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

Clinical Updates

Coronavirus Disease 2019 (COVID-19) Overview

Expert PubMed Searches for COVID-19 Research Articles

ASYMPTOMATIC/PRE-SYMPTOMATIC TRANSMISSION Initial estimates of asymptomatic transmission were too slight. Asymptomatic/Pre-symptomatic spread is about 55% and theorized to contribute to the spread of the virus tenfold. Traditional respiratory droplet/fomite guidelines were for particles larger than SARS-CoV-2; human droplets range from 0.1 to 1000 μm; size, inertia, gravity, and evaporation determine distance emitted droplets and aerosols will travel. Additionally, respiratory droplet size influences disease severity. For example, influenza aerosols below 1 μm (submicron), lead to more severe infection, Tellier, R., Li, Y., Cowling, B.J. et al. Recognition of aerosol transmission of infectious agents: a commentary. BMC Infect Dis 19, 101 (2019); SARS-CoV-2 submicron aerosols are even smaller; inhalation moves them rapidly to lodge in the pharynx and alveoli bypassing physical immune responses and replicating three times faster than SARS. Shedding occurs before innate immunity is activated, Chu H, Chan JF, Wang Y, et al. Comparative replication and immune activation profiles of SARS-CoV-2 and SARS-CoV in human lungs: an ex vivo study with implications for the pathogenesis of COVID-19, Clin Infect Dis. 2020. These factors combined allow COVID-19 to transmit through asymptomatic individuals breathing and speaking normally. S. Asadi, N. Bouvier, A. S. Waxler, W. D. Ristenpart, Aerosol Sci. Technol. 54, 635 (2020). Investigating the amount of exposure needed for inoculation is tricky. COVID-19 behaves differently from other viruses; with the flu and H.I.V, high levels of pathogens usually correspond with more-severe symptoms and likelihood of infecting others. In COVID-19, asymptomatic persons carry viral loads as high as those who are seriously ill. Thorax, describes findings from the epidemiological investigation of a COVID-19 outbreak onboard a cruise to Antarctica. Among 217 total passengers and crew, 128 (59%) tested positive for SARS-CoV-2 infection, but only 24 (19%) were symptomatic-81% were asymptomatic. Among the symptomatic individuals, 66% were mildly ill and 33% required medical evacuation due to severity; 4 required mechanical
ventilation. "Aerosols can accumulate, remain infectious in indoor air for hours, and be easily inhaled deep into the lungs. For society to resume, measures designed to reduce aerosol transmission must be implemented, including universal masking and regular, widespread testing to identify and isolate infected asymptomatic individuals" per writers Prather A., Wang C., Schooley R., Reducing transmission of SARS-CoV-2, Science 27 May 2020.

SYMPTOM UPDATES

GASTROINTESTINAL
A systematic review and meta-analysis of 23 published and 6 preprint studies found approximately 12% of patients with SARS-CoV-2 infection reported diarrhea, nausea, and vomiting. Liver enzyme levels outside reference ranges were observed in 15%-20% of patients, and SARS-CoV-2 RNA shedding detected in 41% of patient stool specimens.


NEUROLOGICAL

- 36.4% of cases in a JAMA Neurology publication expressed neurological symptoms to include dizziness or headaches, severe infection raised instance to 45%.

DERMATOLOGICAL

Rashes A Spanish research study published in the British Journal of Dermatology noted 6% of 375 COVID-19 cases involved necrosis, or livedo, generally found in older patients with increased severity of illness.

Postinflammatory hypopigmentation and desquamation may follow as rashes resolve. Other rashes described by the dermatologists included: Blistered pruritic rash on the abdomen or back, arms, legs or feet as an early symptom noted primarily in middle-aged patients. Hive-like small, slightly elevated reddish or white patch hives appeared over the body or on the palms; average duration of 7 days and associated with amplified severity (19%). Maculopapular rash consisting of small reddish bumps on a flat, reddish patch of skin; intermittently pruritic. Averaging 9 days this rash was most common occurring in 47% and associated with more severe cases.

Skin Sensitivity was reported 6 times as frequently as other symptoms by surveyed individuals in a recent report from genetic testing manufacturer, Helix.com. The company included genetic profiling in their report to improve accuracy identify and predict distribution and case prevalence across specific demographics. These results are preliminary and clinicians should interpret with consideration certain socioeconomic indicators are not accounted for. Onlyage and exposure showed statistically significant differences. High-exposure defined as healthcare and essential workers, people living with essential workers, and people with specific exposure events such as being in the same room as someone with a COVID-19 diagnosis.
BLOOD TYPE
A preliminary study by the genetic testing company 23andMe found individuals with O blood type were 9-18% percent less likely to test positive for COVID-19. Comparing the research participants who reported that they tested positive for COVID-19 to those who tested negative, a variant in the ABO gene was associated with a lower risk. The single nucleotide polymorphism in the ABO gene is rs505922, a T at that location is associated with lower risk. The P-value for the association is 1.4e-8, OR = 0.88. This research is pending peer review.

European scientists across 5 major cities documented a strong statistical link between genetic variations and Covid-19 using genotyping from 1,610 patients requiring oxygen or mechanical ventilation. Nine million DNA letters were evaluated, then the same genetic survey was completed on 2,205 blood donors with no evidence of COVID-19. Researchers surveyed for spots in the genome, called loci, where an unusually high number of the severely ill patients shared the same variants (compared with healthy subjects). Two loci results were constructive:

- Type A blood was linked to a 50 percent increase in the likelihood that a patient would require oxygen or mechanical ventilation. The loci directing production of a protein to determine blood cell surface molecules- where the blood-type gene is positioned- includes DNA which regulates a gene that produces the protein triggering strong immune responses- this variation may contribute to cytokine storm.
- Chromosome 3 contained a 2nd locus with six genes. Two may contribute to COVID-19 illness severity; one encodes a protein known to cooperate with ACE2 and a second determines a strong immune signaling molecule.

Genetic variants in ACE2 did not appear to make a difference in risk of severity or fatality. Though the research is awaiting peer review, one researcher noted it is uncommon to find any cohesive genetic variants within a small sample size; an indication of how significant this research might be. The Covid-19 Host Genetics Initiative unites thousands of researchers in 46 countries collecting DNA samples and data from SARS-CoV-2 patients.

ALTITUDE High altitude populations may be less susceptible to developing severe symptoms of COVID-19 according to Respiratory Physiology & Neurobiology. Epidemiological data was studied from the Tibetan region of China; Bolívia, where a third of its territory extended at high-altitude; and Ecuador, a country deeply affected by the pandemic, in which half of the population lives at high-altitude areas. The first analysis Lhasa, located at an elevation of 3,500 meters above sea level (MASL) of 67 patients with COVID-19 revealed 54 percent asymptomatic and less than 10 percent of the patients presented fever. Ten percent progressed in severity 29 percent of all the patients were potential high-risk due to predisposition with chronic respiratory or cardiovascular disease. Only 10% escalated in severity and all fully recovered. The second analysis of La Paz Bolívia at 2,400 to 4,150 MASL noted a mere 54 cases in Bolivian high-altitude provinces. Real-time geographic data of the COVID-19 pandemic combined with a digital elevation model illustrates the distribution of global positive COVID-19 cases in relation to altitude. Results clearly indicate a decrease of prevalence and impact of SARS-CoV-2 infection in populations living at altitude of above 3,000 MASL; this could be environmental or a physiological adaptation to hypo-oxygenation.

SMOKING: Scientists from Cold Spring Harbor Laboratory (CSHL) found that smoking increases the gene expression of ACE2-the protein that binds SARS-CoV-2. This evidence suggests prolonged smoking causes increase of the ACE2 protein in the
lungs and explains the higher fatality rate in smokers. "Our results provide a clue as to why smokers who develop COVID-19 tend to have poor clinical outcomes," senior author Jason Sheltzer, PhD. Developmental Cell, Cigarette smoke exposure and inflammatory signaling increase the expression of the SARS-CoV-2 receptor ACE2 in the respiratory tract.

**DURATION:** A typical layperson believes SARS-CoV-2 infects a minority of people; the elderly and those with pre-existing health conditions. Most afflicted individuals are mild or asymptomatic and recover over 14 days, yet thousands of patients claim they have on-going symptoms from 1-3 months. "Long-termers" or "long-haulers" are becoming more prevalent as voices of experience speak up; most are young and previously healthy. Pandemic discourse of a second wave frustrates long-haulers who are still grappling with the consequences, "it has been like nothing else on Earth," Paul Garner, a professor at the Liverpool School of Tropical Medicine, leads Cochrane Infectious Diseases reviewing scientific evidence in prevention and infection treatment. Garner has a history of dengue fever and malaria and is currently on day 77 of COVID-19. To preserve [kits] for health-care workers, and believing his case would be fatal, Garner waited to test. The British Medical Journal published an editorial he wrote regarding his long-term symptoms and experience. Garner is not alone but evidence to support chronic symptoms of COVID-19 is still limited to anecdotal surveys such as 640 people from the Body Politic study. Though not peer reviewed, these collections provide valuable insight to recovery expectations for SARS-Cov-2. Data is limited however, as many experienced symptoms prior to test availability; only 25% have tested positive for COVID-19 and 50% never tested.

- 3/5 are ages 30-49. 38 % visited the ED (not admitted). 56% never hospitalized

**Long-term symptom complaints:** brain fog or concentration challenges, coughs or fevers, delirium, short-term memory loss, skin sensitivity, dyspnea despite normal oxygenation, or idioopathic angina.

Akiko Iwasaki, an immunologist at Yale, offers possibility of virus harboring in some reservoir organ which increases likelihood a PCR test will not be decisive, or persistent fragments of viral genes triggering additional immune overreaction, or the immune system remains in a hyperactive state despite viral resolution. Similar symptoms are reported in myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) and complex regional pain syndrome. Clusters of both syndromes have occurred after infectious outbreaks accounting for post-viral fatigue. Hickie J, Davenport T, Wakefield D et al. Post-infective and chronic fatigue syndromes precipitated by viral and non-viral pathogens: prospective cohort study. BMJ. 2006;333(7568):575 Evidence of this has been observed internationally; in Australia 11% of those recovering from Ross River virus, Epstein-Barr, or Coxiella burnetii the bacterium of Q-fever were diagnosed with ME/CFS after six months. Two hundred thirty-three survivors of SARS, 2003 in Hong Kong reassessed regularly documented 40 percent with chronic-fatigue problems three years post-infection: 27% met CDC criteria for ME/CFS. Many acute pathogens trigger the inflammatory responses culminating in a chronic disorder and post-exertional malaise—the defining feature of ME/CFS is common. Severe systemic inflammation follows activity- even lightly stressful exertion. The results are painfully distinct from exhaustion. Clinicians advise resting as much as possible in early months of post-viral fatigue, as crucial. The Open Medicine Foundation, of California, announced a study monitoring the course of SARS-CoV-2 disease and its sequelae to ascertain if conversion to ME / CFS occurs and to study the molecular transformation. Radiological changes reflect lung tissue scarring may contribute to extensive weakness, and feasibly higher numbers of long-term disability. The important take-away for clinicians and nurses is to be aware the extent of recovery is unestablished; do not dismiss a 'recovered' patient complaint due to lack of findings. Additional resource: https://www.nextgov.com/cio-briefing/2020/06/covid-19-can-last-several-months/165961/
Cochrane review (1285 participants). All included contained overall high risk of bias, whilst two trials had a low risk of bias for all domains except blinding of participants and personnel. Meta-analysis indicated harm from higher fraction of inspired oxygen or targets as compared with lower fraction or targets of arterial oxygenation regarding mortality close to three months (risk ratio (RR) 1.18, 95% confidence interval (CI) 1.01 to 1.37; I² = 0%; 4 trials; 1135 participants; very low-certainty evidence). Harm from targeted, or higher fraction of inspired oxygen compared with lower fraction or targets of arterial oxygenation, regarded serious adverse events closest to three months (estimated highest proportion of specific serious adverse events in each trial RR 1.13, 95% CI 1.04 to 1.23; I² = 0%; 1234 participants; 6 trials; very low-certainty evidence). These yielded very low-certainty evidence. **Results indicated oxygen supplementation with higher versus lower fractions, or oxygenation targets, may increase mortality.**


**COMPLICATIONS** - Thirty day mortality and pulmonary complication rates in patients with perioperative SARS-CoV-2 infection were evaluated to determine COVID-19 impact on postoperative recovery. The impact of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) on postoperative recovery needs to be understood to inform clinical decision-making. Research investigated 1128 patients in 235 hospital across 24 countries, measured mortality, pneumonia, ARDS, or unexpected postoperative ventilation. 835 surgeries were emergent, 280 were elective. Pulmonary complications occurred in 51%; 30-day mortality in these patients was 38% and accounted for 219 of 268 deaths, and was associated with male sex (odds ratio 1·75 [95% CI 1·28-2·40], p<0.0001. Postoperative pulmonary complications occur in half of patients with perioperative SARS-CoV-2 infection and are associated with high mortality. Thresholds for surgery during the COVID-19 pandemic should be increased—particularly in men aged 70 years and older. Postponement of non-urgent procedures and promoting non-operative options was recommended. COVIDSurg Collaborative, Mortality and Pulmonary Complications in Patients Undergoing Surgery with Perioperative SARS-CoV-2 Infection: an International Cohort Study: The Lancet, 5/29/2020.

**LUNG TRANSPLANT**: A COVID-19 survivor received the first reported lung transplant for treatment of disease complications. The patient was a previously healthy young female with severe lung damage, secondary bacterial infection, and the onset of MODS. The surgeon, Dr. Ankit Bharat, reported inflammation and lung damage nearly fused the lung tissue to the patient's chest wall. A decent long-term prognosis is expected.

**STROKE** - COVID-19 pandemic has broad implications on stroke patient triage. Emergency medical services providers have to ensure timely transfer of patients while minimizing the risk of infectious exposure for themselves, their co-workers, and other patients. This statement paper provides a conceptual framework for acute stroke patient triage and transfer during the COVID-19 pandemic and similar healthcare emergencies.
Cardiac injury and myocarditis are not uncommon complications in adults diagnosed with COVID-19. Children initially exhibited minimal symptoms— if any—this remains true, however, the research related to cardiac complications in the pediatric population is mounting internationally. Children have a positive COVID-19 result typically within a month of an onset of acute cardiac decompensation. The complication diagnoses is severe Multisystem Inflammatory Syndrome in Children (MIS-C).

58 pediatric patients evaluated from 8 hospitals in Great Britain; a subset of whom required intensive care, were treated for pediatric inflammatory multisystem syndrome temporally associated with severe acute respiratory syndrome coronavirus 2 (PIMS-TS). 45 of 58 patients (78%) had evidence of current or prior SARS-CoV-2 infection. Patients were febrile, with systemic inflammation and organ dysfunction. All exhibited nonspecific symptoms; abdominal pain 53%, rash 52%, conjunctival injection 45%, and 58% complained of diarrhea. 29 developed shock with evidence of myocardial dysfunction requiring inotropic support or fluid resuscitation with 23 necessitating mechanical ventilation. 13 met diagnostic criteria for Kawasaki disease- 8 developing notable coronary artery dilatation or aneurysms. Comparison of PIMS-TS with KD / KD Shock Syndrome showed differences in clinical and laboratory features including; older age median of 9 years (5.7-14) versus 2.7-3.8 in KD. Greater elevation of CRP: 229 mg/L [IQR, 156-338] vs 67mg/L mean, ferritin 610 μg/L [IQR, 359-1280] assessed in 53 of 58. This comparison suggests the disorder differs from KD / KD Shock Syndrome. Whittaker E, Bamford A, Kenny J, et al. Clinical Characteristics of 58 Children With a Pediatric Inflammatory Multisystem Syndrome Temporally Associated With SARS-CoV-2. JAMA. Published online June 08, 2020.

Circulation, the publication of the American Heart Association, circulated an article, Acute heart failure in multisystem inflammatory syndrome in children (MIS-C) in the context of global SARS-CoV-2 pandemic, in May resulting from research over 14 pediatric ICU's through France and Switzerland. The outcomes are similar in a median admission age of 10 (2-16 years). Documentation did note co-morbidities present in 28% of cases reporting asthma and childhood obesity. Left ventricular ejection fraction was under 30% in a third of children, 80% required inotropic support and 28% treated with ECMO. Left ventricular function restored in 25/35, none died, and all treated with ECMO successfully weaned. Physicians reported Immune globulin appeared associated with recovery of left ventricular systolic function.
The National Institutes of Health initiated research to evaluate antivirals and anti-inflammatory medications prescribed to treat pediatric COVID-19 patients in the United States. The study will assess dosage, metabolism and other properties not yet determined in children. Forty sites, located in neighborhoods of economic and racial disparity, opted to participate in the NICHD-funded Pediatric Trials Network. "As we search for safe and effective therapies for COVID-19, we want to make sure that we do not overlook the needs of our youngest patients who may respond differently to these drugs, compared to adults," said Diana W. Bianchi, M.D., director of NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD). The study is not a clinical trial; healthcare providers will enroll patients in the Pharmacokinetics of Understudied Drugs Administered to Children Per Standard of Care with parental consent. Treatments will be 'added' or 'subtracted' to the list based upon success as there is no control group. Examination of drug metabolism will be obtained via venipuncture and provider report of ADRs, patient outcomes, duration of treatments / mechanical ventilation needs and acute care admissions. The goal is not medication efficacy but drug safety and dosage evaluation. "The study also aims to analyze drug dosage and safety for special populations, including premature infants, critically ill children, children with Down syndrome and obese children and is part of NICHD's Best Pharmaceuticals for Children Act (BPCA) research program, which investigates insufficiently tested drugs and therapies commonly prescribed to them. Data from BPCA studies are available to researchers through NICHD's Data and Specimen Hub (DASH)."

PREGNANCY & INFANTS:

Expert recommendations now state confirmed or suspected COVID-19 post-partum mothers should stay in different hospital rooms than their newborns to minimize the risk of transmission, Rasmussen SA, Jamieson DJ. Caring for Women Who Are Planning a Pregnancy, Pregnant, or Postpartum During the COVID-19 Pandemic. JAMA. June 5, 2020. Thus far, pregnant women with COVID-19 do not appear to be at increased risk for severe disease compared with the general population but a small Swedish study reported that pregnant and postpartum women with COVID-19 were 5 times more likely to be admitted to an intensive care unit compared with non-pregnant women of similar age. "Symptomatic newborns born to mothers with COVID-19 have been reported to have SARS-CoV-2 infection at a few days of life; whether this was due to prenatal, perinatal, or postnatal transmission is unknown. The presence of IgM and IgG antibodies in 3 infants born to mothers with COVID-19 during pregnancy is reported. IgG antibodies freely cross the placenta; however, IgM antibodies do not typically cross the placenta, suggesting the possibility of prenatal transmission of SARS-CoV-2."

New recommendations from Society for Maternal-Fetal Medicine (SMFM) and Society for Obstetric Anesthesia and Perinatology (SOAP) and others:

- Newborns born to mothers with confirmed COVID-19 at the time of delivery should be considered to have suspected COVID-19 and be isolated from healthy newborns (AAP, ACOG). Consider separate obstetric units / designated clinician teams for SARS-CoV-2 positive patients. Weigh benefits / risks of magnesium sulfate for fetal neuroprotection, preeclampsia/intrapartum seizure prophylaxis, due to potential maternal respiratory depression (SMFM, SOAP). Consider adjusting antenatal corticosteroid use for fetal maturation, given the risk of worsening patient outcomes with corticosteroid use in patients with COVID-19 (eg, offer antenatal steroids for patients <34 weeks' gestation, weigh risks and benefits and individualize decisions for ≥34 weeks' gestation) (ACOG, SMFM, SOAP). Consider early epidural analgesia. Place a mask on the patient and isolate in a single-person room with the door closed. (airborne isolation only if aerosolizing procedures)
- Do not alter delivery timing or mode but it may be reasonable to attempt to postpone delivery to decrease risk of neonatal transmission (ACOG). Consider temporary separation of mothers with confirmed COVID-19 from their newborns on a case-by-case basis, using shared decision-making (ACOG, CDC). If
temporary separation is chosen, breastfeeding mothers should practice hand and breast hygiene, and express their milk. Expressed milk can be fed to the newborn by a healthy caregiver (ACOG, AAP, CDC, SMFM, SOAP). If not opting for separation, the mother should use physical barriers and face masks (AAP, CDC). Mothers who choose to feed at the breast should wear a face mask and practice hand and breast hygiene before each feeding (AAP, ACOG, CDC, SMFM, SOAP).

- Related: COVID-19 review of national clinical practice guidelines for key questions relating to the care of pregnant women and their babies. Cochrane Pregnancy and Childbirth have identified, collated and summarized national clinical practice guideline recommendations that address important questions. This can help pregnant women see quickly what other countries are recommending for key clinical questions and help inform their decisions.

### Treatment Research

**Monoclonal Antibodies:** Pharmaceutical manufacturer Eli Lilly commenced early stage human trials of a monoclonal antibody therapeutic in 32 currently hospitalized SARS-CoV-2 patients. The Phase 1 clinical trial of LY-CoV555, a treatment created from antibodies derived from US COVID-19 survivors. Expect results in late June. A larger trial, testing efficacy and safety in non-hospitalized patients will be authorized if successful.

- After months of recommendations, a nationwide sero-survey is proposed by the CDC to collect data from 325,000 people in 25 metropolitan areas. The program begins in July.

**Acalabrutinib:** a RCT is scheduled after a small 19 patient off-label study suggested the hemo-oncology drug was associated with a reduction in signs of cytokine storm, and, reduced respiratory distress by blocking Bruton tyrosine kinase (BTK) protein. Findings published June 5, 2020, in *Science Immunology* by the Center for Cancer Research at the National Cancer Institute (NCI), in collaboration with the National Institute of Allergy and Infectious Diseases (NIAID), Walter Reed National Military Medical Center and four other hospitals nationally.

**Cannabis:** Inhibition of viral receptor-mediated entry into cells via the angiotensin-converting enzyme II (ACE2) expressed in lung tissue, oral/ nasal mucosa, kidney, testes, and the gastrointestinal tract may be plausible. Cannabis sativa specifically high in the anti-inflammatory cannabinoid cannabidiol (CBD) is a proposed modulator of gene expression and inflammation, harboring anti-cancer and anti-inflammatory properties. A Health Canada research licensed team developed over 800 new Cannabis sativa lines and extracts and, hypothesizing high-CBD C. might modulate ACE2 expression, devised the phrase "Gateway Tissue" to describe those containing ACE2 receptors. Wang, B.; Kovalchuk, A.; Li, D.; Ilnytskyy, Y.; Kovalchuk, I.; Kovalchuk, O. In Search of Preventative Strategies: Novel Anti-Inflammatory High-CBD Cannabis Sativa Extracts Modulate ACE2 Expression in COVID-19 Gateway Tissues (preprint) 202004.0315

The team utilized C. Sativa extracts and artificial human 3D models of oral, airway, and intestinal tissues to identify 13 extracts which modulated ACE2 gene expression and protein levels. Initial data suggested several extracts down-regulate serine protease TMPRSS2, another critical protein required for SARS-CoV2 entry into host cells. Further large-scale validation is needed on medical cannabis effect to COVID-19 as this treatment could be a safe addition or an adjunct therapy. The team cited targeted development of prophylactic mouthwash for both clinical and home use and its potential to decrease viral entry via oral mucosa. The current Cannabis status as a federally illegal substance prevents this research from taking place in the United States, and, eligibility of federal grant or COVID19 research funding. In a pandemic situation, ideally every therapeutic opportunity and avenue should be eligible for consideration.
Vaccine Development: Phase 3 Testing plan is finalized for Moderna's COVID-19 Vaccine candidate per Time Magazine. The late-stage trial of 30,000 participants is scheduled for July 2020. Currently the Milken Institute cites there are nearly fifty SARS-CoV-2 vaccines in development worldwide. The NY Times created a tracker to follow the status of those that reach human trials as well as some promising ones still being tested in cells or animals. When surveyed by NORC Center for Public Affairs 49% of respondents intend to vaccinate when available. The same poll, 31% were undecided, and 20% were unquestionably against it.

Regeneron Begins Clinical Trial for Potential COVID-19 Treatment. Regeneron Pharmaceuticals initiated the first clinical trial of REGN-COV2, an antibody cocktail for the prevention and treatment of COVID-19. The REGN-COV2 clinical program will consist of four separate study populations, including hospitalized COVID-19 patients, non-hospitalized symptomatic COVID-19 patients, uninfected people that are high-risk, and uninfected people with close exposure to a COVID-19 patient. (Homeland Preparedness News, 6/15/20)

Mutation: Dr. Maria Van Kerkhove, WHO technical lead, reports genomic analysis has not yielded genetic changes to the SARS-CoV-2 virus'. Currently this suggests no increased transmissibility or disease severity. Fatigue among the public (from prolonged travel restriction and social distancing) and leadership complacency resulting in return to pre-COVID conditions, are more likely contributing to increased transmission.

Global Situation Report

June 16, 2020 at 0930 am CST
8,075,962 confirmed cases
437,939 fatalities
188 countries & regions

New Zealand's Prime Minister announced that New Zealand has eliminated COVID-19 after 17 days with no new cases and the discharge of the last active patient. New Zealand subsequently transitioned to Alert Level 1, lifting nearly all restrictions except strict border controls and mandatory 14-day quarantine for arriving travelers. The Unite for Recovery stage focus' on economic recovery while maintaining vigilance and enhanced hygiene.

Brazil: Favelas are the poorest and most overpopulated portions of the country; the neighborhoods have elected 400 new "street presidents" responsible for helping neighbors secure food, aid and health care. Brazil's president, in a style similar to the United States' President Trump; dismisses infectious disease expert leadership, vows not to provide funding to the World Health Organization (WHO) and denies need for isolation policies.

South Africa lifted its ban on alcohol sales. The deeply unpopular measure has been theorized as connected with a drop in murders and traffic accidents in the country.

Beijing has set about testing hundreds of thousands of people for the coronavirus in an exhaustive effort to stamp out a new eruption of cases reported over the weekend. Monday Chinese authorities mobilized almost 100,000 community workers to test everyone who has worked in or visited the Xinfadi market in the southwest of Beijing.
Researchers in South America fear breakthroughs from abroad will be too slow or inequitably shared to benefit them, are making a back up plan. **Latin American Scientists Join the Coronavirus Race** "No One's Coming to Rescue Us", published in *Nature*, details their goals to capitalize on national knowledge and establish scientific independence from overseas pharmaceutical companies. Chile's health minister, who advocated a limited-lockdown policy that the government later abandoned, resigned Saturday as daily coronavirus deaths reached a record high.

**United States of America**

*The New York Times, ProPublica, Johns Hopkins University*, and others continue to track state- and local-level COVID-19 incidence in a variety of forms. States began to relax social distancing measures-including resuming operations at restaurants, retail stores, and barbershops/salons-at the end of April/early May. Notably, *New York City* and *Las Vegas* are expanding business and social activities. The changes in Las Vegas, raised concern of transmission risk for individuals crowding into casinos with questionable social distancing and many not wearing face masks. *Arizona, California,* and *Texas* increased spread significantly.

Others of note: *Alabama, Alaska, Florida, North Carolina, South Carolina,* and *Vermont* exhibited increased COVID-19 incidence and hospitalizations after resuming social interaction, mass gatherings, and large-scale protests against racial injustice. These could potentially contribute to community transmission. Multiple outbreaks in different locations-including congregate settings such as nursing homes, meat packing facilities, and prisons or jails-are contributing substantially to these totals.

*Michigan* lifted its stay-at-home order allowing groups up to 100 people to gather outdoors while social distancing. Restaurants will open provided tables are six feet apart.
Despite the continuing outbreaks in Mississippi, Gov. Tate Reeves announced that all businesses could reopen and travel restrictions had been lifted.

HURRICANE SEASON
The 2020 Atlantic hurricane season predicts frequent and powerful storms. Coastal states planning for hurricanes are accounting for COVID-19 related concerns in public safety calculations and policies. States such as Florida, popular among elders with high degrees of respiratory illness, supplementary nurses are seasonally necessary; these may be required in greater numbers due to patient and severity influx.

Non-Pharmacological Interventions

MASK WEARING
A Beijing research publication, Wang Y, Tian H, Zhang L, et al. Reduction of secondary transmission of SARS-CoV-2 in households by face mask use, disinfection and social distancing: a cohort study in Beijing, China. BMJ Global Health (2020) reported mask use by COVID-19 positive individuals, and those within the household, highly effective at preventing secondary transmission prior to the onset of symptoms—a reasonable conclusion supporting recent mask related policies. New York Governor Andrew Cuomo issued an executive order stating that businesses have the right to refuse entry to anyone not wearing a mask. The state of Virginia has also mandated mask wearing in public.

Hand-Sewn Mask Advisory
The World Health Organization (WHO) endorses masks created with a minimum of 3 layers of different materials: an inner layer of absorbent cotton, a middle layer of non-woven material (polypropylene), and an outer layer of non-absorbent material such as polyester. Simple cloth masks are recognized as protection for others; additional layers provide smaller particle filtration.

PUBLIC EDUCATION
SARS-CoV-2 is a microscopic particle: 10,000 times smaller than a millimeter, barely one-thousandth the width of a human hair, narrower than the wavelength of light from a germicidal lamp. The genome is over twice the size of the influenza virus and about one-half larger than Ebola.

If a human were the size of Earth, the virus would be the size of a person. The human lung cell would be as a cramped as an office just big enough for a desk, a chair and a copy machine: SARS-CoV-2 is an oily envelope stuck to the door. To view a comprehensive microscopic visual of SARS-CoV-
WHO Director-General Dr. Tedros Adhanom Ghebreyesus emphasized that mask use alone does not protect against SARS-CoV-2 infection and masks should be included in a "comprehensive strategy" of protective measures. Results from the meta-analysis, Physical distancing, face masks, and eye protection to prevent transmission of SARS CoV-2: a systematic review [E1], published June 01, 2020 in The Lancet, noted reduced transmission from NPIs. Data for SARS-CoV-2 and the beta-coronaviruses causing SARS, and MERS were evaluated from 21 standard WHO-specific and COVID-19-specific sources with no restriction by language, for comparative studies and for contextual factors of acceptability, feasibility, resource use, and equity. Frequentist and Bayesian meta-analyses and random-effects meta-regressions were included. Evidence was weighted according to Cochrane methods and the GRADE approach. The study was registered with PROSPERO, CRD42020177047. "The distance from a patient that the virus is infective, and the optimum person-to-person physical distance, is uncertain. For the currently foreseeable future prevention will continue to rely on NPIs including pandemic mitigation in community settings." Quantitative assessment of physical distancing is relevant to recommendations. Cheng V, Wong S-C, Chen J et al Escalating infection control response to the rapidly evolving epidemiology of the coronavirus disease 2019 (COVID-19) due to SARS-CoV-2 in Hong Kong. Infect Control Hosp Epidemiol. 2020; 41: 493-498. Masks and social distancing improved control of SARS-CoV-2 and findings supported single-layer cloth masks were less effective than surgical masks; N95 masks provided the best protection. Handwashing and disinfection were also important. Audio interview with authors: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31142-9/fulltext#coronavirus-linkback-header. Evidence showed policies of at least 1 m physical distancing were likely effective in a high percentage of transmission reduction.

SOCIAL DISTANCING
Data used from 1,717 (NPI) non-pharmaceutical based interventions across 5 countries evaluated the impact of large scale policies (including social distancing) on economies and epidemic spread. HsiangS., Allen D., Annan-Phan S., The effect of large-scale anti-contagion policies on the COVID-19 pandemic. Nature (6/2020) concluded that the interventions may have prevented 62 million SARS-CoV-2 cases globally; the equivalent of 530 million infections; including approximately 4.8 million in the United States. A second article focused on interventions in Europe through May 4, 2020, when some countries began to relax national social distancing measures. Considering serological data, researchers evaluated the effects of social distancing policies on transmission and mortality: non-pharmaceutical interventions, including national "lockdowns," could have averted approximately 3.1 million COVID-19 deaths across 11 European countries.

WORKSPACES (CDC)
Daily temperature and symptom checks should be requested. Desks should be six feet apart, or, consider erecting plastic shields around workspaces. Seating should be barred in common-areas, and face coverings worn at all times. Increased ventilation or open windows are suggested to decrease viral particle concentration. Instead of public transit or car-pooling, workers should drive alone. Guidelines recommend companies offer reimbursement for parking or single-occupancy rides or continue work from home arrangements. Cyclic schedules (short working weeks) are becoming more commonly accepted. Karin O, Bar-On YM, Milo T, Katzir I, Mayo A, Korem Y, et al. Adaptive cyclic exit strategies from lockdown to suppress COVID-19 and allow economic activity. Problem areas: social distancing in elevators.
Crowded airplanes are a source of anxiety in the pandemic. Though all contain filtration systems, those avoiding all risk should wait to fly again. To reduce transmission risk: account for the infection rates in both departure and arrival cities (metro listings here) and acquire how full flight is. Change flights if necessary; often red-eye flights have fewer passengers. Wear a mask on the plane and in the airport, and, to minimize your time in the enclosure do not board early. Keep the overhead air nozzle turned on. A new itineraries column by Jane L. Levere, and biologist Erin Bromage message provide hints. The CDC has also provided decision making resources: Deciding to Go Out & Considerations for Events and Gatherings

SUPER-SPREADING
Bars, Karaoke and Gyms Aid Superspread
(Nature) Clusters of coronavirus infections are often linked to largely populated events. Hitoshi Oshitani at Tohoku University in Sendai, Japan, and his colleagues analyzed clusters of five infected people (minimum) attending the same event or venue. Investigation of 61 'superspreading' incidents occurred in hospitals, nursing homes and other care facilities, but a little more than half took place at venues such as musical events, restaurants and workplaces.

CONTACT TRACING
The tracing in the United States of America are disjointed but in progress.

CanShake- Instead of the Hand-shake, the CanShake app encourages users to shake their cellphones at each other as a greeting transmitting contact information. Privacy concerns and absence of national policy in the United States have made this step of mitigation and containment delay 'reopen'. Traditional method of contact tracing is time consuming and labor-intensive of 90 minutes for each case; 60 minutes to interview a positive individual and 30 minutes contacting possible exposure candidates. In other countries, geolocation data collection has been effective but used without permission.

Safe Paths- The MIT Media Lab produced a concept that could use Bluetooth or geolocation technology without compromise of individual liberties by running with owner permission. The app creates and stores movement history. When an individual tests positive, their history is downloaded to a database where others may privately run checks to see if their own movements have intersected with the anonymous positive testing person. The Department of Health and Human Services, Harvard University and the Mayo Clinic are providing input in the MIT development. Google and Apple also have a partnership underway developing software. Alabama, North Dakota and South Dakota are the only 3 states known to have reported current contact tracing apps in progress.

GENOMICS
Findings from the Proceedings of the National Academy of Sciences could be a crucial step in approaches to predict, by genome analysis alone, the severity of future outbreaks, and detection of animal coronaviruses that have zoonotic potential. NLM Director Patricia Flatley Brennan, R.N., Ph.D. "Predictions made through this analysis can inform possible targets for diagnostics and interventions." A team of researchers from the National Library of Medicine (NLM), part of the National Institutes of Health, identified genomic features of SARS-CoV-2 and other high-fatality coronaviruses that distinguish them from other coronaviruses'. 6/11/2020

Genomics will provide a resource to identify and track infectious outbreaks as lockdowns are easing. Studies already show that outbreaks tend to be shorter and smaller when genomics is used to help contact tracing. Stevens, E. et al. Front. Microbiol. 8, 808 (2017). For example, genomic research of influenza has pinpointed lockdowns and social-distancing measures aimed at slowing the spread of
coronavirus have shortened the influenza season in the northern hemisphere by about six weeks. Global genomic surveillance will be important when international travel resumes, however an unfortunate limitation of genomic analysis based contact tracing is expense; it has thus far been restricted to high-income countries. In the case of SARS-CoV-2 it will be only one method of tracing; asymptomatic individuals are unlikely independently seek testing. [https://www.nature.com/articles/d41586-020-01573-5](https://www.nature.com/articles/d41586-020-01573-5)

### Reopening Strategy


The goal was a simple feasible plan for the greatest number of citizens to return to work (while maintaining social distancing) but without overwhelming the health-services. Easy to interpret results would allow for replication in other countries. The article published in Frontiers in Public Health explores how and when lockdowns should be lifted for non-essential workers and compared the 'on-off' strategy (releasing everyone until infection rates become high, then reinstituting lockdown) to gradual reopening options.

The worst-case scenario of a gradual release was more manageable than worst-cases of threshold release on-off strategy. The research equation set was based on a standard Susceptible, Exposed, Infected, Recovered (SEIR) model framework, Hethcote HW. The mathematics of infectious diseases. SIAM Rev. (2000) 42:599-653. Each has a modeled population, and as time evolves, people move through each class toward recovery (or death). This study divided equations into two groups; a non-quarantined group, and during the full lockdown, the essential workers required to maintain health provision services. The second group are those quarantined. "SEIR-based equations are solved for non-quarantine and quarantine groups, connected by modeled release strategies from lockdown. That allows fractions of the quarantined group to move into the non-quarantined group at different times. For each potential strategy of movement between them an objective function is calculated-some metric describing the desirability of such a strategy. This is high when many people are removed from quarantine, as they are available to work-a desirable outcome... the main distinction between the non-quarantine and quarantine groups is that, in the latter, lockdown causes a much lower rate of virus transmission." Politicians and lay persons use the expression of "flattening the curve," to explain why lockdown is essential to avoid overwhelming health services. Mathematical simulations alter curve predictions and inform the debate of future lockdown release possibilities. The ideal release strategy included:
Releasing half a population 2-4 weeks from the end of an initial infection peak, then wait another 3-4 months allowing a second peak before releasing the remaining population; population-wide instantaneous release caused the number of infected individuals to rise dramatically and quickly.

- Release safety is not influenced highly by incubation, COVID-19 death rate, or lockdown efficacy.

- Transmission and recovery rate are the most critical to determining release safety guidelines- or the fraction of infected people in any given day that then are classified as recovered. The accurate identification of these values is extremely important to ongoing policy. This requires follow up testing- difficult in a society with limited guidelines or testing occurring to begin with.

- Any easing of lockdown measures requires constant monitoring and high-percentage population testing, though a gradual release strategy slows the subsequent infection peaks. Anticipate a second peak 1-2 months later; the remaining population should remain in quarantine until several weeks daily low infection rates are celebrated.

- "In all considered instances it may not be possible to end lockdown for the entire population for any longer than 2 weeks; the number of infected individuals rises quickly overwhelming health services." While it is desirable to return the population to work as early as possible, optimal calculation states a 1-2 week "wait" period is crucial to ensure infection remains as low as possible. After this sufficient, cautious, wait period release should occur with the knowledge 1% may require critical care in future months Ferguson N, Laydon D, Nedjati Gilani G, Imai N, Ainslie K, Baguelin M, et al. Report 9: Impact of Non-pharmaceutical Interventions (NPIs) to Reduce COVID-19 Mortality and Healthcare Demand. London, UK: Imperial College (2020).


A more cautious gradual release remains preferable as the development of a viable vaccine is undetermined. Analysis does not as yet differentiate by age who should be in any partial lockdown release stage, the younger population could be the first to ease subsequent strain on the health system, and potentially further bolster a herd-immunity effect. Differential release times based on age. Scala A, Flori A, Spelta A, Brugnoli E, Cinelli M, Quattrociocchi W, et al. Time, Space and Social Interactions: Exit Mechanisms for the Covid-19 Epidemics (2020). Available online at: http://arxiv.org/abs/2004.04608. It is important to ensure government and relevant health services are given enough time prepare between release phases.

### Shortages and Solutions

#### SUPPLY TACTICS

Market failure witnessed in the global scramble for personal protective equipment (PPE), ventilators, tests, and sanitizer requires tactical decisions and distribution. "Auctioning scare resources is unethical- hospitals cannot and should not pay exorbitant prices for life-saving equipment," Borrow Crisis Tactics to Get COVID-19 Supplies to Where They are Needed (Nature). This should include medications and vaccines identified to treat COVID-19 as well. Utilizing emergency response guidebooks devised by the military, electric companies, and a "clearing house and
currency tools” could encourage exchange without gouging prices. Roth, A. E. Econometrica 70, 1341-1376 (2002). The clearing house “should provide dynamic estimates of medical-equipment needs, plans for distributing supplies, and establish a broad medical currency for use during emergencies. Ideally multiple participating governments would sponsor a medical supplies marketplace to operate freely in normal times but shift to an emergency pricing system seamlessly during a crisis. Finally, wealthier countries should strive for a distribution of life-saving supplies fairly and effective globally. National health agencies should design and implement a platform for coordinating the distribution of medical supplies during shortage both between and within nations.” Peter Cramton, Axel Ockenfels, Alvin E. Roth & Robert B. Wilson

VENTILATORS
DOD Targets Increased Ventilator, Respirator Production. Hollingsworth & Vose has secured a $2.2 million Department of Defense contract to increase domestic ventilator and respirator production. The effort involves producing 27.5 million N95 filters, and 3.1 million N95 respirators per monthly, beginning in August. The endeavor is in support of the US Department of Health and Human Services (HHS). (Homeland Preparedness News, 6/5/20)

BLOOD
Several months of social distancing and collection drive cancellations have led in fewer people donating blood. Supply and demand fell in tandem as most surgeries were canceled and far fewer people were injured in traumas and accidents. Reopening measures are raising concerns of pending critical shortages, Staggering Drop in Blood Supplies (NYT).

RESPIRATOR REUSE/FIT FAILURE
A study at the University of California, San Francisco (US) assessed mask integrity after repeat use of respirators. Published in JAMA, it evaluated the fit integrity of both dome-shaped and duckbill-shaped N95. The higher failure rate (70.6%) of duckbill-shaped respirators was significant compared to dome-shaped respirators (27.5%). Failure rate increased related to use frequency in dome-shaped masks. No results were reported for any association between the number of uses and failure in duckbill-shaped respirators. The study included 68 participants-51 using dome-shaped respirators and 17 using duckbill. and additional study is required to better characterize risk differences between specific manufacturers. The equipment needed to clean and reuse various types of personal protective equipment (PPE), including respirators is not widely available, and these items are not designed for reuse, so it is critical to understand the limitations on multiple uses, including any potential increased risk of exposure during subsequent uses.

The FDA issues emergency use authorizations revising decontamination recommendations, and, identifying masks which are deemed ‘unsafe’ for reuse. National Institute for Occupational Safety and Health (NIOSH) testing which authorized respirators manufactured in China, may vary in their design and performance. In addition, relevant EUA no longer authorize decontamination or reuse of respirators that have exhalation valves. According to CDC’s recommendations, decontaminated respirators should only be used when new FDA-cleared N95 respirators, NIOSH-approved N95 respirators, or other FDA authorized respirators are not available. The decontamination systems are only authorized to decontaminate non-cellulose compatible N95 respirators. (FDA 6/7/20)


ELASTOMERICS have practical challenges, like fitting and cleaning and have failed to catch on largely because of their industrial look and general reluctance to consider alternatives to previously cheap and plentiful N95’s. The NY Times reported Yale hospital administrators bought 1,200 of the reusable silicone elastomeric respirators for HCW. Elastomerics are designed to be cleaned and reused for years and are certified to protect as well as N95’s. Researchers in 2019 simulating a pandemic

TESTING

- SUPPLIES  Portsmouth Naval Shipyard in Kittery, Maine, and the US Army Medical Materiel Development Activity at Fort Detrick, Maryland, finalized a memorandum of agreement to support the production and delivery of 3D-printed nasopharyngeal test swabs needed to support diagnostic testing for COVID-19. (Global Biodefense, 6/3/20)

- MACHINES  A shortage of testing machines capable of processing hundreds of specimens at a time is the next barrier in test capacity. Manufacturers Hologic, Roche, and Abbott Laboratories cite inability to produce machines quickly enough to meet demand. This is critical to expanding testing capacity and surveillance in order to relax social distancing policies.

- HOME KITS  The FDA devised a template to submit with At-Home Sample Collection kits to facilitate the EUA process. (FDA, 5/29/20)

- ACCURACY  Addressing inaccuracy of diagnostic tests should be the next priority according to the Geisel School of Medicine at Dartmouth. Several large studies reveal kit errors and frequent false-negative results. New England Journal of Medicine Researchers note factors limiting current diagnostic capabilities as variability in sensitivity and a lack of standard process to test for accuracy.

Vulnerable Populations

MIGRANT WORKERS
U.S. Immigration and Customs Enforcement announced Wednesday that it has expanded COVID-19 testing for those in detention facilities following criticism (Associated Press)

LOW WAGE WORKERS
A Testing Blitz by Unidos en Salud coalition (hundreds of university, hospital, and community volunteers) conducted the largest test study in the nation, discovering low-wage workers were the most afflicted with COVID-19 in the San Francisco area. The four-day blitz swabbed and collected serology samples from 4,160 adults and children- including over half the residents of 16 square blocks of Census Tract 229.01, the Mission District. This is one of the city's most densely populated and heavily Latin neighborhoods.

OBESITY
Research study: the pandemic is having a significant impact on patients with obesity, regardless of infection status. Survey results may help clinicians devise effective strategies to minimize negative outcomes for this vulnerable population now and during recovery efforts.

HIV
Vulnerability to COVID-19 is complicated by factors of systematic racism, poor insurance coverage, food insecurity, and unstable housing for patients with HIV.

PROTESTS and pepper-spray are a deadly combination. August Nimtz Jr. joined protests in Minneapolis, "I'm a 77-year-old African-American male. I've gotta be concerned about catching COVID-19, but at the same time there is the importance of coming out into the streets. We had to do this. If we don't do it the cops will get away with it again."
Protestors and security professionals alike experienced anxiety related to risk of exposure in the crowds. Time Magazine interviewed National Guard members who were deployed in Washington DC, individuals from both sides of the line have tested positive. This week ends the anticipated time frame of probable ‘superspreading’ related to initial protests. For those attending protests, there are recommendations to reduce risk including: Wear a mask if not, at least a face covering. Use a ‘noise maker’ rather than yelling or singing to reduce deep inhalation. Avoid risk of exposure to tear gas/pepper spray: increased deep breathing, secretions, coughing, sneezing and mucous drainage are obvious agents for transmission. Attempt to place 6 feet between yourself and mass groups. Hydrate well and use sanitizing spray.

MENTAL HEALTH
The numbers of Americans suffering from mental health disorders like anxiety and depression have more than tripled during the COVID-19 pandemic, according to a new survey from the Johns Hopkins Bloomberg School of Public Health. McGinty EE, Presskreischer R, Han H, Barry CL. Psychological Distress and Loneliness Reported by US Adults in 2018 and April 2020. JAMA.

NURSE LEADERSHIP
According to Harvard Business Review crisis leaders have four defining qualities which make them effective: decision making speed over precision, bold adaptability, reliability despite environment, and deep engagement. During crisis function "daily changes are necessary to keep staff and patients safe. We [leadership] must analyze the data and make decisions quickly yet purposefully. When leaders are transparent, the why behind their decisions and the necessary changes are more easily understood by staff." -AACN

Moments of crisis tell you a great deal about the inner drive of staff members; informal leaders often arise from below titled roles. Though emergency departments historically have functioned in a team capacity, the dynamics of this often-cut-throat environment can be foreign to nurses from other specialties. With repurposing and 'floating' prevalent to support staffing COVID-19 has created an environment where leadership and team building are not an extravagance, but essential. Those who were once experts in one area are now a novice in another. Flexibility and humility must be blended in with resolve of 'best care' in what is inconsistently a 'best practice' environment.

Identify who stepped forward, who struggled, and why in both instances. Asking these questions facilitates changes to create an environment of safety, empowerment, involvement, and nurse satisfaction. Assessing team structure is crucial to leadership in an era where team-nursing has become a necessity.

The pandemic will bring system wide changes- and it should -in order to create a strategy for better outcomes in the future. Unit Managers and administrators should be evaluating where unexpected leadership emerged; in what role did they shine? How can this leadership be sustained in a redefined system? What system level interventions can be made to strengthen weakness’ and decrease stress during future crisis? "Ask yourself whom you want at the table both during the crisis, and, in the longed-for tomorrow when we emerge." It is wise to begin these evaluations now as many of us will be redefined by the events we have endured; the post-COVID nurse is a new creature.
NURSE WELL-BEING  
SKIN DAMAGE PREVENTION: Preventing Facial Pressure Injury in HCW: evidence based protocol from Advances in Skin & Wound Care

LOST ON THE FRONTLINE: Many hospitals are overwhelmed, and some workers continue to lack protective equipment or suffer from underlying health conditions that make them vulnerable to the highly infectious virus- their cases are shrouded in secrecy. "Lost on the Frontline" is a collaboration between The Guardian and Kaiser Health News that aims to document the lives of health care workers in the U.S. who die of COVID-19, and to understand why so many are falling victim to the pandemic.

Resources

Self-Care Resources

Virtual "Compassionate Listening Circles" for RNs
The Compassion Caravan, a national project led by holistic nurses, and hosted and facilitated by American Holistic Nurses Association (AHNA) Chapters for all of nursing, is offering Compassionate Listening Circles for nurses and healthcare providers. The intent of these circles is to offer a Compassionate Heart-Center places for nurses and other healthcare workers to be heard, to offer connection, to be fully present for others and to embrace common humanity. Click on the "Contact" link in the www.compassioncaravan.com website to get more information and a ZOOM invite. Summer 2020 Schedule:

- Saturdays 12 noon EDST (5/30-July 25),
- Sundays 8:30 pm EDT (5/31-8/30),
- Wednesdays 6:30 pm EDT (5/27-8/26)
- Thursdays 6:30 EDT (5/28-6/4)

Rest, Work, Survive
Sleep better, work better, survive this pandemic An online program to help rest after your shift or gear up for your coming shift Free for all healthcare employees! Learn effective tools in short multimedia programs (average length 6 mins). Available at your convenience Enroll for free at www.LymanCenter.com/courses

American Nurses Foundation Launches National Well-being Initiative for Nurses
In response to the growing burden of stress and moral distress on the nation's nurses as they valiantly care for patients on the frontlines of the pandemic, the American Nurses Foundation announced the launch of the national Well-being Initiative designed specifically for nurses Combating Healthcare Provider Burn Out in Clinical Settings: WED JUNE 17 from 1-2:30pm CDT Webinar.

Course: Cultivating Our Best Selves in Response to COVID-19 CNE activity: 1.0 contact hour by the Emory Nursing Professional Development Center

Tips for Survivors of a Disaster or Traumatic Event: What to Expect in Your Personal, Family, Work, and Financial Life
Having Trouble Coping After a Disaster? Talk With Us. Disaster Distress Helpline Wallet Card.

Storytelling Project with DearWorld.org

Psychological First Aid: Guide for Field Workers

Managing Fatigue During Times of Crisis: Guidance for Nurses, Managers, and Other Healthcare Workers

Moral Resilience Rounds

Well-Being Hub for Travel Nurses during the COVID-19 crisis

Practice Resources

Tips for Survivors: Coping with Grief After a Disaster or Traumatic Event

Disaster Distress Helpline (brochure)

Notifying Families After a COVID-19 Death

Coping with COVID-19 for Caregivers - Monitoring Survey

Managers and Business Resources:

Validated Instruments to Assess Clinician Wellbeing

Webinars: Rising Up Above the Crisis As a Resilient Healthcare Leader

Emergency responder health monitoring and surveillance

Helping Staff Manage Stress When Returning to Work

Identifying Substance Misuse in the Responder Community

Supporting Families of Healthcare Workers Exposed to COVID-19

Coronavirus Preparedness & Response: Critical Elements for Business Planning

COVID-19 Clinician Resources

Resilience in Stressful Times and Connecting During Times of Trauma

Caring for the Healthcare Workforce Steps Forward module

System-Wide Well-Being Staff Resources During COVID-19

Creating Wellness in a Pandemic: A Practical Toolkit for Health Systems Responding to COVID-19

Understanding and Addressing Sources of Anxiety Among Health Care Professionals During the COVID-19 Pandemic

ANNA is offering continuing nursing education (CNE), free to both nephrology and non-nephrology nurses. Four online bundles are available and address the following areas: Acute Kidney Injury, Continuous Renal Replacement Therapy, Hemodialysis, & Peritoneal Dialysis. Each bundle includes multiple educational programs and free contact hours and can be accessed at annanurse.org/freekidneyCE.