



LAWRENCE
LIVERMORE
NATIONAL
LABORATORY

LLNL-PRES-809457

HS4440-WU01

COVID-19: Working Safely at LLNL

During the COVID-19 Pandemic

REVISION 3

Version 1.2.0 / April 23, 2020

Authors/Instructional Designers:

C. I. Hall

M. F. Hagerty

Auspices Statement:

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Working Safely at LLNL During the COVID-19 Pandemic

1 Welcome

HS4440-WU01
Working Safely at LLNL During the COVID-19 Pandemic
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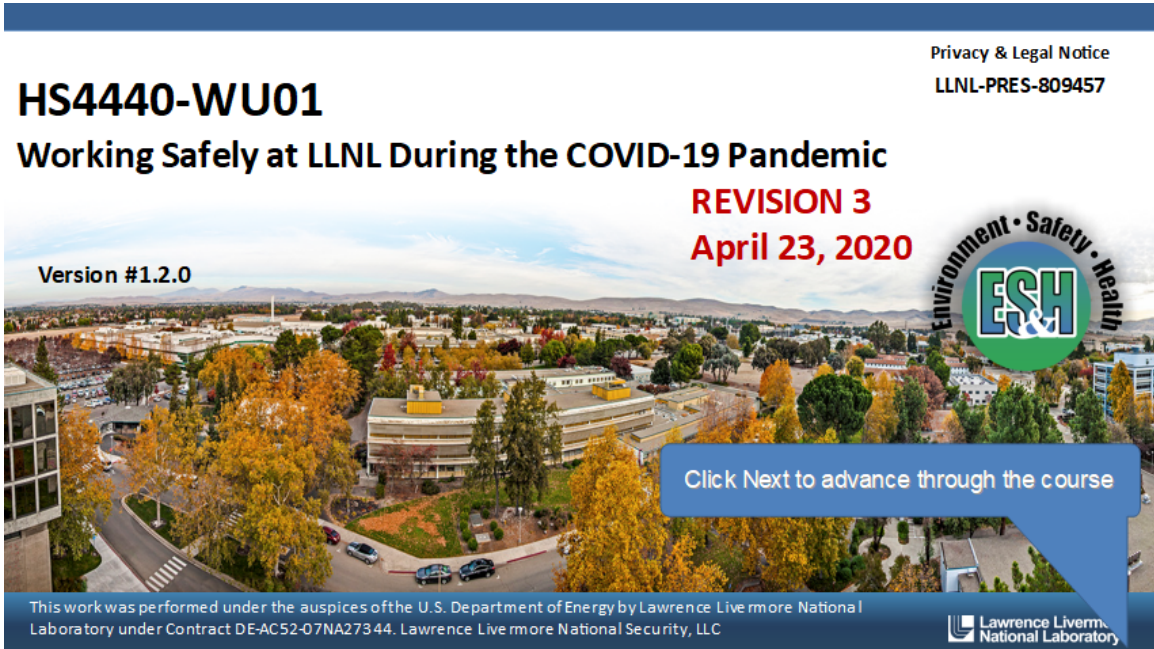
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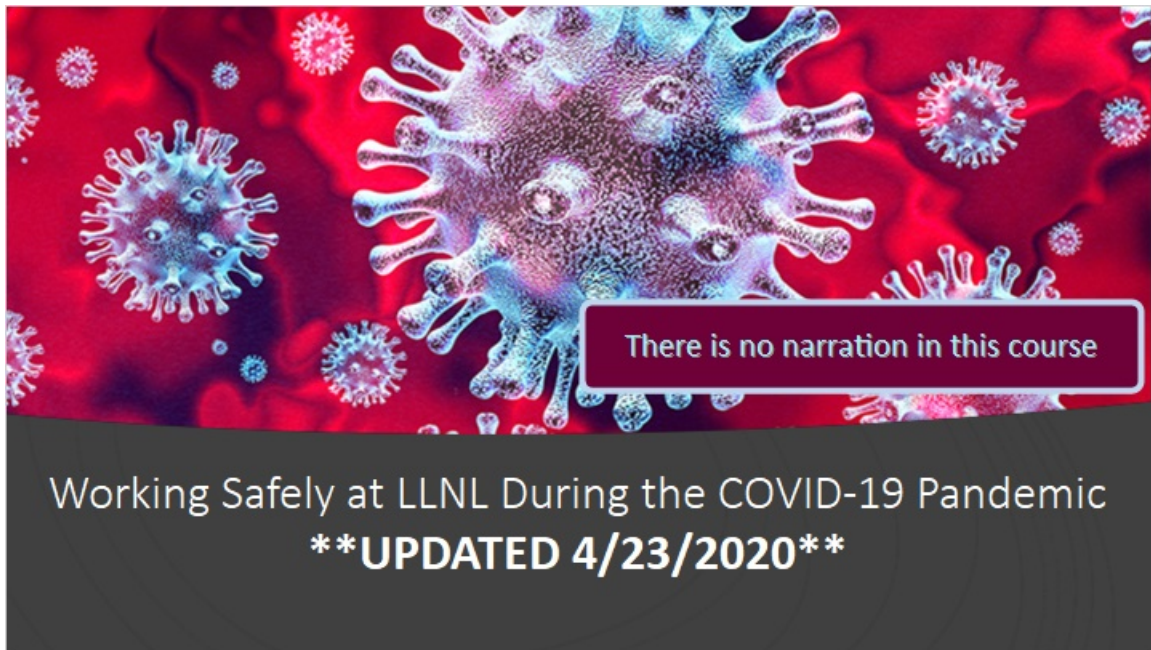
Lawrence Livermore National Laboratory




2 Announcement



3 COVID-19: Working Safely at LLNL During Minimum Safe Operations



4 Overview

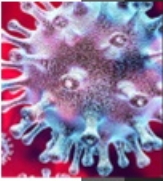


The COVID-19 pandemic is an emerging, rapidly evolving public health emergency.

The content of this course reflects the most up-to-date guidance and data from the Centers for Disease Control and Prevention (CDC), World Health Organization (WHO) and scientific literature available at the time the course was developed.

Updates to the course will be made as necessary to reflect evolving guidance from public health authorities and new data from the scientific literature.

5 Reduced Minimum Safe Operations:



Reduced Mission-Critical Operations:

"In the face of the coronavirus pandemic, the Lab has reduced its staffing at sites 200 and 300 to that required for safety, security and the minimal maintenance of facilities.

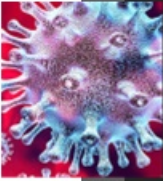
Small groups of employees have made themselves available at the Lab to respond without delay to questions about the stockpile that arise in the course of surveillance and dismantling, to maintain critical national response activities like NEST and NARAC and to engage in projects that have spun up to respond directly to the pandemic. I want to extend my thanks to all those who have been on-site keeping the Lab, and the nation safe and secure during these difficult days.

Our planning for what we have been calling minimum safe operations always included the continuation and resumption over time of a set of mission critical activities on-site, a posture NNSA deems "Reduced Mission-Critical Operations." Doing so is consistent with local shelter-in-place orders, which exempt critical defense activities.

The Laboratory's top priority is protecting the health and safety of the workforce during any on-site operations, including those resuming this week. The number of people on-site will remain small to minimize contact and enable "social distancing." Protocols for working on-site include the precautions we have all been practicing, as well as access to PPE and the maintenance of clean work areas. These protocols have been formalized into a Site-wide Work Control Document that spell out the controls designed to protect employees from the potential spread of the coronavirus in the workplace."

Director Bill Goldstein, 3/30/2020


6 Work Planning & Control



Work Planning & Control ****UPDATED - 4/23/2020****

- All workers on-site are required to wear a face covering when interacting with, or near, other individuals on-site. Face coverings will be provided by the Laboratory.**
- If you are on-site performing AL-0 work, such as inspections, walk-throughs, and office work, this presentation serves as your guidance for implementing appropriate controls for your work.
- If you are on-site performing work under a WCD or Competent Worker program, your RI will conduct a pre-start review (WCDs) or a pre-job brief (Competent Workers), prior to commencing work. The Laboratory has approved a site-wide Work Permit with controls for the COVID-19 hazard. During the pre-start review/pre-job brief, your RI will discuss which controls for COVID-19 will be applied, based upon the work controls in your JHA, and whether social distancing can be maintained.
 - If the controls in your JHA are more protective than the COVID-19 controls, the more protective controls will be used.

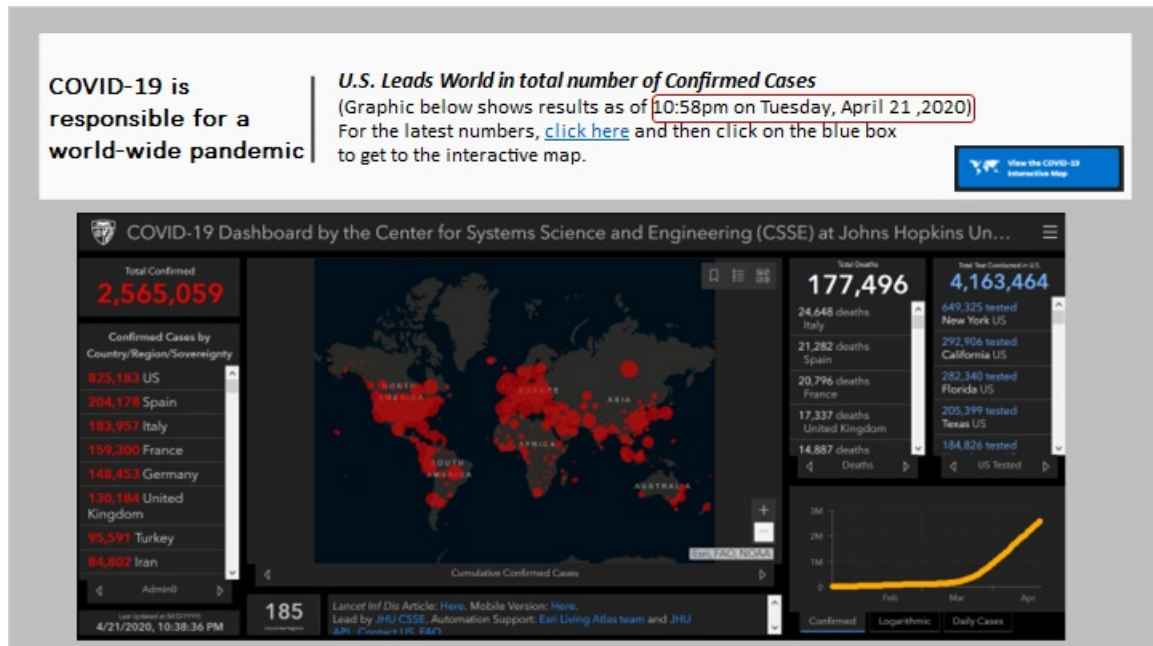
7 What is COVID-19?



What is COVID-19?

- COVID-19 is the name of the disease caused by the SARS-CoV-2 virus.
- Coronaviruses are a large family of viruses that generally cause mild-to-moderate upper-respiratory tract illnesses, like the common cold in humans.
- Hundreds of coronaviruses exist in nature, most circulate in animals including pigs, camels, bats and cats.
- On rare occasions, coronaviruses “jump” to humans
 - There are 7 coronaviruses known to cause disease in humans
 - 4 cause mild disease
 - 3 cause more serious disease: *these 3 viruses differ from other more common coronaviruses in that they cause mild to severe lower-respiratory tract illnesses:*
 - SARS-CoV: caused outbreak in 2002, disappeared in 2004
 - MERS-CoV: emerged in 2012, low numbers of cases continue to be reported, primarily in Middle Eastern countries
 - SARS-CoV-2: emerged in December 2019

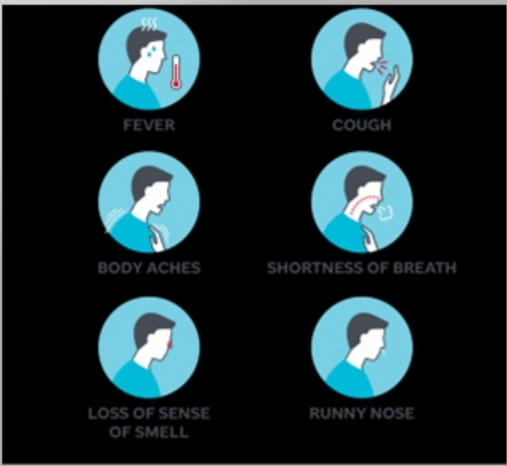
8 COVID-19 is responsible for a world-wide pandemic



9 What are the Symptoms of COVID-19?

What are the Symptoms of COVID-19?

- Symptoms will vary from person to person.
- Reported illnesses have ranged from no symptoms to mild symptoms to severe illness.
- The clinical picture (spectrum of symptoms) is evolving as more information becomes available from across the world.
 - Other symptoms that have been reported include fatigue, sore throat, headache, loss of sense of taste, chills and diarrhea.
- Symptoms usually develop 5 days after exposure but this can range between 2-14 days.
- Percentage of cases by illness severity (based on current data):
 - ~81% of confirmed cases are mild (no pneumonia)
 - ~14% of confirmed cases are severe (clinical symptoms include shortness of breath)
 - ~5% of confirmed cases are critical (pneumonia, respiratory failure)
- Those individuals age ≥ 65 years, or with a history of other illnesses, like diabetes, lung disease, or immunocompromising conditions, have a higher risk of severe illness.






10 What do we know about how COVID-19 is spread?

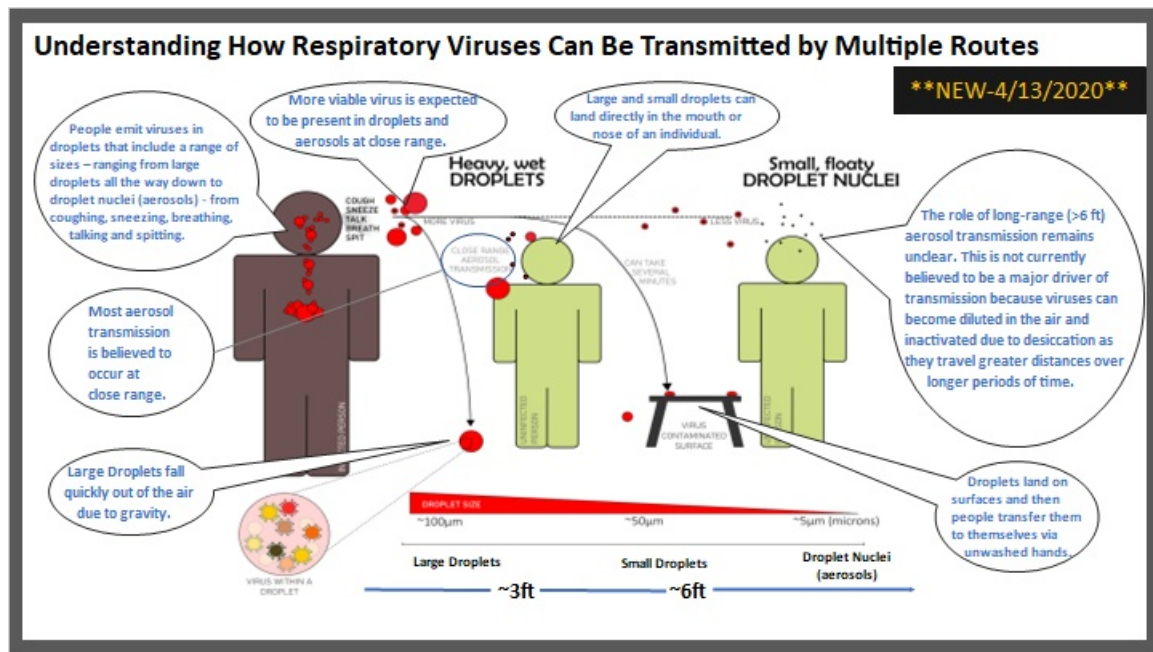
UPDATED – 4/13/2020

What do we know about how COVID-19 is spread?

Current evidence suggests that there may be three potential routes of transmission of COVID-19. The relative role each route plays in community spread of the disease remains somewhat unclear.


Route of Transmission	Definition	Relative Role in COVID-19 transmission
Droplet transmission	Respiratory secretions containing the virus are expelled when an infected individual coughs, sneezes, breathes and/or speaks and land in the mouth, nose or eyes of someone nearby (generally within 6 feet). 	<ul style="list-style-type: none"> Believed to be a major driver of community spread.
Contact transmission	Respiratory droplets containing the virus settle on surfaces. Someone touches that surface and then touches their mouth, nose or eyes which can potentially result in transmission of the virus to themselves. 	<ul style="list-style-type: none"> Believed to contribute to community spread, but not believed to be the primary driver.
Aerosol transmission	Small particles (generally defined as smaller than 5µm; sometimes referred to as droplet nuclei) containing virus are inhaled into the lungs. Aerosol transmission can occur over short ranges (within 6 ft) as well as potentially longer ranges. 	<ul style="list-style-type: none"> Believed to play an important role in spread within healthcare system resulting from aerosol-generating medical procedures. UNCLEAR role in community spread, not believed to be a major driver of community spread.

11 Understanding Transmission



12 Direct Transmission

NEW-4/13/2020

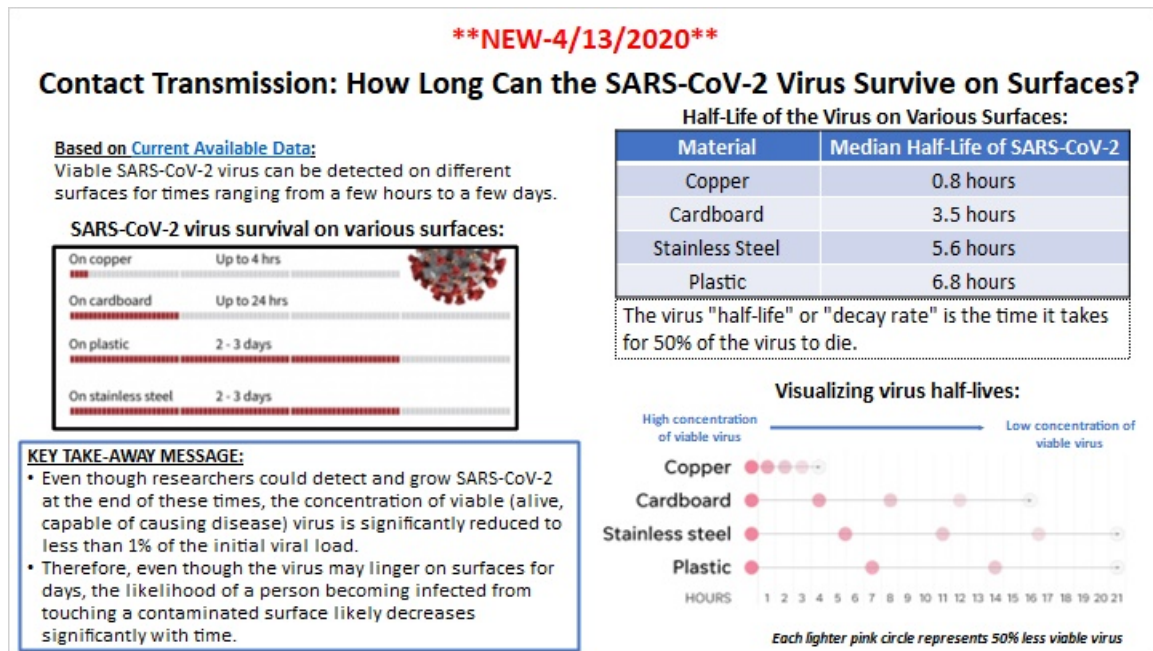


Direct Transmission Is Believed to be the Primary Driver of the COVID-19 pandemic and the most straight-forward. If you are near someone – generally within 6 feet - when they cough or sneeze, virus-laden droplets may get into your mouth, nose or eyes.

Contact (or fomite) transmission is also possible, although not believed to be a major driver of the pandemic.

- While the virus can remain on surfaces for hours-to-days, it quickly starts to die once it is out of the body.
- Adherence to hand-washing and avoiding touching your eyes, nose and mouth can readily break this chain of transmission.


13 Contact Transmission: how long can the SARS-CoV-2 virus survive on surfaces?



14 What about aerosol transmission

****NEW-4/13/2020****

What about aerosol transmission??



This route of transmission is the most controversial, not only for COVID-19 but also for other, more familiar respiratory illnesses, including influenza.

The scientific evidence to support a role for aerosol transmission for respiratory viruses is sparse. Let's look at what we know and what we don't know.

15 How long does the virus last?

Short-range aerosol transmission appears to play an important role in the spread of COVID-19 among healthcare workers performing aerosol-generating medical procedures (e.g., intubations, removing patients from ventilator).

[Recent reports](#) indicate that SARS-CoV-2, the virus that causes COVID-19 can survive as an aerosol in the air for up to 3 hours.

- This study used an aerosol generating device (nebulizer) to generate the aerosol in this study which **does not** mimic respiratory secretions generated when an individual coughs or sneezes.
- The nebulizer does mimic aerosol-generating procedures conducted in a **healthcare setting** (e.g., intubation, disconnecting a patient from a ventilator).



How long does the virus last?

SARS-CoV-2, which causes COVID-19, needs a living host to reproduce in. A new study looks at how long it can last outside the body

As aerosol in the air* Up to 3 hrs



The half-life of the virus in air is approximately 1 hour- meaning that after about an hour, about 50% of the virus particles are no longer infectious.


16 Aerosol transmission in the community

****NEW-4/13/2020****



So, while aerosol transmission appears to play an important role in the healthcare setting- what role does it play in the transmission of COVID-19 in the community?

17 We know that People Can Transmit COVID-19 even without showing any symptoms:



****UPDATED-4/13/2020****

Here's What We Know: People Can Transmit COVID-19 even without showing any symptoms:

Here's how:

- Viruses "hijack" cells in your respiratory tract (nose, throat, lungs) and use your cells to produce more virus.
- Viruses can do this while you are feeling completely fine.
- BUT, if the virus is there, you can expel virus without knowing it.
- Anytime you breathe, speak, laugh, sing – or even sneeze from something tickling your nose or cough from swallowing wrong – you expel tiny droplets, including droplet nuclei.

Droplets expelled during breathing, talking, singing, etc., can transmit the virus in the same way as a cough or sneeze - by landing in the eyes, nose or mouth of someone close by or by landing on surfaces that are touched by others who then touch their eyes, nose or mouth.

- It also means that you are expelling droplet nuclei that may be capable of transmitting the virus by the aerosol route.
 - Seasonal [coronaviruses](#) and [influenza viruses](#) have been detected in exhaled breath in the range of aerosols (particles less than 5µm in size) as well as in larger droplets (>5µm in size).


18 The Unfortunate Answer is: We Just Don't Know Yet

****NEW-4/13/2020****

Here's What We Don't Know!

Key Outstanding Questions that Make it Difficult to Determine the Relative Role of Aerosol Transmission in Community Spread of COVID-19:

- Is the COVID-19 virus commonly transmitted via aerosols?**
 - There have been no reports yet where aerosol transmission was the *SOLE* potential route of infection.
 - Studies of *MERS-CoV* and *SARS-CoV* have suggested roles for aerosol transmission in aerosol-generating medical procedures in healthcare workers and in the context of rare "super spreader" events (events where a single individual sheds orders of magnitude larger amounts of virus than the average infected individual).
- How much virus does the average aerosol contain?**
 - There are currently no studies looking at this for SARS-CoV-2.
 - Seasonal coronaviruses have been detected in low quantities in exhaled breath, but the viability of the virus was not assessed.
- How long does the virus remain infectious in aerosols in a real-world setting?**
 - Most studies conducted to date have focused solely on detection of viral nucleic acid and suffer from lack of data on survivability of the virus.
- How much virus does it even take to make someone sick?**
 - There is currently no data to indicate what the infectious dose for SARS-CoV-2 might be – several factors, including ability of your immune system to combat the virus - could come into play in determining the course of infection.



19 The Unfortunate Answer is: We Just Don't Know Yet


NEW-4/13/2020

Here's What We Don't Know!

Key Outstanding Questions that Make it Difficult to Determine the Relative Role of Aerosol Transmission in Community Spread of COVID-19:


- Is the virus-laden aerosol capable of traveling long distances?
 - If it is able to travel long distances – is the virus still present in sufficient number to be able to cause an infection? Or does the virus get diluted to a relatively harmless concentration?

- The most recent [study](#), published on April 10, 2020, in which researchers performed air sampling in hospital wards housing COVID-19 patients – indicated that SARS-CoV-2 RNA was detected up to 4 meters (~13 ft) from patients.
 - Importantly though- the researchers did not assess virus viability by attempting to culture the virus from the air samples. Therefore, they cannot conclude whether the air samples contained viable virus.
 - In addition, these were patients that were symptomatic; therefore, conclusions cannot be drawn for asymptomatic spreaders.
- Virus dilution in the air and inactivation due to desiccation of the virus as it travels long distances over longer periods of time may reduce the potential for long-distance aerosol transmission, but this remains unclear.
- The [CDC](#) believes that airborne transmission from person-to-person over long distances is unlikely.



20 Key Take Away Messages

NEW-4/13/2020



Key Take Away Messages:

- People likely emit virus-containing particles in a range of sizes doing a number of everyday activities such as breathing, speaking, singing, coughing, sneezing.
- Some evidence suggests that small virus-containing particles (infectious aerosols) can be important in short-range (<6 ft) aerosol transmission of COVID-19.
- The role of long range (>6 ft) aerosol transmission of COVID-19 remains unclear. However, it is not currently believed to be a major driver of the COVID-19 pandemic.

21 So What DO We Know?

Household Contacts Provide Evidence that Close Contact Plays an Important Role in COVID-19 Transmission

****NEW-4/13/2020****

We know that persons sharing a residence with an individual that has COVID-19 have a higher probability (risk) of getting infected than people who do not have a member of their household that is infected with COVID-19.

What does this tell us?

This tells us that being in close contact with someone who has COVID-19 is one of the most important risk factors.



22 OK – But What Do We Mean by “Close Contact”?



****NEW-4/13/2020****

OK – But What Do We Mean by “Close Contact”?

- At the start of the pandemic – the focus was on maintaining a 6-foot separation between yourself and others.
- But now, the [CDC is acknowledging](#) that defining what constitutes “close contact” is not that cut and dry:

Data are limited to define close contact. Factors to consider when defining close contact include:

- Proximity (broadly defined as 6-feet)
- Duration of exposure (e.g., longer exposure time likely increases exposure risk)

23 How long is too long?

****NEW-4/13/2020****

How long is too long?

- If close contact is defined not only by proximity to an infected, or potentially infected individual, but also by the duration of exposure to that individual – what defines “prolonged exposure”?
- Again, the CDC is acknowledging that there is no clear-cut answer:
 - *Data are insufficient to precisely define the duration of time that constitutes a prolonged exposure.*
 - *Recommendations vary on the length of time of exposure from 10 minutes or more to 30 minutes or more.*
 - *Brief interactions are less likely to result in transmission; however, symptoms and the type of interaction (e.g., did the person cough directly into the face of the individual) remain important.*



24 Unfortunately- there is no magic formula for determining how long or how far apart constitutes safe!

****NEW-4/13/2020****



Unfortunately- there is no magic formula for determining how long or how far apart constitutes safe!

- We do know that farther is better!
- We do know that spending as little time with someone as possible is better!
- Our risk of potentially contracting or spreading COVID-19 increases the longer we spend with someone and the closer we are to them.

25 With So Much Uncertainty – What Are We Supposed to Do??

****NEW-4/13/2020****

With So Much Uncertainty – What Are We Supposed to Do??

The idea that so many everyday activities can potentially transmit COVID-19 can be scary!

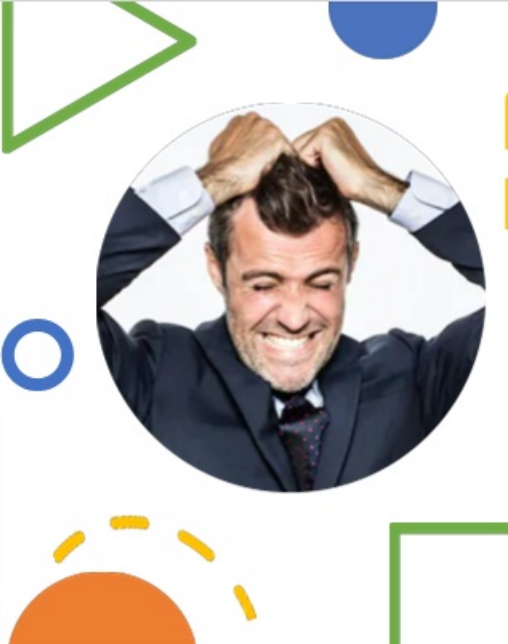
Not knowing the actual risks associated with each route of transmission can be even scarier!

And not having clear, executable guidance on how close is too close or how long is too long can be frustrating!

So What Can We Do?

1. Realize that this is a new virus that we don't fully understand and acknowledge that we will have to be flexible enough to adjust to a rapidly evolving global health crisis with new information coming at us faster than we can process.
2. Consider all potential routes of exposure, assess the relative risk based on the best available data, and identify appropriate controls to minimize those risks.

The Lab has a team of subject matter experts dedicated to searching for and reviewing new information and data on a daily basis and assessing the Lab's current controls to ensure we are protecting our workers based on the best available current data.

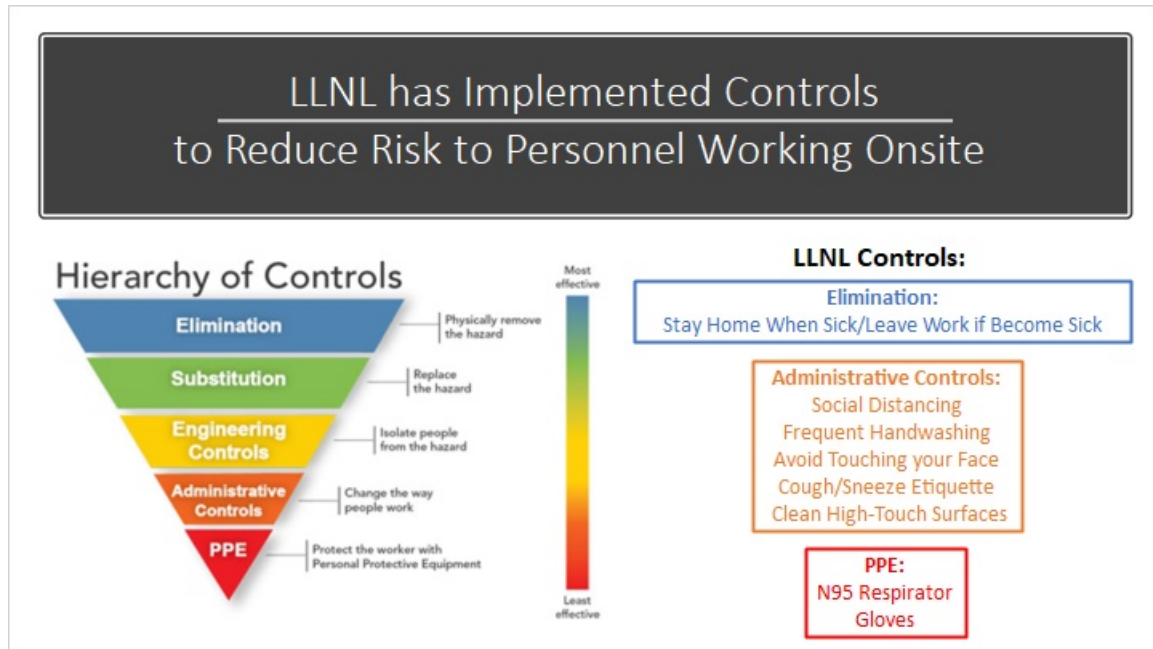


26 How Do I Work Safely During Reduced Mission Critical Operations?



How Do I Work Safely During Reduced Mission Critical Operations?

27 LLNL has Implemented Controls to Reduce Risk to Personnel Working Onsite



28 No Single Control Alone is Protective:




29 The MOST IMPORTANT Things You Can Do, Both at Work and At Home, To Minimize Your Risk of Contracting or Spreading COVID-19:


The **MOST IMPORTANT** Things You Can Do, Both at Work and At Home, To Minimize Your Risk of Contracting or Spreading COVID-19:

While these may seem simple and inconsequential, the following four behaviors, discussed in more detail on the following slides, are the most important things you can do to protect yourself and others.


Social Distancing: Stay away from others to the extent possible!




Stay home if you are sick; Go home if you become sick at work.



Avoid Touching Your Eyes, Nose AND Mouth.



Wash your hands frequently with soap and water!



30 If You Are Sick – STAY HOME!

****UPDATED-4/13/2020** If You Are Sick – STAY HOME!**

Sick?



If you have been told by your Personal Healthcare Provider (HCP) that you have or may have COVID-19 – either by testing or symptoms alone – follow the guidelines provided by your provider and contact Health Services.

Contact Health Services:
By phone: 2-6843 (COVID)
By email: covid19@llnl.gov

Information is passed to Health Services via an established confidential process


If you are sick but have **NOT** been told by your HCP that you have or may have COVID-19- stay home until you are symptom-free for 72-hours without the use of symptom altering medications (e.g., fever-reducers, cough-suppressants).

- If you have used 5 or more consecutive days of sick leave – contact Health Services PRIOR to returning to work.

If you get sick while you are at work – leave work IMMEDIATELY – do not linger or attempt to complete your shift.

- Ensure you leave your work area in a safe state.
- Notify your supervisor (or a co-worker) and send an email to covid19@llnl.gov.

31 If You Are Sick – STAY HOME!



If You Are Sick – STAY HOME!

- If you have been told by your Personal Healthcare Provider (HCP) that you have or may have COVID-19 – either by testing or symptoms alone – follow the guidelines provided by your provider and contact Health Services.

Contact Health Services:
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 - If you have used 5 or more consecutive days of sick leave – contact Health Services **PRIOR** to returning to work.

32 COVID-19 Case Management Aims to Prevent Transmission of COVID-19 at the Workplace

NEW – 4/23/2020

COVID-19 Case Management Aims to Prevent Transmission of COVID-19 at the Workplace

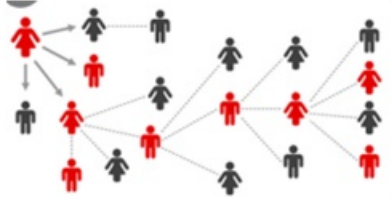
Health Services is responsible for identifying, tracking and performing follow-up case management of COVID-19 affected Laboratory workers.

- The goal of case management is to take steps to prevent future transmission of infection to others at work and at home.

To this end, Health Services requests –and temporary emergency LLNL pandemic policy requires – that employees contact Health Services if:

- You have been tested for COVID-19 and received a positive test result.
- You are being tested for COVID-19 and are awaiting test results.
- You were told by your personal health care provider that you may have COVID-19 based on your symptoms but were not tested.
- You are sharing a residence with an individual who has been told by their Personal Healthcare Provider that they have or may have COVID-19 – either by testing or symptoms alone. *Individuals sharing a residence with someone that has COVID-19 (diagnosed by testing or by symptoms alone) are at increased risk for contracting COVID-19.*
- You have traveled by air (foreign and domestic) or been on a cruise.

Contact Health Services:
 By phone: 2-6843 (COVID)
 By email: covid19@llnl.gov
Information is passed to Health Services via an established confidential process



For additional information on COVID-19 reporting requirements, please refer to the [LLNL COVID-19 FAQs](#).

33 Social Distancing: What is it?

Social Distancing: What Is It?

Purpose: Social distancing reduces the rate of disease transmission and can stop an outbreak.

What is Social Distancing? Social distancing is a group of measures taken by Public Health Officials to limit the spread of a disease.

Social Distancing is one of the most powerful tools to combat all possible routes of exposure!

How do we implement social distancing at work?

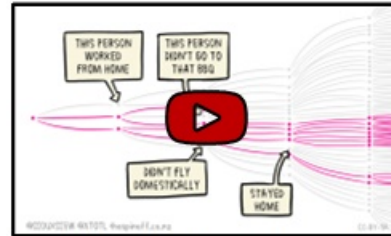
Maintain physical separation from others to the maximum extent possible!

MORE DISTANCE IS BETTER:

- Stay home if you are sick.
- Telecommute to the maximum extent possible.

WHEN YOU HAVE TO COME TO WORK:

- Limit the number of people in one place to the extent possible.
 - Don't congregate in groups in – for example - your office, lunch/break rooms, conference rooms, hallways.
- At a minimum – maintain 6 feet separation from others to the extent possible.
- Minimize the amount of time spent with others.



Social distancing deliberately increases the physical space between people to prevent sick people from coming in contact with healthy people to reduce the opportunity for spreading COVID-19.

34 Wash your Hands Frequently

Wash Your Hands Frequently

- Wash your hands frequently with soap and water for at least 20 seconds.
- If soap and water are not immediately available, use an alcohol-based hand-sanitizer containing ≥60% alcohol.
 - If hands are visibly dirty, wash with soap and water!

Wash your Hands or Use Hand Sanitizer:

- Before touching your face for any reason
- Before preparing food/eating
- After coughing or sneezing
- After touching high-touch surfaces
- Before and after putting on, adjusting and taking off your N95 respirator.

Note: Handwashing is more effective at removing germs than hand sanitizer.




Watch the video
proper hand-washing technique

35 Handwashing






Handwashing is One of the Most Powerful Weapons in the Fight Against COVID-19

You have the power in your hands to break the chain of infection.



Handwashing is THE BEST METHOD to protect yourself from being infected and from transmitting the virus to others!

HANDWASHING BREAKS THE CHAIN OF INFECTION:


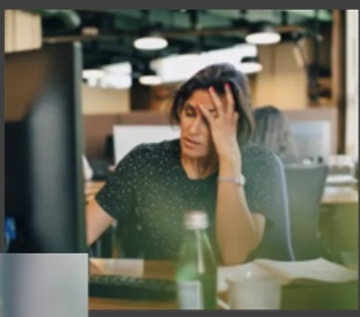
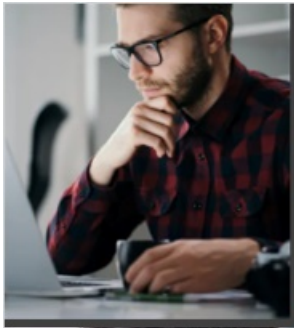


Handwashing accomplishes two things:

1. It physically REMOVES pathogens from your skin.
2. Soap destroys the envelope of the virus which makes it unable to infect your cells.

Humans touch their faces, on average, 20 times an hour! Approximately 44% of the time, these touches involve the eyes, mouth and nose.

36 Avoid Touching Your Face – Especially Your Mouth, Nose and Eyes



Avoid Touching Your Face – Especially Your Mouth, Nose and Eyes

- The COVID-19 virus needs a way to get into your body!
- Your own contaminated hands can serve as a vehicle for transferring the virus from a contaminated surface to you!
- Avoid touching your face – especially your mouth, nose and eyes.
 - Your mouth, nose and eyes are entry points for the virus to get into your respiratory tract where it can then establish an infection!

37 Cover your Cough and Sneeze:



Cover your Cough and Sneeze:

Reduce the possible spread of COVID-19 by:

- Cough or sneeze into a tissue whenever possible.
- Immediately discard used tissue into an open waste container.
- When a tissue is not readily available, cough or sneeze into your elbow.
- Wash hands after coughing/sneezing.

38 Frequent Cleaning and Disinfection of High-Touch Surfaces Augments Infection Control Measures



**Frequent Cleaning and Disinfection of High-Touch
Surfaces Augments Infection Control Measures**

39 Important Considerations Regarding Cleaning and Disinfection:

Important Considerations Regarding Cleaning and Disinfecting:

While it is important to keep your workspaces and equipment clean, including shared workspaces, it is important to remember:

Cleaning/disinfection is only a single point in time. The surface will remain disinfected only until the next person or microbe touches the surface.

*Therefore, it is important that you **WASH YOUR HANDS frequently!***

Simply touching a potentially contaminated surface does not result in transmission – you have to then get the virus from your hand into your body (e.g., by touching your mouth, nose or eyes).

*Therefore, it is important to **AVOID TOUCHING YOUR FACE!***



40 Frequently Clean High-Touch Surfaces:

Frequently Clean High-Touch Surfaces:

- To minimize the risk of indirect transmission of the virus from potentially contaminated surfaces:
 - Custodial staff focus on cleaning and disinfecting high-touch surfaces (e.g., doorknobs, elevator buttons, light switches)
 - Employees should clean high-touch surfaces frequently – prior to and after use.
 - Consider using removable, cleanable protectors for shared equipment (e.g., keyboard covers).

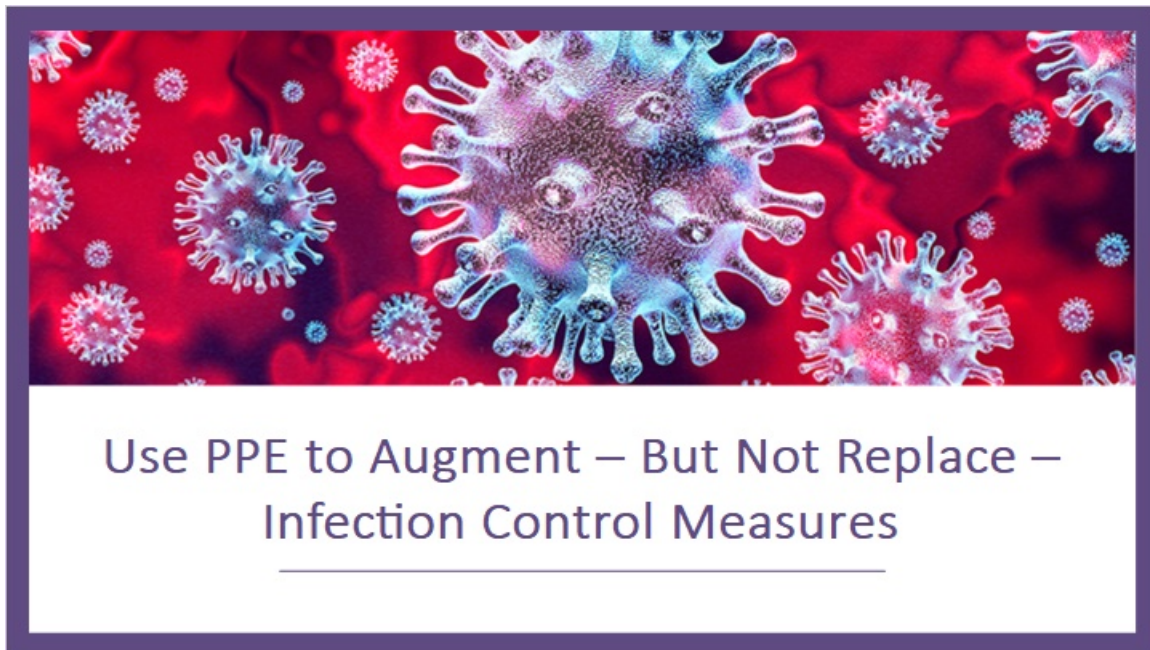
*Be aware of **CONTACT TIMES** when using disinfecting products! To be effective- disinfectants must be left on surfaces for specific amounts of time, generally ranging from 1 to several minutes – **READ THE PRODUCT LABEL** and use according to the manufacturer's instructions.*

- Minimize sharing of equipment and tools (e.g., computer keyboards and other computer components, phones, safety glasses, work gloves).

Cleaning (physically removing microbes from surfaces) reduces the risk of spreading infection.



41 Use PPE to Augment – But Not Replace – Infection Control Measures



42 To Mask or Not to Mask- That is the Question!

****UPDATED – 4/23/2020****


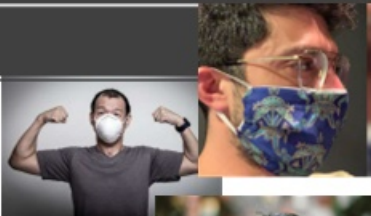
To Mask or Not to Mask- That is the Question!

Recent Recommendations for Wearing Face Coverings:

- On April 1, 2020, the California Department of Public Health (CDPH) released [Face Covering Guidance](#)
- On April 3, 2020, the CDC Released [Recommendations for Wearing Cloth Face Covering](#)
- On April 17, 2020, Alameda County issued a [Public Health Order](#) requiring use of a face covering in public.

What is driving the change in recommendations?

- Increasing evidence that there is significant spread of the COVID-19 virus by individuals who are not showing symptoms (asymptomatic)
 - *Data from contact-tracing efforts suggests that up to half of COVID-19 transmission occurs before infected individuals show symptoms.*
- Recent data suggests that COVID-19 infected individuals can start to transmit the virus up to 2 days prior to showing any symptoms.



Face coverings, when combined with social distancing and other infection control measures (e.g., hand hygiene), can help slow the spread of COVID-19.

43 What is the Purpose of Wearing a Face Covering?

****NEW – 4/23/2020****

What is the Purpose of Wearing a Face Covering?

COVID-19 is believed to be primarily spread through respiratory droplets.

- Droplets are expelled by you when you talk, breath, cough, sneeze, laugh and sing.
- Individuals can be infected with the virus and expelling potentially infectious droplets without showing any symptoms.
- People can also be infected and contagious up to 48 hours before developing symptoms.
- As such, infected people can unintentionally spread the virus without recognizing that they are infected.

Wearing a face covering reduces the chance that the mask wearer spreads potentially infectious respiratory droplets to others or to surfaces.

When combined with social distancing (maintaining at least 6 feet separation between yourself and others) – wearing a face covering when around others can reduce the risk of transmitting the virus to others.

Wearing a face covering is NOT a substitute for social distancing and frequent handwashing!

44 Am I Required to Wear a Face Covering While I am On-site?

****NEW – 4/23/2020****

Am I Required to Wear a Face Covering While I am On-site?

In line with the newly issued order from the Alameda County Public Health Department, the Laboratory now requires that all on-site personnel use face coverings.

Face coverings are required while on-site whenever you are interacting with or are near others. Examples may include:

- In hallways, stairwells and elevators.
- In common areas such as restrooms and kitchens.
- In shared vehicles when more than one person is present.

Face coverings are not required when:

- You are alone in your individual office,
- When engaging in **outdoor** activities – such as walking, biking, running or eating lunch – when you can maintain the recommended 6 feet of separation from others.

***Note:** employees are encouraged to have a face covering with them and available to put on in case they encounter a situation where they cannot maintain social distancing.*



45 Can I wear a Face Covering with an Exhalation Valve?

****NEW – 4/23/2020****

Can I wear a Face Covering with an Exhalation Valve?

Face coverings should not have a one-way exhalation valve.

The Alameda County Public Health Order does not recognize masks that incorporate a one-way valve (exhalation valve) as face coverings.



Exhalation valve

- Makes it easier to breathe
- Helps keep your face cooler
- Reduces moisture build up inside the facepiece

WHY?

- The intent of the face covering is to protect others from respiratory droplets released by the wearer when they cough, sneeze or talk.
- One-way (exhalation) valves allow some portion of respiratory droplets expelled by the wearer to be released through the exhalation valve.

46 Are Face Coverings Being Provided by the Lab?

****NEW – 4/23/2020****

Are Face Coverings Being Provided by the Lab?

All employees working on-site will be provided a face covering for use on-site.

The Laboratory has several options for face coverings – including:



KN95 mask



Surgical-Style Mask



Cloth Mask

If you were previously issued an N95 respirator with an exhalation valve for general use on-site, you may no longer use these unless specifically approved for your job duties/work area.

You may pick up a valveless face covering (e.g., KN95 mask, surgical mask or cloth mask) to use instead.

Face Coverings are available from your Directorate.

Contact your RI for directions on where to obtain your face covering.

Face coverings are also available from Respirator Services (B255, R147) M-F, 8AM –12PM.

47 Can I Bring my Own Face-Covering from Home for Use On-Site?

****NEW – 4/23/2020****

Can I Bring my Own Face-Covering from Home for Use On-Site?

Employees may choose to wear their own face coverings (e.g., cloth masks, surgical-style masks or N95 respirators) brought from home* for use onsite.

**Exception: If an N95 is required for your specific job duties onsite- you must use the Lab-issued N95 respirator provided to you by Respirator Services.*

REMINDER: Face masks brought from home cannot have an exhalation valve!

OK – No Valve



NOT OK – Valve



48 How to Properly Don (put on) and Doff (take off) Face Coverings

****NEW – 4/23/2020****

How to Properly Don (put on) and Doff (take off) Face Coverings

Important Reminders for Donning/Doffing Face Coverings:

- Always wash your hands (or use hand sanitizer) before and after putting on, adjusting, and taking off your face covering.
- Use the ear loops to put on and take off the face covering. Minimize touching the surface of the face covering!
- Check the integrity of your face covering before use and re-use.
 - Discard disposable face coverings if they become wet, soiled or damaged.
- Store face coverings in a clean bag between uses.
- Launder cloth face coverings regularly.

Video Examples Showing Proper Technique:

Surgical-style mask:



<https://www.youtube.com/watch?v=jwPWdkbyizw>

Cloth mask:



https://www.youtube.com/watch?v=g_k7VBV3czw

49 Certain Job Duties Will Require the Use of an N95 Respirator

****NEW – 4/23/2020****

Certain Job Duties will Require the Use of an N95 Respirator

N95 respirators provide protection from both respiratory droplets AND from aerosols.

- While aerosol transmission is not believed to be a primary route of COVID-19 transmission in the community, out of an abundance of caution – job duties that require that individuals work in close proximity to each other will require the use of an N95 respirator instead of a face covering.

The determination of when an N95 respirator is required (and what type of N95 is required – valved or valveless) will be made by the RI, in consultation with Health Services and the Biosafety Officer, as needed.



50 Why is the Lab Issuing Valved N95 Respirators for Some Job Duties?

****NEW – 4/23/2020****



Why is the Lab Issuing Valved N95 Respirators for Some Job Duties?

- N95 Respirators are tight-fitting respirators that reduce the wearer's exposure to 95% of airborne particulates including both large respiratory droplets and small-particle aerosols.
- Unlike face coverings - which protect others from the wearer's respiratory droplets, N95 respirators are designed to protect the wearer.
- If all employees in the work group are in a valved N95 respirator (or a valveless N95 respirator), they are all equally protected from droplets (and potentially short-range aerosols) that may be expelled by others through the exhalation valve.

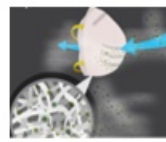
51 Key Factors for Effective Use of an N95 Respirator:

Key Factors for Effective Use of an N95 Respirator:

The respirator must be put on correctly and worn during exposure.



The respirator must fit snugly against the user's face to ensure that there are no gaps between the user's skin and the respirator seal.

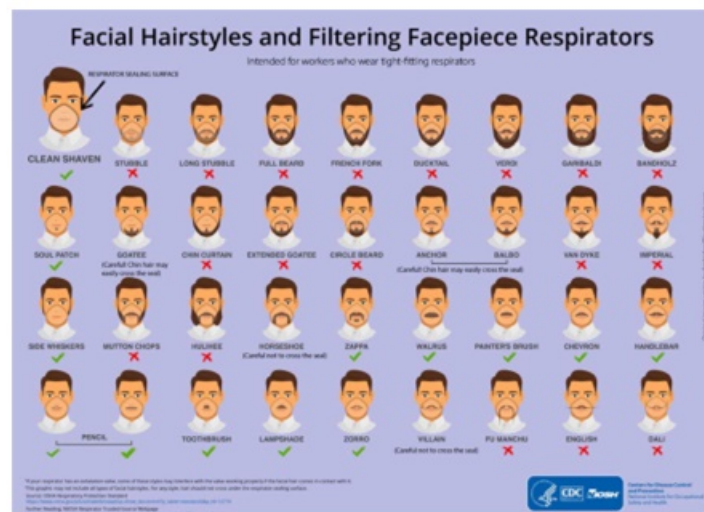


Improper use will reduce the filter efficiency and reduce protection against infectious droplets.

52 Ensuring a Proper Fit/Seal: Facial Hair Matters

Ensuring a Proper Fit/Seal: Facial Hair Matters

- To work properly, you must be able to get a good seal between your face and the N95 respirator.
- Facial hair can interfere with the ability to generate a good seal
 - This reduces the effectiveness of the protection provided by the N95 respirator



53 Properly donning and doffing an N95

UPDATED – 4/23/2020


https://www.youtube.com/watch?v=zoxpvDVo_NI

Know How to Properly Put On and Take Off Your N95 Respirator:

- How you put on and take off your respirator will affect how well it protects you from potentially infectious droplets.
- You must ensure a proper fit.
- Watch this video to learn how to properly put on your respirator and perform a seal check:

[Watch the Video](#)

Always wash your hands before and after putting on, adjusting and taking off your N95 respirator!




IMPORTANT VIDEO NOTES:

- The video shows a different style N95 than that provided at the laboratory. However, the overall procedure applies to donning/doffing all N95 respirators.
- The N95s being provided by the Lab do not come in different sizes, but users still need to be sure to perform a fit check!
- The video says to discard your respirator after use – this is because it is geared toward healthcare workers. **DO NOT DISCARD YOUR RESPIRATOR AFTER A SINGLE USE!** When cared for properly, respirators used in most work settings can be re-used safely for an extended period of time. See next slides!

54 Store Your N95 Respirator Properly:

Store Your N95 Respirator Properly:

- Store your respirator in a clean, resealable plastic bag OR a paper bag.
 - Discard the bag after each use (paper bag) or clean the interior of the bag regularly to keep the inside of the N95 respirator clean (plastic bag).
 - Allow your N95 to dry in a clean area prior to placing it in a bag.
 - Plastic bags: Leave a corner of the bag open during storage to prevent moisture build up inside the bag.
- Store your respirator in a way that minimizes the potential for the respirator to become damaged or deformed.
- Label the bag with your name to prevent use by others.
- Consider labeling your respirator with your name.
 - Write your name on the straps or side of the respirator.
 - Do not write across the filter of the respirator.

55 How Long Can I Re-Use my Respirator?



How Long Can I Re-Use My Respirator?

LLNL has a limited supply of N95 Respirators. Please take care of your respirator to ensure you can extend the life of your respirator!

If cared for properly, your N95 can be re-used for an extended period of time in the workplace setting.

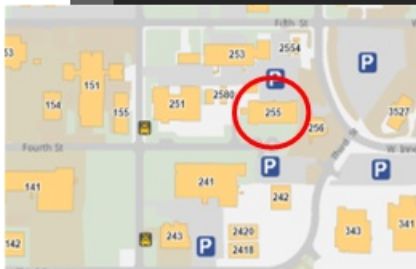
Do not attempt to clean, sanitize or sterilize your N95 respirators. Replace your respirator when it becomes damaged or deformed, soiled or if it becomes difficult to breathe through your respirator.

Discard soiled/damaged N95 respirators in the municipal waste unless otherwise directed under your specific Work Control Document (WCD) to do otherwise.

56 Where Can I Get an N95 Respirator?

****UPDATED – 4/23/2020****

Where Can I Get an N95 Respirator?



N95 Respirators:

- Individuals identified by their RI or Health Services/BSO as requiring an N95 respirator must pick up their respirator at Respirator Services.
- Alternatively, N95 respirators can be obtained from your supervisor if your supervisor picked up respirators for your group from Respirator Services

Individuals must be on-site supporting Reduced Mission Critical Operations to obtain a face covering or N95 respirator.

Pick up Your N95 Respirator At:

Respirator Services


B255, R147

Open M-F from 8AM – 12PM


For urgent needs outside of this time, please contact respirator@llnl.gov.

57 Consider Wearing Gloves If You Can't Control the Surfaces You Touch:

YES



NO!!!




Consider Wearing Gloves If You Can't Control the Surfaces You Touch:

The use of gloves can reduce the risk of indirect transmission that could result from touching potentially contaminated surfaces and then touching your face (mouth, nose, eyes).

Remember- you still need to avoid touching your face even with gloved hands!

58 Know How to Properly Use Gloves:



Watch the video

Know How to Properly Use Gloves:

- Ensure integrity of gloves when putting on – discard gloves if they are ripped, torn, or otherwise compromised.
- **DO NOT RE-USE GLOVES!**
 - Re-using gloves could lead to the spread of germs to your hands from the worn gloves. Treat all worn gloves as if they are potentially contaminated!
- Properly remove gloves to reduce the transmission of the COVID-19 virus to your hands and wrists.
- Discard gloves into the municipal trash immediately upon removing.
- Wash your hands with soap and water (or use an alcohol-based hand sanitizer) immediately after removing gloves to reduce the risk of indirect transmission to your face (mouth, nose and eyes) from potentially contaminated hands.
- Watch this video for tips on how to properly remove your gloves:
https://www.youtube.com/watch?v=xTYioOo_6U





Nitrile Gloves are Available From:
Respirator Services
B255, R147
Open M-F from 8AM – 12PM
For urgent needs outside of this time, please contact respirator@llnl.gov.

59 How Do We Navigate Protecting Ourselves When we Encounter Situations that may be Unique to Being at Work?



60 Can I Hold In-Person Meetings?

If you absolutely must hold an in-person meeting:

<p>Limit in-person meetings to ONLY those that are necessary and cannot be held by other means (e.g., WebEx virtual meeting).</p> 	<p>Keep the meeting as brief as possible to limit the amount of time people are gathered in a single location.</p> 	<p>Have a clear agenda to help keep the meeting on-track.</p> 	<p>Limit the number of people in the meeting room and maintain social distancing – follow posted signs for REDUCED maximum room occupancy. Wear a face covering (e.g., KN95 mask, surgical mask or cloth mask).</p> 
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Can I Hold In-Person Meetings?

****UPDATED – 4/23/2020****

61 Things and Places that we Normally Take for Granted can Pose Unique Risks During the COVID-19 Pandemic:

Things and Places We Normally Take for Granted Can Pose Unique Risks During the COVID-19 Pandemic:

The collage consists of six images arranged in a grid-like fashion. The top row shows 'Break/Lunchrooms' (people at tables), 'Elevators' (a person in an elevator), and 'Cars' (a couple in a car). The bottom row shows 'Coin Booths' (a person at a coin booth) and 'Bathrooms' (a bathroom stall). The 'Cars' image is the largest and is positioned on the right side of the collage.

Break/Lunchrooms

Elevators

Cars

Coin Booths

Bathrooms

62 How Should I Navigate Common Areas?

The collage consists of five images arranged in a grid-like fashion. The top row shows a hand pressing an elevator button, a person opening a door, a hand using a payphone, and a hand using a water fountain. The bottom row shows a person using a hand sanitizer dispenser.

How Should I Navigate Common Areas?

We touch MANY surfaces throughout the course of the day – how do we protect ourselves when interacting with surfaces that may potentially be contaminated with the COVID-19 virus?

The most important things you can do to protect yourself when interacting with high-touch surfaces in common areas are:

- **WASH YOUR HANDS** after interacting with high-touch surfaces and especially before preparing/eating foods and touching your face.
- **BREAK THE HABIT: AVOID TOUCHING YOUR FACE** all the time, and especially after interacting with high-touch surfaces!
- When practical, clean or disinfect high-touch surfaces in common areas prior to use.
- In addition, you can consider using a barrier (e.g., kimwipe, paper towel) when interacting with high-touch surfaces.

63 Social Distancing at Lunch

Social Distancing At Lunch!

- Cafeterias remain closed during reduced mission critical work.
- Eat in your office, if you have one, whenever possible.
- If you do not have an office – practice social distancing at lunch to the extent possible:
 - Consider eating outside for some fresh air!
 - Limit the number of individuals in the break room to maintain social distancing.
 - Stagger your lunches with your co-workers whenever possible.



64 Performing Everyday Risk Assessments Using What we Have Learned about COVID-19:

Performing Everyday Risk Assessments Using What We Have Learned about COVID-19:

A mental checklist, based on information we know about COVID-19 and the mechanisms available to protect ourselves from spreading and acquiring COVID-19, can help us navigate unique situations we may encounter at work.

Assume everyone is potentially infected, and every surface is potentially contaminated.

With this in mind- think through how you would approach the situation:

- ☐ Will there be close contact (consider time and distance)?
- ☐ Are there physical barriers in place that can provide some level of protection?
- ☐ Is there sufficient airflow or is airflow limited?
- ☐ Are there surfaces that I need to be concerned about?

Based on the answers to these questions:

- ☐ What controls should I apply to reduce the risk of exposure?

65 Elevators May Pose Unique Risks – Small Spaces with Limited Airflows

Elevators May Pose Unique Risks – Small Spaces with Limited Airflow

☐ Will there be close contact (consider time and distance)? **YES (<6 ft distance)**

☐ Are there physical barriers in place that can provide some level of protection? **NO**



☐ Is there sufficient airflow or is airflow limited? **LIMITED AIRFLOW**

☐ Are there surfaces that I need to be concerned about? **YES- elevator buttons, handrails**

Based on the answers to these questions:

☐ What controls should I apply to reduce the risk of exposure?

- When possible, limit the number of riders in an elevator to **ONE**
 - When not possible, limit the number of riders to the extent possible and all individuals should wear a face covering (e.g., KN95 mask, surgical-style mask or cloth mask).
- Be cognizant of high-touch surfaces!
 - Use a barrier (e.g., paper towel, tissue) to press buttons
 - Wash hands (or use hand sanitizer) after interacting with any high-touch surface!
 - Avoid touching your face (eyes, nose, mouth) until you have had an opportunity to wash your hands!

66 CAIN booths May Pose Unique Risks – Small Spaces with Limited Airflows

CAIN booths May Pose Unique Risks – Small Spaces with Limited Airflow

☐ Will there be close contact (consider time and distance)? **YES (<6 ft distance)**

☐ Are there physical barriers in place that can provide some level of protection? **NO**


☐ Is there sufficient airflow or is airflow limited? **LIMITED AIRFLOW**

☐ Are there surfaces that I need to be concerned about? **YES- entrance buttons, badge keypad, door handles**

Based on the answers to these questions:

☐ What controls should I apply to reduce the risk of exposure?

- When possible, limit the number of individuals passing through a CAIN booth to **ONE**
 - When not possible, limit the number of individuals to the extent possible and all individuals should wear a face covering (e.g., KN95 mask, surgical-style mask or cloth mask).
- Be cognizant of high-touch surfaces!
 - Use a barrier (e.g., paper towel, tissue, your shirt sleeve)
 - Wash hands (or use hand sanitizer) after interacting with any high-touch surface!
 - Avoid touching your face (eyes, nose, mouth) until you have had an opportunity to wash your hands!



67 Public Restrooms – How to Approach During a Global Pandemic

Public Restrooms – How to Approach During a Global Pandemic

- ☐ Will there be close contact (consider time and distance)? **Maybe** (could be less than 6 feet and generally not longer than 10 minutes potential exposure)
- ☐ Are there physical barriers in place that can provide some level of protection? **YES** (stall walls and door provide a physical barrier between you and others).
- ☐ Is there sufficient airflow or is airflow limited? **SUFFICIENT**
- ☐ Are there surfaces that I need to be concerned about? **YES- door handles, stall handles, faucets, paper towel dispensers**



Based on the answers to these questions:

- ☐ What controls should I apply to reduce the risk of exposure?
 - Consider not using adjacent stalls.
 - Consider not using adjacent sinks – wait for others to finish washing their hands.
 - Be cognizant of high-touch surfaces!
 - Wash hands (or use hand sanitizer) after interacting with any high-touch surface!
 - Avoid touching your face (eyes, nose, mouth) until you have had an opportunity to wash your hands!
 - Wipe down high-touch surfaces prior to and after use.
 - Wear a face covering when you are near others in a public setting.

68 Sharing a Car With a Coworker During the COVID-19 Pandemic

Sharing a Car with a Coworker During the COVID-19 Pandemic

Even something as seemingly benign as sharing a ride with a co-worker can require some thought!


- ☐ Will there be close contact (consider time and distance)? **YES!** (less than 6 ft distance, time can range from a few minutes to a few hours)
- ☐ Are there physical barriers in place that can provide some level of protection? **NO**
- ☐ Is there sufficient airflow or is airflow limited? **DEPENDS ON YOU!**
- ☐ Are there surfaces that I need to be concerned about? **YES – door handles, steering wheel, gear shifter, turn signal, windshield wiper lever, etc.)**



Based on the answers to these questions:

- ☐ What controls should I apply to reduce the risk of exposure?
 - Wear a face covering when sharing a car with others (e.g. KN95 mask, surgical-style mask, cloth mask).
 - Turn OFF the air recirculation and crack open windows, if possible, to increase ventilation.
 - Be cognizant of high-touch surfaces!
 - Wipe down high-touch surfaces prior to and after use.
 - Avoid touching your face (eyes, nose, mouth) until you have had an opportunity to wash your hands!
 - Wash hands (or use hand sanitizer) after interacting with any high-touch surface.

69 COVID-19 Hotline:




COVID-19 Hotline:

WE ARE IN THIS TOGETHER!
COVID-19 Employee Hotline **422-6843 (COVID)**
OR
covid19@llnl.gov
Voicemail and email monitored 7 days a week.
Calls returned same day whenever possible.

Purpose of the Hotline/Email:

- Triage/prioritize phone calls for Health Services
 - Confidential!
 - No need to provide details- just request a consultation with Health Services
 - Calls returned same day, whenever possible (may be evenings)
 - Any Health-Related Concern: testing results, possible COVID-19 illness, personal health concern, concern about household members who may be at high risk, return to work questions
- Any other COVID-19 related questions!
 - Questions about the virus?
 - Questions about best practices for interacting with the world around you?
 - Questions about Lab operations during Reduced Mission Critical operations?

70 Resources:



Resources:

- LLNL COVID-19 website: <https://covid19.llnl.gov/>
- LLNL COVID-19 FAQs: <https://covid19.llnl.gov/faq.html>
- N95 Respirator Tips Video:
https://www.youtube.com/watch?v=zoxpvDVo_NI
- Proper Handwashing Video:
https://www.youtube.com/watch?v=xTYioOo_6U

Have a Question that Hasn't Been Answered?
Submit to: covid19@llnl.gov