OPERATING WORKPLACES

HOW TO KEEP MANUFACTURING DURING THE COVID-19 PANDEMIC

PRESCOUTER

CONTENTS

INTRODUCTION

The outbreak of the COVID-19 pandemic has brought about widespread disruption in how everyday business processes take place all over the world. For workers in manufacturing settings, and as more employees slowly return to their workplaces with the easing of the quarantine restrictions, certain measures should be undertaken to minimize the chances of spreading viral contamination. Given the close proximity in which workers operate in manufacturing lines, it is very easy for the COVID-19 virus which has multiple ways to spread among people, to infect an entire shift of workers. This would cause an enormous loss of productivity throughout the supply chain due to the sudden shortage of a large number of workers as a result of being isolated and quarantined. Hence, following best practices for social distancing, hygiene and disinfection is crucial for manufacturing-centric workplaces. By following the recommendations and guidelines from the CDC, businesses can ensure that a workplace keeps running to a large extent even if there is a COVID-19 positive person detected within the vicinity.

The CDC is providing interim guidance that is continually updated as more information about the virus is gathered [1]. This guidance is intended to inform planning considerations to reduce community spread of COVID-19. Regarding the workers themselves, the aim is to reduce risk of exposure, and prevent any stigma and discrimination based on race or country of origin by maintaining confidentiality regarding people with a confirmed infection status. The cooperation of businesses and employers with state and local governments is strongly encouraged to help develop appropriate responses and mitigation strategies [2].

These guidelines will aid businesses in achieving the following outcomes [3]:

a) Reducing transmission among employees
b) Maintaining a healthy work environment
c) Preventing disruptions in the supply chain
d) Maintaining critical manufacturing infrastructure for the country

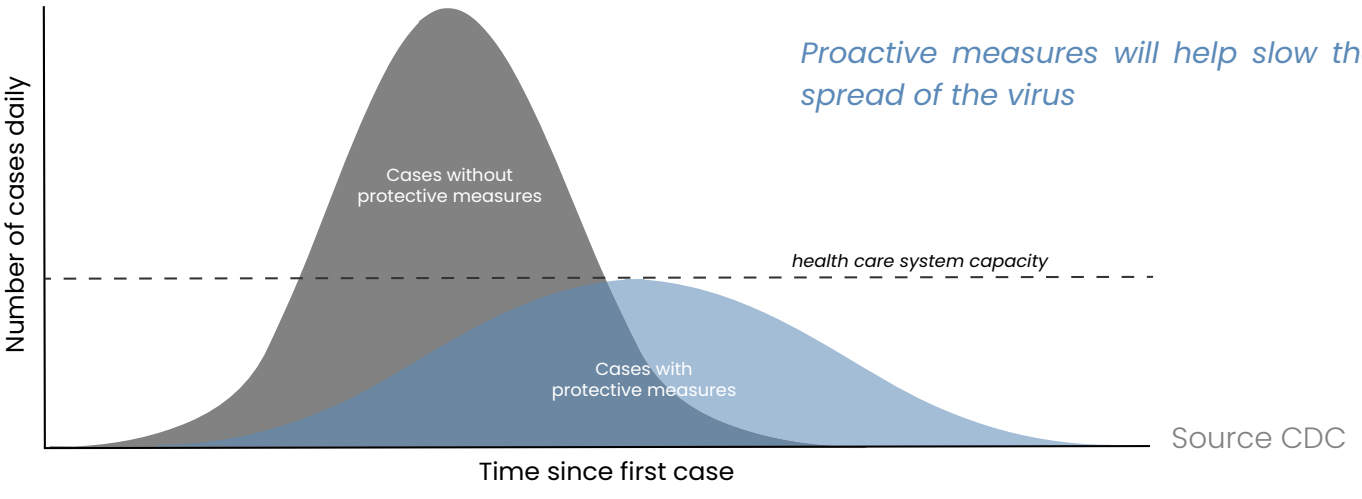
Please note that these guidelines apply to non-healthcare settings. For healthcare settings, the CDC has provided a separate set of guidelines which should be followed instead [4]. These guidelines have been broken down into easy to follow actions that can be implemented at workplaces, as described in the following sections.

REDUCING TRANSMISSION AMONG EMPLOYEES

In order to reduce transmission among employees in the workplace, it is very important that employers follow these crucial steps as recommended by the CDC. Firstly, employers need to actively encourage sick employees to stay home, and to further promote this, they should implement non-punitive measures to further allow employees to stay home. In case, an employee arrives sick or falls sick at the workplace, then they must be promptly isolated while informing coworkers of a potential exposure, following up with cleaning and disinfection procedures. After workers have been self-isolating, there are further steps that should be taken to ensure that they are fit to return to work. In order to implement these measures effectively it is important for both employees and employers to have a good understanding of what constitutes exposure and "close contact" with an infected individual.

Exposure or close contact is defined by the CDC as:

- Being within 6 feet or 2 meters of an individual confirmed or suspected to be COVID-19 positive for a prolonged period of time, including within the 48 hours prior to onset of symptoms.
- Caring for, living with, visiting, or sharing a healthcare waiting area or room with a COVID-19 individual can also promote close contact.
- Being in direct contact with the infectious secretions of a COVID-19 individual, like being coughed, sneezed on etc., also constitutes close contact.
- Short exposures when walking past someone is not "close contact".



Proactive measures will help slow the spread of the virus

Source CDC

Encourage employees to stay home when sick

Employers should offer flexible sick leave and other practices, which are not punitive,to encourage people to stay home when sick [5].

- Businesses should develop flexible policies for scheduling and work-from-home options, permitting them to stay home to look after sick family members or children due to school and childcare closures.
- Businesses should not request a healthcare provider's note from employees who are ill with respiratory illness to validate their illness or to return to work.
- Businesses should actively encourage employees to stay at home without fear of being penalized for taking a sick leave in relation to COVID-19.
- Human resources policies must be reviewed to ensure that businesses are in line with current State and Federal workplace laws.
- Employers should have conversations with employees about their concerns and connect them to employment assistance programs and community resources if available.
- Employers and businesses are encouraged to read OSHA guidelines to create a workplace free of retaliation, to be able to help address any employee concerns [6].
- Employers should continue to evaluate and update the return to work plans for employees who have self-isolated. They should only allow them to return to work if they meet the criteria for discontinuation of home isolation as specified by the CDC and in consultation with healthcare professionals, as well as local and state healthcare departments.

What to do when an employee arrives sick or gets sick at work [7]?

Identify
If a potentially infected person is identified through self reporting or by their symptoms; cough, shortness of breath, fever of 100.4° F/38.0° C or greater using an oral thermometer.

Isolate
Immediately move them to an isolation chamber. To limit spread of the infected person's secretions, provide them with a face mask and making sure it covers both the nose and mouth. The individual should be asked to leave the work site immediately and return home if they can do so on their own, or call emergency med.

Inform
Inform individuals of potential exposure in line with the Health Insurance Portability and Accountability Act (HIPAA) requirements.

All surfaces in their workspace should be cleaned and disinfected according to CDC recommendations. Local healthcare departments and healthcare professionals must be contacted as well. An OSHA report must be made as per recent guidelines if:

- A person tests positive for COVID-19.
- A person gets infected due to performing work related tasks.
- It satisfies other criteria for an OSHA report.

Recommendations for when an employee is at home:

- Ask them to remain at home for at least 3 days since the resolution of fever (a fever is a temperature of 100.4°F/38.0°C or greater) without the use of fever-reducing medications.
- Symptoms like cough and shortness of breath are reduced.
- At least 7 days have passed since the first appearance of symptoms.

When is it safe for an employee who had tested positive for COVID-19 or showed symptoms to be able to return to work?

Following CDC recommended steps, it is of vital importance that all the conditions are met as outlined for each scenario described below, in addition to consultations with healthcare professionals, and the local and state healthcare departments [8].

Where tests are not available, symptomatic COVID-19 infected persons may discontinue isolation if:

- At least 3 days have passed since the resolution of fever (a fever is a temperature of 100.4° F/38.0° C or greater) without the use of fever-reducing medications.
- Symptoms like cough and shortness of breath are reduced.
- At least 7 days have passed since the first appearance of symptoms.

Where tests are available, symptomatic COVID-19 infected persons may discontinue isolation if:

- Fever (a fever is a temperature of 100.4° F/38.0° C or greater) is resolved without the use of fever-reducing medications.
- Symptoms like cough and shortness of breath are reduced.
- Negative results of two consecutive PCR swab tests 24 hours apart.

Asymptomatic lab-confirmed COVID-19 infected persons may discontinue isolation:

- At least 7 days have passed since the first positive test result.
- They continue to be asymptomatic and have no subsequent illness.
- They maintain social distancing; 6 ft or 2 meters apart, with a barrier covering their nose and mouth.

What about employees who are caring for individuals infected with COVID-19?

Employees caring for individuals potentially or confirmed infected with COVID-19 at home, need to be monitored closely [9].

At the workplace:

1. Employers should pre-screen these employees by monitoring symptoms - cough, shortness of breath, and measure temperature for fever; 100.4°F/38.0°C or greater, with an oral thermometer, prior to entering the workplace.
2. Employers should also monitor temperature regularly using infrared thermometers, maintain social distancing, and continue practicing hand washing etiquette.
3. The employees must wear a face covering in the workplace at all times for 14 days since the time they have come into contact with an infected individual.
4. If symptoms arise in the employee, they should be sent home immediately and all surfaces in their workspace should be cleaned and disinfected according to CDC recommendations. Local healthcare departments and healthcare professionals must be contacted as well.

At home:

1. A person with a high risk serious underlying illness should not take on a role as a caregiver for a COVID-19 infected person when possible.
2. Limit contact with the infected person by using separate bedrooms and bathrooms, isolating them in a sickbay style area where possible, and ensuring good ventilation and air circulation.
3. Wear gloves and a face covering when in close contact with the infected person, and wash hands every time after handling items used by the sick person. Dispose used gloves in a lined trash can.
4. Practice hygiene, cleanliness and disinfection around the house, and track your own health.

How to identify where and how workers might be exposed to COVID-19 at work?

In order to proactively implement measures that lower the risk of exposure to the workers, it is important to understand how and where a worker can contract the virus. By keeping track of the location of each worker and the people they come in contact with, it becomes easier to trace all the people they may have inadvertently infected in the due course of their job. It also helps employers to trace where a worker most likely contracted the infection. This is crucial to reducing further spread by implementing timely quarantine and isolation measures.

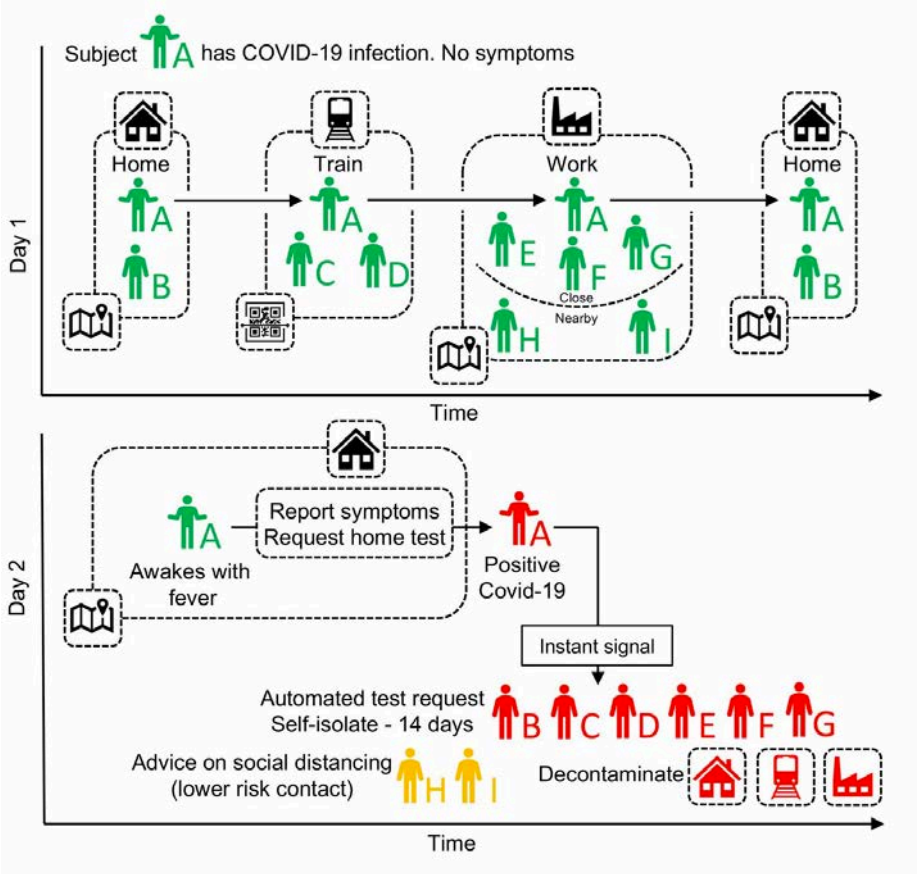
Contact tracing can be implemented in two ways

By implementing record keeping of employee movements within the workplace:

In the event of an infected employee being detected within the work site, it is investigated where the sick employee travelled within a facility for the past 48 hours, and routine cleaning and disinfection is only commenced after 7 days. Hence, it is advisable to maintain records of past movements of employees for at least the past 7 days to aid with the tracing of how the infection has potentially spread among the other employees.

By implementing digital contact tracing tools:

The CDC is currently conducting a landscape analysis to understand the efficacy of digital tracing tools currently available. One tool used by a few foreign governments is to use a bluetooth application, but due to data privacy concerns in thais method, there is still hesitation among the general public to adopt this [10].



A schematic of app-based COVID-19 contact tracing (Fig. 4 from Ferretti et al. 2020). Contacts of individual A (and all individuals using the app) are traced using GPS co-localisations with other App users, supplemented by scanning QR-codes displayed on high-traffic public amenities where GPS is too coarse. Individual A requests a SARS-COV-2 test (using the app) and their positive test result triggers an instant notification to individuals who have been in close contact. The App advises isolation for the case (individual A) and quarantine of their contacts.

How to implement social distancing in the workplace?

When an infected person sneezes, coughs, or talks the virus is launched into the air via aerosolized micro droplets. These droplets can land on nearby surfaces and in the noses and mouths of nearby persons thereby spreading the disease. These droplets can't travel farther than 6 ft or 2 meters, but the virus can survive on various surfaces for almost 3 days. Hence, social distancing as described below is an important preventative measure and should be applied to employees, contractors, and visitors [5]:

For employees:

1. Workers should avoid using public transportation, taxis, and ride sharing facilities, when coming to work.
2. A distance of approximately 6 feet or 2 meters from others is to be maintained when possible.
3. Workers should avoid congregating in the break rooms or other crowded places.
4. Break rooms should ensure that 6 feet distances are maintained. Staggering breaks to avoid congregation of workers should also be considered.
5. Staggering staff into pods, to minimize the number of people in contact if one of them becomes sick, should be considered.
6. Businesses can establish alternate days or work shifts, and stagger start times of work shifts, to reduce the total number of employees on site at any one time.
7. Wipe dispenser stations at the entrance of a break room should be offered to promote its usage on communal items; microwaves, vending machines, etc.
8. Plexiglass (or other cleanable surface) barriers can be installed to ensure social distancing where congregation can occur, and also at customer-employee interaction points.
9. Promote good sneezing and coughing etiquette.
10. Moving training and orientations online, to a video or similar format, to minimize classroom congregation.
11. Reducing contact in narrow hallways, stairs, and break areas, by making pathways throughout the workplace unidirectional paths where possible.
12. Assigning an employee to monitor and enforce social distancing efforts in communal areas.
13. Adding additional touchless clock in/out stations throughout the facility to reduce crowding and congregating at these areas.

For customers:

1. Installing a drive-through window for customer service.
2. Where possible limit customers' and visitors' access to worksite.
3. Keeping customers informed about COVID-19 symptoms, and asking sick customers to minimize contact with workers until healthy again.

How can employers educate staff and what signage or visual cues can help?

All workers need to be trained to handle an anticipated occupational exposure in line with their jobs [7].

Training should:

1. Provide information about the sources of exposure to the virus, the associated hazards, and the appropriate workplace protocols to prevent or reduce the likelihood of exposure [11].
2. Provide information about how to isolate potential or confirmed infected persons, and how to report them appropriately while maintaining discretion, as required by the Americans with Disabilities Act (ADA) [1].
3. Include increased signage in the workplace using educational materials from the flu pandemic resource as recommended by the CDC [12].
4. Ensure that signage is in all languages spoken at the facility and should focus on the use of large pictograms.
5. Ensure signage is posted in cafeterias, locker rooms, and break areas to remind employees about hand hygiene, social distancing, and PPE.
6. Ensure that signage is enlarged, simplified, and at eye level.
7. All training should be free of charge to the employee and must be scheduled during working hours.

What are the best practices for hand washing?

Wash hands often with soap and water for at least 20 seconds. Use hand sanitizer with at least 60% alcohol if soap and water are not available.

Safe work practices as outlined in the OSHA guidelines recommend that [13]:

- Businesses should provide tissues, no-touch trash cans, hand soap, and alcohol-based hand rubs containing at least 60 percent alcohol.
- Workers should be educated about the proper way to wash hands with soap and water; wash for at least 20 seconds, and to use hand sanitizer when soap and water are not available.
- Workers should be encouraged to always wash hands whenever they are visibly soiled and after removing any PPE.
- Handwashing signage should be posted in restrooms.

How to efficiently screen employees/ visitors and conduct wellness checks?

Employers who decide to screen their employees must clearly communicate and consistently implement this practice both in conducting assessments and temperature screening and answering follow-up questions that employees may have [14]. For a full list of known symptoms, please refer to page 13.

Please note that employers conducting screening tests and assessments on their employees under the current "job related and consistent with business necessity" status, must ensure that they are both HIPAA and ADA compliant, by maintaining appropriate employee confidentiality and privacy [15-17]. For example, there should not be alarm bells or alerts going off at the point of detection of a potentially infected employee, making their infection status public knowledge. This data may only be shared with local and state healthcare professionals and healthcare organizations.

Recommendations for verbal screening

Employees may be asked if:

1. They have tested positive for COVID-19.
2. They have recently experienced COVID-19 symptoms.
3. They have recently travelled to a community with a high transmission rate.
4. They have been in close contact with a potential or confirmed COVID-19 infected person.

Recommendations for wellness checks

Wellness checks should be performed prior to employees or visitors entering, returning to the building after breaks and throughout the day.

1. Businesses should post signage encouraging employees and visitors to immediately report if they are experiencing COVID-19 symptoms.
2. Temperature screens using FDA approved thermal imaging systems if possible, or measured individually using a tympanic, temporal, or an oral thermometer with a probe cover, every time employees enter or leave the work site should be considered [18].
3. An over the counter fingertip pulse oximeter may be another method to perform additional screens [19]. It can be used to detect low blood oxygen levels during early onset of the infection, which can be indicative of infection. This is especially useful for early detection in asymptomatic persons.
4. Employees performing screening tests need to be properly trained in order to not get infected themselves due to prolonged and repeated contact with infected people [13].

COVID-19 SYMPTOMS

There are a wide variety of symptoms associated with the COVID-19 pandemic, and they take anywhere from between 2-14 days to manifest [20].

Common symptoms:
Fever, cough, and shortness of breath

Other symptoms include:
Chills, shaking, muscle pain, sore throat, and new loss of taste or smell

Temperature checks and COVID-19 testing (the ADA allows such tests[15] but ensure company Human Resources/Legal/Unions understand and agree) – perform monitoring before employees or visitors enter the building and when they reenter after breaks.

The information available for the COVID-19 pandemic is rapidly evolving. Hence, employers should keep up to date with the latest guideline specified by the CDC to maintain workplace safety. Taking the body temperature of a person constitutes a medical examination, but this test along with other forms of COVID-19 testing may be administered as part of mandatory screening before they enter the workplace. These tests now fall under the category of being "job related and consistent with business necessity" [15].

As infected individuals pose a direct threat to both coworkers and the business at large, employers may choose to implement accurate and reliable screening tests but under strict adherence to ADA confidentiality requirements [17].

How to put on, take off and launder face masks and face coverings?

As the virus has multiple modalities of transmission including an airborne route as aerosolized micro-droplets and through touching infected surfaces, it is crucial that individuals know how to properly make use of the masks. Improper wearing and handling of the masks, and not maintaining proper hand washing etiquette, all result in the person getting no protection from the mask. The CDC has specified its guidelines below to promote proper handling and use of masks [21].

How to properly put on (don) a face mask:

1. Wash hands with soap and water before putting on a mask.
2. Determine which sides of the mask are the front and top.
3. Follow instructions specific for each type of mask – with ear loops, with ties, with bands.
4. Mold the top edge to the shape of your nose, if applicable.
5. Pull the bottom of the mask over the mouth and chin to ensure proper coverage of the nose, mouth and chin.

How to properly take off (doff) a mask

1. Wash your hands with soap and water before touching the mask.
2. Avoid touching the front and inside of a mask.
3. Touch only the ear loops, ties, and bands to remove the mask.
4. Dispose single use masks in a lined bin, and avoid shaking the mask to minimize the risk of re-dispersing the micro droplets.
5. Wash hands again with soap and water.

How to launder reusable cloth face coverings

1. Washing cloth coverings with laundry detergent, with hot water, and complete drying at a hot temperature setting is recommended.
2. Ensure that a clearly defined washable cart/hamper is identified at the workplace if face coverings are provided by the employer. Personal face coverings which have been used must be securely stored in a bag to take home and launder.
3. For persons engaged in cleaning
4. Do not shake dirty laundry to avoid risk of re-dispersing the virus.
5. Clean and disinfect anything used for transporting laundry.
6. Wear disposable gloves when handling soiled items.
7. Wash hands immediately after removing gloves or after handling dirty items.
8. Clean and disinfect hampers/carts/bags daily.

Special considerations for food manufacturing and processing industries

Special considerations for food manufacturing and processing industries Food manufacturing, processing, and retail industries have their own stringent OSHA guidelines. But under the current COVID-19 outbreak situation, face masks that are usually used in these industries are in short supply. Hence, the FDA suggests the use of cloth face coverings instead, while still applying the CDC guidelines for social distancing, minimizing transmission, cleanliness and disinfection practices. Businesses and employers are encouraged to coordinate with their local governments to stay up to date with these guidelines. Additional information may be found here.

In food manufacturing facilities or manufacturing facilities requiring extraneous controls for product, when using homemade or cloth face masks, wear a beard guard over top to reduce the risk of extraneous materials falling into food. When using manufactured face masks, beard guards are only necessary over the mask if the individual has a beard.

How to operate with increased absenteeism?

Workers may be absent due to a variety of reasons including – they are sick themselves, they are caregivers to sick or immunocompromised family members and/or children, and because they fear exposure.

During this time, businesses should observe changes in patterns of commerce and consumer preferences.

Businesses should also communicate with their business partners who are involved in the supply chain to seek out alternatives to interrupted supply chains.

Businesses should also consider functioning on a skeleton staff and encourage most of the employees to stay home at any given time.

MAINTAINING A HEALTHY WORK ENVIRONMENT

Engineering controls [13]

Installing high-efficiency air filters to catch as much of the airborne virus as possible.

Increasing ventilation rates in the work environment to increase the percentage of outside air.

Installing physical barriers, such as clear plastic sneeze guards.

Specialized negative pressure ventilation in some settings, such as for aerosol generating procedures in laboratories, etc.

Increase signage around handwashing and coughing/ sneezing

Employers should consider installing hand sanitizer or portable hand washing stations at the entry and exit point of their work sites, in addition to the entry and exit points of major worker congregation areas.

Post increased signage educating employees about COVID-19 infection symptoms, proper coughing and sneezing etiquette and handwashing [20].

Use verbal announcements on the loudspeaker and place signage throughout the establishment, at entrances, in restrooms, and in break rooms to remind employees and customers to maintain distances of 6 feet from others.

Routine cleaning and disinfection

Cleaning and disinfection procedures should be focused on high-touch surfaces, and should always be done while wearing disposable gloves and other appropriate PPE [22]. Cleaning with soap and water or another detergent must be conducted first, and only after cleaning should the surface be disinfected. During and after these procedures PPE must always be carefully removed to avoid contamination of the wearer and surroundings, and hand washing etiquette needs to be followed without fail.

Cleaning:

- Practice routine cleaning of high touch surfaces.
- Wear appropriate PPE for the cleaning product used.
- Use appropriate cleaning products for the surface – carpets, benchtops, electronics, etc.

Disinfection:

Use approved disinfectants (effective against COVID-19) from EPA's website (check the EPA registration number or name against the website) List N: Disinfectants for Use Against SARS-CoV-2 [23].

Businesses can use disinfectants on the EPA list which claim to be effective against human coronavirus. Ideally, the disinfectant should have an EPA registration number and have human coronavirus listed as the target pathogen. These products are to be used on surfaces, NOT on humans.

- Practice safe and effective use of the product, such as surface wetting times, ventilation requirements, etc.
- Wear appropriate PPE for the disinfecting product used.
- Focus on high touch surfaces.

LIST OF FREQUENTLY TOUCHED SURFACES

Suggested cleaning procedure based on the equipment or surface

Bucket and Brush/ Sanitizing Spray

- Stainless table tops, production
- Main Dairy doors handles, in and out
- Tank room door handles, in and out
- COP tub Handle
- Case Hooks
- Domestic water hose handles
- Step ladder rails, dry ingredients
- Garbage bag frame holders
- Long bed cart handles
- Delivery truck back door handles
- Wheelers handles
- Garbage lid in cooler

Disposable Cleaning and Sanitizing Wipe

- Light switches to ingredient cooler and freezer
- Ingredient cooler pull cord, in and out
- Ingredient freezer pull cord, in and out
- Handicap accessible push buttons, in and out of main door
- Break room door handles, in and out
- Office door handles, in and out
- Door handles to concrete hallway by cooler, in and out
- "Man- door" to cooler, in and out
- Light switch to main cooler
- Exit door by truck loadout, in and out
- Plant lavatory door handles, in and out
- Dry ingredients pull cord, in and out
- Tool box drawers
- Cooler, pad lock, pull handle and exit
- Markers on white production schedule board
- HMI screens
- Clip board for production paperwork
- Tape guns
- Federal filler operation control buttons
- Control buttons for conveyors in bottle room
- Personal phone screens
- Mouse and keyboards located in lab/ control room
- Lactoscope
- Chart recorder handles
- Arms of office chair
- Ball point pens
- phone chargers
- Cell phones
- Truck gear shift
- Delivery truck steering wheel
- Driver door handle
- Controls for hot / cold dashboard of truck
- Truck keys
- Metal invoice clipboard of truck
- Restrooms
- Locker room
- Outside of hand sanitizers

Cleaning and disinfection if a sick person was detected in the workplace [24]

Determine where the sick employee travelled within a facility for the prior 48 hours. Let those areas sit idle for 24 hours before beginning cleaning. If it has been more than 7 days then continue routine cleaning.

Consider whether you need organic chemicals, if you have organic requirements for labeling.

Consider where you are cleaning (i.e. welfare areas like locker rooms, lunch rooms versus food production areas). Use appropriate chemicals if it needs to be acceptable for food contact surfaces

Ensure you follow directions for dilution rates and contact times, as well as any recommendations for rinsing and washing.

Ensure your chosen chemical is appropriate for the surface as some chemicals can corrode.

Ensure you are aware of health hazards associated with the chemicals and use proper protection.

Clean 10-12 ft in height.

Consider areas where only dry cleaning/sanitizing chemicals are acceptable versus wet cleaning/sanitizing or hard surfaces versus porous surfaces.

There is no current way to test for absence of the virus after cleaning and disinfecting. You can use ATP to test for organic load to simply see if the surface has been cleaned but this is an indirect indicator.


ROAST BATCH #
Profile
Origin&Wt.
Process
Moist (%)
Taste
Agtron #
Temp
Pwr.
Remark

STRATEGIES, RECOMMENDATIONS & RESOURCES

Understand the needs of your industry such as the food industry

Low risk businesses should implement the interim guidance measures specified by the CDC [1], and outlined in this article. For all other risk levels the identification guidelines for exposure risks are outlined below:

Identify job category and exposure risk level: OSHA has divided the various types of jobs into 4 risk exposure levels: very high, high, medium, and low risk [25]. There are also jobs where people may move between exposure levels. Hence, employers should rely on thorough hazard assessments to identify any increased risks for their workers.

Identify exposure risk level of tasks within a job: Businesses with workers involved in medium, high, and very high risk tasks, OSHA has prepared "Control and Prevention" guidelines specific to each job [7,13]. Employers and businesses may refer to examples of various tasks with increasing risks levels to better design their control measures to minimize exposure risk.

Identify employees with higher risk of serious illness, and consider assigning them tasks which minimize face-to-face contact, and/or maintain 2 meters distance from customers and other employees, or telework if possible.

Engineering controls, administrative controls, safe work practices, and PPE must be implemented accordingly.

Industry Specific Hazard Recognition [25]

Low Exposure Risk

- Workers involved with manufacturing and industrial facilities, and who do not have frequent close contact with other coworkers, customers and the general public.
- Office workers with minimal contact, people working from home, and long distance truckers.

Medium Exposure Risk

- Workers having frequent contact with international travelers.
- Workers having contact with high density population environments – schools, universities, high volume retail.

High Exposure Risk

- Healthcare delivery and support staff.
- Medical transport workers.
- Mortuary and burial/cremation ceremony preparation workers handling COVID-19 infected bodies.

Very High Exposure Risk

- Healthcare workers
- Healthcare laboratory personnel.
- Morgue workers performing autopsies on COVID-19 infected bodies

There are other jobs that may have tasks that move between varying exposure levels, such as janitors, and solid and wastewater management workers. Hence, it is very important that employers conduct job and task specific risk assessments and implement appropriate controls.

Support for Food Manufacturing, Processing, and Retail.

The USDA has announced various measures to support the businesses impacted by the disruption of supply chains and services [26]. As of now, the USDA and FDA have moved their focus from services to safety of the people. So they are working with food manufacturers and grocers to ensure that food reaches people on time.

As the agriculture sector falls under the critical infrastructure umbrella, every measure is being taken to protect crops and livestock. In relation to workers both domestic and migrant, steps are being taken to ensure steady paychecks and visa requirements.

Impact on the Food Manufacturing, Processing, and Retail industries

As this industry roughly falls under manufacturing and industrial activities, the associated exposure risk seems to be low; subject to the working conditions of the workers at individual sites. But the sudden shortage of masks has removed an important part of PPE from their daily practices. This is currently being remedied using cloth face coverings, but these are not standardized. Hence, employers must assess if this doesn't interfere with their normal operations, as well as if the OSHA regulations for industries such as meat packing and poultry processing are still being met [27,28].

The interim guidelines by the CDC and FDA still need to be met as best as possible. Further information and guidance regarding dealing with various emergencies and situations in the food industry can be found in the resources provided by the FDA and those provided by the International Association for Food Protection [29,30].

Survivability of SARS-CoV-2 in the air (aerosol) and various surfaces[31]

Conditions: Viruses were applied to copper, cardboard, stainless steel, and plastic maintained at 21 to 23°C and 40% relative humidity over 7 days.

	Presence of Viable Virus (hr)
Aerosols	3
Copper	4
Cardboard	24
Stainless Steel	48
Plastic	72

ENDNOTES

1. https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html
2. https://www.cdc.gov/coronavirus/2019-ncov/downloads/community-mitigation-strategy.pdf
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8. https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html
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12. https://www.cdc.gov/nonpharmaceutical-interventions/tools-resources/educational-materials.html
13. https://www.osha.gov/Publications/OSHA3990.pdf
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15. https://www.eeoc.gov/eeoc/newsroom/wysk/wysk_ada_rehabilitaion_act_coronavirus.cfm
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Naveen is a medical technology professional with a deep interest in new and emerging technologies and their impact on businesses. He is passionate about understanding his clients' needs and guiding them towards technology solutions which are a perfect fit. He is also a science communicator and has consulted for pharmaceutical research clients, medical technology companies, and for PreScouter. Being of an entrepreneurial mindset he worked as a co-founder of two medical device start-ups in the areas of sports injury rehabilitation and mental health. He is experienced in managing intellectual property, drafting investigators brochures and ethics applications for clinical trials, and navigating regulatory guidelines to maintain compliance levels of medical devices. During his PhD, he developed expertise in the synthesis and use of electrically conductive nanomaterial inks to manufacture wearable biosensors, which resulted in a patented invention, garnering interest from Johnson & Johnson Innovation and 3M. He holds a PhD in Chemical Engineering from Monash University, Australia.

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