Confronting COVID-19:

Insights for Real Estate Leaders

Urban Land Institute

Urban Land Institute

URBAN LAND INSTITUTE

Provide leadership in the responsible use of land and in creating and sustaining thriving communities worldwide

BUILDING HEALTHY PLACES

Leveraging the power of ULI's global networks to shape projects and places in ways that improve the health of people and communities

Convenings | Research | Best Practices | Education

ULI Goals

Help ULI members:

- Understand the role they can play in mitigating the spread of the disease
- Cope with impacts of the coronavirus and associated short and long term disruptions
- Play a role in addressing adverse impacts on vulnerable people

www.uli.org/covid19

Speakers

Rachel MacCleery

Senior Vice President

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~ Moderator ~

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2019 NOVEL CORONAVIRUS

Catherine Troisi, PhD

UTHealth School of Public Health

American Public Health Association Executive Board

24 March 2020

WHAT WE KNOW

- Person to person spread through droplets, fomites, maybe aerosol?
- Sx are similar to flu but ~10% have no symptoms, some have GI sx
- Disease occurs up to 14 days after exposure with average time of 5 days
- People can shed virus early in the infection and after symptoms subside
- About 14%-20% of infections are severe
- About 2% of those infected die – range between 0.5% and 3.5%; Elderly, morbidly obese, those with other medical conditions at higher risk of dying – but young people also at risk

WHAT WE'RE NOT SURE ABOUT – BUT WISH WE DID

- What is role of presymptomatic, asymptomatic, postsymptomatic infections in transmission?
- When a person is most infectious?
- How long virus can remain in environment – preliminary reports of up to 2-3 days
- Will virus disappear when warmer weather occurs? And if so, will it return next fall?
- How long do we need to physically distance to flatten the curve?
- What is best clinical treatment

WORLDWIDE SITUATION AS OF 23 MARCH 2020

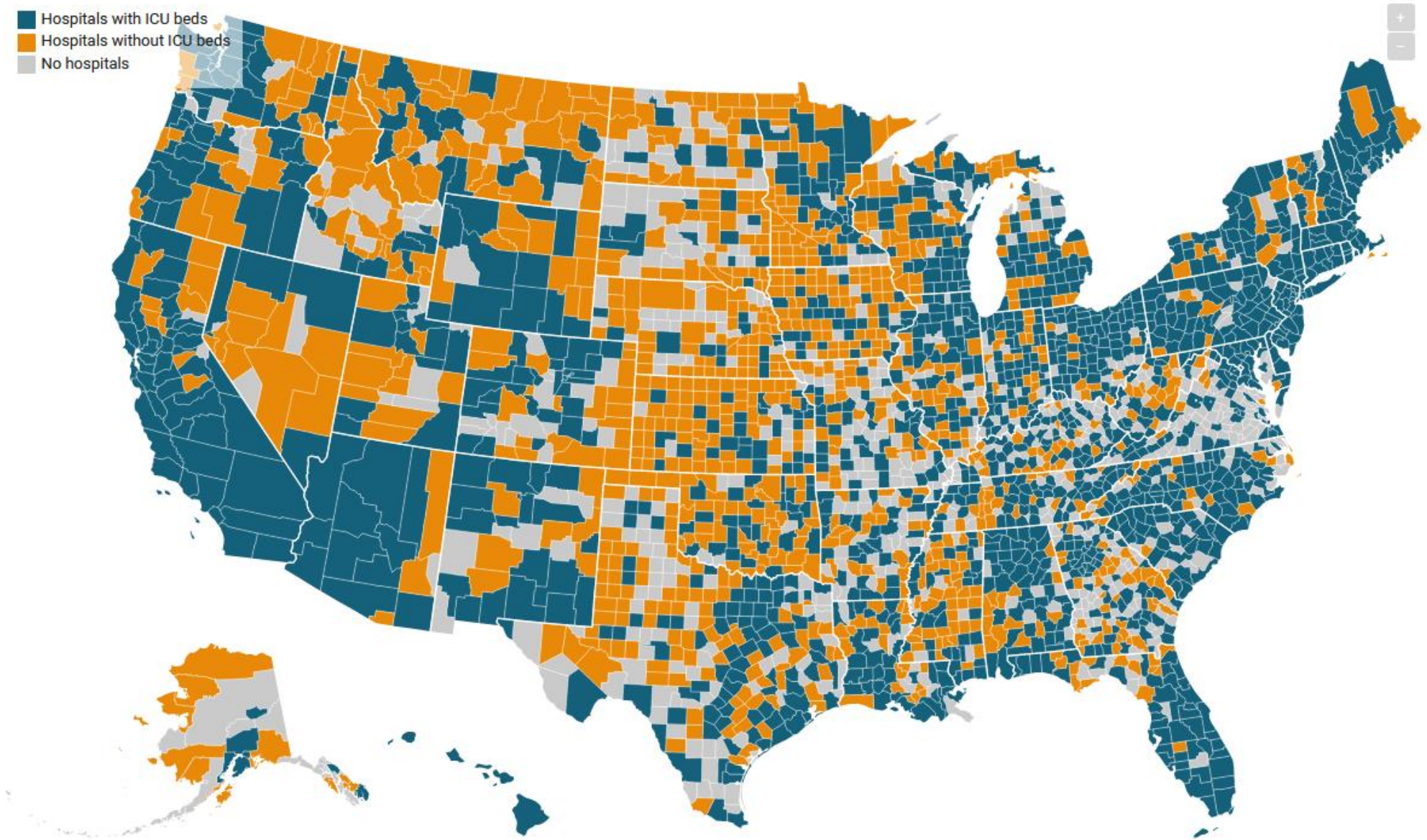
- >385,500 confirmed infections – 79% outside mainland China
- >16,500 deaths
- Cases reported in 169 other countries
- Took 3 months to 1st 100K cases, 12 days to next 100K, 24 hrs to next 100K
- Pandemic, infodemic, and feardemic

US SITUATION AS OF 23 MARCH 2020

- 44,000 cases with rapid increase despite limited testing; 520 deaths
- Cases in all 50 states, DC, Puerto Rico, VI,
- Shortage of :
  - Testing kits and supplies
  - PPE for healthcare workers and first responders
  - Medical beds/ventilators and other equipment
- Seeing increase in ICU admissions
- May be 8-10 days behind Italy

Where The ICU Beds Are

More than half of counties have no hospital ICU beds, a growing concern as the novel coronavirus spreads throughout the nation. This map shows counties with no hospitals, counties with hospitals but no ICU beds, and counties that do have ICU beds.



Map by Lydia Zuraw/Kaiser Health News

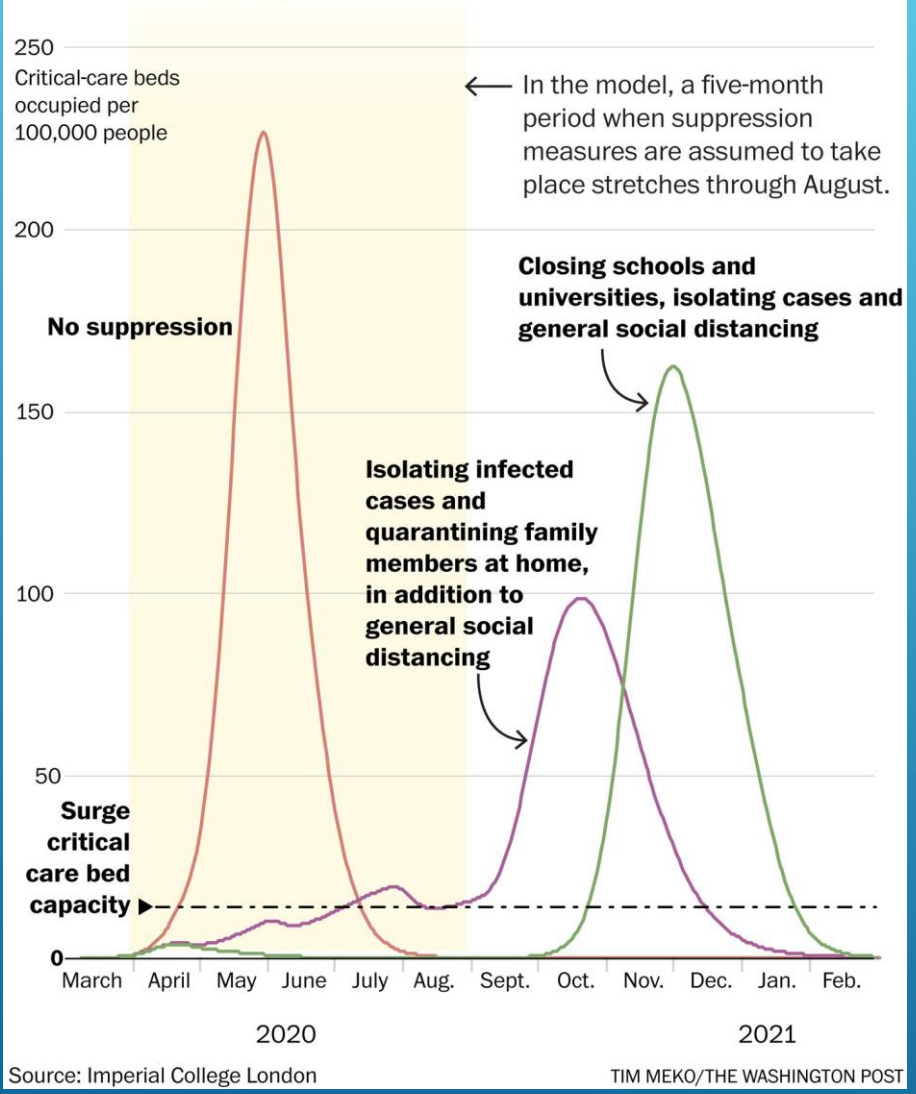
Source: Kaiser Health News analysis of hospital cost reports filed to the Centers for Medicare & Medicaid Services • Get the data • Created with Datawrapper

WHAT'S GOING TO HAPPEN?

- Hard to predict
  - Wave has not crested
  - What happens in fall?
  - May eventually become endemic like other respiratory viruses (colds, flu)
- Social (physical) distancing implemented to flatten the curve
  - How long will this be needed? Different models
  - Will depend on compliance, how long social distancing lasts, characteristics of the virus
- Is business or health the priority? Difficult decisions needed
- We're in this together

Suppression scenarios

Models from researchers at Imperial College London suggest that wide adoption of measures to reduce the transmission of the novel coronavirus can reduce the demand for critical health-care services, in part by spreading the demand over a longer period. The major challenge is that those measures will need to be maintained until a vaccine becomes available, or transmission will quickly rebound.



Source: Imperial College London

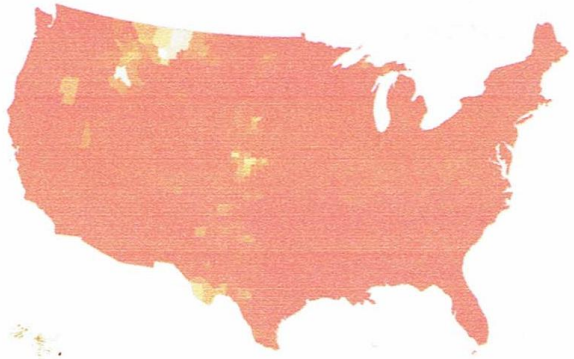
TIM MEKO/THE WASHINGTON POST

WASHINGTON POST, 3/19/2020

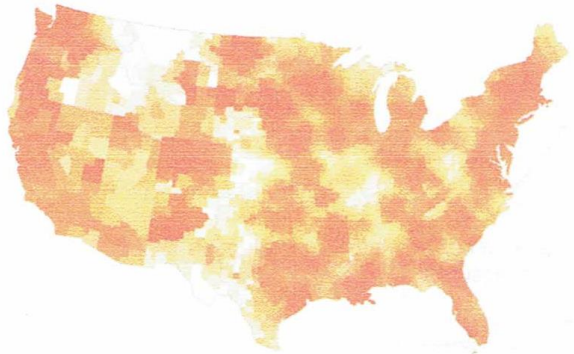
Three scenarios for how the outbreak could spread.

Percent infected by **July 1**

25 50 75%



No control measures



Some control measures

Severe control measures

NYT 3/21/20

HOW BAD WILL IT GET?

- How contagious is the virus?
- How deadly is the virus?
- Are people infectious before/without symptoms?
- How much have infected persons traveled?
- How effective is our response?
- How long to develop vaccine?

MEASURES SCIENTISTS WORKING ON

- New diagnostics
- Vaccine
- Antivirals

HOW TO REDUCE YOUR (AND OTHER PEOPLE'S) RISK

- Don't panic
- Wash your hands with soap and water (20 seconds or two 'Happy Birthdays'); moisturize
- If soap/water not available, use alcohol-based hand sanitizer
- Clean and disinfect frequently touched objects and surfaces
- Cover your cough/sneeze – either crook of elbow or use tissue and dispose of in lidded receptible
- Don't touch your face, nose, eyes
- Stay healthy – adequate sleep, good nutrition, exercise, reduce stress

HOW TO REDUCE YOUR (AND OTHER PEOPLE'S) RISK, CON'T

- Stay home if you're sick
- Stay away from sick people
- Mask – evidence isn't there, may do more harm than good
- Get a flu shot every year; pneumonia vaccine if ≥65 years old
- Travel only if necessary
- Ready.gov/kit
- Support public health

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PLACE MATTERS:

PREVENTION AND PREPAREDNESS, RESILIENCE AND RECOVERY

IWBI & THE NOVEL CORONAVIRUS (COVID-19)

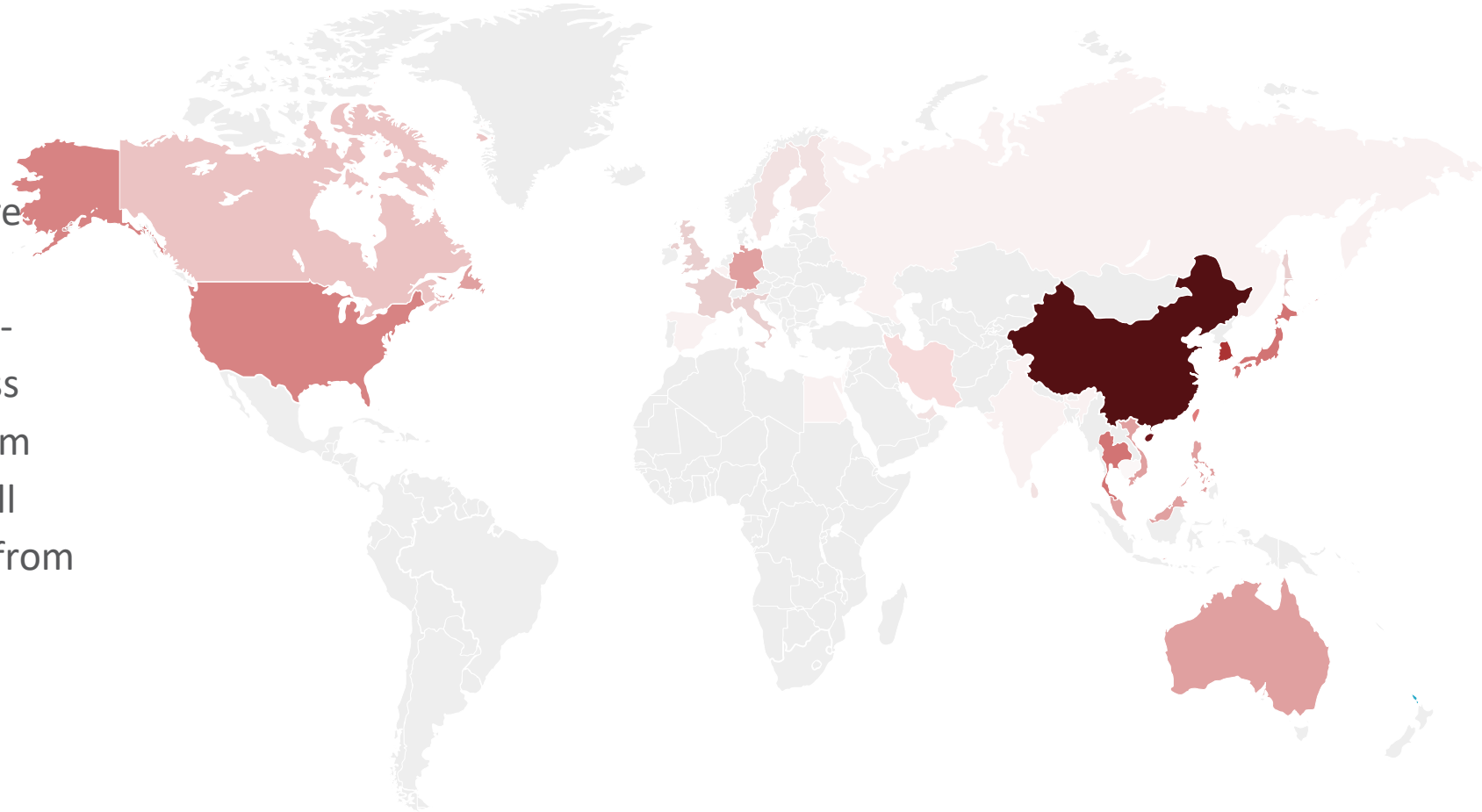
WHITNEY AUSTIN GRAY, PHD, LEED AP, WELL AP
INTERNATIONAL WELL BUILDING INSTITUTE

“As part of an international team of experts that live and work in China at the International WELL Building Institute, each day, we work to create places that support health, but never has that mission been so important than our current situation calls for. My team was thrown at the epicenter of the outbreak starting on January 23, 2020, and yet, we were also called to respond to the rising volume of inquiries from the marketplace, especially from our WELL users, as to how our spaces can be part of our care-giving team in the fight against viruses. We rallied with our WELL community and responded in a sense of preparedness and resilience. I’m thrilled to witness such a strong affirmation from the marketplace that the health component has undeniably become the front and center position in buildings and communities.”

Xue Ya, President of IWBI Asia

THE COVID-19 PANDEMIC:
SPREAD AND FREQUENCY

Given the pace of recent global outbreaks of disease, some researchers say we can expect more pandemics in years to come, particularly given increased animal-human interaction from habitat loss and changing weather patterns from climate change.[4,5] This means it's all the more important that we learn from the current conditions and work toward for a more resilient future.



Data taken from the WHO Coronavirus disease 2019 (COVID-19) Situation Report – 34; numbers as of 25h February 2020

1.Neuer, Rachel. (2020). To prevent the next Coronavirus, stop the wildlife trade. https://www.nytimes.com/2020/03/04/opinion/coronavirus-buildings.html
2.Robbins, Jim. (2020). The Ecology of Disease. https://www.nytimes.com/2012/07/15/sunday-review/the-ecology-of-disease.htmlL

PLACES MATTER

Our homes, communities & locations are closely tied to our current experience.

- **LOCATION:** some research has shown that latitude and climate can influence vulnerability to COVID-19.[1]
- **BUILDINGS:** We spend approximately 90% of our time indoors.[2]
- **QUARANTINE:** Working from home highlights how well our spaces are working for our daily lives.

1.Sajadi et al. (2020). Temperature, Humidity and Latitude Analysis to Predict Potential Spread and Seasonality of COVID-19. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3550308
2.Environmental Protection Agency: The Inside Story: A guide to Indoor Air Quality. https://www.epa.gov/indoor-air-quality-iaq/inside-story-guide-indoor-air-quality

"[…Buildings]… If managed poorly, they can spread disease. But if we get it right, we can enlist our schools, offices and homes in this fight."

Joseph Allen, DSc, MPH

Co-Chair, IWBI Special Task Force on Coronavirus
Assistant Professor of Exposure, Assessment Science,
Department of Environmental Health,
Harvard T.H. Chan School of Public Health

Opinion

Your Building Can Make You Sick or Keep You Well

Proper ventilation, filtration and humidity reduce the spread of pathogens like the new coronavirus.

By Joseph G. Allen
Dr. Allen is director of the Healthy Buildings program at Harvard T.H. Chan School of Public Health.

March 4, 2020

EvergreenHealth medical center in Kirkland, Wash., where two patients have died of the Covid-19 disease.
Grant Hindsley for The New York Times

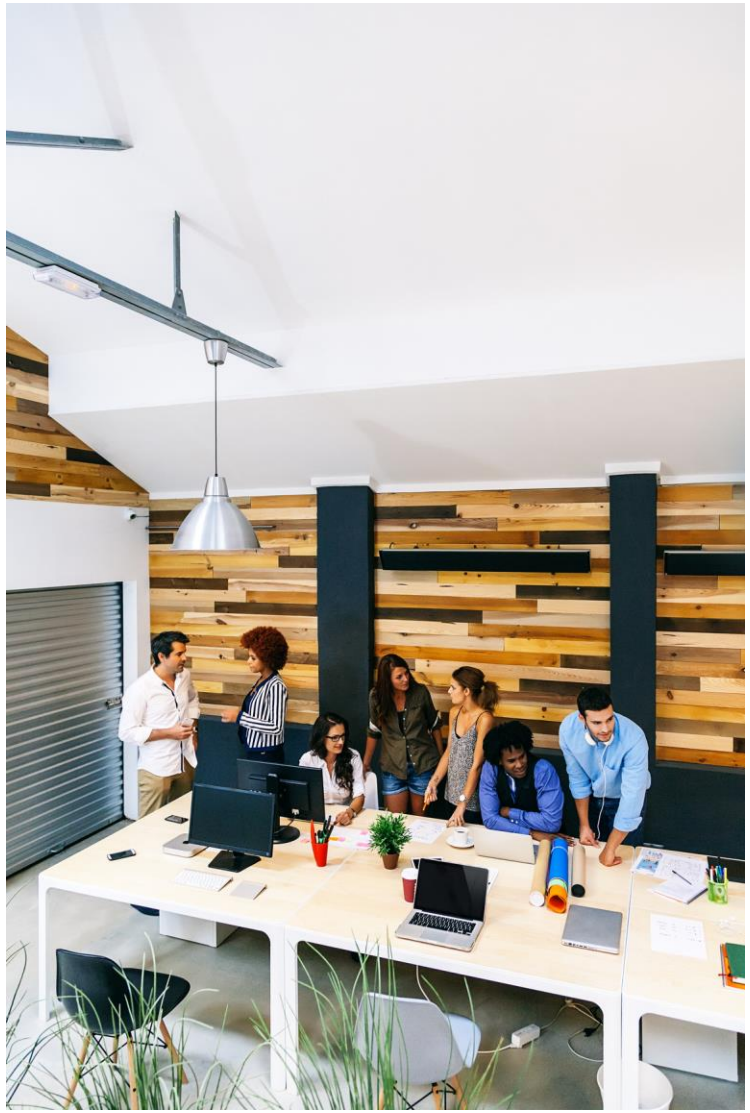
WELL AS A TOOL FOR PUBLIC HEALTH

Implementing WELL features enables us to apply buildings as a tool to help advance public health - and allows people to better protect themselves in indoor environments. While implementation of WELL features cannot prevent a pandemic, it can help reduce the risk of spreading infectious disease.

OVERVIEW OF **WELL**

THIRD PARTY VERIFICATION

A REASON TO TRUST YOUR BUILDING



INFORMATION IS EMPOWERMENT.

IWBI SPECIAL TASK FORCE ON CORONAVIRUS

CHAIRS OF THE TASK FORCE

Joseph Allen, DSc, MPH
Assistant professor and Director of the Healthy Buildings program at Harvard's T.H. Chan School of Public Health.

Richard Carmona, M.D., MPH, FACS
17th Surgeon General of the United States
Professor, University of Arizona

Risa Lavizzo-Mourey, M.D., MBA
Former president and CEO,
Robert Wood Johnson Foundation
Professor of Population Health and Health Equity,
University of Pennsylvania

JOIN THE TASK FORCE TODAY

PLACES MATTER:
PREVENTION AND PREPAREDNESS; RESILIENCE AND RECOVERY

- A framework that builds on public health disaster preparedness models and considers short and long term impact related to buildings and community health

1.Cronstedt, Mal. (2002). Prevention, Preparedness, Resopnse, Recovery- an Outdated Concept? Australian Journal of Emergency Management 17 (2).
2.U.S. Green Building Council. The Center for Resilience. https://www.usgbc.org/about/programs/center-for-resilience

PREVENTION

REDUCING THE POSSIBILITY OF INFECTION

- Key components of prevention include hand washing, isolation of those who are sick, cleaning protocols and ventilation strategies. [1]
- This includes cleaner air, cleaning protocols, individual behavior change and immune support
- Risk-management approach balanced with health promotion approach

1. WHO Guidelines: Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care. 2014

KEY STRATEGIES

PREVENTATIVE MEASURES PROMOTED BY WELL

01 HAND WASHING

02 CLEANING POLICY

03 CLEANER AIR

- A03 Ventilation Effectiveness
- A07 Operable Windows
- A12 Air Filtration
- A06 Enhanced Ventilation
- A11 Source Separation
- A14 Microbe and Mold Control

PREVENTION: CLEANER AIR

COVID-19 is spread primarily through close contact (6 ft) with an infected person via respiratory droplets. New research indicates that the virus can remain airborne for hours as well as remaining on surfaces for days.[1] The HVAC system in buildings may transport the virus spreading the possibility of infection, therefore it is critical to keep indoor air as clean as possible. Increased ventilation also has other cognitive and health benefits.

- Increase ventilation rates and open windows.[1]
- If possible, turn off air recirculation and ventilate only using outside air.[2]
- Consider other preventive measures:
  - Regularly clean, disinfect and maintain open cooling towers, filters, purifiers, air vents, air handling units, surface coolers, heating, cooling coils and other equipment or components of the HVAC system.[1,3]
  - Use filtration devices (ideally HEPA-rated), but ensure that addition of filters does not decrease outdoor air ventilation rate.[4]
  - Maintain humidity above 30%.[4]

[1] Novel coronavirus should be run and managed by office buildings. China Architecture Society T/ASC 08-202
[2] Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. J Hosp Inf. DOI: 10.1016/j.jhin.2020.01.022
[3] Hygienic code for central air conditioning and ventilation system in public places WS394-2012.
[4] COVID-19 guidance document: How to operate and use building services in order to prevent the spread of the coronavirus disease (COVID-19) virus (SARS-CoV-2) in workplaces. REHVA. March 17, 2020

PREVENTION: CLEANER AIR

Additional Considerations to help promote cleaner air:

- **Disinfect the indoor environment daily, open windows and ventilate frequently** [1]. As COVID-19 is structurally similar to SARS and MERS, it may last on surfaces for up to 9 days [2].
- If possible, **use ultraviolet radiation on the cooling coils and drain pans** of the air conditioning system [5] .
- Where possible, ascending and descending stairs can be set up separately to avoid areas becoming too crowded. **Stairwells with operable windows could take advantage of natural ventilation** and those without should be ventilated with mechanical systems [6].
- If possible, **run stand alone air purifiers to further reduce possible contaminated air** and air pollutants brought in by natural ventilation [6].

[1] *Novel coronavirus should be run and managed by office buildings. China Architecture Society T/ASC 08-202*
[2] *Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. J Hosp Inf. DOI: 10.1016/j.jhin.2020.01.022*
[3] *Air conditioning and ventilation system operation management standard gb50365-2020*
[4] *Hygienic code for central air conditioning and ventilation system in public places WS394-2012.*
[5] *WELL Building Standard V2 (Pilot)*
[6] *Operation and management guide for air conditioning and ventilation system of public buildings in epidemic period, Architectural Environment and Energy Research Institute of China Construction and Research Institute*

PREPAREDNESS

REDUCING THE IMPACT OF PANDEMICS

- A key differentiator in current COVID-19 death rates has been the level of preparation in different countries.[1] Those with experience with recent pandemics and the infrastructure and policies in place to respond quickly have kept their number of mortalities lower than those with a less unified response. [2]
- Includes Organizational and Technology Strategies to ensure continuity of the organization, support remote workers, and reduce stress during transitions

1. Orenstein, Charles. (2020). This Coronavirus is unlike anything in our lifetime. https://www.propublica.org/article/this-coronavirus-is-unlike-anything-in-our-lifetime-and-we-have-to-stop-comparing-it-to-the-flu
2. Tharoor, Ishann. (2020). WHO Guidelines: Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care. 2014

KEY STRATEGIES

WELL FOR PREPAREDNESS

01 HEALTH BENEFITS

02 VISUAL AND PHYSICAL ERGONOMICS

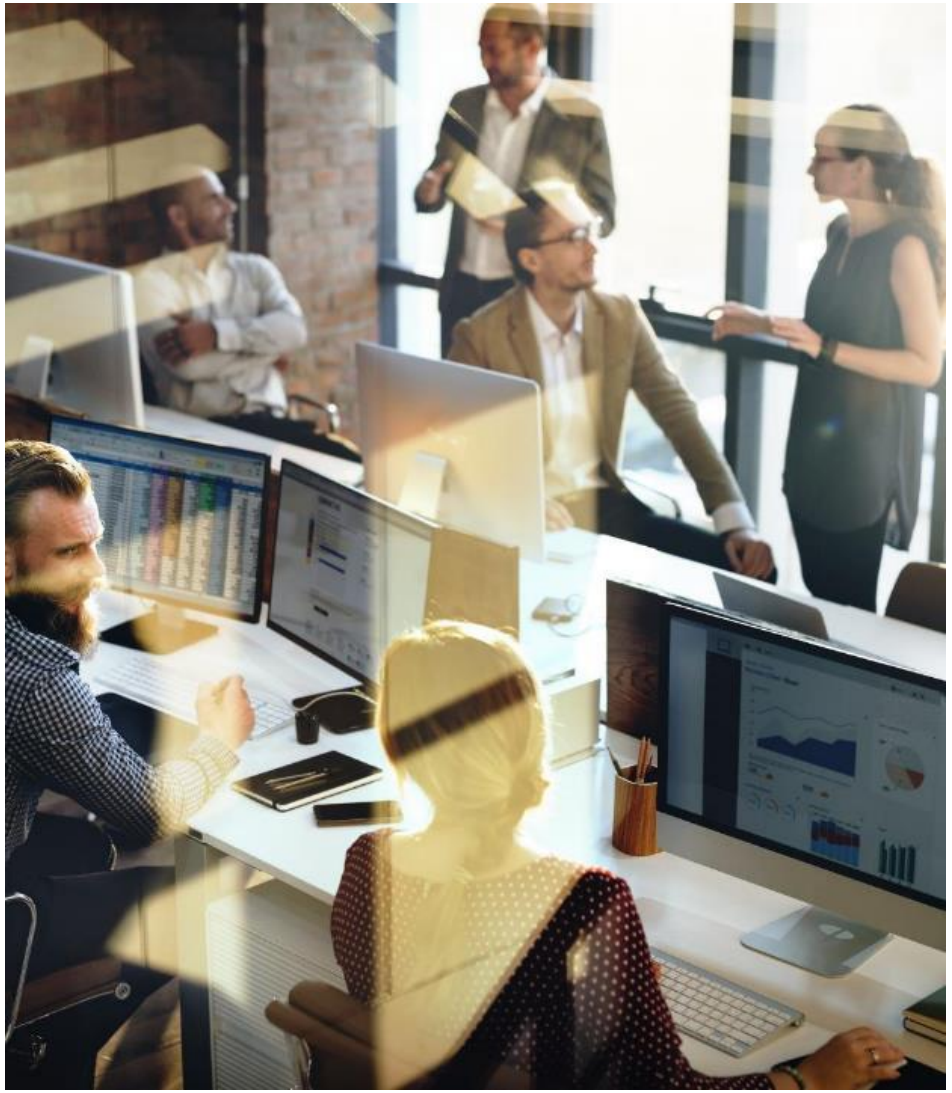
03 EMERGENCY PREPAREDNESS

- C15 Emergency Preparedness
- CHR Community Health Resilience

PREPAREDNESS: EMERGENCY PREPAREDNESS

Enhance communication, minimize confusion, improve personnel coordination, build response capabilities, including assessment of supplies, specialized personnel and physical structure.

- Establish an emergency management plan that addresses:
  - Steps for response during infectious disease outbreak.[1,3,4]
  - Needs of vulnerable occupants.[1,2]
  - Individuals responsible for managing response.[1,3]
  - Ongoing communications to occupants.[1,3]
- Provide resources that educate occupants on:[1,3,4]
  - Creating evacuation or shelter-in-place plans.
  - Building emergency kits, supplies and go-bags.
  - Planning communications with family or primary contacts.



[1] Chao EL. How to Plan for Workplace Emergencies and Evacuations. Occup Saf Heal Adm. 2001;OSHA 3088:5-25. https://www.osha.gov/Publications/osha3088.pdf

[2] WHO. Environmental health in emergencies : Vulnerable groups. https://www.who.int/environmental_health_emergencies/en/. Published 2002.

[3] Lockwood NR. Crisis Management in Today's Business Environment: HR's Strategic Role. SHRM Research Quarterly. https://www.shrm.org/hr-today/news/hr-magazine/Documents/1205RQuartpdf.pdf. Published 2005.

[4] Federal Emergency Management Agency. Every Business Should Have A Plan. https://www.fema.gov/media-library-data/1388786699366-f6593a40cee347ce4a8def70a28b748e/Business_quadfold_brochure_2012.pdf. Published 2014.

RESILIENCE AND RECOVERY

LOWERING THE IMPACT OF PANDEMICS & SHORTENING THE RECOVERY TIME

- Resiliency is a key framework used by industry, policy makers and academics to increase the chance of weathering uncertainty and change.[1]
- Resiliency can be at multiple scales: individual, building, community, city and region. [2]
- Resilience can improve recovery

1. Rockefeller Foundation. (2015). City Resilience Framework. https://www.rockefellerfoundation.org/report/city-resilience-framework/
2. Windle, Gill et al. (2011). A methodological review of resilience measurement scales. Tharoor, Ishann. (2020). Health Quality Life Outcomes. 9 (8). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3042897/ .

RESILIENCE

INDIVIDUAL, ORGANIZATIONAL, BUILDING & COMMUNITY

- Actions taken to support individual, organizational and community capacity to recover quickly and adapt to changing circumstances.
- Often used in climate change adaptation and mitigation work, [1] resilience is being used for building-level strategies, particularly for Environmental, Social and Governance reporting.
- Resilience also refers to individual resilience and strategies.[2]
- Adaptive and flexible preparation plans can help build resilience.
- Key strategies include supporting individual immune systems, providing flexible and adaptive expectations of employees during transitions, and community support.

1.http://100resilientcities.org
2.https://greatergood.berkeley.edu/article/item/five_science_backed_strategies_to_build_resilience

KEY STRATEGIES

WELL FOR RESILIENCE

01 MOVEMENT

02 CLEAN CONTACT

03 MENTAL HEALTH SUPPORT

- M01 Mental Health Promotion
- M04 Mental Health Education
- M05 Stress Support
- L01 Light Exposure and Education
- C01 Health and Wellness Awareness
- CRI Mental Health Crisis Support

RESILIENCE: MENTAL HEALTH SUPPORT

WELL promotes mental health through policy, programming and design strategies that seek to address the diverse factors that influence cognitive and emotional well-being.

- Provide access to virtual programming that supports relaxation, restoration and stress reduction, such as:[1,2]
  - Digital programming - e.g., applications that provide guided meditation, yoga instruction or other mindfulness activities.
  - Remote training courses - e.g., mindfulness stress reduction course.
- Share resources that promote the importance of daylight exposure for mental health.[3,4]

[1] Goyal M, Singh S, Sibinga EMS, et al. Meditation programs for psychological stress and well-being: A systematic review and meta-analysis. JAMA Intern Med. 2014;174(3):357-368. doi:10.1001/jamainternmed.2013.13018.Meditation.
[2] Kachan D, Olano H, Tannenbaum SL, et al. Prevalence of Mindfulness Practices in the US Workforce: National Health Interview Survey. Prev Chronic Dis. 2017;14:160034. doi:10.5888/pcd14.160034.
[3] Boubekri M, Cheung IN, Reid KJ, Wang CH, Zee PC. Impact of windows and daylight exposure on overall health and sleep quality of office workers: A case-control pilot study. J Clin Sleep Med. 2014;10(6):603-611. doi:10.5664/jcsm.3780.
[4] Figueiro MG, Steverson B, Heerwagen J, et al. The impact of daytime light exposures on sleep and mood in office workers. Sleep Heal. 2017;3(3):204-215. doi:10.1016/j.sleh.2017.03.005.

KEY STRATEGIES

WELL FOR RECOVERY

01 CLEANER AIR

02 CLEAN CONTACT

03 CLEANING PRODUCTS AND PROTOCOLS

- X09 Cleaning Products and Protocol
- FAC Sanitary Facilities Provision

RECOVERY: CLEANING PRODUCTS AND PROTOCOL

WELL encourages identification and maintenance of high-touch surfaces by implementing a cleaning schedule for thorough cleaning and disinfection.

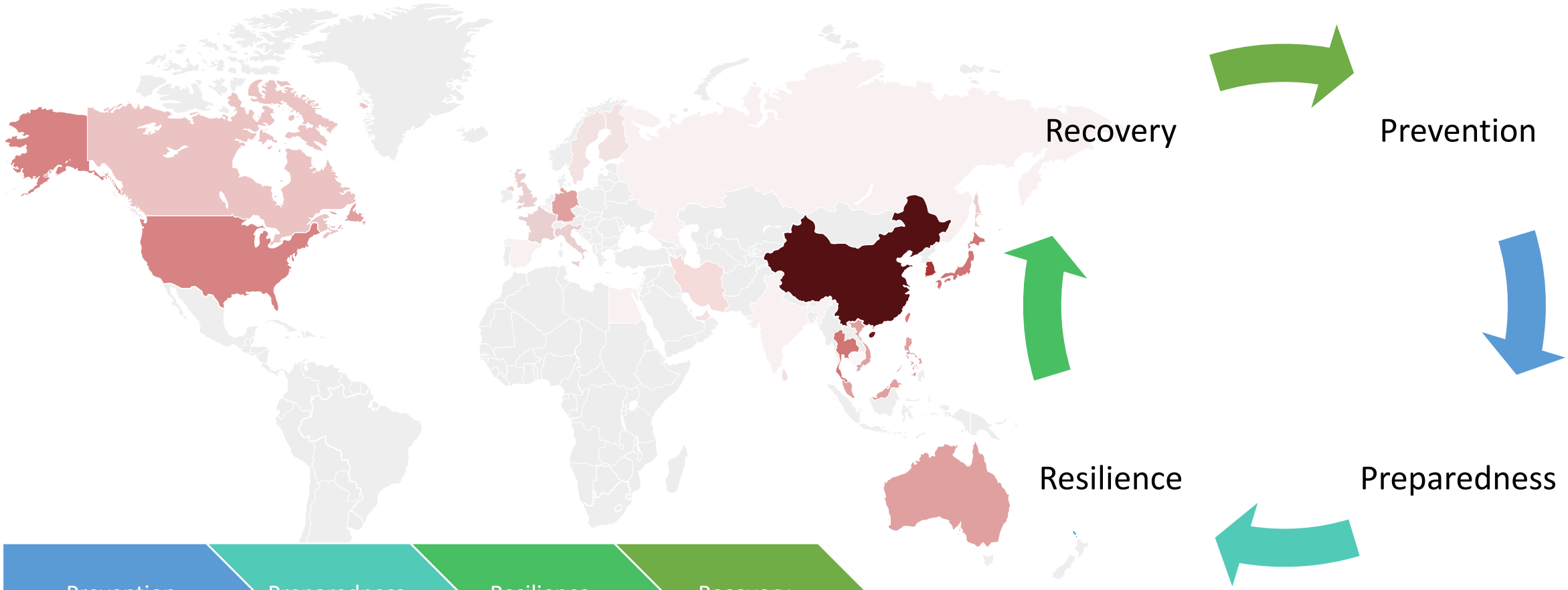
- Establish monitoring, feedback and auditing mechanisms for the existing cleaning program.[1]
  - Assess inventory of high-touch surfaces.
  - Update training practices for cleaning personnel.
- Select cleaning products that are less harmful for occupants' respiratory systems by:[2,3]
  - Follow health guidelines
  - Inquire for ingredients

[1] US CDC and ICAN. Best Practices for Environmental Cleaning in Healthcare Facilities in Resource-Limited Settings. 2019 https://www.cdc.gov/hai/prevent/resource-limited/environmentalcleaning.html.

[2] Zock J-P, Plana E, Jarvis D, et al. The Use of Household Cleaning Sprays and Adult Asthma. American Journal of Respiratory and Critical Care Medicine. 2007;176(8):735-741.

[3] Garza JL, Cavallari JM, Wakai S, et al. Traditional and environmentally preferable cleaning product exposure and health symptoms in custodians. American Journal of Industrial Medicine. 2015;58(9):988-995.

Places Matter:



“One comfort I take from this is that our team is doing our part in preparing people creating spaces that help advance health, and we are part of the long term solutions in moving towards a safer, healthier society. Our team has gone through various stages of quarantine/self-isolation depending on their whereabouts, with a few severe cases now going on for 60 days of complete self-isolation. But, our work never stopped. Our team provided air purification and ventilation system strategies to front line workers in a few hospitals and the living quarters for medical staffers in Wuhan. People want to know if the virus can spread throughout the apartment buildings they are living in, the offices they are returning to, these are serious and important questions that we are up to at IWBI. We use WELL as a tool to guide people in their search for healthier spaces to live, work, learn and play in. We continuously work to engage our stakeholders and empower our WELL community.”

Xue Ya, President of IWBI Asia

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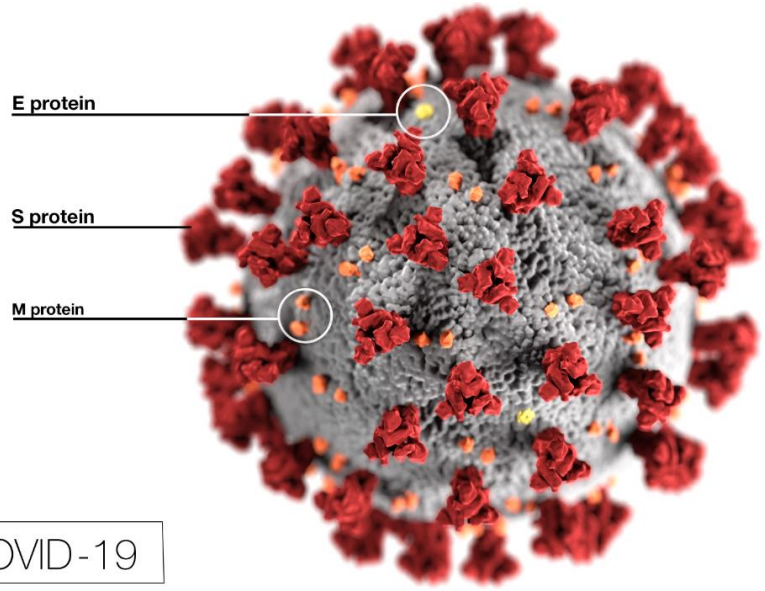


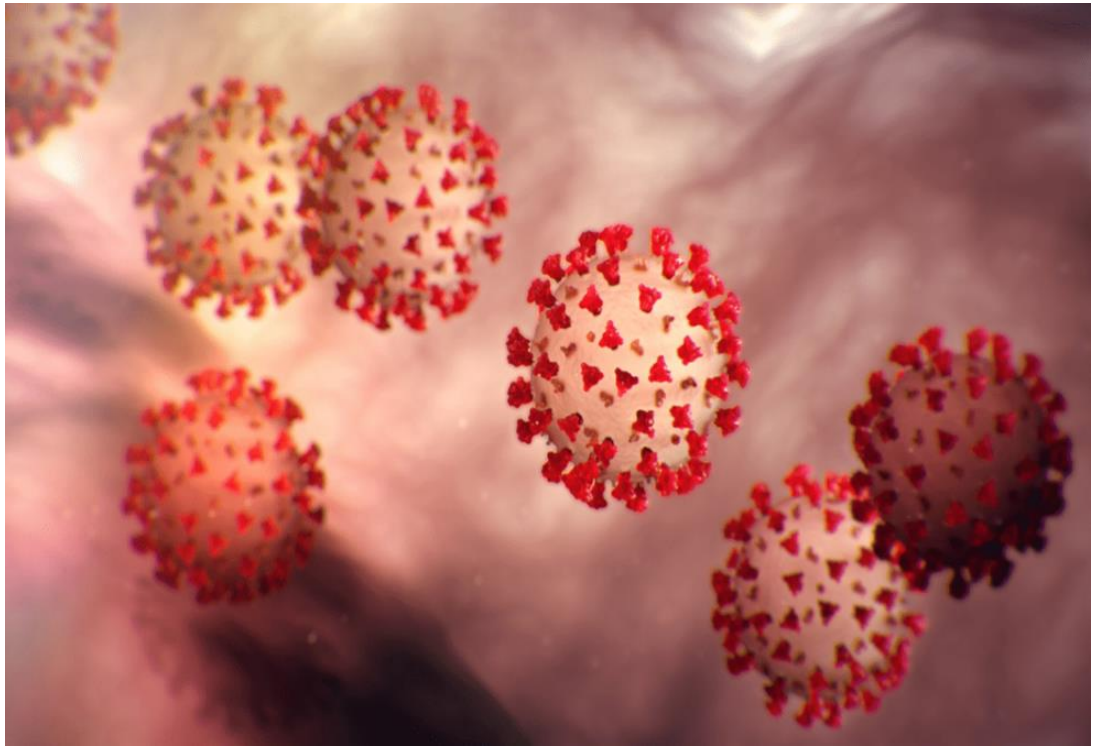
Responding to COVID-19 in your building

EMERGENCY MANAGEMENT STRATEGIES FOR COMMERCIAL REAL ESTATE

Bazak Consulting
educate . plan . prepare

Overview

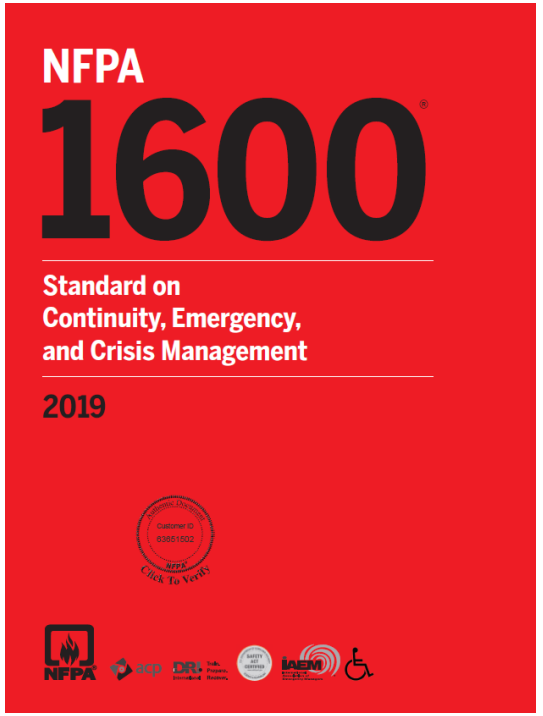
1. Pandemic in context
2. What to do right now
3. Anticipating what's ahead



Source: U.S. Dept. of Health & Human Services, *U.S. Government Covid-19 Response Plan*

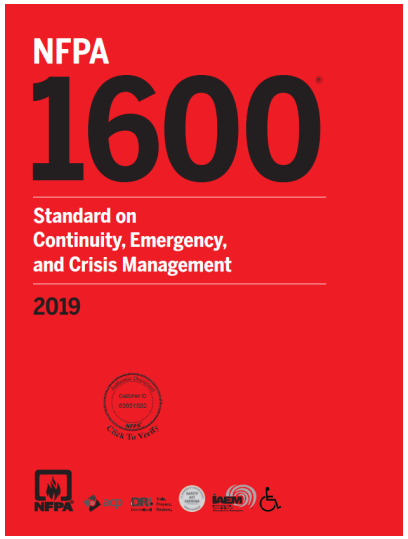
Pandemic Planning in the context of Emergency Management

3.3.12 Disaster/Emergency Management. An ongoing process to prevent, mitigate, prepare for, respond to, maintain continuity during, and to recover from, an incident that threatens life, property, operations, information, or the environment



Pandemics as a Biological Hazard

Your pandemic plan is part of your risk-based Emergency Management Plan



5.2* Risk Assessment.

5.2.1 The entity shall conduct a risk assessment.

5.2.2 The entity shall identify hazards and monitor those hazards and the likelihood and severity of their occurrence over time.

5.2.2.1 Hazards to be evaluated shall include the following:

(1) Geological:
- (a) Earthquake
- (b) Landslide, mudslide, subsidence
- (c) Tsunami
- (d) Volcano

(2) Meteorological:
- (a) Drought
- (b) Extreme temperatures (hot, cold)
- (c) Famine
- (d) Flood, flash flood, seiche, tidal surge
- (e) Geomagnetic storm
- (f) Lightning
- (g) Snow, ice, hail, sleet, avalanche
- (h) Wildland fire
- (i) Windstorm, tropical cyclone, hurricane, tornado, water spout, dust storm, sandstorm

(3) Biological:
- (a) Food-borne illnesses
- (b)* Infectious/communicable/pandemic diseases

(4) Accidental human-caused:
- (a) Building/structure collapse
- (b)* Entrapment
- (c) Explosion/fire
- (d) Fuel/resource shortage
- (e)* Hazardous material spill or release
- (f) Equipment failure

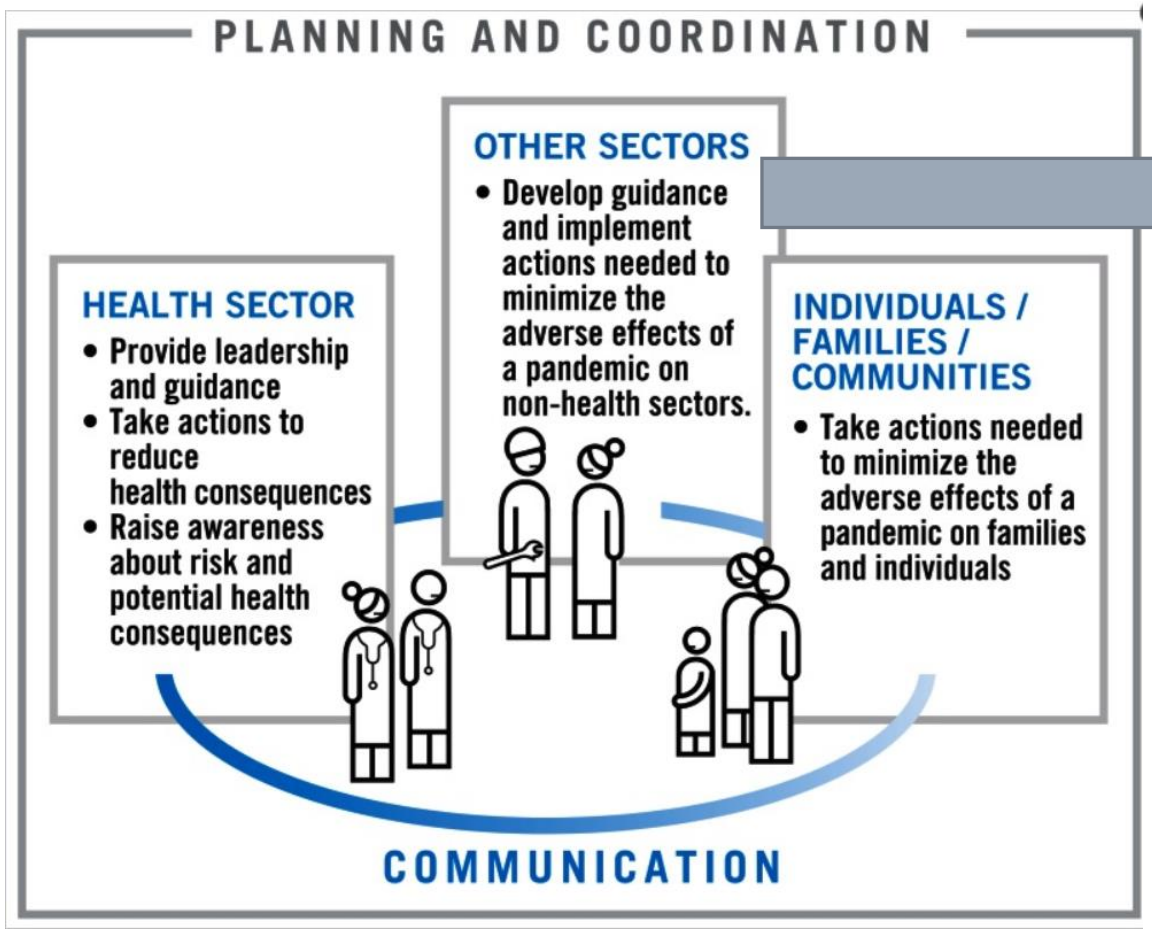
Pandemic Planning

Global, national, local pandemic plans were developed with influenza in mind

Current COVID-19 guidance

Customized planning, and targeted guidance for COVID-19

Whole of society approach

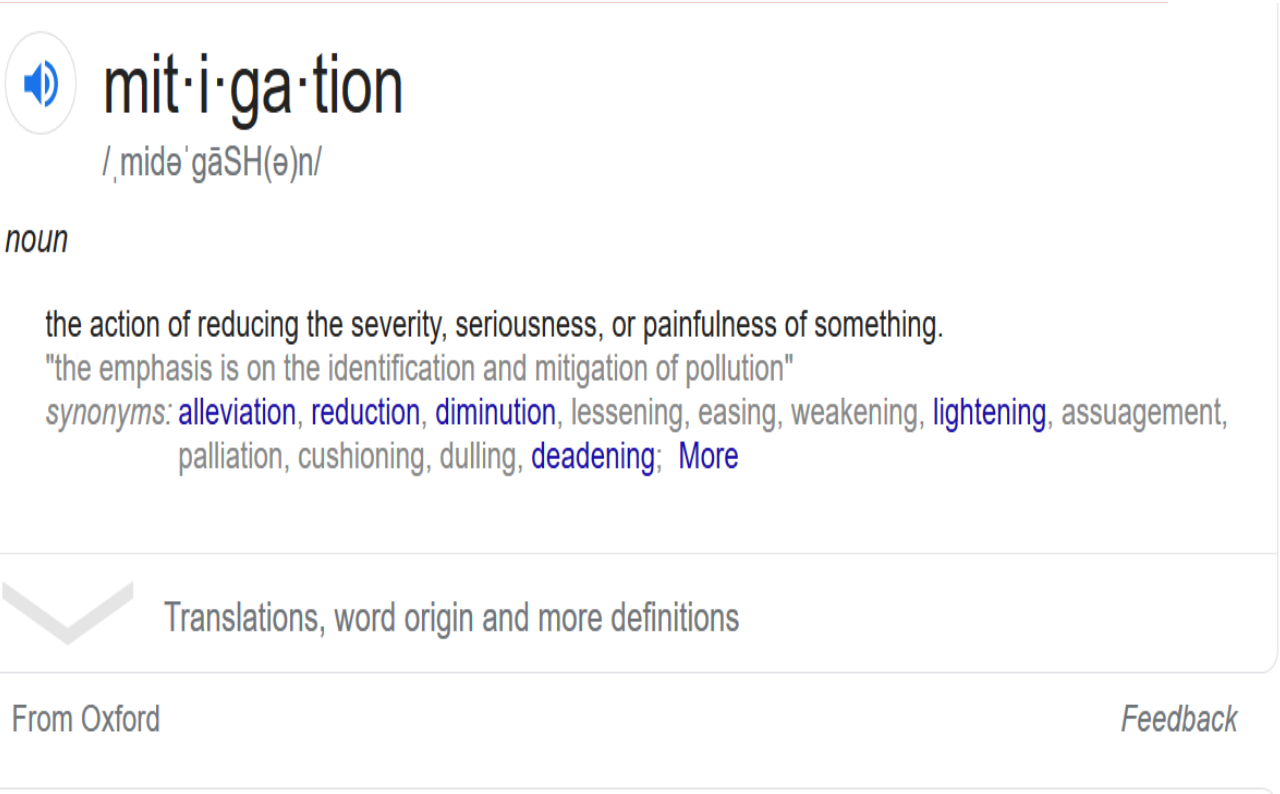


Commercial real estate's critical role in COVID-19 response

Source: *Pandemic Influenza Preparedness and Response, A WHO Guidance Document* Geneva: World Health Organization; 2009.

Responding to COVID-19

1. Containment
2. Preparedness
3. Mitigation



mit·i·ga·tion

/ˌmidəˈgāSH(ə)n/

noun

the action of reducing the severity, seriousness, or painfulness of something.
"the emphasis is on the identification and mitigation of pollution"
synonyms: alleviation, reduction, diminution, lessening, easing, weakening, lightening, assuagement, palliation, cushioning, dulling, deadening; More

Translations, word origin and more definitions

From Oxford

Feedback

Critical Mitigation Considerations

1. Protecting your stakeholders' health and safety
2. Communicating effectively
3. Ensuring essential business continues

Source: CDC, *Pandemic Flu Checklist: Workplace Administrators*

1. Protecting Health & Safety

Ensure HR policies and guidance to employees are consistent with CDC COVID-19 guidance as the pandemic evolves

CDC Interim Guidance for Businesses & Employers

Do your HR Policies reflect CDC Guidance?

- Encourage sick employees to stay home
- Separate sick employees immediately
- Key messages: stay home if you are sick, practice respiratory etiquette, hand hygiene
- Perform recommended COVID-19 cleaning protocols
- Communicate appropriate travel guidance

CDC Interim Guidance for Businesses & Employers

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Coronavirus Disease 2019 (COVID-19)

HR Policies (continued):

- Employees who have a sick family member - notify your supervisor
- If an employee becomes sick - employers should inform staff of their possible exposure, but maintain confidentiality
- Employees exposed to a co-worker with confirmed COVID-19 - conduct a risk assessment. (See: https://www.cdc.gov/coronavirus/2019-ncov/php/risk-assessment.html)

CDC Interim Guidance for Businesses & Employers

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

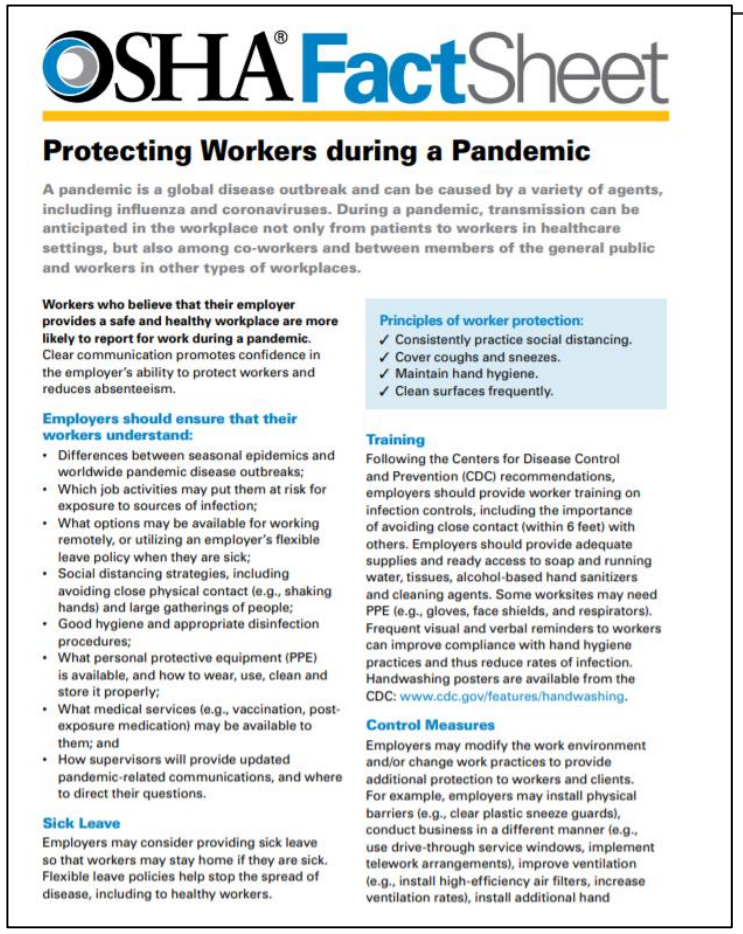
Coronavirus Disease 2019 (COVID-19)

Recommendations

Explore social distancing policies and practices

- Telecommuting (e.g. working from home)
- Flexible work hours (e.g., staggered shifts)
- Ensure availability of information technology and infrastructure needed to support multiple employees who may be able to work from home

Occupational Health & Safety Administration (OSHA)



OSHA® FactSheet

Protecting Workers during a Pandemic

A pandemic is a global disease outbreak and can be caused by a variety of agents, including influenza and coronaviruses. During a pandemic, transmission can be anticipated in the workplace not only from patients to workers in healthcare settings, but also among co-workers and between members of the general public and workers in other types of workplaces.

Workers who believe that their employer provides a safe and healthy workplace are more likely to report for work during a pandemic. Clear communication promotes confidence in the employer's ability to protect workers and reduces absenteeism.

Employers should ensure that their workers understand:

- Differences between seasonal epidemics and worldwide pandemic disease outbreaks;
- Which job activities may put them at risk for exposure to sources of infection;
- What options may be available for working remotely, or utilizing an employer's flexible leave policy when they are sick;
- Social distancing strategies, including avoiding close physical contact (e.g., shaking hands) and large gatherings of people;
- Good hygiene and appropriate disinfection procedures;
- What personal protective equipment (PPE) is available, and how to wear, use, clean and store it properly;
- What medical services (e.g., vaccination, post-exposure medication) may be available to them; and
- How supervisors will provide updated pandemic-related communications, and where to direct their questions.

Sick Leave

Employers may consider providing sick leave so that workers may stay home if they are sick. Flexible leave policies help stop the spread of disease, including to healthy workers.

Principles of worker protection:

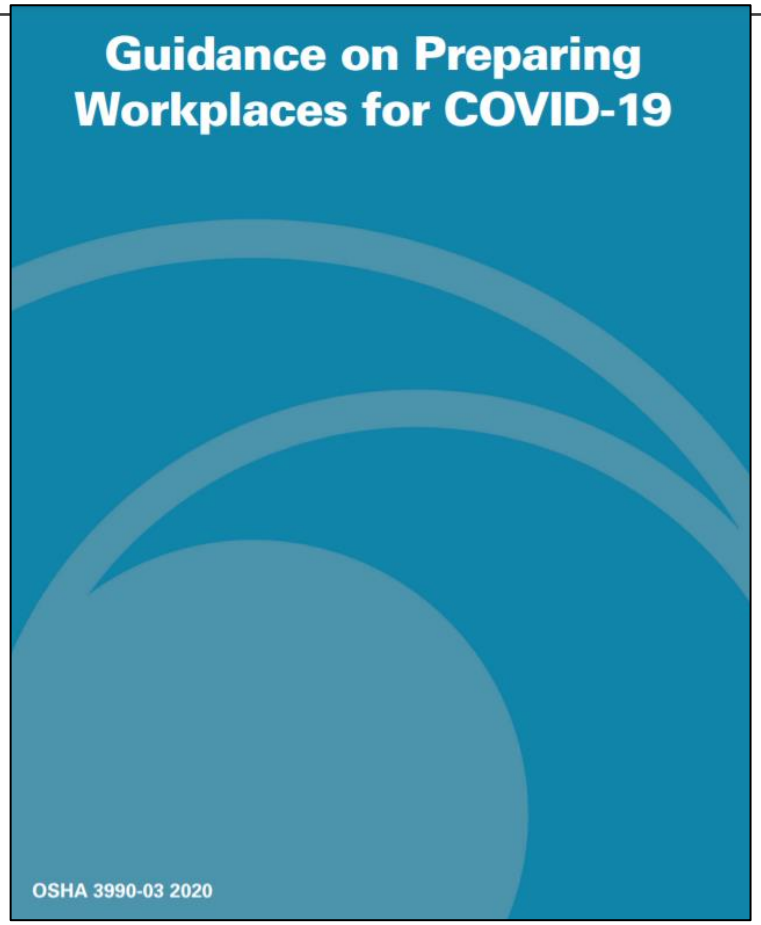
✓ Consistently practice social distancing.
✓ Cover coughs and sneezes.
✓ Maintain hand hygiene.
✓ Clean surfaces frequently.

Training

Following the Centers for Disease Control and Prevention (CDC) recommendations, employers should provide worker training on infection controls, including the importance of avoiding close contact (within 6 feet) with others. Employers should provide adequate supplies and ready access to soap and running water, tissues, alcohol-based hand sanitizers and cleaning agents. Some worksites may need PPE (e.g., gloves, face shields, and respirators). Frequent visual and verbal reminders to workers can improve compliance with hand hygiene practices and thus reduce rates of infection. Handwashing posters are available from the CDC: www.cdc.gov/features/handwashing.

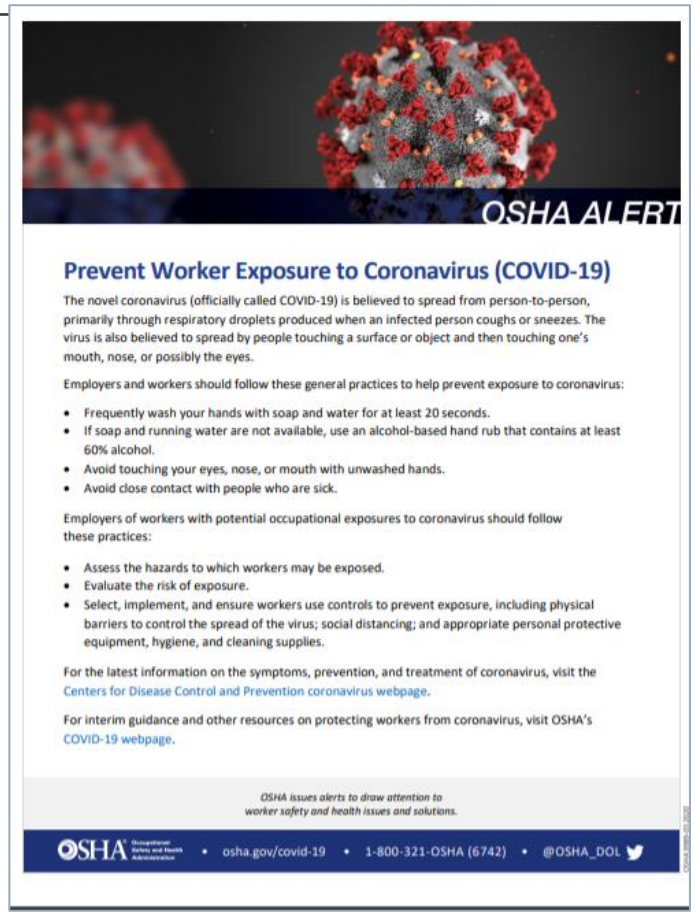
Control Measures

Employers may modify the work environment and/or change work practices to provide additional protection to workers and clients. For example, employers may install physical barriers (e.g., clear plastic sneeze guards), conduct business in a different manner (e.g., use drive-through service windows, implement telework arrangements), improve ventilation (e.g., install high-efficiency air filters, increase ventilation rates), install additional hand



Guidance on Preparing Workplaces for COVID-19

OSHA 3990-03 2020



OSHA ALERT

Prevent Worker Exposure to Coronavirus (COVID-19)

The novel coronavirus (officially called COVID-19) is believed to spread from person-to-person, primarily through respiratory droplets produced when an infected person coughs or sneezes. The virus is also believed to spread by people touching a surface or object and then touching one's mouth, nose, or possibly the eyes.

Employers and workers should follow these general practices to help prevent exposure to coronavirus:

- Frequently wash your hands with soap and water for at least 20 seconds.
- If soap and running water are not available, use an alcohol-based hand rub that contains at least 60% alcohol.
- Avoid touching your eyes, nose, or mouth with unwashed hands.
- Avoid close contact with people who are sick.

Employers of workers with potential occupational exposures to coronavirus should follow these practices:

- Assess the hazards to which workers may be exposed.
- Evaluate the risk of exposure.
- Select, implement, and ensure workers use controls to prevent exposure, including physical barriers to control the spread of the virus; social distancing; and appropriate personal protective equipment, hygiene, and cleaning supplies.

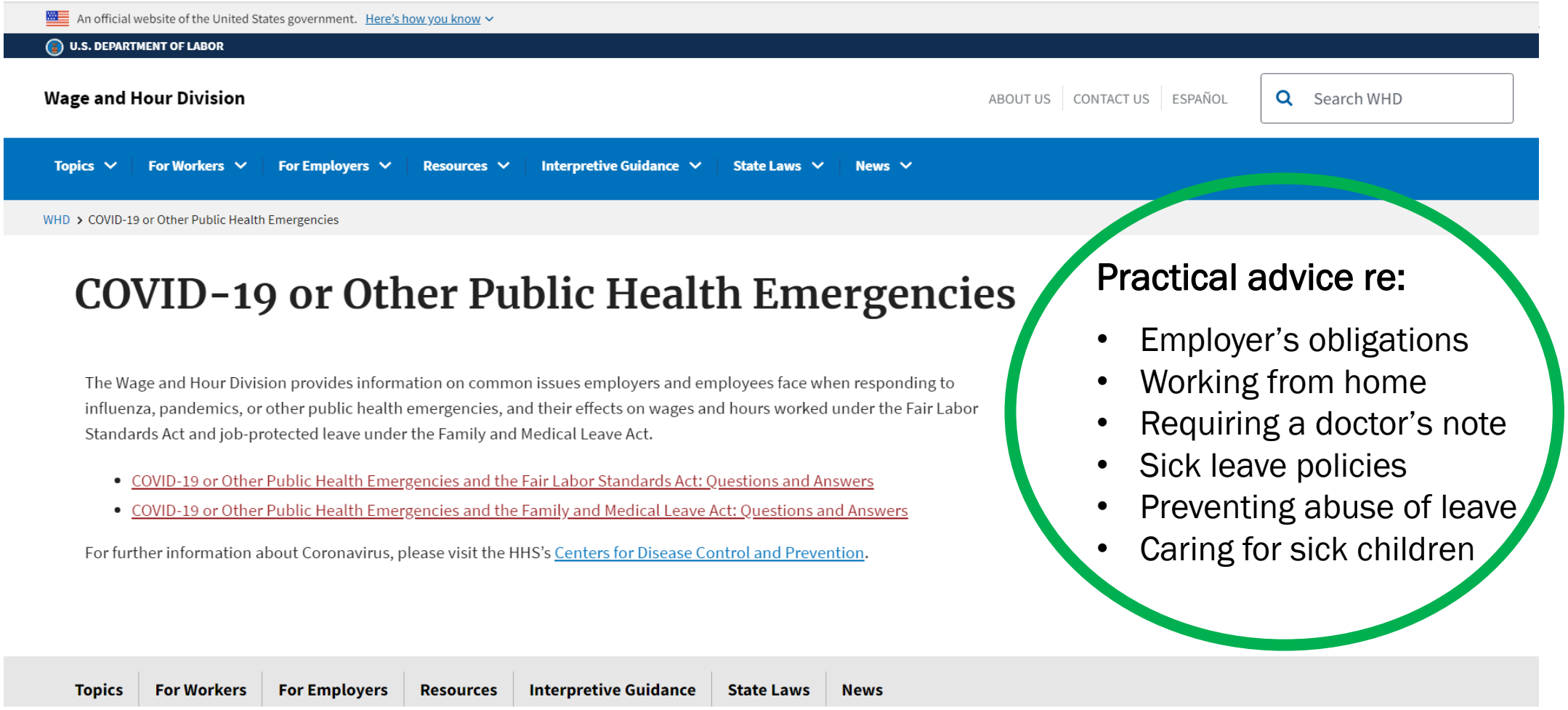
For the latest information on the symptoms, prevention, and treatment of coronavirus, visit the Centers for Disease Control and Prevention coronavirus webpage.

For interim guidance and other resources on protecting workers from coronavirus, visit OSHA's COVID-19 webpage.

OSHA issues alerts to draw attention to worker safety and health issues and solutions.

OSHA • osha.gov/covid-19 • 1-800-321-OSHA (6742) • @OSHA_DOL

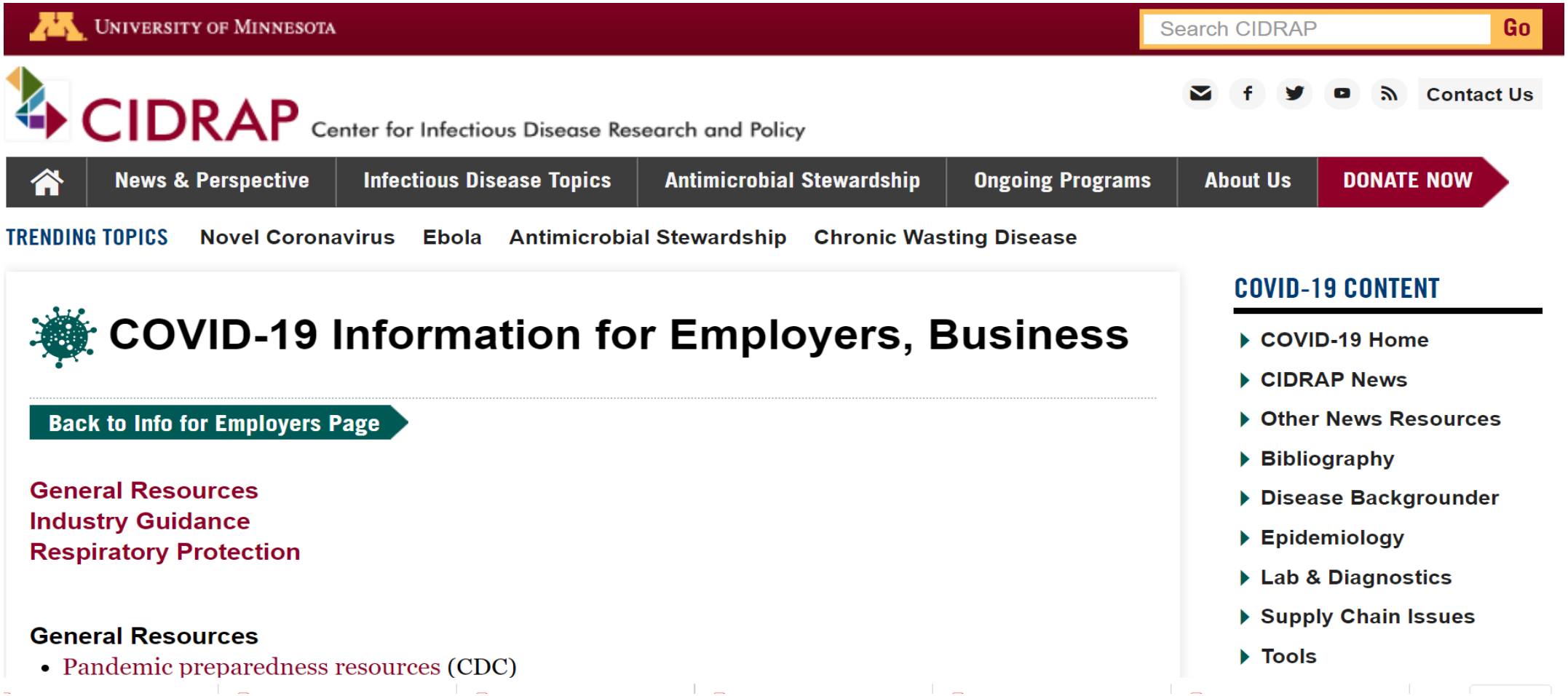
Department of Labor
Wage & Hour Division



Practical advice re:

- Employer's obligations
- Working from home
- Requiring a doctor's note
- Sick leave policies
- Preventing abuse of leave
- Caring for sick children

University of Minnesota, CIDRAP



World Health Organization

World Health Organization

3 March 2020

Getting your workplace ready for COVID-19

In January 2020 the World Health Organization (WHO) declared the outbreak of a new coronavirus disease in Hubei Province, China to be a Public Health Emergency of International Concern. WHO stated there is a high risk of the 2019 coronavirus disease (COVID-19) spreading to other countries around the world.

WHO and public health authorities around the world are taking action to contain the COVID-19 outbreak. However, long term success cannot be taken for granted. All sections of our society – including businesses and employers – must play a role if we are to stop the spread of this disease.

How COVID-19 spreads

When someone who has COVID-19 coughs or exhales they release droplets of infected fluid. Most of these droplets fall on nearby surfaces and objects - such as desks, tables or telephones. People could catch COVID-19 by touching contaminated surfaces or objects – and then touching their eyes, nose or mouth. If they are standing within one meter of a person with COVID-19 they can catch it by breathing in droplets coughed out or exhaled by them. In other words, COVID-19 spreads in a similar way to flu. Most persons infected with COVID-19 experience mild symptoms and recover. However, some go on to experience more serious illness and may require hospital care. Risk of serious illness rises with age: people over 40 seem to be more vulnerable than those under 40. People with weakened immune systems and people with conditions such as diabetes, heart and lung disease are also more vulnerable to serious illness.

This document gives advice on:

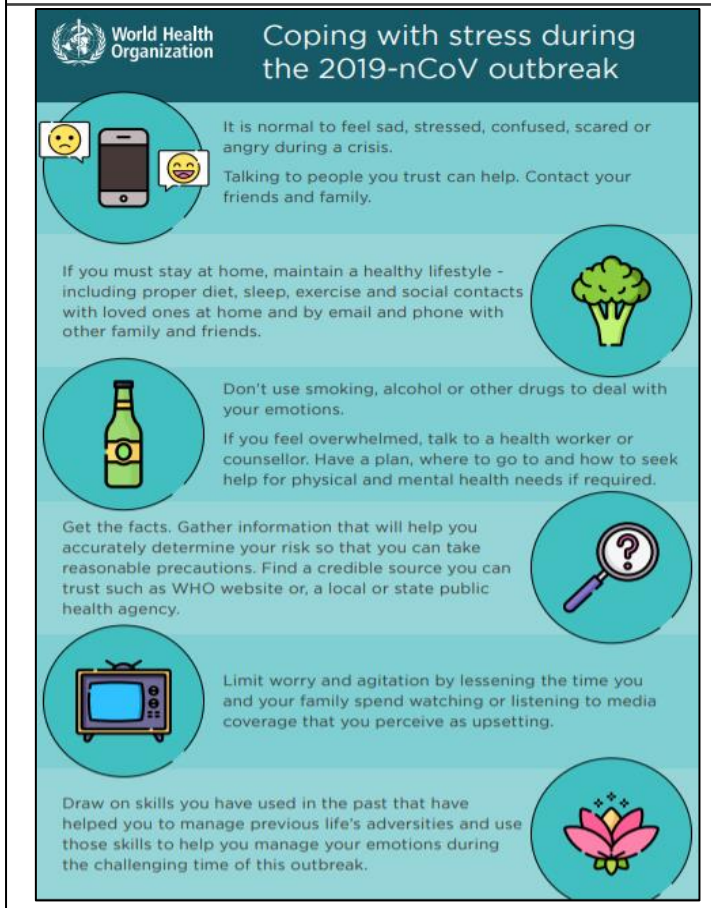
1. Simple ways to prevent the spread of COVID-19 in your workplace
2. How to manage COVID-19 risks when organizing meetings & events
3. Things to consider when you and your employees travel
4. Getting your workplace ready in case COVID-19 arrives in your community

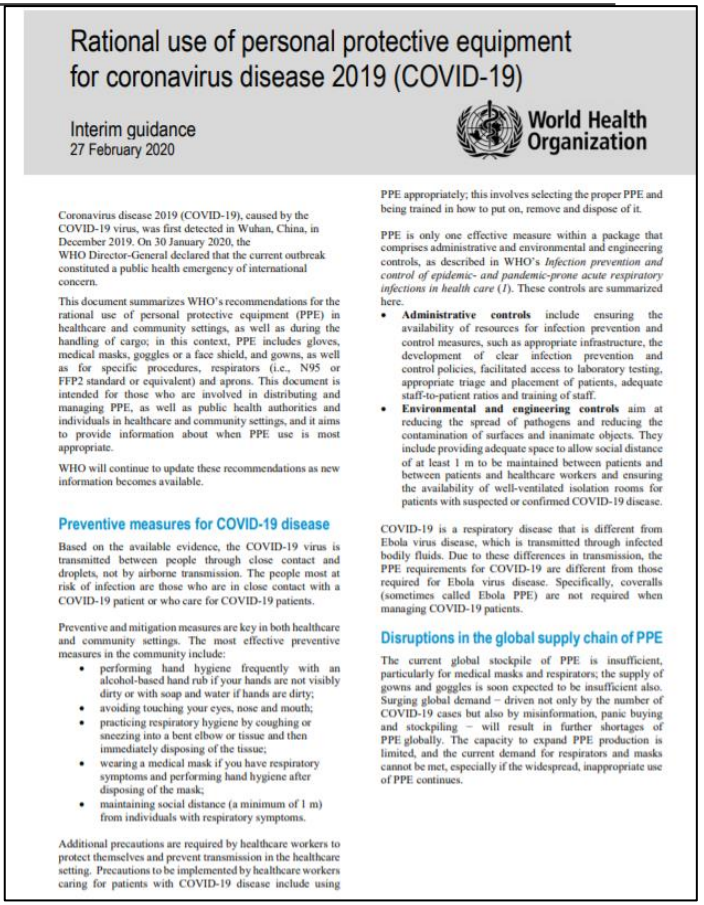
1. Simple ways to prevent the spread of COVID-19 in your workplace

The low-cost measures below will help prevent the spread of infections in your workplace, such as colds, flu and stomach bugs, and protect your customers, contractors and employees.

Employers should start doing these things now, even if COVID-19 has not arrived in the communities where they operate. They can already reduce working days lost due to illness and stop or slow the spread of COVID-19 if it arrives at one of your workplaces.

- Make sure your workplaces are clean and hygienic





Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19)

Interim guidance
27 February 2020

World Health Organization

Coronavirus disease 2019 (COVID-19), caused by the COVID-19 virus, was first detected in Wuhan, China, in December 2019. On 30 January 2020, the WHO Director-General declared that the current outbreak constituted a public health emergency of international concern.

This document summarizes WHO's recommendations for the rational use of personal protective equipment (PPE) in healthcare and community settings, as well as during the handling of cargo; in this context, PPE includes gloves, medical masks, goggles or a face shield, and gowns, as well as for specific procedures, respirators (i.e., N95 or FFP2 standard or equivalent) and aprons. This document is intended for those who are involved in distributing and managing PPE, as well as public health authorities and individuals in healthcare and community settings, and it aims to provide information about when PPE use is most appropriate.

WHO will continue to update these recommendations as new information becomes available.

Preventive measures for COVID-19 disease

Based on the available evidence, the COVID-19 virus is transmitted between people through close contact and droplets, not by airborne transmission. The people most at risk of infection are those who are in close contact with a COVID-19 patient or who care for COVID-19 patients.

Preventive and mitigation measures are key in both healthcare and community settings. The most effective preventive measures in the community include:

- performing hand hygiene frequently with an alcohol-based hand rub if your hands are not visibly dirty or with soap and water if hands are dirty;
- avoiding touching your eyes, nose and mouth;
- practicing respiratory hygiene by coughing or sneezing into a bent elbow or tissue and then immediately disposing of the tissue;
- wearing a medical mask if you have respiratory symptoms and performing hand hygiene after disposing of the mask;
- maintaining social distance (a minimum of 1 m) from individuals with respiratory symptoms.

Additional precautions are required by healthcare workers to protect themselves and prevent transmission in the healthcare setting. Precautions to be implemented by healthcare workers caring for patients with COVID-19 disease include using PPE appropriately; this involves selecting the proper PPE and being trained in how to put on, remove and dispose of it.

PPE is only one effective measure within a package that comprises administrative and environmental and engineering controls, as described in WHO's *Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care* (*1*). These controls are summarized here.

- **Administrative controls** include ensuring the availability of resources for infection prevention and control measures, such as appropriate infrastructure, the development of clear infection prevention and control policies, facilitated access to laboratory testing, appropriate triage and placement of patients, adequate staff-to-patient ratios and training of staff.
- **Environmental and engineering controls** aim at reducing the spread of pathogens and reducing the contamination of surfaces and inanimate objects. They include providing adequate space to allow social distance of at least 1 m to be maintained between patients and between patients and healthcare workers and ensuring the availability of well-ventilated isolation rooms for patients with suspected or confirmed COVID-19 disease.

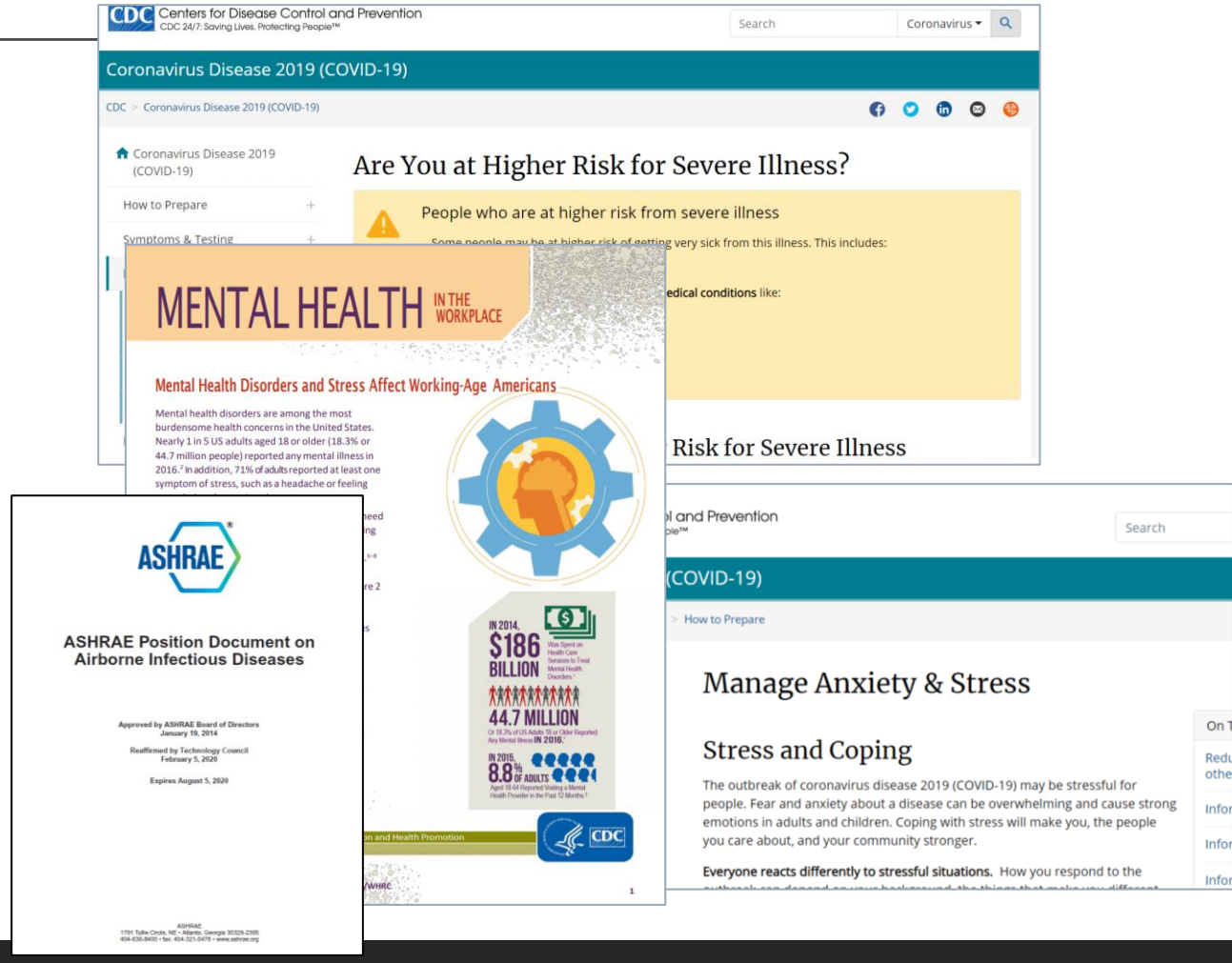
COVID-19 is a respiratory disease that is different from Ebola virus disease, which is transmitted through infected bodily fluids. Due to these differences in transmission, the PPE requirements for COVID-19 are different from those required for Ebola virus disease. Specifically, coveralls (sometimes called Ebola PPE) are not required when managing COVID-19 patients.

Disruptions in the global supply chain of PPE

The current global stockpile of PPE is insufficient, particularly for medical masks and respirators; the supply of gowns and goggles is soon expected to be insufficient also. Surging global demand – driven not only by the number of COVID-19 cases but also by misinformation, panic buying and stockpiling – will result in further shortages of PPE globally. The capacity to expand PPE production is limited, and the current demand for respirators and masks cannot be met, especially if the widespread, inappropriate use of PPE continues.

Other Health & Safety considerations

- Promote work from home for employees with pre-existing health conditions, older adults,
- Resources to support employees' mental health
- Maintaining air quality
- HR policies, including work refusals



2. Communicating effectively

Audiences

Employees

Tenants

Visitors

Contractors

Community partners

Media

Modalities

Posters

Elevator, lobby screens

Intranet

Webinars

Telephone hotlines

Newsletters

Sources

CDC

World Health Organization

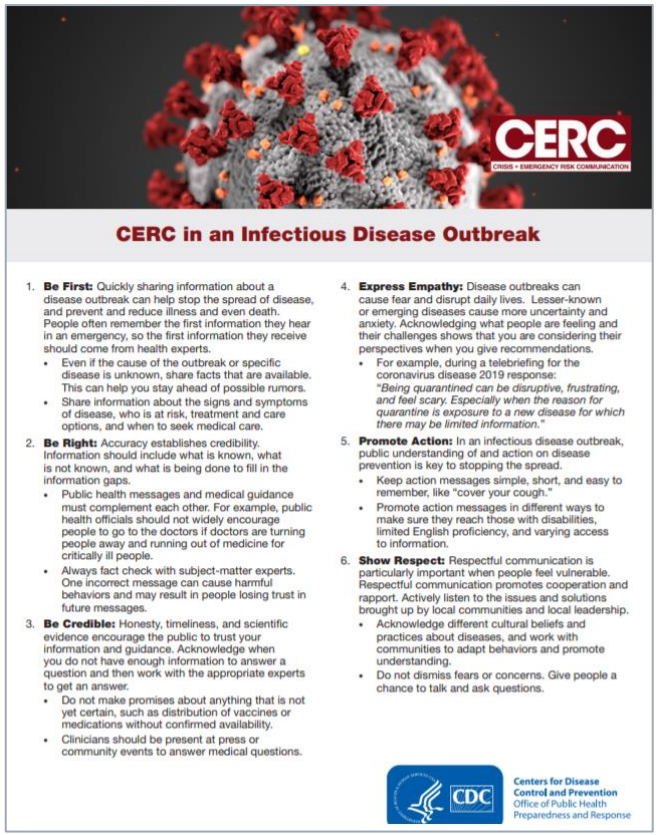
Local Public Health

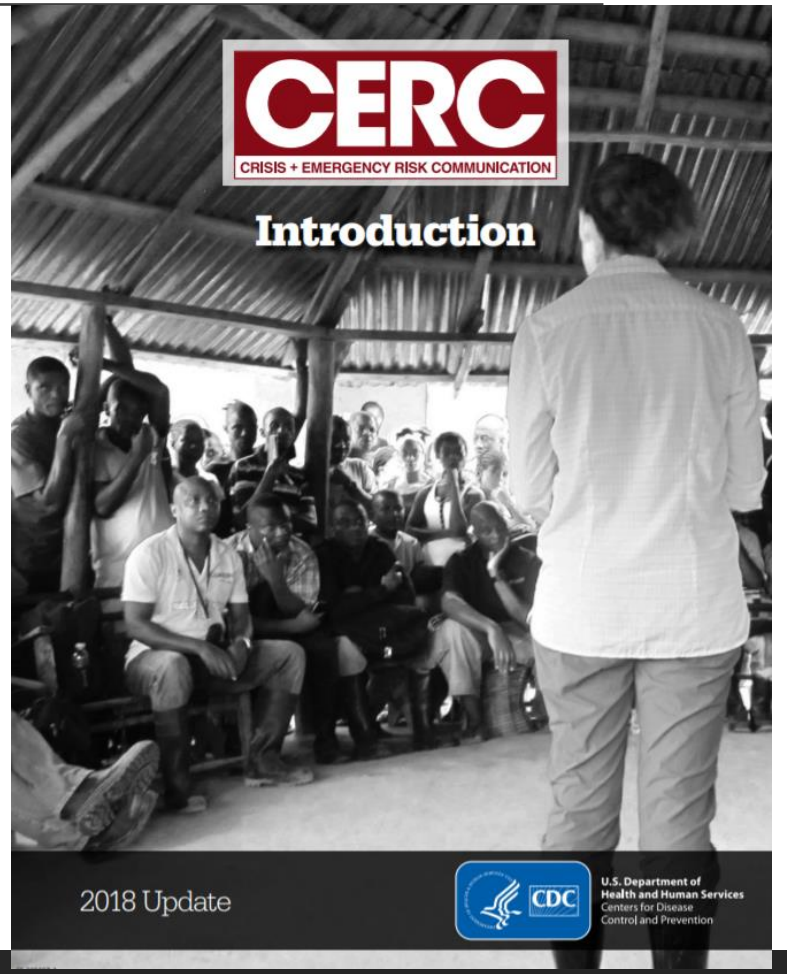
Trusted industry leaders

CDC, Crisis & Emergency Risk Communication

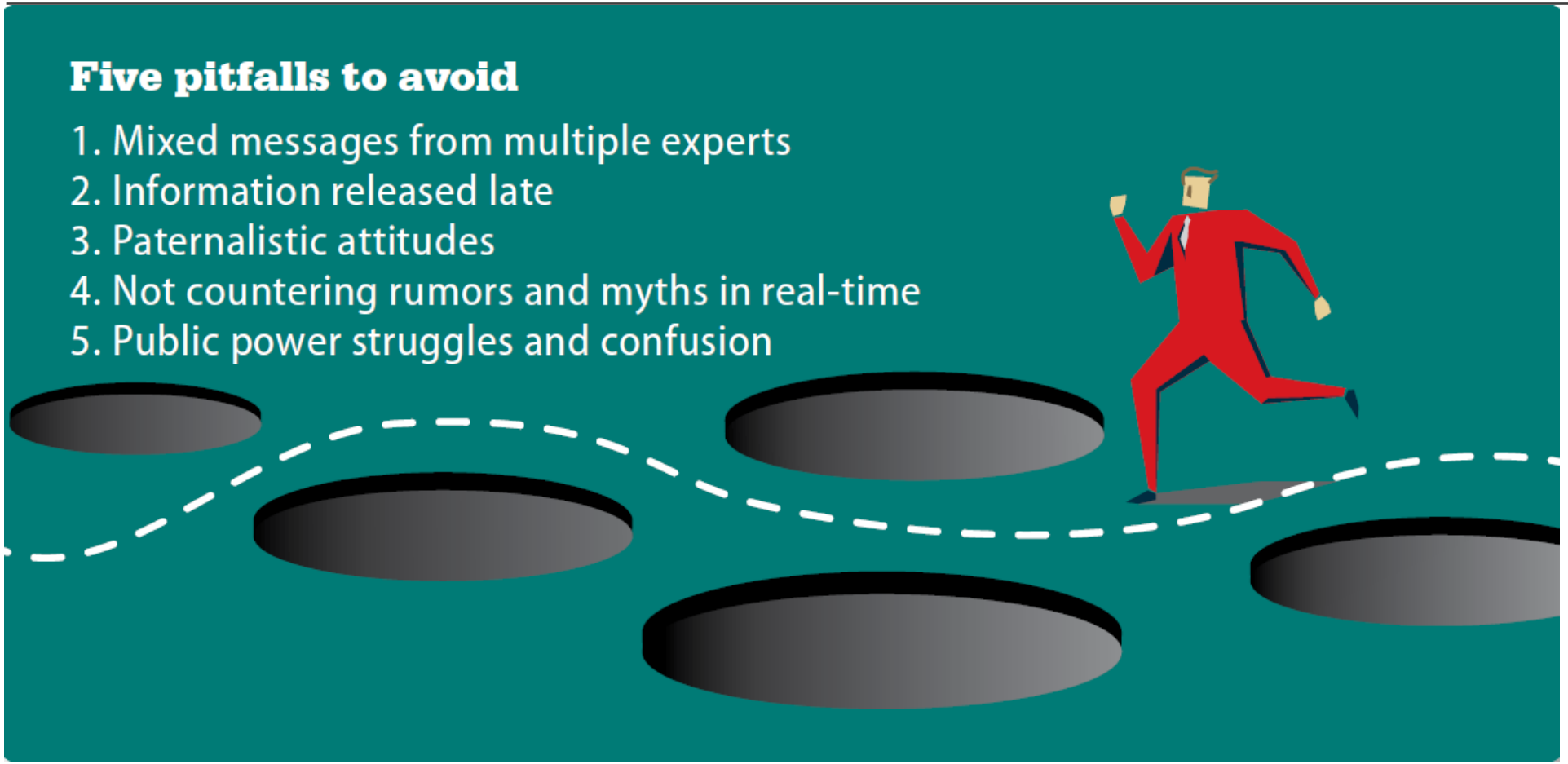
6 Principles:

1. Be first
2. Be right
3. Be credible
4. Express empathy
5. Promote action
6. Show respect





Avoiding communication pitfalls



Source : CDC, Crisis & Emergency Risk Communication Manual

Community (tenant) engagement

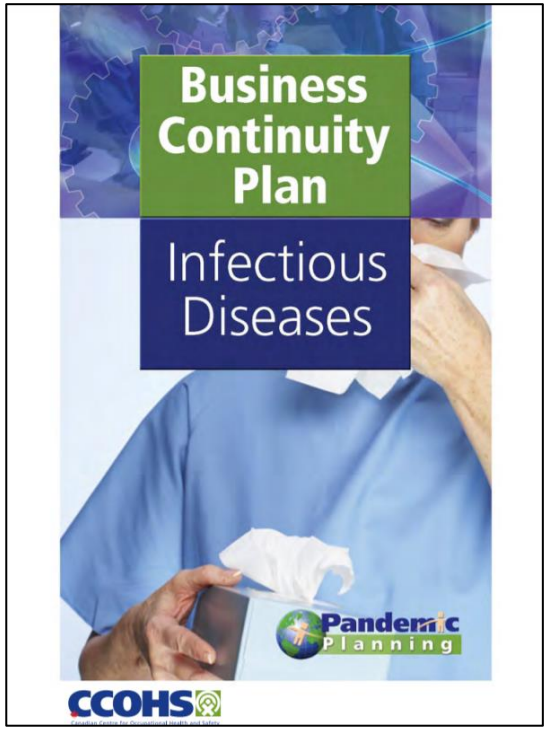
- Effective communication is always 2-way
- Listening and responding to concerns and needs
- Partnering with tenants in pandemic communication efforts
- Anticipate fear, rumors

"The overall goal of community engagement: to provide the most people with the information they need to make decisions and take actions that save lives and lead to recovery.

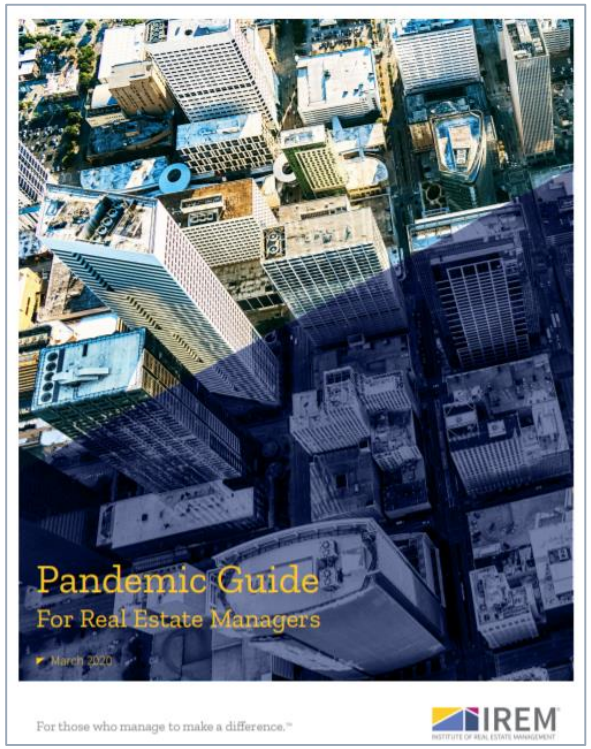
3. Safeguarding your Business: Business Continuity

- What are your essential business functions, essential jobs/roles?
- Cross-train staff to perform essential functions
- Stagger work shifts to enhance social distancing
- Is there a need to suspend further programs, services, operations?
- Continue reviewing essential supplies and supplies; have backup plans
- Third-party service contracts – do your contractors have their own BCPs?

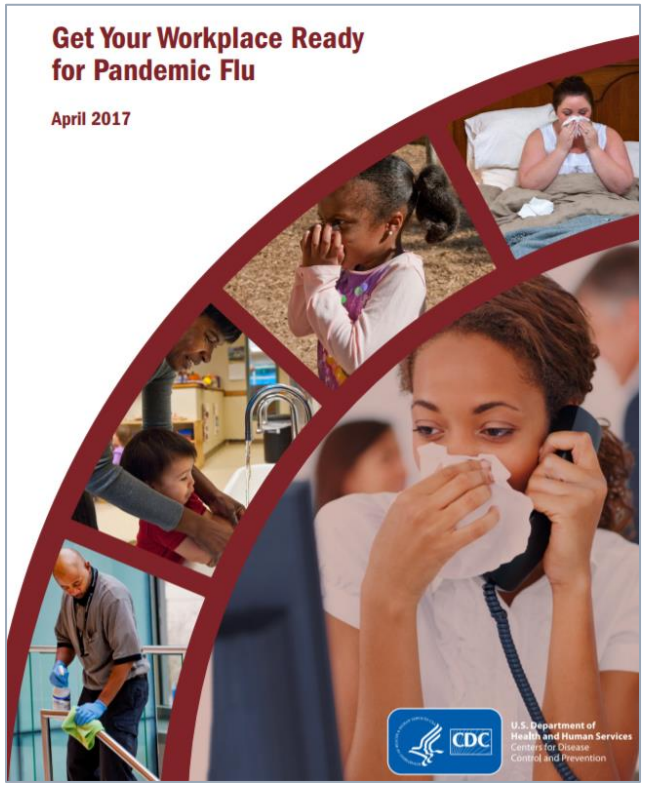
Business Continuity Resources



Canadian Centre for Occupational Health and Safety



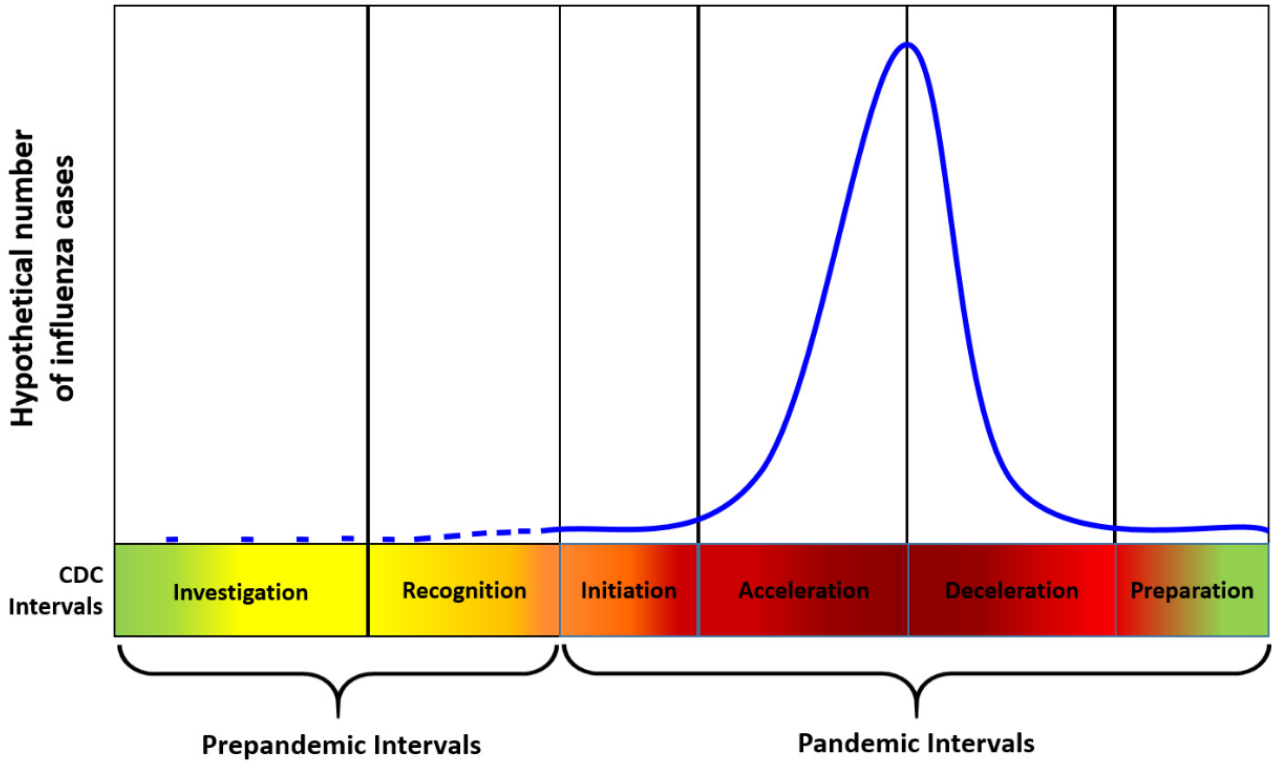
Institute for Real Estate Management



Centers for Disease Control & Prevention

What's ahead? Planning for the Future

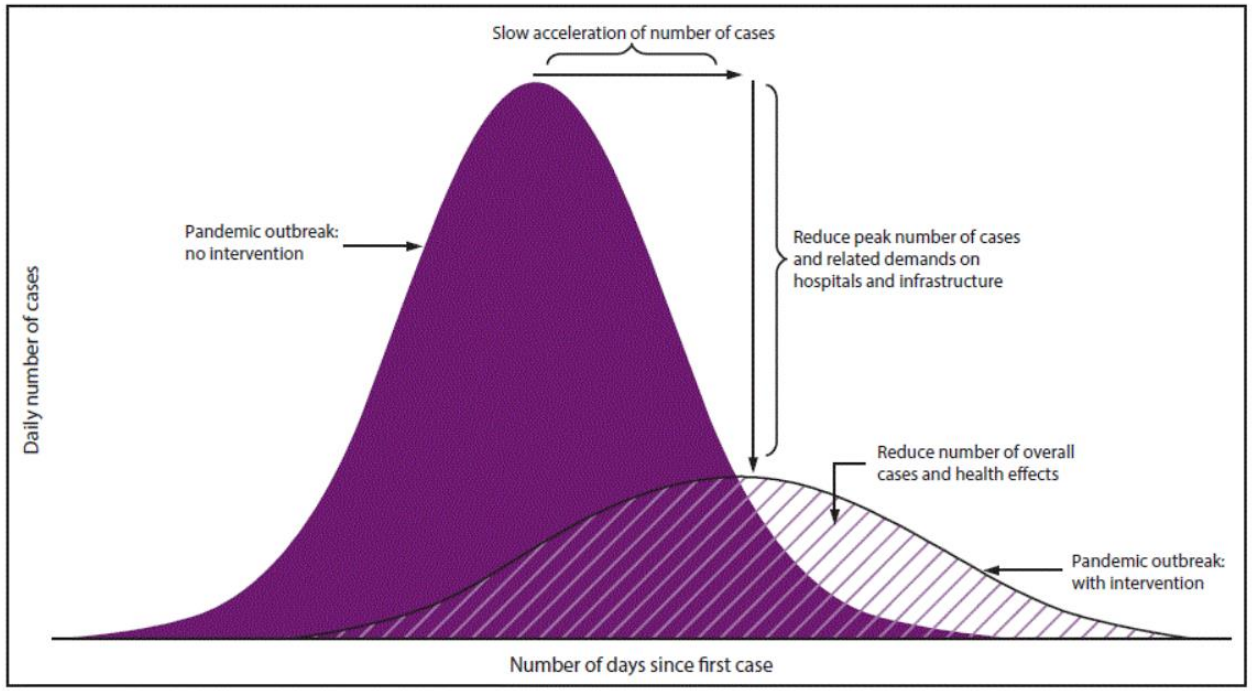
Figure 1. Preparedness and response framework for novel influenza A virus pandemics: CDC intervals



Source: CDC, *Pandemic Intervals Framework*

Our best possible future

FIGURE 1. Goals of community mitigation for pandemic influenza



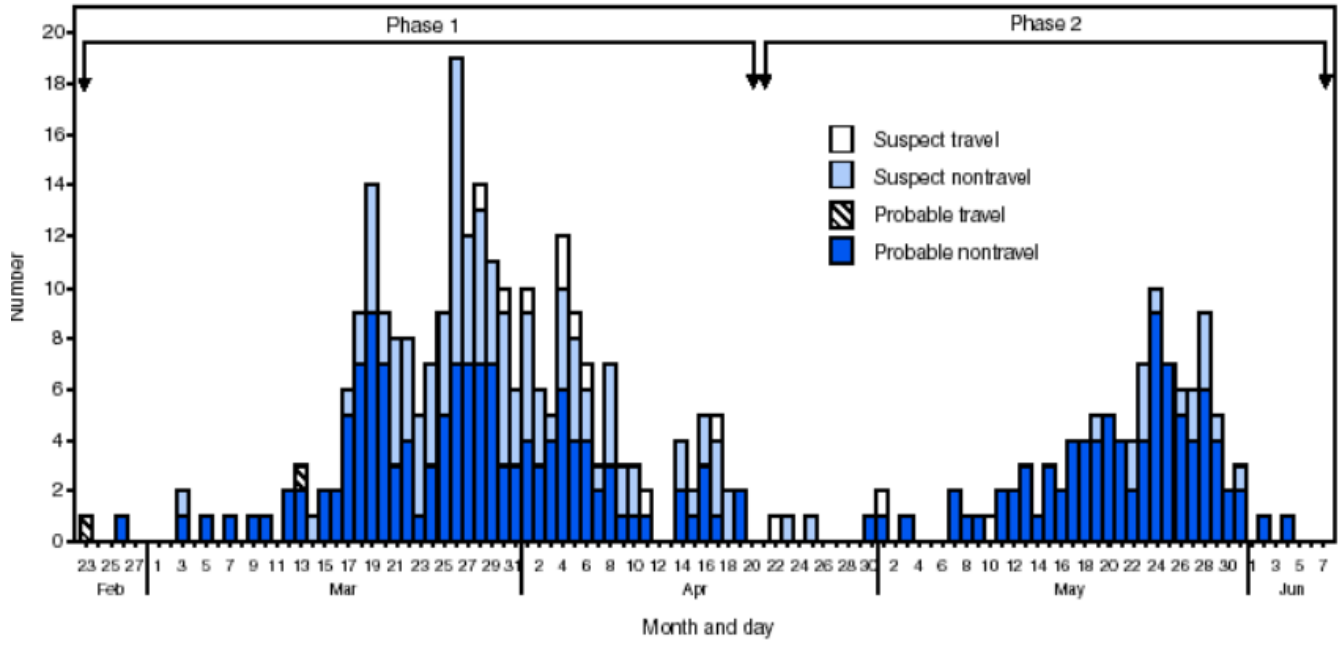
Source: Adapted from: CDC. Interim pre-pandemic planning guidance: community strategy for pandemic influenza mitigation in the United States—early, targeted, layered use of nonpharmaceutical interventions. Atlanta, GA: US Department of Health and Human Services, CDC; 2007. https://stacks.cdc.gov/view/cdc/11425.

Source: CDC, *Community Mitigation Guidelines to Prevent Pandemic Influenza – United States, 2017*

Planning for the Future

Expect and plan for subsequent waves, with varying severity levels

FIGURE 1. Number* of reported cases of severe acute respiratory syndrome, by classification and date of illness onset — Ontario, February 23–June 7, 2003

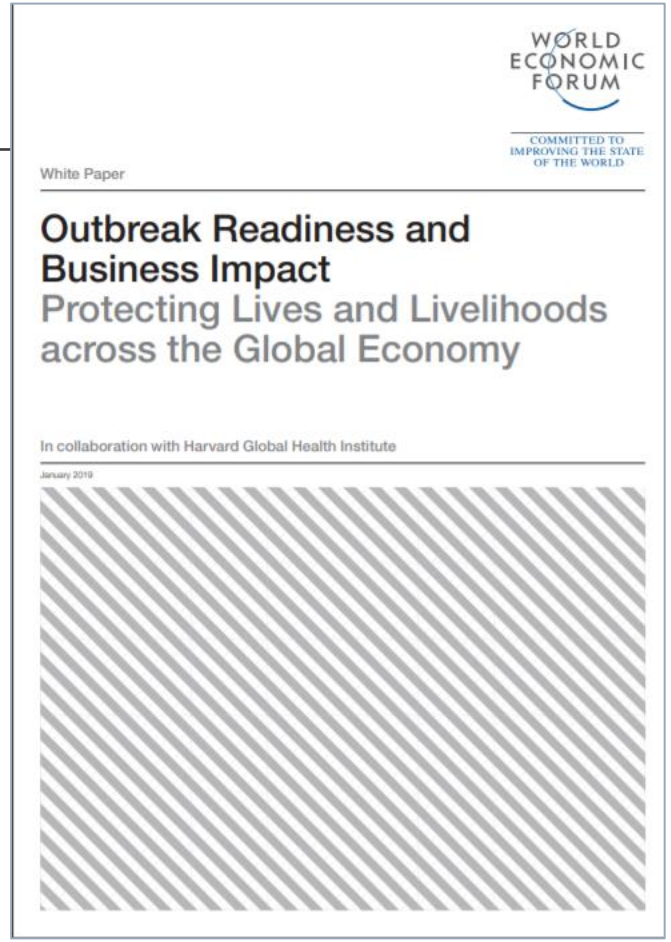


*N = 361.

Source: CDC, MMWR Weekly, Update: Severe Acute Respiratory Syndrome Toronto, Canada, 2003

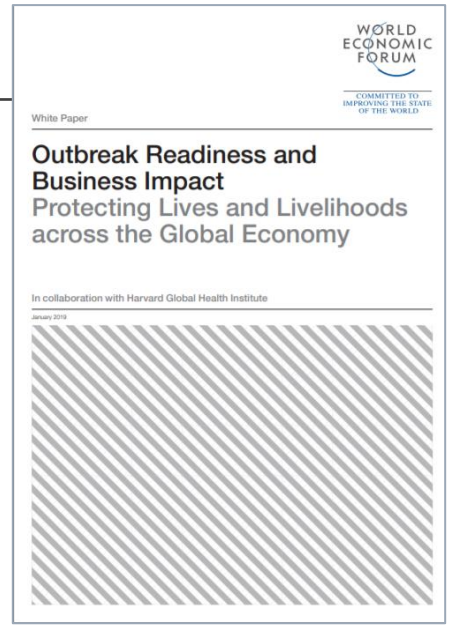
More to follow

- Expect to see more infectious disease outbreaks
- With increasing trade, travel, population density, human displacement, migration and deforestation, as well as climate change, a new era of the risk of epidemics has begun
- **Frequency and diversity of disease outbreaks are expected to grow steadily as they have for past 30 years**



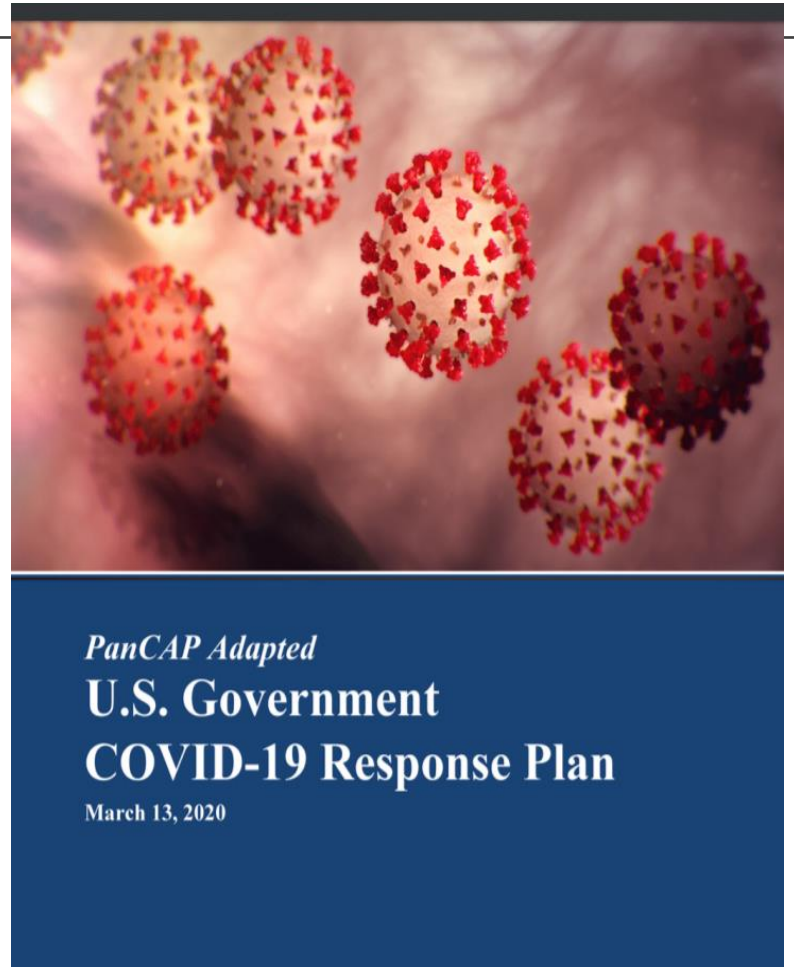
Implications

- We need to include the growing risk of infectious diseases in planning
- We need to reduce our exposure to this reality to improve our resilience
- We need to look for opportunities for enhanced public-private cooperation to strengthen global health security and mitigate the potentially devastating impacts of infectious disease, in both human and economic terms.



Finally, this could take a while: U.S. Government Planning Assumptions

- Pandemic can last 18 months or longer
- Could include multiple waves of illness
- Supply chain and transportation impacts
- COVID-19 outbreak will likely result in significant shortages for government, private sector, and individual consumers



Planning Implications

Government Assumptions

- Pandemic can last 18 months or longer
- Could include multiple waves of illness
- Supply chain and transportation impacts
- COVID-19 outbreak will likely result in significant shortages for government, private sector, and individual consumers

Your Considerations

- How can your business adapt to long-term?
- Need to plan staffing for round 2 of illness
- Have ongoing conversations with suppliers
- What is your plan to cope with expected shortages?

The good news: Recovery will happen

- What's your Recovery plan?
- Which programs, services will resume first?
- Continuing provision of coping resources for stakeholders
- How, what, and to whom will you communicate when emergency is over?
- Conduct stakeholder debrief sessions – identify what went well, gaps, what needs to be improved
- After-Action reports – how will you amend procedures, plans & protocols based on what you have learned? Communicate these to staff
- Find ways to share your findings with the industry

ACTION NOW: Document everything during pandemic response – don't forget what you did and learned!

Thank you!

ARE YOU READY?

Q&A

Rachel MacCleery

Senior Vice President

Urban Land Institute

~ Moderator ~

Whitney Austin Gray,
PhD, LEED AP, WELL AP,
WELL Faculty
Senior Vice President

International WELL Building Institute

Catherine Troisi, Ph.D.

Associate Professor

University of Texas School of Public Health in Houston

Susan Bazak, M.A.

Principal

Bazak Consulting

bazakconsulting@gmail.com

Upcoming Confronting COVID-19 Webinars | Tuesdays at 1 pm

March 31: Healthy Buildings; Optimizing Mental Health

Joseph Allen

Assistant Professor, Harvard T.H. Chan School of Public Health

Joanna Frank

Executive Director, Center for Active Design

April 7: Considerations for Multifamily Buildings

April 14: TBD

www.uli.org/covid19 health@uli.org

Confronting COVID-19:

Insights for Real Estate Leaders

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Urban Land Institute