Emerging Practices to Combat Coronavirus Disease (COVID-19): Emerging clinical practice and evidence

COVID-19 Clinical Knowledge Transfer from Vizient members and industry resources
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Vizient is committed to ongoing research of Vizient members’ emerging practices and other related updates to federal and regulatory guidelines in support of efforts to combat the COVID-19 pandemic. The purpose of this document is to assist our members with critical information to supplement this work. As new information surfaces, updates will be provided.

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Practice trends

As the COVID-19 pandemic continues to evolve, emerging clinical practices and evidence to mitigate the impact are evolving as well. National guidance has emerged ranging from the detection of COVID-19 through end of life care. This week, we’ve seen:

- The treatment of COVID-19 through use of convalescent plasma showing promise, continued research on potential vaccinations and the emergency approval for the use of anti-malaria drugs.

- New recommendations regarding universal masking, innovations such as the “aerosol box” for use during intubation when clinicians do not have access to standard personal protective equipment, and guidance for caring for COVID-19 positive obstetric patients and for GI endoscopy during COVID-19.

- The use of noninvasive ventilation to decrease patient intubation, the importance of prone positioning for COVID-19 patients, and algorithms for allocating scarce resources; as well as

- Clinicians continuing to feel the burden of caring for terminally ill COVID-19 patients, often serving as caregiver and family member, and the importance of providing resources for clinicians to guide end of life conversations and decision making.

Many national professional organizations are sharing COVID-19 resources at no cost, including the New England Journal of Medicine. The information included in this document is intended to collate emerging evidence that may help guide your clinical practice and assist in keeping patients and clinicians safe.
Research and treatment

Protecting clinicians during endotracheal intubation

Researchers describe an "aerosol box" that could help protect clinicians without access to standard personal protective equipment during endotracheal intubation. The clear plastic cube covers the patient's head and has two holes through which the clinician passes his or her hands to perform the procedure. During experiments with a simulated cough, only the inside of the box and the clinician's gloves and gowned forearms were contaminated. Without the box, contamination was seen as far as 2 meters from the patient.

Added 4/9/2020

Interim guidance on treating COVID-19

The American Thoracic Society released interim guidance on treating novel coronavirus disease while cautioning that the available data used to guide the recommendations are limited.

- For hospitalized patients with COVID-19 and pneumonia, the group says that hydroxychloroquine or chloroquine may be used on a case-by-case basis, but clinicians must discuss potential risks and benefits of treatment, data must be collected on outcomes, the patient's condition must be severe, and the drug cannot be in short supply.

- For outpatients with COVID-19 or hospitalized patients without pneumonia, the group made no recommendation for or against use of hydroxychloroquine or chloroquine.

The group also declined to take a position for or against other potential drugs at this time. They did suggest use of prone ventilation for patients with refractory hypoxemia related to progressive COVID-19 pneumonia, and then extracorporeal membrane oxygenation (ECMO) if prone ventilation fails.

Added 4/9/2020

Masking

Universal masking is already standard practice in Asia and has recently been adopted by some U.S. hospitals where one mask per staff each day is handed out for extended use. Although this practice should not replace required infection-control measures in working with suspected or confirmed COVID-19 patients, the possible benefits of Universal Masking in Hospitals in the Covid-19 Era may include reducing the likelihood of transmission from asymptomatic or minimally symptomatic health care workers, reminding people of the importance of social distancing and other infection-control measures, and reducing anxiety.

The Joint Commission has issued a statement supporting use of personal face masks provided from home amid COVID-19 pandemic when health care organizations cannot provide access to protective equipment. The CDC supports wearing cloth face coverings in public settings where other social distancing measures are difficult to maintain.

Added 4/9/2020

Transmission and symptoms

SARS-CoV-2, the virus that causes COVID-19, could potentially spread through the eyes according to a preliminary study in JAMA Ophthalmology. Of 38 patients in China hospitalized with clinically confirmed COVID-19, roughly a third had conjunctivitis. Some 17% of those with ocular abnormalities tested positive for the virus in both conjunctival and nasopharyngeal swabs.

Added 4/2/2020
The virus may be detectable for as long as 8 days after a person's symptoms resolve. Half of patients in this study still tested positive via throat swab after their symptoms resolved, however it's unclear whether positive tests mean the virus is capable of transmission later in the course of the disease.

*Added 4/2/2020*

There is rapidly accumulating anecdotal evidence that loss of smell or taste are frequently reported symptoms associated with COVID-19.

*Added 4/2/2020*

### Convalescent plasma use

The FDA is working to enable access to convalescent plasma as a potential treatment for COVID-19, citing early research suggesting a benefit. The agency expects to "be able to move thousands of units of plasma to patients who need them in the coming weeks." A second treatment, hyperimmune globulin made from convalescent plasma, is also under development. People who have been symptom-free for at least two weeks may donate plasma.

Frequently asked questions have been posted by the American Red Cross and Mayo Clinic.

*Added 4/9/2020*

### CPR guidance

The American Heart Association has issued interim guidance for CPR and emergency cardiovascular care for patients with known or suspected COVID-19.

*Added 4/6/2020*

### Blood donation guidance

The FDA has updated its blood donation guidance to expand to expand its donor pool. Some of the changes include shortening the deferral period for men who've had sex with men from 12 months to 3 months. The same change applies to those who have received tattoos and piercings or have traveled to malaria-endemic countries.

*Added 4/6/2020*

### Field hospitals

Because the coronavirus pandemic is causing alternative care sites such as "field hospitals," Chinese health officials reveal a strategy how they minimized infections in these sites. This article shares practical, specific instructions for those care sites that will not be operating in traditional brick and mortar buildings.

*Added 4/2/2020*

### Preventing pressure injuries from PPE use

To prevent the development of or promote healing of pressure injuries from prolonged use of facemasks, goggles, or shields, identify strategies such as foam or hydrocolloid dressings, petroleum jelly, or other pressure and friction reduction strategies that do not compromise the fit and seal of the mask. When injuries are present, determine the appropriate treatment based on the specific stage of the wound.

*Added 4/6/2020*
Recommendations from experts regarding the Prevention and treatment of skin lesions associated with non-invasive mechanical ventilation includes always using foam or hydrocolloid dressings on the nasal bridge and evaluating the condition of the skin under the interface and harness every 4 hours.

**Added 4/9/2020**

### Respiratory care

#### Noninvasive ventilation

Patients with Acute Respiratory Distress Syndrome (ARDS) may benefit from noninvasive ventilation delivered by helmet as shown in the following articles. Please note there is no published data in the COVID-19 patients using the helmets. The JAMA article below reported an 18.2% intubation rate in patients randomized to helmet (control group 61.5%). Feedback from Europe (Milan) notes that helmets allows ~30% of patients to avoid intubation:

- Effect of Noninvasive Ventilation Delivered by Helmet vs Face Mask on the Rate of Endotracheal Intubation in Patients With Acute Respiratory Distress Syndrome
- Patients with Acute Respiratory Distress Syndrome Enrolled in a Randomized Clinical Trial of Helmet versus Facemask Noninvasive Ventilation
- Helmet-based ventilation is superior to face mask for patients with respiratory distress
- University of Chicago helmet ventilation management instructional video

**Added 4/6/2020**

### Ventilator sharing

In a joint statement issued by professional medical organizations from across the U.S., there is no standard guidance or recommendation for sharing mechanical ventilators between patients. This statement concludes that it’s better to purpose the ventilator to the patient most likely to benefit than fail to prevent, or even cause, the demise of multiple patients. However, the U.S. Surgeon General is suggesting a possible crisis standard of care strategy, which would include sharing ventilators without objection from the CDC and FDA.

**Added 4/2/2020**

### Airway management

The Anesthesia Patient Safety Foundation provides a summary of Recommendations for Airway Management in a Patient with Suspected Coronavirus (2019 nCoV) Infection.

**Added 3/30/2020**

### Treatment of ventilated patients

Evidence in support of long duration prone-position ventilation for mortality reduction in severe Acute Respiratory Distress Syndrome (ARDS) cases are shown in the following articles:

- Prone position ventilation in ARDS: An overview of the evidence *(added 4/2/2020)*
The American Association of Respiratory Care guidance document synthesis the current experience coming from China, Italy and the US (Seattle & New York) and some common sense approaches from past lessons learned.

*Added 4/2/2020*

### Decontamination and Reuse of FFRs

Although disposable filtering facepiece respirators (FFRs) are not approved for routine decontamination and reuse as standard of care, the CDC provides guidelines as a crisis capacity strategy to ensure continued availability. The CDC summarizes research on the potential methods to decontaminate FFRs using ultraviolet germicidal irradiation, vaporous hydrogen peroxide, and moist heat which show the most promise.

*Added 4/6/2020*

### Treatment of SARI

World Health Organization provides up-to-date guidance on clinical management of severe acute respiratory infection when COVID-19 is suspected.

*Added 4/2/2020*

### End of life care

#### End of life resource allocation

Allocating Ventilators in a Pandemic. Establish an ethics panel to make decisions about utilization of end-of-life resources (ICU, Ventilators) to buffer the care team from making those decisions or removing life support.

*Added 4/2/2020*

#### Standard of care

Care of the imminently dying patient should not differ significantly from standard best palliative care practices, but there are some pertinent modifications in COVID-19 to consider with respect to:

- Non-pharmacological management
- Pharmacological management
- Withdrawal of life sustaining treatments (WLST)
- Support for staff who are providing end-of-life care

*Added 4/2/2020*

#### Resources for clinicians

Council for Advancing Palliative Care’s toolkit to address end of life care contains COVID-19-specific resources and online courses including scripting for difficult conversations, guidelines for symptom management, patient and family support resources, etc.

*Added 4/2/2020*

Address advance care planning and decisions about Do-Not-Resuscitate orders during novel coronavirus.

*Added 4/2/2020*

Resources to facilitate communication during COVID-19:
Specialty care

Managing pregnant women and newborns

Diligence in evaluating and treating pregnant women is warranted due to the lack of data and experience with coronaviruses in this population. This algorithm is designed to aid practitioners in promptly evaluating and treating pregnant persons with known exposure and/or those with symptoms consistent with COVID-19 (persons under investigation [PUI]).

Added 4/9/2020

Initial guidance for the Management of Infants Born to Mothers with COVID-19 is to separate them and test the newborn if possible to guide their plan of care.

- Temporary separation of mother and newborn will minimize the risk of postnatal infant infection from maternal respiratory secretions. However, an informed discussion between new mothers and their doctor should occur if the mother requests to remain with her infant. In such cases the infant should remain at least six feet from the mother except when nursing.

- Studies to date have not found SARS-CoV-2 in breast milk. Mothers should wear masks while nursing and wash their hands before and after along with washing breast pump parts if they are utilized to assist with lactation.

- Additional articles on this issue include:
  - COVID-19: Separating Infected Mothers from Newborns: Weighing the Risks and Benefits
  - FAQs: Management of Infants Born to Mothers with Suspected or Confirmed COVID-19
  - Coronavirus (COVID-19), Pregnancy, and Breastfeeding: A Message for Patients

Added 4/6/2020

Managing patients with opioid dependency

Providers managing patients with an opioid dependency should plan for an adjusted frequency of visits to the clinic, work with their state and SAMHSA to secure waivers needed to manage risk and should establish telehealth options where possible.

- Substance Abuse and Mental Health Services Administration (SAMHSA) COVID-19 Resources and Information

- FAQs: Provision of methadone and buprenorphine for the treatment of Opioid Use Disorder in the COVID-19 emergency

- Use of Telemedicine While Providing Medication Assisted Treatment (MAT)
Critical Care
Surviving Sepsis Campaign COVID-19 panel issued several recommendations to help support healthcare workers caring for critically ill ICU patients with novel coronavirus.

As the number of critically ill patients surges in hospitals, non-ICU clinicians may be needed to care for critically ill patients. The Society of Critical Care Medicine provides online education to healthcare professionals who may benefit from critical care training as well as other emergency resources and updates.

- Critical Care for the Non-ICU Clinician.
- Resources (includes checklist and videos)
- COVID-19 updates

Use of PPE in GI endoscopy
This report now joins other recent guidance on endoscopy during COVID-19, including recommendations from endoscopists in Italy.

Anesthesiology
Anesthesia machine use, protection and decontamination during the COVID-19 pandemic.

Ambulatory care
Elective surgery during COVID-19 incubation period
Researchers retrospectively analyzed clinical data of 34 patients who underwent elective surgeries in China during the incubation period of COVID-19. They discovered that symptoms quickly emerged after surgery with 44% of patients studied requiring intensive care for COVID-19. Seven patients died — all had undergone level-3 surgeries (with level 4 being the most difficult). The authors say the findings "suggest that surgery may accelerate and exacerbate disease progression of COVID-19."
Long term care


Webpage last reviewed 3/21/2020

Home health care

CDC Interim Guidance for Implementing Home Care of People Not Requiring Hospitalization for COVID-19.

Webpage last reviewed 3/20/2020

Ethical considerations

Operationalizing ethical values

The University of Pittsburgh Medical Center developed a framework for determining how medical resources should be allocated to patients based on their score on an eight-point scale that takes into account their odds of survival to hospital discharge and certain life-limiting medical conditions.

Many states have legacy policies or emergency plans in place regarding allocating resources. Some examples are below. Check with your state health department to view your state’s plans.

- Alabama ventilator rationing plan
- Washington Scarce Resource Management and Crisis Standards of Care Overview and Materials

Updated 4/9/2020

NEJM article describes how to operationalize four ethical values for rationing health resources in a pandemic.

Added 4/2/2020

Resources

The Hastings Center has assembled ethics resources for responding to novel Coronavirus (COVID-19).

- Ethical Framework for Health Care Institutions & Guidelines for Institutional Ethics Services Responding to the Coronavirus Pandemic
- COVID-19: Supporting Ethical Care and Responding to Moral Distress in a Public Health Emergency

Added 3/30/2020

Legal ramifications of rationing

There are potential legal ramifications of either withholding or withdrawing a ventilator from a patient who would ordinarily receive such aid in the absence of a public health emergency. This article discusses the risks of legal liability and identifies needed reforms states should consider.

Added 4/6/2020
Environmental services

Transmission Routes and Surface Survival
Because information is still lacking on the transmissibility of COVID-19 from contaminated environmental surfaces and objects, studies looking at decontamination are important.

Added 4/9/2020

Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1 on various surfaces and estimated rates of decay.

Added 4/2/2020

Disinfectants and room cleaning


Webpage last reviewed 4/1/2020

EPA’s list of disinfectants for use against COVID-19.

Added 4/2/2020

UW Medicine’s room cleaning policy.

Added 4/2/2020

Infection control guidelines

CDC Environmental Infection Control Guidelines.

Webpage last reviewed 7/23/2020

Coding

Medical coding resources for COVID-19 novel coronavirus:

• Vizient’s Emergency use of ICD codes summary
• Vizient Advisory Solutions team recorded presentation outlining recent changes
• ICD-10-CM Official Coding and Reporting Guidelines

Added 4/9/2020

Additional Resources

• University of Washington (UW) resources
• UCSF resources
• Nebraska Medicine resources
• Lifespan, The Miriam Hospital resources
• The University of Chicago Medicine resources
Additional emerging practices

Access resource documents on other topics.

- Managing critical supplies
- Testing
- Surge capacity
- Staff impact
- Visitation