AHNA COVID-19 Update
Tuesday, June 30, 2020

The American Holistic Nurses Association (AHNA) supports the Center for Disease Control (CDC) and the World Health Organization (WHO) in acknowledging the immediate global public health risk of the COVID-19.

This update is current to time of release. Previous updated information is reduced weekly to keep the report as concise as possible. For a comprehensive appraisal, please review subsequent weekly updates (since Feb 2020) at:
https://www.ahna.org/Home/Resources/Coronavirus-COVID-19

The mission of AHNA is to illuminate holism in nursing practice, community, advocacy, research, and education. Our vision is that Every Nurse Is a Holistic Nurse. This is exhibited as we attempt to incorporate the evidence-based research of multiple nursing specialties in our COVID-19 updates. Please use our Table of Contents to navigate to the sections pertinent to your nursing practice. Research material suggestions may be submitted it to practice@ahna.org.

Self-Care Sharing: To sustain nurses in the Holistic Core Value of Self-Care AHNA is providing FREE public access to STRESS MANAGEMENT and RESILIENCE materials!

Clinical Updates

ASYMPTOMATIC: Long, Q., Tang, X., Shi, Q. et al. Clinical and immunological assessment of asymptomatic SARS-CoV-2 infections. Nat Med (2020) compared RT-PCR cycle threshold (Ct) values of positive nasopharyngeal swabs for 37 asymptomatic individuals and 37 symptomatic patients. The initial Ct values for both groups were similar; median duration of viral shedding, in asymptomatic individuals was 19 days (IQR, 15-26 d) in a 6 days-45 day spectrum. The asymptomatic group had a significantly longer duration of viral shedding than the symptomatic group. Mild
symptoms resulted in median duration of viral shedding of 14 days. Detectable viral shedding does not equate virulence. (The SARS-CoV-2 shedding load virulence correlation with infectivity requires further investigation.) COVID-19 without symptoms may still result in damage. Signs indicative of minor lung inflammation are observed in lung tissue of confirmed asymptomatic cases. Probability of long-term damage is unknown in asymptomatic infection, however laboratory findings of lower cytokine and chemokines indicate lower risk for inflammatory damage. More noteworthy, researchers observed a lack of antibodies.

Viral antibody production ended quickly in both asymptomatic and symptomatic COVID-19 patients during convalescence, making lasting immunity to the virus questionable. Antibody IgG levels in 93% (28/30) of the asymptomatic group and 97% (30/31) of the symptomatic group substantially dropped in early convalescent phase (by 8 weeks after discharge). Antibody levels dropped by 71.1% in asymptomatic patients and 76.2% in the symptomatic group. "40.0% (12/30) of asymptomatic individuals, but only 12.9% (4/31) of symptomatic individuals, became seronegative for IgG," Long, Tang, Shi, et al. Known duration of antibodies in severe acute respiratory syndrome (SARS) and MERS-CoV (Middle East respiratory syndrome coronavirus) patients where antibodies remain 12 months or more. Researchers surmised it risky to assume recovered patients are immune to reinfection; this may have implications on physical distancing restrictions.

ANDROGENS & BALDING: Balding men have more androgens than men with full heads of hair and women, a fact considered by researchers at hospitals in Madrid, Spain who observed 79% of male patients with severe COVID-19 exhibited androgenic alopecia. Wambier CG, Vaño-Galván S, McCoy J, et al. Androgenetic Alopecia Present in the Majority of Hospitalized COVID-19 Patients- the "Gabrin sign", Journal of the American Academy of Dermatology (2020) suggesting androgens contribute to SARS-CoV-2 related immune compromise. "This is approximately double this population frequency," Jenny Graves Professor of Genetics, La Trobe University. SARS-CoV-2 rates were 4x lower in men with prostate cancer receiving androgen-deprivation therapy (than alternate treatment groups) in a study of 9,280 patients in Italy, M. Montopoli, S. Zumerle, R. Vettor, et al. Androgen-deprivation therapies for prostate cancer and risk of infection by SARS-CoV-2: a population-based study, Annals if Oncology (2020) May.

"TMPRSS2 is a member of the family of type II transmembrane serine proteases that are involved in multiple physiological and pathological processes, including cancer and viral infections, Choi S.Y., Bertram S., Glowacka I., Park Y.W., Pohlmann S. Type II transmembrane serine proteases in cancer and viral infections. Trends Mol Med. 2009; 15:303-312. TMPRSS2 has been implicated as a critical host cell factor for the spread of influenza A, SARS-CoV, and MERS-CoV coronaviruses. Glowacka I, Bertram S, Muller MA. Evidence that TMPRSS2 activates the severe acute respiratory syndrome coronavirus spike protein for membrane fusion and reduces viral control by the
humoral immune response. J Virol. 2011; 85:4122-4134. Recent studies report that the new SARS-CoV-2 binds to angiotensin-converting enzyme 2 (ACE2) for cell entry, followed by proteolytic cleavage of the S protein by TMPRSS2 allowing the fusion of viral and cellular membranes. Matsuyama S., Nao N., Shirato K. Enhanced isolation of SARS-CoV-2 by TMPRSS2-expressing cells. Proc Natl Acad Sci U S A. 2020;117:7001-7003. In vitro evidence indicates that TMPRSS2 inhibition by camostat mesylate may be beneficial to prevent the infection of SARS-CoV-2. Hoffmann M., Kleine-Weber H., Schroeder S. SARS-CoV-2 cell entry depends on ACE2 and TMPRSS2 and is blocked by a clinically proven protease inhibitor. Cell. 2020;181: 271-280.e8 TMPRSS2 is highly expressed in both localized and metastatic prostate cancers and its transcription is regulated by the androgen receptor AR which regulate TMPRSS2 expression also in non-prostatic tissues, including lung. In vitro and in vivo results show that androgen administration induces TMPRSS2 expression in human lung epithelial cells and that androgen deprivation reduces TMPRSS2 transcription in murine lung. The androgen-dependent regulation of TMPRSS2 expression in the lung may explain the increased susceptibility of men to develop SARS-CoV-2 severe infections when compared with women."

Limitations: cancer patients likely are tested frequently compared to non-cancer patients, resulting in higher rates of diagnosis. Social distancing may have been more adhered to by ADT prostate cancer recipients vs. patients with non-ADT care. Additional large cohort studies would provide further validation.

ALBUMIN
Authors from three Universities in Italy, hypothesize HSA analysis may be used to identify patients at higher risk of death in COVID-19 patients. "Human serum albumin (HSA) is an acute phase reactant with antioxidant property. Under conditions of oxidative stress, HSA may undergo irreversible oxidation, which impairs antioxidant property and eventually elicits cell and tissue damage. In clinical settings associated with oxidative stress and reduced albumin levels, an enhanced mortality risk has been detected" Violi, F., Cangemi, R., Romiti, G., Is Albumin Predictor of Mortality in COVID-19? Antioxidants and Redox Signaling, June 2020. Analysis of 319 patients with COVID-19 studied over median of 19 days; 64 died, non-survivors had more prevalence of COPD, heart failure, elevated D-dimer, high-sensitivity CRP and troponins, and lower values of albumin. At the Cox regression analysis, albumin and age were independently associated with mortality, irrespective of adjustment for gender, ICU admission, heart failure, COPD, and hs-CRP levels.

COMPLEMENTARY/INTEGRATIVE CARE
"We are pleased to share recommended approaches, science, and historic references as part of the global effort to leave no stone unturned... in best preparing our populations to withstand COVID-19 and future viral threats," John Weeks, Editor-in-Chief, JACM.

The American Holistic Nurses Association could not agree more. Searching for integrative case studies and EVP has been a labor of love; a curative holistic protocol is yet to emerge, but the
humble beginnings have been underway for centuries.

**AYURVEDA:** Traditional medicine removes focus from health of the host an integral cause in disease. Ayurveda recommends preventive measures to discourage infection. *Charaka Samhita*, the classic of Ayurveda, describes epidemic management and defines immunity as arresting disease progress to maintain homeostasis. "The concept of building strength of mind and body to cope with various stressors, including infection, is a cornerstone of Ayurveda practice. Similar to innate and acquired immunity, *Bala* (strength) is classified as natural *Sahaja*, chronobiologic, *Kalaja*, and acquired, *Yuktikrut*.


The respiratory system 'portals of entry' (eyes, nose, and mouth) lead to SARS-CoV-2 particle replication in the pharynx. The fatty acid coat of the virus adheres to the moist mucosal layers, which helps it gain entry into the cells binding to ACE2 receptors. Ayurveda interventions targeting viral entry points may improve the innate immunologic response of the mucus membranes inhibiting viral migration deeper into the pulmonary system. Meditation and yoga, as a part of a wellness routine, have been found to reduce inflammation markers and influence markers of virus-specific immune response. Regular practice of *Pranayama* also improved lung function, Abel, A. N., Lloyd, L. K., & Williams, J. S., The effects of regular yoga practice on pulmonary function in healthy individuals: a literature review. The Journal of Alternative and Complementary Medicine (2013), and, Morgan N, Irw in MR, Chung M, Wang C. The effects of mind-body therapies on the immune system meta-analysis. PLoS One. 2014; 9 (7).

Ayurveda advises consuming hot water or food and herbal decoctions, gargling with medicated water, steam inhalation, and applications are discussed as methods to improve *Ama*, Tillu G., Chaturvedi S., Chopra A., et al, a pro-inflammatory byproduct of metabolic disorder, linked to infection. Sumantran VN, Tillu G., Cancer, Inflammation, and Insights from Ayurveda, Evidence Based Complementary Alternative Med (2012);306346. Hot or warm water improves digestion, inflammation, metabolism, asthma and allergies. Adding spices to boiling water and consuming intermittently through the day provides antiviral and antibacterial properties. This is termed *Medicated Water*. Dry ginger (*Zingiber officinale*), yashtimadhu
(Glycyrrhiza glabra), nut-grass (Cyperus rotundus) rhizomes; khus (Vetiveria zizanioides), Indian sarsaparilla (Hemisdesmus indicus) roots; coriander (Coriandrum sativum), fennel (Cuminum cyminum) seeds; cinnamon (Cinnamomum verum) and catechu (Acacia catechu) barks, are added individually or in combination, Shrungeswara, A. H., & Unnikrishnan, M. K. (2019). Evolution of dietary preferences and the innate urge to heal: Drug discovery lessons from Ayurveda. Journal of Ayurveda and integrative medicine, 10(3), 222-226.


**Nasal oil:** Medicated oils from Ghee, sesame or coconut oil can be introduced in the nostrils as prophylaxis from pathogen entry. Pure sesame oil effectively relieves dry nasal mucosa. The procedure, nasya, is well documented, creating biofilm barrier to viral entry. Vinjamury, S. P., Vinjamury, M., Sucharitakul, S., & Ziegler, I. (2012). Panchakarma: ayurvedic detoxification and allied therapies-is there any evidence? In Evidence-based practice in complementary and alternative medicine (pp. 113-137). Springer, Berlin, Heidelberg. Traditional Chinese Medicine investigated features of SARS-CoV-2 determining that due to low intermolecular attraction between two adjacent sesame oil molecules; pure sesame oil could readily wet the surface of various solid and aqueous phases possibly acting a physical barrier to SARS-CoV-2 particles, Fan, W., Zeng, J., & Xu, Y. (2020). A theoretical discussion of the possibility and possible mechanisms of using sesame oil for prevention of 2019-nCoV (COVID-19 coronavirus) from the perspective of colloid and interface science. ResearchGate, 10. This has not been further researched.

**Steam inhalation:** Hot fomentation using menthol or aromatherapy provide satisfactory clinical relief in nasal and throat congestion, bronchoconstriction, sinusitis via nasal conditioning, mucus velocity, and reducing congestion and inflammation, Abbott, D. J., Baroody, F. M., Naureckas, E., & Naclerio, R. M. (2001). Elevation of nasal mucosal temperature increases the ability of the nose to warm and humidify air. American journal of rhinology, 15(1), 41-46.
**Systemic Prophylaxis:** Ayurveda advocates several non-pharmacological measures that are critical to overall health, including diet, sleep, mental relaxation, lifestyle behavior, and Yoga. The recommended daily diet includes fresh hot soups of vegetables (radish, trigonella leaves, drum stick vegetable pods) and pulses (lentils, green gram/mung beans, chickpeas) seasoned with spices such as ginger (Zingiber officinale), garlic (Allium sativum), cumin seeds (Cuminum cyminum), and mustard (Brassica nigra) seeds (black whole mustard), Chopra, A., Saluja, M., & Tillu, G. (2010). Diet, Ayurveda and interface with biomedicine. *Journal of Ayurveda and integrative medicine*, 1(4), 243-244.


The cytokine storm resulting in lung damage and multi-organ failure is an immunological event. “Although antivirals are important, a robust and well-contained immune response to maintain immune homeostasis will be critical for good recovery and reduced mortality. This requires a favorable Th1/Th2 cytokine balance,” Shi, Y., Wang, Y., Shao, C. et al. COVID-19 infection: the perspectives on immune responses. *Cell Death Differ* 27, 1451-1454 (2020).

Potential Rasayana immunomodulatory botanicals for prophylaxis; Withania somnifera (Ashwagandha), Tinospora cordifolia (Guduchi), Asparagus racemosus (Shatavari), Phyllanthus emblica (Amalaki), and Glyceriza glabra (Yashtimadhu).

**Ashwagandha:**

Adaptogens such as Ashwagandha are renowned Immunomodulators and antioxidants. Often used for various kinds of disease processes and as a nerve tonic, it is an anti-inflammatory. Ashwagandha is an anti-inflammatory Gupta, M., & Kaur, G. (2019). Withania somnifera (L.) Dunal ameliorates neurodegeneration and cognitive impairments associated with systemic inflammation. *BMC complementary and alternative medicine*, 19(1), 217. Its effects are well
studied in arthritis, and oncology. The selective Th1 up-regulation by aqueous extract of Ashwagandha roots had a broad-spectrum (dose-dependent) role in immune homeostasis. Potential mechanisms of action of Ashwagandha in prophylaxis (antiviral, immune boosting, vascular integrity) and management (pyrexia, anti-inflammatory, conserving alveoli) related clinical targets of COVID-19 are pictured: ACE, angiotensin-converting enzyme; COX2, cyclooxygenase 2; IL, interleukin; TH1, T helper type 1; TNF α, tumor necrosis factor α; VEGF, vascular endothelial growth factor; WS, Withania somnifera. Tillu G., Chaturvedi S., Chopra A., et al. recommend further research to determine the clinical efficacy of Rasayana drugs such as Ashwagandha, Guduchi, Amalaki, and Yashtimadhu. In the stress of isolation, introducing daily practices with the possibility of prevention may bring peace. "Noticeably, these interventions have the advantages of simplicity, affordability, and acceptability and appear promising as feasible measures for large-scale implementation. Ayurveda, Yoga, and meditation have a potential role to engage the community in creating a more positive health environment," Tillu G., Chaturvedi S., Chopra A., et al. Introducing these mechanisms to clients is discussed in motivational interviewing, "Public Education" section.

TRADITIONAL CHINESE MEDICINE (TCM): Diagnosis and Treatment Protocols in TCM vary by patient symptoms and signs. The strategy of combining the merits of both TCM and modern Western medicine for the treatment of COVID-19 patients can effectively relieve symptoms such as fever, cough, sore throat, myalgia and fatigue, shorten the course of disease, and reducing severity. These therapies should be integrated with a trained practitioner therefore protocols will not be discussed in depth. Dr. John Chen and Lotus Institute of Integrative Medicine published clinical evidence to demonstrate efficacy of TCM in COVID19 treatment options. It is customary to incorporate processes such as Shegan-Mahuang Decoction, or Yakammaoto, a classic TCM formula with nine herbs for respiratory symptoms. Shegan-Mahuang Decoction(SMD) was originally discovered by Zhang Zhongjing in Eastern Han dynasty and is regularly used in asthmatics. The protocol includes Asarum sieboldii Miq., Aster tataricus L.f., Ephedra sinica Stapf, Belamcanda chinensis (L.) Redouté, Pinellia ternata (Thunb.) Breit., Schisandra chinensis (Turcz.) Baill., Tussilago farfara L., Zingiber officinale Roscoe, and Ziziphus jujuba Mill., Lin CC, et al.,Shegan-Mahuang Decoction ameliorates asthmatic airway hyper-responsiveness by downregulating Th2/Th17 cells but upregulating CD4+FoxP3+ Tregs. J Ethnopharmacol. 2020. Asthma is generally considered to be well managed by inhalation of corticosteroids, but the effects of long-term use are adverse and many, and 40% of asthmatics fail to respond to corticosteroids, Martin et al., 2007. SMD is a legitimate alternative therapy shown to alleviate asthmatic airway hyper-responsiveness" Lin CC, et al. It has been widely used as a traditional medicine to treat flu-like symptoms in China and Japan for around twenty centuries. One of the common TCM formulas, SMD has been traditionally used to relieve cough variant asthma, post-infection cough, bronchitis and other airway injuries, Chen et al., 2012; Wang and Zhang, 2017; Yen et al., 2014. Previous studies have further revealed that SMD can treat asthma by regulating the production of inflammatory mediators, such as IFN-γ, IL-4, IL-10, IL-13, and TNF-α, Chen and Hu, 2010; Zhou et al., 2010, making it an appropriate addition to integrative management of COVID-19.

References: Scientific evidence and Research of Chinese Herbs
QIGONG: "TCM is based on the knowledge that when broken down, everything is simply Qi, or energy and all which occurred thousands of years ago is buried in today. In the Universal aspect, every person, plant, animal, planet, star, even the air we breathe is Qi. A human being is Heaven and Earth's energy transformed together. When Qi flows smoothly through the body's meridian system, we experience balanced emotions, balanced weight, healthy digestion, peaceful sleep and a sense of calm. A smooth flow of Qi also leaves us creatively energized! Conversely, when Qi is blocked, the body sends you a sign or a "symptom". This physical or emotional message is simply an energetic imbalance in the body. In this light, we are all built of the same material. This concept opens our eyes to see others in a more beautiful light and to find the light that shines within ourselves as well. Renew your connection to Nature-it is your birthright." -Grand Master Nan Lu

To stimulate a healthy immune system, Grand Master Nan Lu recommends:

Eat warming foods: Cook raw vegetables so they are easily digested by the body. Add warming spices, such as ginger, cinnamon and turmeric. And above all, hold the ice!

Get plenty of sleep: Head to bed before midnight. When you work after midnight, the body uses double the amount of Qi to complete a task than it does during the day.

Stay positive: Prevention has a lot to do with perspective. Instead of focusing on fear and negativity, care for your body to the best of your ability.

Practice: simple Qigong exercises to restore balance, resource: qigong-for-covid19-prevention

ULTRAVIOLET LIGHT (UV) is a type of electromagnetic radiation with wavelengths from 10 nm to 400 nm. These wavelengths are shorter than that of visible light. Between the wavelengths 100 to 400 nm ultraviolet radiation (UV light) is subcategorized into three different ranges: Ultraviolet C (UVC) 100 - 280 nm, Ultraviolet B (UVB) 280 - 315 nm, and Ultraviolet A (UVA) 315 - 400 nm. Of the three spectrums, UVA light appears to cause the least damage to mammalian cells. Recent advances in light emitting diodes (LEDs) have made it much more feasible to manufacture and apply narrow band (NB) UVA light to internal organs. An abstract led by the team at Cedars-Sinai Medical Center was published in the United European Gastroenterology Journal, October 2019, titled "Internally Applied Ultraviolet Light as a Novel Approach for Effective and Safe Anti-Microbial Treatment." Here, the authors show that UVA light exhibits significant in vitro bactericidal effects in an array of clinically important bacteria. Additionally, this is the first study using intracolonic UVA application, which reports that UVA exposure is not associated with endoscopic or histologic injury. These findings suggest that UVA therapy can potentially provide a safe and effective approach to antimicrobial treatment via
Healight phototherapy. The research is in development partnership of Cedars-Sinai and Ayuto Bioscience Healight. Resource: Internally-applied-UV Light anti-microbial-treatment research

BOTANICALS: Jeffrey Langland, a virologist for Arizona State University's Biodesign Center for Immunotherapy and Associate Professor of Medical Microbiology at Southwest College of Naturopathic Medicine is facilitating a herbal treatment collaborative between the two institutions. The botanical research will investigate plant-based therapies for COVID-19. It is anticipated in the fall.

Traditional, Complementary and Integrative Health and Medicine COVID-19 Support Registry - Integrative Practitioners: please contribute your COVID-19 case studies to this registry with de-identified data from patients/clients who have been treated for exposure or prevention!

PHARMACEUTICAL RESEARCH

DEXAMETHASONE: Researchers suggest the steroid dexamethasone could be effective at reducing COVID-19 mortality. Results were strongly positive, including the primary endpoint (improved 28-day mortality) and secondary endpoints (reduced need for intubation and reduced hospital length of stay). The drug is part of the RECOVERY clinical trials conducted in the United Kingdom, one of the largest clinical trials testing potential COVID-19 therapeutics. The preliminary results have not undergone peer review. The study tested a small daily dose of the drug in 2,104 hospitalized COVID-19 patients. When compared to a non-placebo-controlled control group who received the normal standard of care, dexamethasone was associated with a 34% decrease in mortality for patients on mechanical ventilation and 20% decrease for those receiving oxygen therapy. Resource: NIH Treatment Guidelines for Dexamethasone in Patients with COVID-19

REMDESVIR: Gilead Sciences announced that it will soon begin enrollment of an open-label, single-arm Phase 2/3 clinical trial to investigate the use of remdesivir as a treatment for pediatric COVID-19 patients. The trial is designed to involve approximately 50 pediatric patients with moderate-to-severe COVID-19, including newborns, across 30 sites in the United States and Europe, and it is scheduled to be completed by December 2020. The completed adult study published in NEJM; noted a reduced length of stay from 15 days to 11 days after remdesivir, a nucleoside analog, which is fairly safe. Those who received high-flow oxygen or noninvasive mechanical ventilation, ventilators or ECMO. These patients were likely in later phases of illness where the antiviral properties of the drug are not as effective. Patients requiring oxygen had greater recovery rate after receiving remdesivir. Although there wasn't a statistical benefit for mortality, there was
a strong trend in those only requiring oxygen. Due to scarcity hospitals are primarily allocating it to people in their first 7-10 days of symptoms.
Related: A Proposed Lottery System to Allocate Scarce COVID-19 Medications: Promoting Fairness and Generating Knowledge - JAMA

TOCILIZUMAB: yet to peer review, the anti-interleukin-6 receptor inhibitor to focus on cytokine release syndrome. A phase 2 single-arm trial over 1,200 patients (no placebo control arm). The investigators cited public demand for interventions was so strong it negated placebo control. Either one or two infusions of 8mg/kg, were administered, though due to production 60% were delayed and others given concurrent therapies. The validation group identified as those not receiving tocilizumab, showed similar rate of c-reactive protein elevations, likely related to status /inflammatory phase of illness. The thirty-day lethality rate in the treatment group was improved; 14 days was similar.

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Review of 43,000 patient mortality rates as a comparison to the null hypothesis at 30 days resulted in 14-day mortality rate of 22% and the 30-day was 27.6% (in the active arm of this single center study). Logistic regression analyses suggested tocilizumab before mechanical ventilation was most beneficial, similar to convalescent plasma. One death was attributed to tocilizumab and a small percent had liver function elevation. GAP: Though a large study which followed the patients prospectively, Italy had one of the highest death rates. Improvements in care may also be contributed, therefore without a true comparison arm, this could be considered inconclusive. If cited, this should be considered.

SURVIVOR SEQUELAE: Critical care specialists at Vanderbilt University report being in the ICU alone is enough to hurt the brain. Patients may suffer from lack of oxygen, small blood clots in capillaries, toxic effects of sedatives, and the death of neurons. ICU survivors have a 50% rate of dementia, a third have depression, and 15 percent have PTSD in a time frame of weeks to months after initial recovery. COVID Symptom Study app designed by the Massachusetts General Hospital, King's College London, and the Harvard T.H. Chan School of Public Health indicates COVID survivors will have at least that and probably more. "Brits and Americans who know or suspect they have COVID-19 use the app regularly to report their symptoms," Andrew Chan, MD, MPH and developer identified of 3.8 million app users 300,000 of experience chronic long-term symptoms. A supportive post-acute care transition plan including Case Management, homecare, palliative or pain management, rehabilitation, and mental health services might improve outcomes and long-term prognosis.
Related:
Recommendations for Hospital-Based Physical Therapists

Continue Upon Discharge: Home pulse oximetry monitoring in COVID-19 patients identifies need for hospitalization - Academic Emergency Medicine

ATHLETES: respiratory specialists issued recommendations for athletes in The Lancet in April that called for caution. Cardiologists publishing in JAMA Cardiology note that acute cardiac injury and myocarditis is far more common in people hospitalized with COVID-19 than with other viral infections. The cardiologists recommend rest and monitoring for people who are virus-positive but asymptomatic, and they also recommend testing for athletes with moderate to severe symptoms before going back into training. Infographic: Graduated return to play guidance - British Journal of Sports Medicine

TRADITIONAL MEDICINE

STATINS: The potent anti-inflammatory and immunomodulatory effects of statins suggested the ability to counter SARS-CoV-2 (Castiglione et al., 2020; Dashti-Khavidaki and Khalili, 2020; Fedson et al., 2020). Observational studies and randomized controlled trials (RCTs) have demonstrated improved pro-inflammatory cytokine release and immune cell functions among individuals with viral and bacterial pneumonia (Fedson, 2013; Pertsov et al., 2019; Sapey et al., 2017). A more recent report based on molecular docking analysis showed that statins might inhibit SARS-CoV-2 entry into host cells by directly binding the main protease of the coronavirus (Reiner et al., 2020). These data led to speculation regarding the potential therapeutic benefits of statins for the treatment of COVID-19 (Arabi et al., 2020; Bifulco and Gazzarre, 2020). Zhang et al. report that among 13,981 cases of COVID-19, in-hospital use of statins compared to non-statin use is "significantly associated with a lower risk of death and a less inflammatory response during the entire hospitalization period. These findings support the notion that the potential benefits of statin therapy for COVID-19 might outweigh the risks. RCTs are needed to determine further clinical benefits," Zhang, X. J., Qin, J. J., Cheng, X. e.t al. In-Hospital Use of Statins Is Associated with a Reduced Risk of Mortality among Individuals with COVID-19. Cell metabolism, (2020) S1550-4131(20)30316-8.

Presentation: Symptoms reported less often include expectoration, headache, hemoptysis and diarrhea. Mild muscle damage and increased Creatine Kinase (CK) levels were commonly observed in Wuhan patient cohorts, Wu C, Chen X, Cai Y. e.t al. Risk factors associated with acute respiratory distress syndrome and death in patients with coronavirus disease 2019 pneumonia in Wuhan, China. JAMA Intern Med 2020. A patient report from Madrid Spain with the primary symptoms of asthenia and myalgia for two weeks and 48 hours of progressively darkening urine. The patient was elderly with pre-existing diabetes and hypertension. Writers suggest "Creatine kinase levels should be monitored in patients with COVID-19 complaining of muscle pain / weakness," S Rivas-García, J Bernal, J Bachiller-Corral, Rhabdomyolysis as the main manifestation of coronavirus disease 2019, Rheumatology, 6/2020.
**Complications:** A network of British researchers including The Association of British Neurologists (ABN), the British Association of Stroke Physicians (BASP), and the Royal College of Psychiatrists (RCPsych), completed a cross-specialty surveillance study of acute neurological and psychiatric complications of COVID-19 patients across the United Kingdom (UK). “Severe neurological and neuropsychiatric presentations associated with COVID-19 have become increasingly apparent, including encephalitis in China and acute necrotizing encephalopathy in Japan. Cerebrovascular disease is common as is Altered Mental Status (AMS) in severe infection, especially with intensive care management. AMS predominates in older groups, reflective of latent neurocognitive degenerative disease, comorbidities, in association with sepsis, hypoxia, sedatives and polypharmacy. A disproportionate number of neuropsychiatric presentations in younger patients noted in this study, with elders being predominantly affected by cerebrovascular complications, encephalopathy or encephalitis,” Varatharaj, A., Thomas, N., Ellul, M., Neurological and neuropsychiatric complications of COVID-19 in 153 patients: a UK-wide surveillance study The Lancet Psychiatry June 2020.

**DRUG REPURPOSING:** The CURE Drug Repurposing Collaboratory records novel uses of FDA approved pharmaceuticals in treating COVID-19 patients. Repurposed medications are ideal for those unable to enroll in a clinical trial (according to the FDA). Per the website the Collaboratory is “particularly interested in capturing data from diverse populations, including pediatric and pregnant women”. Providers should proceed with caution as this collective should not promote unapproved or dangerous treatments contraindicated in these patients.

**Testing:**

The FDA announced a Diagnostics Evidence Accelerator / Therapeutic Evidence Accelerator to promote collaboration of experts among the scientific community analyzing diagnostic and clinical data in real time. The availability of health data aggregation and analytics in a unified effort, may answer key questions contributing to diagnostic tools and medical interventions for COVID-19. Summary of announcement from Amy Abernethy, M.D., PhD. FDA Principal Deputy Commissioner.

The University of Michigan health Library describes several forms of viral testing:

**Antibody Test**- isolates viral specific antibodies to fight COVID-19. If the antibody is found, the result can depict time/duration of infection but not necessarily immunity. Neutralizing antibodies alone may not provide the kind of protective response required, certain T-cell epitopes are important. "For example, influenza patients may still harbor the virus and transmit it. Considering waning immunity this test does not result in an impenetrable armor” Dr. Paul Auwaerter, Clinical Director of the Johns Hopkins School of Medicine Division of Infectious Diseases. Usage of antibody tests to determine immunity is ill-advised.

JAMA Network created a five minute learning module which visually explains the epidemiological Benefits & Deficits of Antibody Testing.

Recent antibody studies - or serosurveys - create potential for misuse of information.
Results should not be used to justify public health decisions such as social distancing. Johns Hopkins Report Calls for National Strategy for Performing Sars-Cov-2 Antibody Studies. Devised recommendations surrounding antibody studies including 1. Establishment of a central repository for serosurveys by the federal government; release results from the Food and Drug Administration (FDA), the National Institutes of Health (NIH), the CDC, and the National Cancer Institute (NCI) antibody test validation studies. 2. Counteract high inaccuracy among manufacturer results; encouraging large employers and universities to register studies to a central repository; focus on obtaining serial, cross-sectional serosurveys. 3. Initiate longitudinal cohort studies across state and local health departments to cost-effectively gain information.

Related: Cochrane review assesses how accurate antibody tests are for detecting COVID-19

**Viral antigen detection test**- Viral antigens develop on the surface of infected cells and may be detected on a sample of infected tissue. Specially tagged (with dye or tracer) antibodies that attach to the specific viral antigens are mixed with the sample. The tagged antibodies are visible via test lamps. If the tagged antibodies attach, the cells are infected.

**Viral culture**- A sample of body fluid or tissue is added to cells promoting viral growth. The process may take several weeks to determine positive (with growth) or negative.

**Viral DNA or RNA detection test**- Sample tissue, blood or CSF is tested for viral genetic material (DNA or RNA) to detect specific virus.

**Stool testing**- Through regular screening, water treatment facility testing can be a valuable indicator of community wide transmission. Up to 50% of patients who are positive for SARS-CoV-2 experience gastrointestinal symptoms, 10% one to two days before they developed respiratory symptoms. SARS-CoV-2 is detectable in stool for up to five weeks using RT-PCR technology. This can be an important monitoring tool for community spread. Coronavirus Stool Testing - Monitor, Manage, and Prevent Transmission of COVID-19


**HERD IMMUNITY**: The ability to detect immunizing infections is essential in predicting the speed of return to economic activity in a public workplace. Strasbourg University Hospital and published on the preprint server medRxiv, 6/25/20, shows that COVID-19 antibody responses may sometimes be lacking following exposure to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The current study aimed at describing T cell and antibody responses between a control group of 10 healthy non-exposed donors. Three assays were used for antibody detection, with high sensitivity and specificity. The RT-PCR assay was capable of detecting as few as 10 copies/reaction. Intrafamilial Exposure to SARS-CoV-2 Induces Cellular Immune Response without Seroconversion - medRxiv.
**VACCINE**: The deliberation over vaccine usage is a point of contention for many nurses. Multiple vaccine models in development add to the discussion. A *Nature* published feature, *The race for coronavirus vaccines: a graphical guide* depicts the conversion from vaccine to immunity through each of eight proposed mechanisms of action.

**Amplifying RNA Vaccine Development** ([NEJM](https://www.nejm.org)) Self-amplifying RNA vaccines are derived from the genome backbone of an alphavirus; the genes encoding the viral RNA replication machinery are intact, but those encoding viral structural proteins are replaced with a transgene encoding the vaccine antigen.

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**Global Situation Report**

![World Map](image)

**June 30, 2020**

[Johns Hopkins Coronavirus Interactive Map](https://coronavirus.jhu.edu)

**Global Status Update:**

WHO warns of "a new and dangerous phase" as the pandemic spans 188 countries and regions.

**CASES:** 10,424,992

**FATALITIES:** 509,706

**Noteworthy Changes:** Asia and Europe have new waves of infections. The South Korean government has advised citizens to carry two types of masks - a surgical mask for normal use, and a heavy-duty mask for crowded situations. Japan lifted its domestic travel ban and began discussing easement of international travel bans for arrivals from several countries. Tracking the Global Outbreak - NY Times

**International Support Efforts:** The Food and Agriculture Organization and the UN's Economic Commission for Latin America and the Caribbean report that COVID-19 could result in more than 83 million living in extreme poverty. The organizations proposed 10 measures that could provide financial stability to the region and bolster food security. One proposal, "anti-hunger grants," would provide cash subsidies, food vouchers, and access to baskets of food for individuals and families in need.
Analysis of COVID-19 case counts and outcomes in 116 US counties found a fatality rate in symptomatic patients 13 times higher than a severe influenza season. Without intervention, 350,000 to 1.2 million deaths are estimate by the end of this year if spread continues at current levels. (Health Affairs). Preprint: The infection fatality rate of COVID-19 inferred from seroprevalence data and Epidemiology, clinical course, and outcomes of critically ill adults with COVID-19 in New York City: a prospective cohort study - The Lancet.

**United States of America**

The United States continues to lead in uncontrolled spread: 2,650,553 cases, and 128,327 fatalities. Consequentially despite international reopening, we will not be welcomed. Nationally, the CDC's COVID-19 Emergency Response team Morbidity and Mortality Weekly Report, presented incident analysis indicating a 7-day average decrease during stay-at-home orders. Inadequate planning, testing, and early re-openings promoted a 7-day average increase as anticipated. The common sense question we should all be asking is "Are the restrictions in my State appropriate for the rate of transmission and fatality?" If not, nurses should be conveying this to local government. It is important to be mindful major interstate travel contributes to local transmission.


**Younger Cases:** new cases in cities and states where the virus is now surging, a trend alarming public health officials prompted renewed pleas for masks and social distancing. Arizonans ages 20 to 44 represent 50% of new cases in the State. Florida median positive testing age is 35 years, up from 65 in March.

**Considerable rises:** Florida, Idaho, Kansas, Oregon, South Carolina, Arizona, and Utah, met daily new case record highs. Texas Governor Abbott paused reopening as hospitalizations in Houston ICUs hit 97% capacity. Michael Osterholm, epidemiologist calls Americas outcome one continuous "forest fire." New cases rose in over half the country, COVID-19 related hospitalizations in hit record highs in 7 states after Memorial day celebrations.

**Super-spread events become clusters:** Church attendance, funerals, weddings, choir practices, birthday parties, and bar-
hopping, are again attributed to widespread transmission. Rural Union County Oregon noted 250 cases from Lighthouse Pentecostal Church. Outbreaks at churches are reported in Alabama, Kansas and West Virginia, where Governor Jim Justice, admitted six outbreaks had been linked to churches in his state- he has no plans to close them.

TRANSMISSION
Dr. Paul Auwaerter Clinical Director of the Johns Hopkins School of Medicine Division of Infectious Diseases, “Most [healthcare workers] are familiar with the R0; the number of people a single infected person on average then goes on to infect. The average R0 of 3 for SARS-CoV-2 means that one person might infect three if not socially distancing. People who are expressive or gregarious with numerous social contacts spread far more disease. [USA R0 factor for this virus is approximately 2.5-2.7]. We have learned this through contract tracing. To touch on the K or Kappa factor- the dispersion factor for infection clusters. A lower value means the transmission comes from fewer people. Spanish influenza's was 1; lots of people infected lots of people. We estimate SARS-CoV-2 is worse than others, with 10% of people infecting 80%. Estimates are all the way up to 79% of silent shedders may account for most of the transmission, often before people even become sick. Ex: No symptoms in 37% of COVID-19 nursing home patients, research finds. Viral shedding begins up to six days before symptoms. The standard six-foot recommendation may not account for submicron particles, especially in poor air circulation- consider this and maybe give people a wider berth. Uncovered coughs or sneezes can carry droplets from 20 feet away. I believe that universal masking is our current best weapon to help limit the spread of this virus.”

Audio Interview: A Look at SARS-CoV-2 Transmission - NEJM, & Face mask requirements may have prevented 450,000 coronavirus cases - BGR

Mask Mandates
The Lancet released a paper on June 1, 2020, stating social distancing and mask wearing were critical in preventing the spread of SARS-CoV-2 virus particles. Attempting to avoid subsequent shutdown, State and local government officials are at last making face coverings compulsory. littler.com/Facing your Face mask Duties offers up-to-date state regulations. AHNA has provided chapter leaders a message that supports local governments enacting mandatory masking.

Worldwide renowned researchers in their report entitled Universal Masking is Essential in the COVID-19 Pandemic declared that wearing a surgical or homemade mask while indoors, decreased the spread of the SARS-CoV-2 virus particle by as much as 80%. This means for every ten at-risk persons, the number of people infected could drop to as few as two. This same report observed that if only half the population wore masks, it was “insufficient” to prevent severe spread and infection (we're seeing this now) and second, increasing mask use to 80% of the population
made a greater impact in reducing the spread of the virus than strict 'lockdown' measures.

Mask wearing saves 40,000 lives by October 2020 per Fatality Estimates of IHME Projections


- Staying a meter apart- probably even two meters- is best indoors. The further you are apart, the more likely you have increased protection.
- Face mask use: There is an 80%+ reduction [of incidence for infection]. Stronger with N95 masks, but even surgical masks are important.
- Eye protection [HCW] correlates with about an 80% reduction in risk. Used together, especially indoors or enclosed spaces is advantageous.

We know aerosol droplet, fomite, and asymptomatic transmission are all a component. "There are estimates that up to 79% to people who are asymptomatically infected may be contributing to transmission... public knowledge of how this virus is spread and best practices are probably insufficient," Dr. Auwaerter.

**Public Education**

The Shorenstein Center at Harvard and together with Northeastern, Northwestern, and Rutgers Universities completed a *fifty state survey,* "Trust in individuals and institutions to handle the Covid-19 Pandemic" to reveal how the public receives information during SARS-CoV-2; it noted weighty misconceptions. Frequent sources cited for information were local television, family and friends, and Facebook. Younger ages participating in social media were more susceptible to misinformation, yet in compliance with recommendations, they were receptive. Hospitals and doctors, scientists and researchers, and even the CDC were cited as 'most trusted', followed by city and state government; but these entities were reportedly sought considerably less for information!

**KNOWLEDGE REVISION**

"Belief equals actions, if people believe the news that they read is accurate, they are more likely to follow guidelines... practice hand hygiene, wearing masks, disinfecting, and doing social distancing. If they do not have that belief, they are swinging in the other direction," Auwaerter. The same is true for incredulity.
"Those who feel their beliefs are being threatened become even more entrenched in their views" Yoo Jung Kim, MD. Which beseeches, how might healthcare workers appeal to an erroneous belief system? In "motivational interviewing, I ask my patients about their biggest barriers to changing their minds or habits; this way, I know which worries or misinformation to try to address." Kim cites, Trevors G., Muis K., Pekrun R., et al. Identity and Epistemic Emotions During Knowledge Revision: A Potential Account for the Backfire Effect, Discourse Processes (2016) "guilt-tripping, fearmongering, or ridicule" are ineffective tools in persuasion. These result in defensive posturing resulting in obstinacy rather than facilitating discussion. Escalating political strife has made navigating the 'personal freedom' versus 'greater good' debate more difficult. AHNA offers several suggestions for approaching knowledge revision.

Motivational Interviewing (MI)
Nurse Coaching includes the technique of MI to inspire robust communication, educate clients within their comfort level, and develop goals with the patient. The foundational attitudes of collaboration, acceptance, compassion and evocation inspired by Carl Roger's emphasis on the healing qualities of empathic understanding and unconditional positive regard.

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MI creates a safe environment enabling the individual to feel less vulnerable, be honest with themselves, activate their strengths, and make decisions. Displaying understanding of the clients perspective (even when it conflicts with the nurses own views) conveys acceptance and lays groundwork for a partnership for change. This requires compassion and active listening.

Use reflection statements to replace questions. Acknowledge meaningfulness and authenticate emotions. The outcome is capturing the essence of the message the patient is trying to communicate. Questions lack communication of your understanding, affirmative reflections offer factual and specific qualities, and help "shine a light" on strengths, and abilities beneath the surface.

Evocation is possibly the more difficult skill to develop. Nurses must ask their inner heart how to guide this specific person so that change becomes important to them. What setbacks do they identify related to their current condition/habits? What form of encouragement does the client desire? Returning a clients' truth, provides them self-assurance and worthiness to confront and verbalize their understanding of the current situation. The patient must be the one verbalizing the reasons, needs, commitment, and steps toward changing. This inspires courage to identify the steps needed for self-driven modification. Once a need is identified, affirms and summarize the talk of change. The more one speaks a truth, the greater chance they will undergo behavior changes. Offer alternatives only after seeking permission. "May I make a suggestion?" For example, a person feeling interaction
with family is important, but not wanting to expose others to illness. A collaborative solution prioritizes what matters to them in the approach of resolving the dilemma. This encourages the client to recognize, articulate and decide what transformation might look like for them. In this case, perhaps conversing online. The motivational interviewer is "committed to affirming strengths and capabilities of the person, focusing, clarifying, and discussing priorities for change and drawing out ideas/solutions from the person rather than persuading them to change," Columbia University School of Social Work. Widespread dissemination of MI and its underlying compassionate spirit has provides a solid foundation for delivering education.

**Graphic Medicine**
Linked to a larger field known as narrative medicine, graphic medicine is the place where comics and health education meet. A source of lively discussion, it can be a thoroughfare to sharing knowledge of COVID-19. "Communicating with a narrative is particularly effective for healthcare...our brain will be more likely to absorb information, to remember it, apply it, and understand it, if it's attached to a story," Alice Jaggers. The informative uses of graphic medicine in public health education go back to the early 19th century in attempt to curb misinformation in outbreaks of tuberculosis and polio. A century later the use has expanded to communicate emotions and provide support to people during the pandemic, often with humor and relatability.

A more traditional format for patient education, is the political neutral, evidence-based living document by Qaseem A, Etxeandia-Ikobaltzeta I., Yost J., et al. **Use of N95, Surgical, and Cloth Masks to Prevent COVID-19 in Health Care and Community Settings: Living Practice Points From the American College of Physicians (Version 1)** Annals of Internal Medicine (2020). ACP reports the effectiveness of in standard precautions (hand washing, gloves, gowns) with various masks: N95, surgical, and cloth in prevention of COVID-19 in both practice settings and the community.

**Efficacy**
United States polls exhibited widespread support of stay-at-home orders and non-essential business closures Mid-May, as well as a high degree of adherence to COVID-19 mitigation guidelines. Most respondents reported that they would feel unsafe if restrictions lifted at the time of the Public Attitudes & adherence to COVID-19 mitigation survey. Barriers to care, increased rates of severity and infection contribute to higher risk in non-white individuals. African American, Hispanic, Latino or under-represented minority participants of the Harvard survey, voiced concern to access appropriate health care; groups who stated they were more likely to utilize masks, social distancing, and increased hygiene practices. "The message appears to be reaching those who need it most, but it is important for health
professionals to best practices, to wear masks out in public if we're at risk for being in closer contact, especially indoors. We have to educate our patients- especially those at higher risk- to continue a social distancing, as well as hygiene and face-mask practices,” Auwaerter.

Related: COVID-19 and Public Interest in Face Mask Use - American Journal of Respiratory and Critical Care Medicine

Reopening

The Center for Disease Control (CDC) released guidance last month for reopening offices and churches, but after filtering it left mixed messages: Offices are rigorous with desk spacing, no common seating areas, cleaning, and visual cues for marking as well as avoiding mass transit. Language for Houses of worship, however, became vague with recommendations related to spread via singing, shared cups, hymnals, and worship rugs, eliminated from the final copy. The wording conveys a mixed message that guidelines are only necessary when they fit into political constituent inclinations. The public need to be wary that SARS-CoV-2 is non-discriminatory to politics and religion; it spreads regardless of preferences or temperaments toward modifying specific aspects of life.

To imitate the success of South Korea or Taiwan will require a concert of testing and contact tracing, isolations and quarantines, universal mask wearing, hygiene, physical distancing, and education. Authorities are careful in these countries- mask-wearing is strongly enforced, all contacts are traced, all sick are isolated, and quarantines are enforced by tracking mobile phone movements.

The reopening plan contributes to 3 goals:

1. Prevent seeding: Protect safe areas from infections coming from outbreak areas. Elementary schools, middle schools, and high schools across the United States offered remote learning since spring. Evidence is required to support fall return to school decisions, such as, are mask mandates a realistic expectation for young children? Children may transmit less, however children with special health care needs "are at increased risk for a chronic physical, developmental, behavioral, or emotional conditions and require additional health and related services,” McPherson M, Arango P, Fox H, et al. A new definition of children with special health care needs. Pediatrics. 1998; 102 (1 pt 1):137-13.

An article in JAMA Pediatrics, described 48 children positive for SARS-CoV-2 were admitted to ICUs in North America. 40 of the 48 children (83%) had one or more underlying conditions. This suggests medically fragile children, those multisystem disease, or technology dependence such as tracheostomy or tube-feedings, and complex medication regimen, while a smaller cohort than their peers, are at great risk. Obesity was also a contributing factor for a majority of older pediatric COVID-19 patients. Exacerbations of respiratory illness, increased seizure activity, diabetic ketoacidosis, or sickle-cell crisis were common. In a country of over 50 million public school students, those ages 3-21 who received special education services under the Individuals with Disabilities Education Act (IDEA) was 7.1 million, or 14 percent, The Condition of Education - Students With Disabilities (2020). Many of these children fall into a 'high risk' category. Additionally, State truancy laws often threaten parents whose children are absent over 9 days in a given term; mandates
such as these must be eliminated or curtailed in support of proactively protecting high-risk students. According to CDC reports, as of June 10, twenty-one COVID-19 related deaths occurred in children 14 and younger and 116 deaths in 15-24 year olds; this data collected during social distancing precautions when many medically fragile children would be homebound and unexposed. Data from the National Center for Education Statistics shows that 37% of private school teachers, 29% of traditional public school teachers and 21% of public charter school teachers are 50 or older, also placing them in a ‘high risk’ category for severe infection. Experts suggest education re-opening beginning from a youngest child upward model with closures reoccurring as needed. Daily temperature checks, tests for educators (and ideally students), reductions in class sizes through alternating attendance could move toward shift education or days. Nurses in public education will play a significant role in reducing seeding and spread in our school systems. Planning for reopening should include additional nurse/healthcare personnel staffing.

Universities are different from primary and secondary schools. Gathering, international communities, and high-density environments of University students whom are more susceptible to viral outbreak increase seeding opportunity. The COVID-19 Planning and Self-Assessment Guide for Higher Education is a planning tool for institutions. Organized into leadership, cross-functional, and functional workgroups, it supports comprehensive planning efforts. Related: JAMA Network Learning: Opening School in the Fall

2. Prevent spreading. This is best achieved via travel restrictions, continued social gathering restrictions to include; restaurant and bar decreased capacities and outdoor dining, child care programs, and limited mass transit to lesser ‘mass’ per capacity. Should elementary education successfully reopen with reasonable case control, districts then expand to secondary schools continuing physical distancing.

3. Shelter in Place must become a Public Health initiative. Quarantine spaces are needed for afflicted persons from impoverished, multigenerational homes, and the homeless. Persons with mental illness or addiction create risk for community spread after discharge as many are difficult to isolate or locate for contact tracing.


Shortages and Solutions

Patient Volume and staff shortages have resulted in caring for 4-8 critical patients at a time, a recipe for error and unavoidable neglect. In the rush of an extraordinary event, makeshift ICUs were created in operating rooms and procedural areas and staffed by redeployed nurses with negligible critical care experience or comfort level. The Journal of the American Medical Association showed that among Covid-19 patients between the ages of 18 and 65 in New York City who were put on ventilators,
76% eventually died, Richardson S, Hirsch JS, Narasimhan M, et al. Presenting Characteristics, Comorbidities, and Outcomes Among 5700 Patients Hospitalized With COVID-19 in the New York City Area. JAMA. 2020; 323(20):2052-2059. Recognizing the extreme circumstances these healthcare workers were enduring, preparation for future outbreak should include lessons from New York and other heavily affected areas. Staffing ratios made a vital difference in a PICU repurposed for COVID19 patients and should be a consideration for future response planning.

"In our PICU, the staff is plentiful and all are trained in critical care. There are enough of us to turn our patients to prevent bedsores, give them chest physiotherapy to loosen up secretions in their lungs, suction, and titrate medication drips. The appropriate level of staffing also gives us the luxury of time. It’s impossible to know what percentage of patients in New York City during the surge died from Covid-19 and what percentage died as a result of an overburdened, short-staffed health care system- but the success rate of our small PICU offers a clue," Emily Williams PICU RN, New York-Presbyterian Morgan Stanley Children’s Hospital.

Related: Repurposing a Pediatric ICU for Adults - New England Journal of Medicine

Caring for Critically Ill Adults in a PICU: Dual Trained Intensivists - Pediatric Critical Care Medicine

Vulnerable Populations

INTELLECTUAL DISABILITIES
"People with IDD had higher prevalence of specific comorbidities associated with poorer COVID-19 outcomes. Distinct age-related differences in COVID-19 trends were present among those with IDD, with a higher concentration of COVID-19 cases at younger ages. In addition, while the overall case-fatality rate was similar for those with IDD (5.1%) and without IDD (5.4%), these rates differed by age: ages ≤17 - IDD 1.6%, without IDD <0.01%; ages 18-74 - IDD 4.5%, without IDD 2.7%; ages ≥75- IDD 21.1%, without IDD, 20.7%," Friedman, C., Social determinants of health, emergency department utilization, and people with intellectual and developmental disabilities, Disability and Health Journal, online (6/24/20).

RACIAL DISPARITIES
The Harvard Center for Population and Development Studies found similar results in terms of mortality risk among racial and ethnic minorities. The researchers found that racial and ethnic minorities (age 24-56 years) experienced 5-9 times the mortality risk as non-Hispanic White individuals, depending on age within that range.

Black or African American
Chicago- 72% of COVID-19 fatalities involved Black residents whom are 30% of the cities population. The discrepancy is notable. "It is increasingly clear that the risks of exposure, severe illness, and death from COVID-19 are far from equal in the U.S. Data from across the country clearly demonstrate the startling, disproportionate and unacceptable burdens communities of color face. Preliminary data reveal that Black
patients were six times less likely to get treatment or testing than white patients," Whitney Thurman, PhD, RN and Edtrina Moss, PhD, RN-BC, NE-BC, CLSSGB, of the Texas Nurses Association, attribute this to testing location placement—a fact discussed in depth by public and community health experts nationwide. Trump threatened to stop federal support of 13 testing stations by July 1. Several of these sites are in two of the most diverse TX areas: Harris and Houston County.

Webinar: COVID-19 Disproportionate Impact on Black Communities

Latino
34% of new nationwide cases are among Latino populations—considerably disparate to their 18% share of the population. US counties with a 25% Latino population (or greater) noted 32 percent rises in instance compared to 15 percent in others. California Latinos are 39% of their population but nearly 57 percent of the newly diagnosed. Similar results echo in Florida and Texas. North Carolina- 10 percent of the population identifies as Latino, but 46 percent of the new COVID-19 infections within the community. Infection rates have remained relatively low in affluent neighborhoods, even those occupied by Latinos. Recognize sheltering-in-place did not occur for many essential industry workers, many of them Latino, making them vulnerable to the virus.

![Graph showing outbreaks by location and percentage of Latino population](image)

Note: Counties are included in the group of roughly equal population based on the proportion of each county’s population that is Latino, according to the 2019 five-year American Community Survey. Case data is from a Texas database.

"These inequitable systems not only contribute to economic inequality but also result in greater risk for chronic stress and earlier onset of chronic illness such as diabetes or heart disease—the very conditions that place individuals at greater risk for poor COVID-19 outcomes. This is a critical point for nurses to understand: Many individuals are at higher risk for COVID-19 because of social and economic realities that have nothing to do with biological differences or personal choice," Thurman and Moss

Related Resources:

- Practice Tip of the Week: COVID-19 Shines a Light on Racial Inequalities - Texas Nurses Association
I'm an Asian American doctor on the front lines of two wars: Coronavirus and racism
COVID-19: Disproportionate Impact on Navajo Nation and Tribal Communities
Community Health Centers and Covid-19 - Time for Congress to Act - NEJM

GENDER IDENTITY/LGBTQIA+
The LGBTQIA+ community is disproportionately affected due to rising healthcare disparities. Many are secondary to higher rates of psychiatric disorders, substance abuse, and suicide however, legalities complicating LGBTQIA+ care and protections are being compromised in a ruling reversal (via Trump administration) which included sexual orientation and gender identity protections against discrimination in healthcare and from insurance companies. Though nurses are on the frontlines of advocating for change these fall backs endanger yet another population in time where the barriers of healthcare accessibility should be broken, not recreated.

Resources for nurses supporting LGBTQ+ community: an in-depth guide that breaks down definitions and terms used in addressing the LGBTQ+ community- as well as how those terms may be applied in the clinical sense. Please keep in mind this is a rough guide, the best practice to know how someone identifies is to ask.

GLBT Health Access Project (Standards of Practice Section)
Trans-Health.com
Culturally-competent-healthcare-for-LGBTQ-patients
Primer for healthcare risks in the LGBTQ+ community

NEW! We have added another Resiliency Resource for Nurse Self-Care!

Centering for Resilience
Check out our Breathwork, Beach Guided Imagery, & Forest Guided Imagery

AHNA/Resources -> RESILIENCE
AHNA’s Stress Management for Healthcare Workers
AHNA publications specific to nurses in the COVID-19 response.

Download or Print from the website for FREE.

Compassion Caravan
Listening Circles are a virtual offering and are not a replacement or substitute for medical, psychological or mental health crisis
NurseGroups.org

NursesTogether# Support Conversations are Peer-to-peer phone calls. Conversations are available around the clock offering a safe space to openly share with colleagues.

Happy App "warm line" offers 24/7 access to a trained Support Giver; Nurses have access to their first call at no cost.

MoodFit App; enter program code ANF30

Headspace - Clinical healthcare professionals

Holliblu.com - Support and Social Media exclusively for nurses! Self-care resources to use before, during, and after your shift.


Tips for Managing Stress and Self-Care American Psychiatric Nurses Association

Volunteer to facilitate Nurses Together calls: https://www.signupgenius.com/org/nursetogether#

Patient/Client Self-Care

AAAAI: COVID-19 and Asthma: What Patients Need to Know

Wysa* is an emotionally intelligent chatbot which employs research-backed, widely used techniques such as CBT, DBT, Yoga and meditation, to support users with stress, anxiety, sleep, loss and a whole range of other mental health and wellness needs.

Fabulous* takes a holistic approach to motivate users to be more productive and have higher energy. The app is more than just a habit tracker, or a way to create new rituals - it's a personal coach and happiness trainer.

eQuoo* is an evidence-based Emotional Fitness Game, combining the excitement and joy of gaming and the expertise of mental health professionals to provide a new form of mobile prevention and therapy for young adults 18-28-years old

my mhealth* is the leading supplier of self-management and rehabilitation apps and platforms in the UK for patients with COPD, Asthma, Diabetes and Heart Disease. These patient apps interact with a condition specific clinical interface, enabling efficient, population level remote models of care.
myDiabetes* (my mhealth) provides 24-hour self-management, education and expert advice to patients with type 1 and type 2 diabetes. The app allows users to monitor their blood glucose, HbA1C, and other risk factors, to reduce the risk of serious long-term complications. myDiabetes also brings users closer to their clinician, enhancing and enabling efficient care remotely.

MySugr* is a diabetes logbook which auto-logs data, and allows users to collect daily therapy data such as meals, diet, meds, blood glucose, insulin, carbs and more. The app brings together a blood sugar tracker, carb logger, bolus calculator (EU only) and users’ estimated HbA1c.

Tips for Managing Stress and Self-Care American Psychiatric Nurses Association

- **CBT-i Coach** teaches users about sleep, let's them track their sleep and take a sleep assessment, then guides them through the process of developing positive sleep routines.
- **Mindfulness Coach** provides tools to help users practice mindfulness meditation.
- **Mood Coach** for depression provides positive activity scheduling based on the principles of behavioral activation treatment for depression.
- **Moving Forward** teaches problem-solving skills, which can be used alone or in conjunction with problem-solving training.
- **PTSD Coach** provides information about PTSD and options for professional care, a self-assessment, opportunities to find support, and tools - all designed to help Veterans manage the stresses of daily life with PTSD.
- **PTSD Family Coach** is similar to the PTSD Coach, but it adds guidance for those whose family roles have changed since the onset of PTSD, including tips and information for self-care and for maintaining relationships, as well as ideas for helping a loved one get treatment.

Not an AHNA member? [Learn more.](#)