for a coordinated response. Here we set out potential key roles of CL psychiatrists in the context of COVID-19 and future epidemic/pandemic scenarios, and use our experience at a COVID-affected medical center to identify and problem-solve challenges in filling those roles."

COVID-19 checklist: Mask, gloves, and video chatting with grandpa.

PMID: 32279009
Publication Date: Apr 5, 2020; Apr 13, 2020 (LitCovid)
Solomon, Haley V
Psychiatry Research
Level of Evidence: 5 – Expert opinion
Type of Article: Letter
Summary: The author, a psychiatry resident, discusses the toll social isolation due to an effort of decreasing COVID-19 spread is having on mental health. **Loneliness and lack of social connections has been found to increase risk mortality, especially for older adults**. SARS survivors were found to have other hazardous effects to overall mental health like post-traumatic symptoms, depression, and anxiety, and stress, which has already been found in people during the COVID-19 pandemic. The author states this is an "opportunity to intervene before it is too late.

[They] can reiterate that **social distancing does not equate to social isolation**" and the author outlines some suggestions on staying connected.

The role of Mental Health Home Hospitalization Care during the COVID-19 pandemic.

PMID: 32279309
Publication Date: Apr 11, 2020; Apr 13, 2020 (LitCovid)
Garriga, Marina; Agasi, Isabel; Fedida, Ester; Pinzon-Espinosa, Justo; Vazquez, Mireia; Pacchiarotti, Isabella
Vieta, Eduard
Acta Psychiatr Scand
Level of Evidence: 5 – Expert opinion
Type of Article: Letter
BLUF: The limitations of mental health services have left patients vulnerable to relapse. Home Hospitalizatio enables an inpatient team to manage care at home and can close this care gap.

Summary: Due to COVID-19, mental health services in Spain have been limited. Most outpatient clinic visits have been recommended only for those with psychiatric emergencies or risk of psychiatric relapse. Additionally, early discharge rates from inpatient units are increased to prevent COVID-19 transmission as well as to increase hospital capacity for COVID-19 patients. This has left individuals with mental illnesses vulnerable to acute relapses due to inability to access necessary care and increased stress levels under confinement measures. Home Hospitalization is acute care provided to patients in their own home where patients still hold an inpatient status and remain under the care of their hospital doctor. Mental Health Home Hospitalization Care teams have shown a reduction in psychiatric hospital admissions for adult patients with moderate and severe mental illnesses and in adolescents experiencing a psychiatric crisis. The authors argue that Mental Health Home Hospitalization can serve as a "feasible and cost-effective alternative to inpatient care" for the care of individuals with mental health illnesses.