

Welcome to the webinar!

Water, Sanitation & Hygiene During the COVID-19 Pandemic: Guidance for Local Jurisdictions

Wednesday, June 24, 2020
We will begin at 12:00 PM EST

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Webinar ID: 933 7775 4806

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Thank you for your interest and attendance!



The National Connection for Local Public Health



Before We Begin:

- Due to the high number of expected attendees, **please connect to the webinar with one device**
- Webinar has been extended to end at 1:30 pm EST to allow time for questioning
- This webinar is being recorded and will be available online, along with a summary of the Q&A
- Use the Q&A box to submit questions to panelists



Featured Guest Speakers

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Water, Sanitation & Hygiene During the COVID-19 Pandemic: Guidance for Local Jurisdictions

Amy E Kirby, PhD, MPH

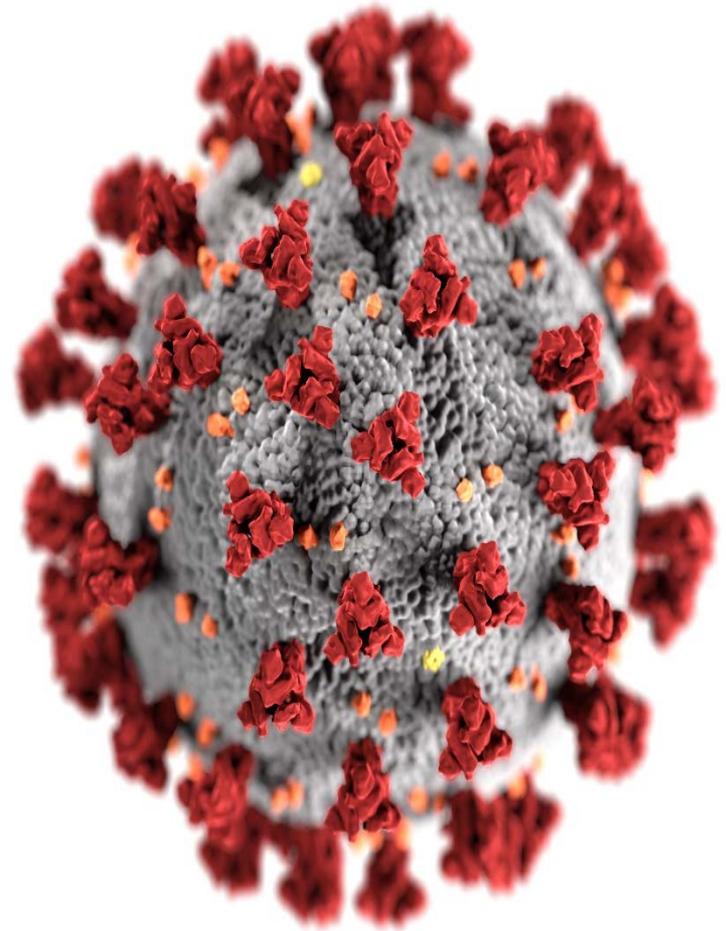
CDR Jasen Kunz, MPH, REHS/RS

WASH Team, Community Intervention and
Critical Populations Task Force

COVID-19 Response

National Association for County and City
Health Officials Webinar

June 24th, 2020



cdc.gov/coronavirus



COVID-19: How It Spreads

- The virus is thought to spread mainly from person to person
 - Between people who are in close contact with one another (within about 6 feet)
 - Through respiratory droplets produced when an infected person coughs, sneezes, or talks
- These droplets can land in the mouths or noses of people who are nearby, or possibly be inhaled into the lungs
- People without symptoms may be able to spread COVID-19
- People may be able to get COVID-19 by touching a surface or object that has the virus on it and then touching their mouth, nose, or eyes



COVID-19: Symptoms & Complications

Symptoms may include

- Cough
- Shortness of breath
- Fever
- Chills
- Headache
- Muscle pain
- Sore throat
- New loss of taste or smell
- Repeated shaking with chills

Wide range of illness severity has been reported

- Mild to severe illness
- Can result in death

Estimated incubation period

- 2 to 14 days

Complications may include

- Pneumonia
- Respiratory failure
- Multisystem organ failure

[Symptom Self-Checker](#)



COVID-19: Protect Yourself

Prevent the Spread of Disease

- Avoid touching your eyes, nose, and mouth with unwashed hands
- Avoid close contact with people when not at home (social distancing)
- Wash your hands often with soap and water for at least 20 seconds
 - Use an alcohol-based hand sanitizer with at least 60% alcohol if soap and water are not available
- Clean and disinfect frequently touched objects and surfaces



COVID-19: Protect Yourself and Others

Other ways you can help prevent respiratory illnesses

- Stay home when you are sick
- Cover your cough or sneeze with a tissue, or the inside of your elbow, then throw away used tissues and wash your hands
- Wear a cloth face covering over your nose and mouth when you are in public, especially in situations where you may be near people
 - **Important:** Cloth face coverings are NOT a substitute for social distancing
 - Cloth face coverings are not PPE nor appropriate substitutes for respirators at worksites where these are required or recommended



COVID-19: What To Do if You Are Sick



- Stay home. Most people recover at home without needing additional medical care
- Stay away from people as much as possible
- Wear a cloth face covering if you must be around other people
- Cover your coughs and sneezes
- Clean your hands often
- Avoid sharing personal household items
- Clean and disinfect frequently touched objects and surfaces

COVID-19: If Your Symptoms Get Worse

- Monitor your symptoms for emergency warning signs including
 - ! Trouble breathing
 - ! Persistent pain or pressure in chest
 - ! New confusion or inability to rouse
 - ! Bluish lips or face
- Call ahead before visiting your doctor
- Call 911 if you have a medical emergency
 - Tell the operator of your COVID-19 status, if known
 - Put on cloth face covering before help arrives



COVID-19: Ending Home Isolation

With COVID-19 test

- No fever without fever-reducing medicine

AND

- Improvement of respiratory symptoms

AND

- Tested negative 2x in a row, at least 24 hrs. apart

Without COVID-19 test

- No fever for 72 hrs. without fever-reducing medicine

AND

- Improvement of respiratory symptoms

AND

- 10 days have passed since symptoms began

With COVID-19 test but no symptoms

- 10 days have passed since positive test

AND

- No symptoms since test

OR

- Tested negative 2x in a row, at least 24 hrs. apart



COVID-19: Social Distancing and Face Coverings

- Social distancing is the most important tool we have for slowing the spread of COVID-19
 - Stay at least 6 feet from other people
 - Do not gather in groups
 - Stay out of crowded places and avoid mass gatherings
 - Wear a cloth face covering when you are in public, especially in situations where you may be near people



Face Covering Do's and Don'ts:

DO:

- ✓ Make sure you can breathe through it
- ✓ Wear it whenever going out in public
- ✓ Make sure it covers your nose and mouth
- ✓ Wash after using

DON'T:

- ✗ Use if under two years old
- ✗ Use surgical masks or other PPE intended for healthcare workers

 cdc.gov/coronavirus

Cleaning and Disinfection



COVID-19: How To Clean And Disinfect Your Home

- Common household cleaners and disinfectants are effective
- Follow label instructions for use (dilutions for use, contact time, and appropriate protective equipment)
- Household bleach can be diluted (1/3 cup of bleach into a gallon of water)
- Focus on high touch surfaces like remote controls, phones, toilet handles, and light switches
- If surfaces are dirty, clean them before disinfecting



COVID-19: If Someone In Your House Is Sick

- Separate the person who is sick from people who are well
 - Set up a sick room
 - If possible, set up a sick bathroom
- Limit sick room cleaning to as-needed
- Sick person should wear a cloth face covering when a caregiver is in the room
- After person who is sick has recovered, close off sick room and wait up to 24 hours before cleaning and disinfecting
 - If possible, open outside windows to increase air flow



COVID-19: Disinfect With The Right Chemicals

- Cleaning and disinfection should be **effective**
 - ✓ Clean first, especially if the surface is dirty
 - ✓ Use [List N EPA-registered disinfectants](#)
 - ✓ Follow manufacturer's instructions for
 - ✓ Application method
 - ✓ Contact time
 - ✓ If List N disinfectants are not available household bleach can be diluted (1/3 cup of bleach into a gallon of water)



COVID-19: Disinfect The Right Surfaces

- Disinfection should be **efficient**
- ✓ Focus on surfaces and objects that are frequently touched by multiple people
 - ✓ For example, doorknobs, light switches, phones, faucets and sinks, handles, tables, countertops, remote controls
- ✗ Many surfaces do not need to be disinfected
 - ✗ Surfaces and objects that are not frequently touched
 - ✗ Walls, floors, sidewalks, groundcovers
 - ✗ Areas that have not been used by anyone in the past 7 days

COVID-19: Disinfect With The Right Protection

- Cleaning and disinfection should be **safe**
- ✓ Staff should be instructed on how to apply the disinfectants according to the label
- ✓ Use disinfectants at the correct concentration
- ✓ Use Personal Protective Equipment (PPE) according to manufacturer's instructions
- ✓ Ensure sufficient ventilation for disinfectants used
- ✓ Keep all disinfectants out of reach of children
- ✓ Store disinfectants appropriately



Sewage Surveillance



Sewage Surveillance

The New York Times

Australia to Detect Coronavirus Spread by Testing Raw Sewage

By Reuters

April 16, 2020, 3:30 a.m. ET



The New York Times

Is It Safe to Come Out of Lockdown? Check the Sewer

Wastewater could provide early, painless and localized data about the rise or fall of coronavirus levels.

The New York Times

Some scientists are using sewage to measure the prevalence of coronavirus in their communities

By Alec Snyder and Susannah Cullinane, CNN

🕒 Updated 7:45 PM ET, Sun April 26, 2020

CNN.com

CORONAVIRUS

Poop could help stop the pandemic. Really.

Wastewater offers a promising way to track the virus, a top CDC doctor says.

Politico



COVID-19 Sewage Surveillance | Public Health Toolbox

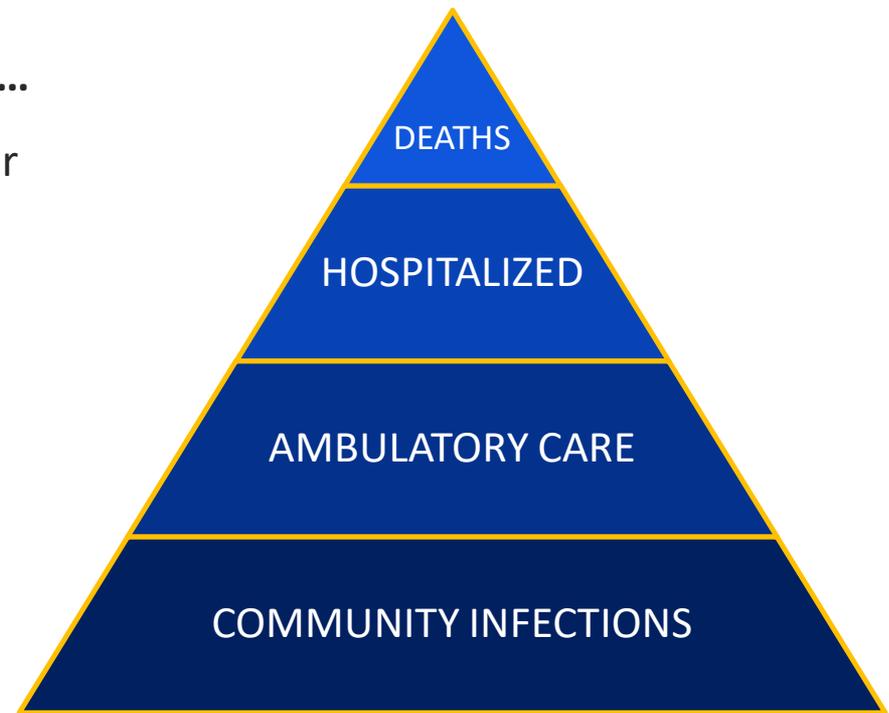
- SARS-CoV-2 is shed in feces of symptomatic and asymptomatic individuals
- Sewage is an efficient pooled sample of (sub)community infection prevalence
 - Captures sub-clinical infections
 - Independent of healthcare-seeking behavior and testing access
 - Provides info within days versus up to 2 week lag for other surveillance data



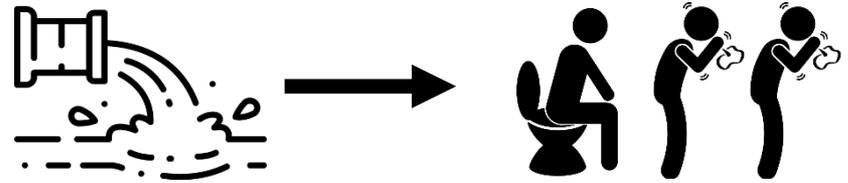
HD Use of Sewage Data in Response Decisions

Sewage data will complement case- and symptom-based surveillance by providing...

- Resolution to conflicting clinical indicator trends
- Infection data for communities where testing data is not available
- Understanding of sub-county variability
- Infection information during sub-clinical phases



Sewage Surveillance Data



Current potential: *based on state of the science*

- Provide county and sub-county level total infection **trends**
- **Leading indicator** of potential infection increases following reopening of communities
- **Early warning** to inform re-closure decisions – particularly high-risk facilities like senior living centers, university campuses, prisons, nursing homes
- **Tracking** virus evolution and global origin upon emergence in US

More Data Needed: estimating overall daily infection prevalence within a sewershed

CDC COVID-19 Sewage Surveillance | Phased Approach

■ Assessment Phase

- Partner with industry or academic partners to evaluate **existing** SARS-CoV-2 sewage data
- Work with CDC COVID-19 response teams to evaluate sewage data against existing case- and symptom-based surveillance data

■ Operational Phase

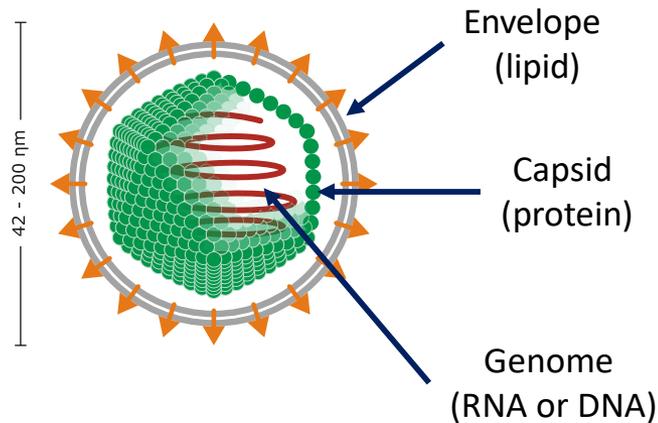
- Expand network for testing to more sentinel sites, including testing capacity at CDC and EPA
- Develop submission process for sewage data into national repository housed at HHS for summary and analyses to inform response



Risk From Water and Wastewater



PCR Detection Does Not Mean Virus Is Infectious



- Culture of live virus requires an intact virus particle
- PCR detects specific regions of the viral genome
 - Damage to the envelope, capsid or genome does not necessarily prevent PCR detection

COVID-19: Wastewater Risk

Table 1
Persistence of SARS-CoV in different waters at 20 °C^a

Water samples	Detection time (day)								
	0	1	2	3	4	5	6	8	14
309th hospital	+	+	+	-	-	-	-	-	-
Domestic sewage	+	+	+	-	-	-	-	-	-
Dechl tap wat ^b	+	+	+	-	-	-	-	-	-
PBS	+	+	+	+	+	+	+	+	+

Table 2
Persistence of SARS-CoV in different waters at 4 °C^a

Water samples	Detection time (day)								
	0	1	2	3	4	5	6	8	14
309th hospital	+	+	+	+	+	+	+	+	+
Domestic sewage	+	+	+	+	+	+	+	+	+
Dechl tap wat ^b	+	+	+	+	+	+	+	+	+
PBS	+	+	+	+	+	+	+	+	+

Wang et al. 2005 J Vir Methods

- Remains unclear whether virus in feces is infectious
- Treatment methods and disinfection are expected to be effective
- There is no epidemiological evidence of higher infection rate in wastewater workers
- Workers should use standard PPE following task-specific risk assessments

SARS-CoV-2 and Drinking Water

- No epidemiologic evidence that drinking water exposure is a risk for COVID-19
- Treatment methods are expected to be effective
- Chlorine, chloramines are effective against SARS-CoV-2
- Possible contamination source most likely wastewater
 - Unknown whether virus in wastewater is infectious
- **Boil advisories-** recent advisories have been misinterpreted to be due to COVID-19 and have caused concern about safety of handwashing
 - adding boil advisory guidance to CDC Water and COVID webpage



8 steps to minimize *Legionella* risk before your business or building reopens



Legionnaires' disease

- First described following an American Legion convention in Philadelphia in 1976
- Causes severe pneumonia and usually requires hospitalization
 - Deadly for 1 in 10 people infected
 - Deadly for 1 in 4 who get it from a healthcare facility



Legionella can grow and spread in many areas of hotels and resorts

Cooling Towers

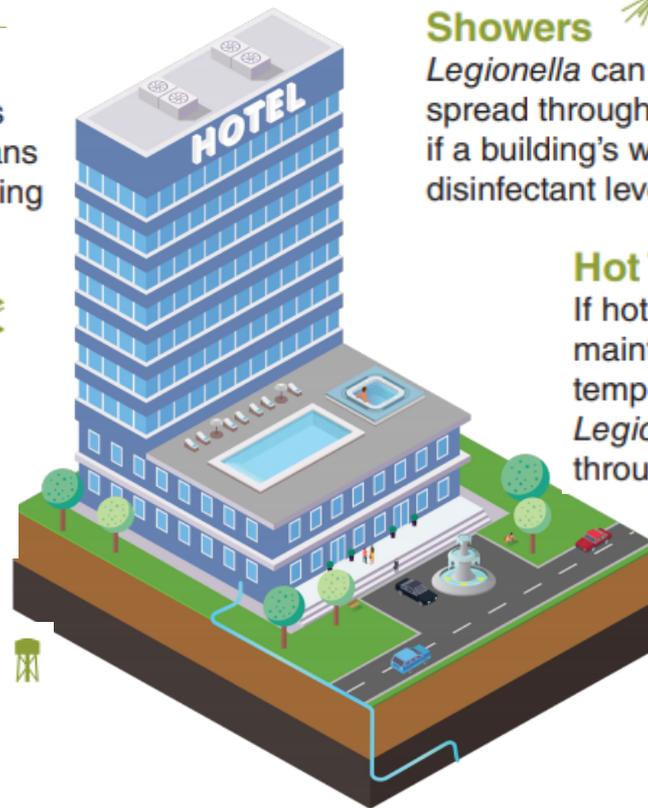
When disinfectant levels are low, cooling tower fans can spray water containing *Legionella*.

Unoccupied Floors

Low occupancy decreases water flow, which can decrease disinfectant levels and increase the risk of *Legionella* growth.

Water Supply Interruptions

Events that interrupt the delivery of municipal water to a building, such as nearby construction, allow dirt to enter the system and use up disinfectant.



Showers

Legionella can grow in and spread through showerheads if a building's water has low disinfectant levels.

Hot Tubs

If hot tubs are not well maintained, the warm temperature supports growth of *Legionella*, which can spread through water jets.

Decorative Fountains

Legionella can grow in warm areas of a fountain and splashing can spread water containing *Legionella*.

Ensure that your water system is safe to use after a prolonged shutdown



- Stagnant or standing water in a plumbing system can
 - Increase the risk for growth and spread of *Legionella* and other biofilm-associated bacteria.
 - Facilitate the lowering of hot water temperatures to the *Legionella* growth range (77–108°F, 25–42°C).
 - Lead to low or undetectable levels of disinfectant, such as chlorine.

Prioritize worker safety when conducting reopening activities

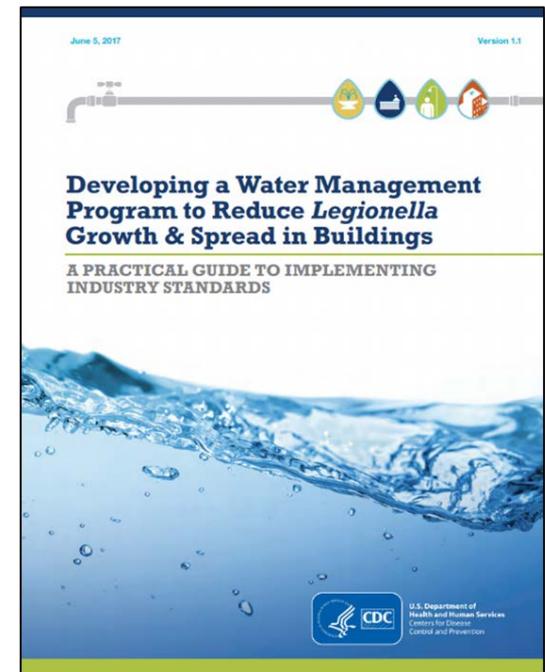
- **People at increased risk** of developing Legionnaires' disease, such as those with weakened immune systems, **should consult with a medical provider** regarding participation in flushing, cooling tower cleaning, or other activities that may generate aerosols.
- Wearing a half-face air-purifying respirator equipped with an N95 filter¹, or an N95 filtering facepiece, may be appropriate in enclosed spaces where aerosol generation is likely.

1. Respirators must be used in accordance with a comprehensive respiratory protection program, which includes fit testing, training, and medical clearance ahead of their use (see [OSHA standard 29 CFR 1910.134](#) and [OSHA Legionellosis website](#)). For more information about N95 respirators, visit the [NIOSH National Personal Protective Technology Laboratory \(NPPTL\) website](#).



Step 1: Develop a comprehensive water management program (WMP)

- Water Management Program Toolkit:
 - www.cdc.gov/legionella/wmptoolkit
- Preventing Legionnaires' Disease: A Training on *Legionella* Water Management Programs (PreventLD Training):
 - www.cdc.gov/nceh/ehs/elearn/prevent-LD-training.html

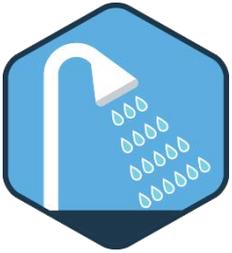


Step 2: Ensure your water heater is properly maintained and the temperature is correctly set

- Determine if your manufacturer recommends draining the water heater after a prolonged period of disuse.
- Set your water heater to at least 140°F.
 - Higher temperatures can further reduce the risk of *Legionella* growth
 - Take measures to prevent scalding



Step 3: Flush your water system



- Flush hot and cold water through all points of use.
- Flushing may need to occur in segments based on facility size and water pressure.
- Flush until the hot water reaches its maximum temperature.
- Take care to minimize splashing and aerosol generation.
- Other water-using devices may require additional cleaning steps in addition to flushing.

Step 4: Clean all decorative water features

- Follow any recommended manufacturer guidelines for cleaning.
- Ensure that decorative water features are free of visible slime or biofilm.
- After the water feature has been re-filled, measure disinfectant levels to ensure that the water is safe for use.



Step 5: Ensure hot tubs/spas are safe for use¹

- Check for existing guidelines from your local or state regulatory agency before use.
- Ensure that hot tubs/spas are free of visible slime or biofilm before filling with water.
- Perform a hot tub/spa disinfection procedure before use.
- *Legionella* testing decisions should be made in consultation with facility water management program staff and relevant public health authorities.

1. See also Considerations for Public Pools, Hot Tubs, and Water Playgrounds During COVID-19:
<https://www.cdc.gov/coronavirus/2019-ncov/community/parks-rec/aquatic-venues.html>



Step 6: Ensure cooling towers are clean and well-maintained

- Maintain cooling towers (including start-up and shut-down procedures) per manufacturer's guidelines and industry best practices¹.
- Ensure that the tower and basin are free of visible slime, debris, and biofilm before use.
- If the tower appears well-maintained, perform an online disinfection procedure.



1. Cooling Technology Institute for guidance on cooling tower start-up and shutdown procedures and disinfection
<https://cti.org/pub/cticode.php>
<http://www.cti.org/downloads/WTP-148.pdf>

Step 7: Ensure safety equipment is clean and well-maintained

- Regularly flush, clean, and disinfect these systems according to manufacturers' specifications
 - Fire sprinkler systems
 - Eye wash stations
 - Safety showers



Step 8: Maintain your water system

- Consider contacting your local water utility to inquire about any recent disruptions in the water supply.
- After your water system has returned to normal operations, ensure that the risk of *Legionella* growth is minimized by regularly checking water quality parameters such as temperature, pH, and disinfectant levels.
- Follow your water management program, document activities, and promptly intervene when unplanned program deviations arise.



EPA Guidance for Maintaining or Restoring Water Quality in Buildings with Low or No Use

- Aligns with CDC guidance
- Steps to maintain water quality while buildings are closed
- Maintenance procedures for buildings operating at reduced usage
- Steps to prepare the building water system when reopening
- Guidance for non-community water systems

RESTORING WATER QUALITY IN BUILDINGS FOR REOPENING

CHECKLIST

Building and business closures for weeks or months reduce water usage, potentially leading to stagnant water inside building plumbing. This water can become unsafe to drink or otherwise use for personal or commercial purposes. EPA recommends that building owners, building managers, and businesses take steps to flush the building's plumbing before reopening.

Flushing involves opening taps and letting the water run to remove water that has been standing in the interior pipes and/or outlets. The flushing time varies by the plumbing configuration and type of water body cleared.

- 1 BEFORE FLUSHING BUILDINGS**
 - Contact your water utility about local water quality and to coordinate maintenance activities.
 - Check information from your local public health department for any local requirements for reopening.
 - Follow appropriate regulations and policies for worker safety and health.
- 2 STEPS FOR FLUSHING BUILDINGS**
 - Review how water moves through your building, from the street to each point of use.
 - Inspect the plumbing.
 - Maintain any water treatment systems (e.g., filters, water-softeners) following manufacturer's instructions.
 - Ensure the hot water system is operating as specified.
 - Flush the service line that runs from the water main to the building.
 - Flush the cold water lines.
 - Drain and clean water storage facilities and hot water heaters.
 - Flush the hot water lines.
 - Flush, clean, and maintain devices connected to the plumbing system following manufacturer's instructions.

Consider checking water quality parameters to verify that fresh water is being flushed through the entire plumbing system.

- 3 OTHER ACTIONS TO CONSIDER**
- Notify your building occupants of the status of the water systems and the flushing program.
- Limit access to or use of the water as an appropriate cautionary phase.
- Determine if proactive disinfections/heat treatment is necessary.
- Develop a water management program.

For more information, please visit [EPA.GOV/CORONAVIRUS](https://www.epa.gov/coronavirus)

<https://www.epa.gov/coronavirus/information-maintaining-or-restoring-water-quality-buildings-low-or-no-use>



Considerations for Disaster Shelters During the COVID-19 Pandemic



Hurricane season 2020

- Hurricane season is expected to be more active than average this year.
- In spite of stay-at-home orders, it may become necessary for people to seek safety in evacuation shelters.
- Shared living areas and crowded conditions in shelters require modifications to standard shelter operations.
- CDC developed recommendations to assist shelter staff to reduce the possibility of transmission of COVID-19 among shelter staff, volunteers, shelter residents, and visitors.





Sheltering during the COVID-19 pandemic

Questions

- How do we lower the risk of transmission?
- How do we operate while maintaining social distancing?
- What strategies can we use to monitor illness?
- What do we do if someone gets sick?
- What should people bring to a shelter?
- What are considerations for people in the higher risk category?
- What are considerations for children?
- What if someone brings their pet?

Disaster shelter options

Option 1 - Hotels or dormitories

Preferred option:

- Separate rooms lower risk of transmission
- Areas for feeding, laundry, and other services
- Hotels preferred over dormitories because they have private bathrooms, televisions, phones, and bedding



Disaster shelter options

Option 2 - Campgrounds

- People can stay in separate tents, cabins, or RVs
- Many sites have bathrooms, laundry and bathing facilities
- Need to check for accessibility
- Post-hurricane sheltering only



Disaster shelter options

Option 3 - Congregate shelters

- Small shelter (fewer than 50 residents)
 - May need more shelters
 - Less complicated operations
 - May be closer to home than larger facility
- Large shelters
 - Option of last resort
 - Demobilize when safe to do so
 - Move shelter residents out of large shelters as soon as possible



CDC Interim Guidance for General Population Disaster Shelters During the COVID-19 Pandemic

The guidance covers the following topics:

- People who need to take extra precautions
- Screening, monitoring, and isolation
- Intake area and waiting room
- Isolation area
- Discontinuation of isolation
- Information in all common areas of the shelter
- Social distancing
- Food service
- Increased use of supplies
- Cleaning and disinfection
- Air filtration
- Special considerations for children
- Animals in emergency shelters

[CDC Interim Guidance for General Population Disaster Shelters During the COVID-19 Pandemic](#)

Key points and important messages

- Alternatives to opening disaster shelters, such as sheltering in-place, should be considered if safe.
- Everyone in the shelter should wear a [cloth face covering](#) at all times except when not practical, such as when eating or showering. *
- Access to safe shelter is critical and shelters should not exclude people who are having symptoms or test positive for COVID-19. These individuals should be directed to the isolation area.

* Cloth face coverings should not be placed on babies or children younger than 2 years of age or anyone who has trouble breathing or is unconscious, incapacitated or otherwise unable to remove the covering without assistance.



Key points and important messages

- Staff should monitor residents for [symptoms of COVID-19](#) and other illness, including mental/behavioral health concerns, and provide a daily update to the local health department.
- Shelters should provide separate areas to isolate residents with symptoms of COVID-19.
- If testing is available, shelter staff, volunteers, and residents should be tested in accordance with state and local health department guidelines.



Key points and important messages

- Use of cloth face coverings, frequent handwashing, social distancing, and frequent cleaning and disinfection should be maintained in all areas of the shelter, including animal area.
- In accordance with the ADA, service animals must be allowed to stay with their handlers unless the animal is out of control or poses a direct threat to health and safety.



Not a perfect solution

Challenges:

- Some people may be afraid to go to a shelter due to COVID-19.
- There may not be enough masks, face coverings, or testing available for everyone.
- People may not comply with social distancing and other preventive measures.
- May be a heightened level of anxiety in the shelter.
- Options to transport people who can't drive themselves may be limited and increase the risk of exposure.
- Some staff and volunteers may be unable or unwilling to assist in the shelter.

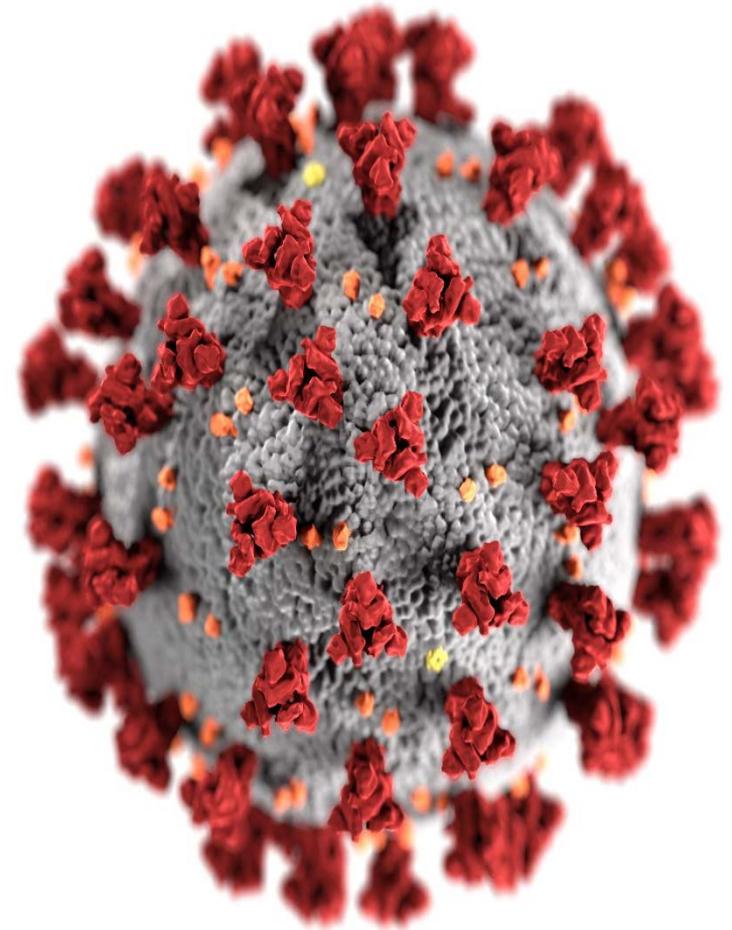
COVID-19: CDC Resources

- Latest COVID-19 information: www.cdc.gov/coronavirus
- COVID-19 prevention: www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/index.html
- Handwashing information: <https://www.cdc.gov/handwashing/index.html>
- Face Coverings: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/diy-cloth-face-coverings.html>
- Reopening Guidance for Cleaning and Disinfection: www.cdc.gov/coronavirus/2019-ncov/community/reopen-guidance.html
- Businesses and Workplaces: <https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/businesses-employers.html>

COVID-19: CDC Resources

- COVID-19 and water: <https://www.cdc.gov/coronavirus/2019-ncov/php/water.html>
- Building Reopening Guidance: www.cdc.gov/coronavirus/2019-ncov/php/building-water-system.html
- Hurricane Guidance: <https://www.cdc.gov/coronavirus/2019-ncov/downloads/Guidance-for-Gen-Pop-Disaster-Shelters-COVID19.pdf>
- CDC communication resources: <https://www.cdc.gov/coronavirus/2019-ncov/communication/index.html>

Questions?



For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



WASH & COVID-19 Efforts at Local Health Departments

Speaking now:

Rob Blake, MPH

Transylvania County Department of Public Health (NC)



Questions?



- Submit questions, or upvote existing questions in the Q&A box
- A summary of the Q&A session will be made available after the webinar



Thank you for attending the webinar!

A recording of the webinar, the presentation slides, and a summary of the Q&A will be made available after the webinar