

SUGGESTED GUIDELINES FOR THE COSTUME INDUSTRY TO HELP PREVENT THE SPREAD OF COVID-19 DURING FITTINGS

Teresa Chou, Infection co-author, MPH, MS-RN, CIC, FAPIC
Infection Preventionist
Infection Prevention and Control Consulting, LLC

Monona Rossol, MS, MFA Industrial Hygienist
President, Arts, Crafts & Theater Safety

Susan Tsu, Costume co-author
Costume Designer, USA Local 829
Bessie F. Anathan Professor of Fine Arts
University Professor- Carnegie Mellon University
Irene Sharaff Lifetime Achievement Awardee
USITT Fellow

INTRODUCTION

The health and safety of all individuals (staff and actors) involved in the costume industry is a priority. This document is a guideline to prevent the spread of coronavirus-2 (SARS-CoV-2), which causes COVID-19. These recommendations are based on scientific research indicating that COVID-19 IS PRIMARILY SPREAD FROM PERSON TO PERSON via droplets containing the virus when an individual speaks, shouts, sings, coughs, or sneezes.

The primary methods to prevent the spread of COVID-19 include:

- 1) ensuring good ventilation in the fitting rooms and work space since many masks and face coverings (except for approved N95 respirators) are unable to completely prevent the transmission of all infectious droplets.
- 2) creating a written plan to prevent the spread of COVID-19
- 3) mandating the wearing of masks or cloth face coverings (henceforth collectively referred to as masks) and other personal protective equipment (PPE),
- 4) adhering to social distancing (to date 6 feet is recommended but new data show the virus can travel 16 feet (*1*)).
- 5) practicing thorough hand hygiene by handwashing at least 20 seconds or using an alcohol hand rub.

Although the inanimate environment is not the primary source of COVID-19, a person may acquire the infection by touching a contaminated surface or object and then touch his/her mouth, nose, or possibly eyes. Therefore, proper cleaning (using friction or elbow grease) of surfaces and objects, as well as hands, is important.

For additional information, refer to the CDC web site: <https://www.cdc.gov/coronavirus/2019-ncov/>). CDC's recommendations are based on science and best practices. Since information about coronavirus 2 (aka SARS CoV-2, COVID-19 virus) is evolving, guidelines and recommendations may change. At all times, it is important to be aware of, and adhere to your organizational, local, city, state, and federal health and safety guidelines and regulations.

I. COVID-19 PREVENTION PLAN

Every company with a Costume Department must have a plan to prevent the spread of COVID-19 that meets federal, state and local regulations and public health department requirements. The plan must include: written policies and procedures that outline how to prevent COVID-19, written risk assessments, education program on policies and procedures, purchase of, distribution of, and education on PPE, and a COVID-19 testing protocol.

The plan must also include an enforcement program for policies and procedures. Enforcement is difficult. One tactic is using a 3-phased procedure: Warn/Yell/Now You Must Leave. Without enforcement, OSHA does not consider that safety is ensured.

The International Alliance of Theatrical Stage Employees (IATSE/USA) has outlined the following requirements (2):

- A written COVID-19 Safety plan.
- Notification of and liaison with local public health authorities. All COVID-19 prevention and control measures must be consistent with federal, state, and local public health guidelines.
- One or more autonomous COVID-19 Compliance Officers (CCO) with specialized training, responsibility and authority for COVID-19 safety compliance and enforcement will be in the workplace to implement the COVID-19 safety plan and address issues as they arise.
- Systems will be employed to assess health of all personnel prior to entry into the workplace.
- The National Institute for Occupational Safety and Health's (NIOSH) Hierarchy of Control will guide approaches to mitigating risk.
- All required PPE will be provided and maintained by the employer.
- Effective communication, training, and support programs.
- Assurance of paid leave and income retention if sick or exposed.
- Compliance with Americans with Disabilities Act (ADA), the Age Discrimination in Employment Act (ADEA), and the Canadian Human Rights Act (CHRA) when implementing mitigation measures.
- Continual assessment and adjustment of venues based on changing circumstances.

II. VENTILATION AND WORK SPACE IN THE WORK ENVIRONMENT

Although most of us don't have much control over the nature our work spaces, and there is no guarantee that a workplace will be completely safe from COVID-19, employers and workers can work together to make the environment as safe as possible.

It is not clear how long coronavirus may remain in the air. One study found that the virus remains infectious in the air for up to 16 hours (3-5).

Therefore, it is important to have proper ventilation (air exchanges in the rooms) and an adequate amount of space to work in order to enable social distancing.

A. VENTILATION For Covid-19 In Buildings

Ventilation is the most important issue in any building during the pandemic. If the ventilation is not removing the virus from the air, all the other precautions such as distancing and masks are useless. The following steps should be taken when planning to work indoors.

1. Determine the type of ventilation
 - a. *Recirculating ventilation*: with diffusers and return grilles (usually in the ceilings) in buildings usually built after 1980.
 - b. *Natural ventilation*: No ventilation system at all. Instead, relies on building leakage, open windows, etc. in many older buildings
 - c. *Industrial ventilation*: in shops consisting of units to heat or cool in-coming air and exhaust fans to remove contaminated air.
2. Negotiate with building managers, operators, or employers to obtain the following information and ventilation upgrades for the type of building ventilation in your venue.

B. RECIRCULATING VENTILATION SYSTEMS:

1. Air exchanges per hour: The ASHRAE 62 standard for indoor air quality in buildings requires about 3 exchanges per hour depending on use (6). It should be more for COVID-19.
2. The grade of the filter in the air handling unit. During this epidemic, the MERV 13 which can effectively capture COVID-19 droplets at between 5 and 30 microns is the minimum filter that should be used. However, since it is now evident that finer aerosol virus-containing particles are a transmission route, the filter best suited for capture is a MERV 17 which is actually a HEPA filter. All filters also must be properly installed if they are to work.

3. The percentage of fresh air introduced. The percentage of fresh air added on every cycle that the damper in the air handler is set for is also helpful information. Workers need to understand that the air coming from the diffusers is only partially fresh. The rest is recycled through from all the rooms connected to this air-handler. The higher the percentage of fresh air in this recirculated air, the better. For example, if a low grade filter must be used, increasing the percentage of fresh air may compensate for this inadequacy.

ADDITIONAL AIR CLEANING. Portable HEPA filter units also may be used. They can only clean the air in small areas of a room, but may be helpful in small rooms.

These principles are formalized in the American Industrial Hygiene Association's (AIHA) guidance document called "Reducing the Risk of COVID-19 using Engineering Controls," Version 1, August 11, 2020. The document can be used to aid in discussions with building facilities managers and engineers when planning to reopen a building for theatrical or film activities (7).

C. NATURAL VENTILATION.

Buildings without central ventilation systems require careful consideration of the following:

1. Any engineering reports on the calculated ventilation rates from open windows or any similar data should be requested from building owners or operators. These buildings actually had pretty good air exchange through leakage when they were originally built. But during the various energy crises, people installed wall insulation and insulated windows and the insulation often resulted in poor air quality, mold, and other issues.

Insulated old buildings are very difficult to make safe during the COVID-19 pandemic. Unless there has been some additional work done on the building, it is unlikely that these buildings will be acceptable venues.

2. Portable air filters. Small areas of the naturally vented buildings may be made acceptable with portable HEPA filter units, but the specifications for the units must be noted. The units usually have a recommendation for the square feet of room they can clean. However, that square footage is usually based on the assumption that the ceiling height is 8 feet. Recalculation may be needed for buildings with higher ceilings.

D. INDUSTRIAL VENTILATION (SHOPS).

Many shops and warehouses have industrial ventilation systems. The following information should be required from building owners or operators.

1. Floor plans and specifications. Included would be a) placement of exhaust fans in the space and their elevation; b) cubic feet per minute (cfm) the fans exhaust; c) location of plans for the make up air units and their cfm. Depending on the location of supply and exhaust, these can be the best solution for the COVID-19 issues. Unlike recirculating ventilation systems, these systems are almost always unique and each must be evaluated based on the location of the various elements and equipment.
2. The standards for this kind of ventilation are those of the American Conference of Governmental Industrial Hygienists (ACGIH). Their Committee on Industrial Ventilation issued a White Paper on “Ventilation for Industrial Settings During the COVID-19 Pandemic,” August 2020. This document can be used to explain these principles to building managers and operators to properly use these systems for mitigation of the COVID-19 risk (8).

E. WORK SPACE

The work area must be large enough to comfortably accommodate the actor and staff needed for fittings. If more than one actor is fitted, the space must be large enough to allow for social distancing between the actors and their associated staff. To date, 6 feet of separation has been recommended. A new study has demonstrated that the virus could travel 16 feet (1).

Where possible and practical, outdoor fittings are encouraged.

- F. Minimize air turbulence by not shaking clothing, cover gowns, fabrics and other items. Air currents may disperse infectious droplets.

G. Legionnaires’ disease and mold

After an extended period of nonuse, buildings may harbor mold and *Legionella*, the bacteria that causes Legionnaires’ disease. General guidance can be found at: <https://www.cdc.gov/coronavirus/2019-ncov/php/building-water-system.html>

Dampness will encourage the growth of mold. Mold has a musty smell and can be seen. It can trigger allergic and asthmatic attacks. To minimize mold, identify and remediate leaks and dampness, replace stained ceiling tiles and dry walls.

Legionella loves to live in the biofilm of pipes that contain stagnant water and in air-conditioning cooling towers. The water system and cooling towers should be appropriately tested prior to reopening and treated as necessary. Immunosuppressed individuals are highly susceptible to *Legionella* which can cause a fatal pneumonia.

III. COSTUME STAFF AND ACTORS

Please note that coronavirus-2, which causes COVID-19, is primarily spread from person to person. Inanimate objects may be a source of infection if not handled properly.

A. STAFF IN FITTINGS COULD INCLUDE:

- Costume Shop/Studio Directors/Managers & their Assistants
- Floor & Project Managers
- Designers & Assistant Designers
- Drapers
- Tailors
- First Hands
- Second Hands
- Stitchers
- Wig and face hair artisans
- Crafts artisans
- Directors if they look in on fittings

Visitors and observers are discouraged. If present, they must adhere to guidelines for staff.

B. TEST & SCREEN HEALTH OF STAFF AND ACTORS PRIOR TO ENTRY TO THE COSTUME SHOP

The production company's requirements for routine testing for COVID-19 and provisions for emotional and mental support will be followed. Since infected asymptomatic people (those who do not have a temperature or any signs of illness) may spread the virus, testing for COVID-19 will help to identify these individuals. Your local public health department and/or primary care physician will have information about testing criteria and testing sites. At some sites, the test may be offered at no charge and/or testing may be covered by insurance.

1. PERIODIC TESTING for COVID-19

The employer should establish routine laboratory testing of staff and actors for COVID-19 in accordance with public health and costume industry guidelines.

Frequency of testing will be determined by the employer in concert with the local health department, and incidence of COVID-19.

Consult with your local health department or experts on testing regarding the best test to use and test locations. For meaningful results, use a testing facility that provides results within 72 hours.

Testing is helpful in identifying asymptomatic or pre-symptomatic individuals who have COVID-19 and are infectious (9).

2. DAILY IN-HOUSE SCREENING, during which staff and actors should be wearing a mask:
 - Take temperature using no-contact thermometer

Ask about:

- Travel within the U.S. or outside of the country within the past 14 days. The CDC recommends that international travelers stay at home for 14 days. Since some state and local governments require people who have recently traveled within the U.S. to stay home for 14 days, it is best to check with your local health department regarding post-travel restrictions.
- Symptoms of an infection (fever or chills, cough, shortness of breath, fatigue, muscle or body aches, headache, new loss of smell or taste, sore throat, congestion or runny nose, nausea or vomiting, diarrhea)
- Known or suspected exposure to COVID-19 in the past 14 days
- A positive test for COVID-19

False information on the above may result in spreading of COVID-19.

The production company's requirements for routine testing for COVID-19 and provisions for emotional and mental support will be followed.

Since it is possible to have influenza and COVID-19 at the same time, the CDC strongly recommends getting an influenza vaccine. The flu vaccine will not prevent getting COVID-19, nor will it increase the risk for coronavirus-2.
<https://www.cdc.gov/flu/prevent/keyfacts.htm>

For more information on COVID-19, go to
<https://www.cdc.gov/coronavirus/2019-ncov/>

3. Record name, date, time, temperature, and symptoms.
This will help your organization do contact tracing.
4. If a person has symptoms, they must leave immediately and be instructed to go home

Anyone with known or suspected exposure to COVID-19, must remain in quarantine for 14 days after last known date of exposure (10).

If a person tests positive for COVID-19, they should be under a doctor's care and in isolation for at least 10 days after onset of symptoms and until fever free for 24 hours when not on fever-reducing medications such as ibuprofen, acetaminophen, aspirin (10).

C. REQUIRED HYGIENE ETIQUETTE FOR THE ACTORS prior to presenting at the costume shop:

Proper hygiene is required and critical since there is close contact between staff and actors.

- Always bathe before each fitting.
- Use body wipes if actors have been in rehearsal all day and haven't showered.
- Wear underwear.
- There will be no fitting if the above conditions are not followed.

Note: The COVID-19 virus has been isolated from respiratory secretions, blood, and feces, and they are infectious. Infected persons who are asymptomatic and pre-symptomatic can also spread the infection (9).

ACTORS Do not come if they have:

- Fever or chills, cough, shortness of breath, fatigue, muscle or body aches, headache, new loss of smell or taste, sore throat, congestion of runny nose, nausea or vomiting, diarrhea or other signs of an infection,
- Had known or suspected exposure to COVID-19 within the previous 14 days,
- Been diagnosed with COVID-19 and have not been released by their physician or other health authorities.

D. PERSONAL PROTECTIVE EQUIPMENT (PPE), HAND HYGIENE STATIONS, AND TRAINING FOR STAFF AND ACTORS:

Mandatory PPE include masks, gloves, and gowns. Eye protection (goggles or face shields) are highly recommended when working face to face, such as when applying a head dress, fitting wigs, and applying make-up. PPE will be provided by the company/institution. OSHA states that the employer must provide and document training on the use and care of PPE.

1. Store clean PPE gowns for staff and actors in a closed container.
2. Hand hygiene stations include:
 - Sinks with soap, running water and disposable towels
or
 - Hand sanitizers/alcohol hand rubs must be FDA registered and at least 60-95% ethyl alcohol. For hand sanitizers to be effective, hands must be free of visible dirt and body fluids.

NOTE: Be sure to check that hand sanitizers do not contain methanol (methyl alcohol or wood alcohol) or 1-propanol, both of which are toxic when absorbed through the skin or ingested and can be fatal if ingested. (11)

In addition to personal training on use of PPE and hand hygiene, reading and viewing CDC Instructions for DONNING and DOFFING of PPE is necessary:

CDC instructions for donning and doffing PPE (personal protective equipment):
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/using-ppe.html>
View Donning video: <https://youtu.be/of73FN086E8>
View Doffing video: <https://www.youtube.com/watch?v=PQxOc13DxvQ>

E. STAFF AND ACTORS MUST MASK BEFORE ENTERING THE COSTUME SHOP

The term “masks” referred to in this section are cloth masks/face coverings and surgical masks. N95 particulate respirators will be referred to as N95 respirators or N95.

1. Cloth and Paper Masks and Face Coverings

Since these masks are made of porous textiles or polymers and fit loosely, they do not completely capture the fine aerosol particles. However, by reducing the aerosols containing the virus, these masks have been shown to help prevent the spread of COVID-19. Cloth masks with multiple layers of tightly woven fabric are better than bandanas and other materials that one can see through. These masks are readily available, and can be worn by most people without problems.

DO NOT use masks with exhalation valves or vents! While protecting the wearer, they allow the wearer’s contaminated exhaled air to escape which others may breathe in.

2. Surgical masks

Surgical masks are FDA regulated, loose fitting, and are fluid resistant (12, 13). Since there is not a tight seal around the face, they do not fully prevent the penetration of viruses, but provide a better barrier than cloth masks. Surgical masks are primarily available in healthcare settings.

3. Wearing Masks

All masks should fit as tightly as possible around the face and completely cover the nose. If the mask does not stay in place over the nose, repeatedly adjusting the mask over nose may lead to inadvertent contamination of the mask and face.

To prevent contamination of the mask, wash hands before putting it on (donning) and before taking it off (doffing). Do not touch the mask while wearing it. (Refer to link above and view videos on donning and doffing procedures.)

Cloth masks may be reused if not soiled or contaminated. Soiled and contaminated reusable mask should be washed in hot water with soap immediately. Disposable masks should be discarded.

Refer to <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-to-wash-cloth-face-coverings.html>.

If your mask has become moist through and through from sweat or hours of wearing, replace it with a fresh one. Do not don cloth masks that have not been thoroughly dried.

While in the fitting room, discourage actors and staff from speaking loudly, shouting and singing, which emits more aerosols containing microorganisms and results in moistening of masks, thereby diminishing their efficacy.

4. N95 Particulate Respirators

Cloth and surgical masks do not capture the fine (aerosol) particles. N95 particulate respirators are NIOSH approved and form a tight seal around the face, thus offering a significantly higher level of protection. Individuals who choose to wear a N95 to increase their level of protection must be medically certified, fit tested, and trained as per the OSHA regulations (13). As with all such OSHA regulations, the employer will arrange for and pay for this respiratory protection.

N95 respirators form a tight seal around the face, and therefore, offer more protection. While all masks create breathing stress in wearers, the tight seal of a N95 makes breathing even more difficult. Experience has shown that most people who wear a N95 all day feel that stress at the end of a full day. While most manufacturers and OSHA recommend that N95 respirators be worn no longer than 8 hours and then discarded, shortages have forced extending the time they are worn and reuse of the respirators.

Facial hair such as beards and side burns prevent a tight seal between the edge of the mask and the wearer's skin. Employers can require N95 wearing employees to shave.

5. Reusing N95 Respirators

Shortages of N95 have prompted creative methods of decontaminating the respirators and reusing them.

NIOSH and CDC have specific guidance on reusing N95 respirators to retain their efficacy. Refer to:

<https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html>

If a person needs to wear a N95 daily, CDC suggests having 5-7 respirators and to wear only one respirator each day. At the end of the day, store the used N95 in a clean breathable paper bag for 5-7 days before reusing. The "time out" will allow the virus, if present, to die. Studies show that COVID-19 lives on plastic, stainless steel, and cardboard surfaces for up to 72 hours, therefore, storing in paper is preferred. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html>

Researchers recently found that N95 respirators could be decontaminated in a electric cooker such as a rice cooker or Instant Pot at 100° for 50 minutes.

However, at this time, **3M does NOT recommend decontaminating FFR's via electric cookers at temperatures above 75 degrees C** such as Autoclave or Steam, due to significant filter degradation." (14).

<https://multimedia.3m.com/mws/media/1824869O/decontamination-methods-for-3m-filtering-facepiece-respirators-technical-bulletin.pdf>

DO NOT sterilize using other methods, wash, or spray N95 masks which will interrupt the ability of the mask fibers to attract particles electrostatically. The mask might look the same after treatment, but efficacy and fit will be compromised.

F. STAFF AND ACTORS MUST CLEAN HANDS UPON ENTRY TO THE COSTUME SHOP

If a sink and water is available, wash hands thoroughly with soap and running water for at least 20 seconds (sing Happy Birthday 2 times). Soap has the ability to dissolve the lipoid (fatty) capsule that surrounds the virus. Wash the front and back of the hands, between the fingers, the thumb, and under the fingernails.

Do not make a bowl of water available for handwashing.

Use hand sanitizers (hand rubs) that contain 60-95% ethyl alcohol if there are no sinks and water nearby. Rub hands together until the sanitizer has dried. If hands are visibly soiled, wash them with soap and water because hand sanitizer won't be effective.

Make sure hand sanitizers do not contain methyl alcohol (also known as methanol or wood alcohol) or 1-propanol, both of which are toxic when absorbed through the skin or ingested and can be fatal if ingested (11).

Clean hands frequently, especially after sneezing or coughing into hands, before and after gloving and masking, whenever hands become soiled or contaminated, and when leaving the Costume Shop.

The wearing of gloves does not preclude the need for hand hygiene!

G. STAFF MAY DON A CLEAN GOWN DURING FITTINGS

Store gowns in closed containers.

Gowns may be either cloth or disposable. Gowns are worn with the opening in the back. When not intrusive to costumes being fit (i.e. wig or headdress fittings), a clean gown should be donned by each actor.

When removing gowns, turn inside out, roll down and away from the body. DO NOT SHAKE. (Refer to previous link II:D on donning and doffing procedures.)

Reusable gowns are placed in a designated container and washed in hot water with soap at least daily. Staff handling soiled gowns should wear gloves and hold the gowns away from their body when placing into a washer and dryer. **DO NOT SHAKE!** Reusable containers for soiled gowns should be disinfected after each emptying.

Discard disposable gowns in a plastic lined garbage container. Tie bag closed before disposing in institutional dumpster.

H. GLOVES MAY BE WORN BY BOTH STAFF AND ACTORS

Gloving is not a substitute for cleaning hands! Gloves can be a source of cross-contamination if not worn properly.

While wearing gloves, do not touch your face, ears, mask or other unprotected parts of the body. Be careful not to touch uncontaminated items such as coffee cups, purses, back packs, glasses, phones while wearing gloves. When not using your gloved hands, hold them together in front of your body (prayer position). Do not place them on your hips or in your pockets, stand akimbo, or place your hands under your armpits, or hold your hands behind your back.

Should an individual choose not to wear gloves, touching precautions listed above for gloving applies. Hands should be thoroughly cleaned frequently, using alcohol hand sanitizer or soap and water.

I. EYE PROTECTION

Eye protection (goggles, face shield) is optional but recommended if working face to face with another person, such as when putting on headpieces, adjusting a wig, or applying make-up. Goggles and a face shield will offer extra protection in the event someone talks, coughs or sneezes in your face. In addition, face shields deter the touching of masks. However, face shields should not be worn alone without a mask because they do not prevent inhalation of aerosols.

It is important not to rub your eyes, which may introduce the virus into the eyes.

Face shields and goggles that are reusable should be cleaned with a disinfectant after each actor fitting.

IV. FITTINGS AND FITTING ROOMS/SPACE

A. FITTING ROOMS/SPACE

As stated previously, fitting rooms and costume shops should be of adequate size and well ventilated (functioning HVAC system or outdoor air). Since many fitting rooms

and costume shops are small and are in constant use, keeping the door open may provide better ventilation as long as the ventilation system is not affected.

Screens or curtains placed outside or at the door can be used to provide privacy. Since the screens and curtains are frequently touched, they are decontaminated after each actor. Screens, the more practical choice, are wiped with a disinfectant, while curtains are washed.

To minimize exposures, the space should be large enough to accommodate an actor and enable all of the necessary staff to practice social distancing which to date is 6 feet apart, but new findings recommend a separation of 16 feet (*1*). If the space is small, limit the number of staff in the room at one time.

It is preferred that fitting room floors be of hard surfaces (wood, vinyl, tile, etc.) so they can be easily cleaned, preferably with a disinfectant. Consider removing area rugs and carpet.

Consider outdoor fittings if practical.

B. MINIMIZE THE NUMBER OF STAFF INVOLVED IN A FITTING AND THE NUMBER OF FITTINGS.

The more people involved in a fitting and the greater the number of fittings, the higher the risk of exposure to COVID-19. Ideally one actor should be fitted at a time with a designated staff member. After each fitting, staff should decontaminate their equipment before removing their protective apparel, and clean their hands before safely fitting another person. Consider using only one staff member per actor.

Also minimize the number of fitting encounters per actor.

Group fittings are strongly discouraged.

C. MAINTAIN RECORDS

Develop a spreadsheet (Excel with a pivot table or similar program) for each actor. List the costumes tried on by date and time, and record every staff member present. If a person becomes COVID-19 positive, documentation will enable contact tracing of exposed individuals and contaminated costumes.

D. COMPLETION OF FITTING

After use, the fitting area should be thoroughly cleaned with a disinfectant while wearing gloves.

Before leaving the fitting room, remove gloves and gowns, if worn, and discard into the appropriate containers. Clean hands before removing the mask.

V. CLOTHING & COSTUMES IN THE FITTING

A. ACTOR'S CLOTHING AND BELONGINGS

Issue a paper or plastic bag or a laundry basket to each actor to store his/her clothing and belongings such as backpacks, phones and purses. When the actor leaves, discard the bag or clean the basket with a disinfectant.

B. COSTUMES, CRAFTS, WIGS, ACCESSORIES, SHOES

1. Keep a TAG on each garment piece tracking its journey of fittings

- Actor's name
- Date and time of fitting
- Dates of airing
- Date of re-fitting, etc.

2. Once worn, costume pieces are considered contaminated.

Educate the actor not to shake costume pieces during removal.

3. POST FITTING CLOTHING:

The virus is easily killed by using soap and hot water. Clothing can be washed and dried in a dryer. Clothes that cannot be washed: wigs, crafts, shoes etc., should be placed in a designated area for airing for 48-72 hours before they are used again.

Bag the clothes every day. Paper is best, then cloth bags are next best. The cloth bags will need to be washed after removal.

Items needed prior to 48 hours can be washed with hot water and soap, steamed, or dry cleaned, depending on the material. Note that there is no data on the efficacy of steaming and dry cleaning. Spraying items, such as clothing and wigs, with a disinfectant may cause damage and be unhealthy for the actor. OSHA does not recommend spraying alcohol as it is flammable.

Shopped clothing may be quarantined for 48-72 hours before use.

4. DRESSING ROOM

- * Maintain social distancing of at least 6 feet, preferably 16 feet (*1*).
- * Provide hand sanitizer and wipes at each actor's station.
- * To minimize air turbulence, wardrobe staff should try to avoid rushing quickly in and out of the dressing rooms.

- * Vocal and physical warmups should be done individually at the actor's apartment, not in the dressing room.
- * Wig and microphone (mic) applications are best done in designated spaces at scheduled times as usual.
- * Whether in the shop or in the dressing room, store each actor's costumes and accessories separately on a designated rack, hooks, bins, or storage area so they do not touch other actor's items. Educate actors on not sharing items unless instructed and documented by costume staff. Store shared items separately.
- * Make-up is assigned each actor and may not be shared. Make-up should be stored in a designated place, and covered when not in use.
- * Educate actors to decontaminate their own spaces (make up areas, mirrors, chairs, etc.) with a disinfectant before leaving. The necessary cleaning items should be readily available.
- * Reusable containers for soiled laundry should be disinfected after each use.

VI. WARDROBE, WIG & SOUND DEPARTMENTS

A. PERSONAL PROTECTIVE EQUIPMENT (PPE) and HYGIENE

Wardrobe and Wig staff and crews should follow the same screening, record keeping, hand cleaning, masking and gowning procedures as costume staff when preparing to run shows, and afterwards when striking, cleaning clothing and restoring wigs.

Sound technicians assigned to apply, replace and remove body microphones (mics) on actors should follow the same screening, recording, hand cleaning, masking and gowning procedures as costume staff.

B. PROCEDURES

1. WARDROBE

- * Gowns and masks worn during the work day for fittings will become a daily washing necessity.
- * PPE should be washed in hot water with soap. The CDC states that it is ok to wash these items with other laundry.
- * Microphone (mic) packs and straps are wiped clean with a disinfectant daily.
- * Do not shake or wave items about when transferring from bins to washing machines.

2. WIGS

Check with your State Board of Cosmetology for the most recent COVID-19 guidelines on the use of blow driers and other practices.

- * Wig staff doing fittings or giving haircuts should have a ready stock of fresh protective gowns and towels and use a clean one for each actor. Gowns and towels should be stored in closed containers.
- * To prevent air turbulence, avoid waving gowns and towels when donning, doffing, and placing in soiled laundry container.
- * Reusable containers for soiled gowns and towels should be disinfected after each emptying.
- * When touching up wigs, you may wish to spray an alcohol sanitizer on select places between re-settings to disinfect them. If the actor has frequently touched the wig during the performance, you may wish to completely wash, set and restyle between each performance.

NOTE: 90 proof vodka is about 45% alcohol and is not a EPA registered disinfectant effective against coronavirus 2. Refer to <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2-covid-19> for disinfectants that are effective against coronavirus 2.

3. SOUND

- * When applying microphones (mics), clean hands and wipe down tape dispensers and scissors between actors.
- * Clean all microphones (mics), battery packs and wires between wearings. In tech, it may be best for the actors to keep on their mic packs and straps rather than taking them off over long breaks.

VII. EQUIPMENT

A. DURING FITTINGS

Take precautions not to contaminate boxes of multiple items, such as markers, straight pins and safety pins. Before use, remove what is needed with clean gloves or hands. If contaminated, clean the container and its soiled contents. For example, a contaminated box of straight or safety pins can be cleaned using 70% alcohol. Since alcohol evaporates quickly, drying pins will not be necessary. Bleach may cause corrosion and does not dry quickly.

It is recommended that cutting tables be covered with plastic and cleaned after use with an EPA-registered disinfectant.

NOTE: All pins and sharp objects that have punctured the skin or drawn blood must be discarded in a medical waste sharps container provided by the employer.

B. AFTER EACH FITTING

Used items such as scissors, rulers, tape measures, chalk, markers, pens and pencils, mark-b-gone, hem puffers sewing machines, cutting boards, mannequins, computers, cameras etc. should be considered contaminated and cleaned by wiping with a premoistened wipe or moisten a cloth (not soaked) with a disinfectant. To minimize damage to equipment, using a damp cloth to clean is preferred over spraying liquid on equipment. Wiping also provides friction to remove dirt.

It is best to use a disinfectant recommended by the manufacturer of the item being cleaned. If that information is not available, select one that is not deleterious to the equipment. Gloves should be worn when cleaning.

C. AT THE END OF EACH DAY

Shop surfaces (countertops, tables and cutting tables), and equipment such as sewing machines; tables; irons and all ironing hams, water, and funnels; sergers; embroidery machines; mannequins; measuring tools etc. should be considered contaminated and cleaned by wiping with a premoistened wipe or moisten a cloth (not soaked) with a disinfectant. Basically, if an item was taken from where it is usually stored, and used, it needs to be cleaned. It is best to use a disinfectant recommended by the manufacturer of the item being cleaned. If that information is not available, select one that is not deleterious to the equipment. Gloves should be worn when cleaning.

Floors and carpets should be cleaned on a routine schedule, and when visibly soiled. Mopping the fitting room floor with a detergent or an EPA registered disinfectant is recommended.

D. DEVICES NOT PROVEN TO BE EFFECTIVE IN KILLING SARS-CoV-2:

Many people are seeking simpler and quicker methods for disinfecting masks, scissors, pins and other shop supplies, and the environment. Although recently, electric cookers have been enthusiastically promoted for disinfecting N95 respirators, 3M does not recommend this practice, as significant degradation of the mask material occurs (14). There is no data as to the efficacy of other devices such as wig and clothing steamers and clothes driers.

1. Killing temperature of SARS-CoV-2

While there is no data regarding temperatures to kill SARS-CoV-2, the virus behaves like SARS-CoV (coronavirus from 2003 SARS outbreak) and experts believe that new virus will be killed under the same conditions. At 56°C (132.8 F) about 10,000 units of SARS-CoV is killed in 15 minutes (15). Other studies

showed a 99% of SARS-CoV was killed after 20 minutes at 130° F and 99.99% of the virus died after 5 minutes at 150° F (16).

2. The killing temperature for SARS-CoV can be reached by many devices. Water boils at 100°C (212°F), and a properly working dishwasher's final rinse cycle is usually around 71.1°C (160°F). The final rinse on commercial dishwashers is required to be 82°F (180°F). Household dryers can be set to reach 51.7°C-57.2°C (125-135°F). The temperatures reached and time maintained at that temperature by wig and clothing steamers are unclear. Studies are needed to determine the effectiveness of these devices against SARS-CoV-2.
- E. EPA N List of Disinfectants Effective Against Covid19:
<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2-covid-19>
(See also VIII Cleaning Procedures, section D)

VIII. ENVIRONMENTAL CLEANING AND DISINFECTION

See also CDC- Reopening Guidance for Cleaning and Disinfecting Public Spaces, Workplaces, Businesses, Schools, and Homes:

<https://www.cdc.gov/coronavirus/2019-ncov/community/reopen-guidance.html>

A. CLEANING AND DISINFECTION DEFINITIONS

1. Cleaning is the physical removal of dirty and body fluids and secretions (using elbow grease) and is absolutely necessary for disinfectants to work. Soap or detergents and water are usually used for cleaning.
2. Disinfection is the killing of microorganisms (not visible to the naked eye) after cleaning. Disinfectants cannot get under dirt and biological matter.

B. CLEANING PROCEDURES

1. Surfaces

Clean all environmental surfaces (tables, chairs, door knobs, sinks, toilets, countertops, light switches, etc.) at least daily and when contaminated, with an EPA-registered disinfectant (noted on the container.) In some places, housekeeping services may be assigned to clean these surfaces. However, they are typically not permitted to touch equipment including but not limited to sewing machines, overlock and embroidery machines, sergers, irons, mannequins, computers, cameras, dye vats, dye mixing boxes, dye sinks, washing machines and driers, dye sinks, craft room equipment, spray booths, industrial steamers, fireproof cabinets, wig steamers and driers, or other costume making tools and equipment.

2. Floors and Carpets

Fitting room floors and carpets should be cleaned on a routine schedule, ideally daily and when visibly soiled.

Hard floors should be mopped with a disinfectant solution. Disposable mop heads are preferred because they can be discarded after each use. If the mop head is reusable, it must be washed and dried after each use according to the manufacturer's specifications. Buckets for the solution also need to be cleaned after each use.

Carpets should be vacuumed frequently, regularly and shampooed when visibly soiled.

3. Bathroom

Bathrooms should be cleaned daily and more frequently when visibly soiled using an EPA-registered disinfectant. Close attention should be paid to cleaning of faucet handles, toilet flush handles, towel dispensers, soap dispensers, door knobs and toilet seats.

It is known that flushing toilets causes aerosolization, and that the aerosols may contain micro-organisms. To date however, there is no evidence that the aerosols have been experimentally or epidemiologically demonstrated to cause COVID-19 (17).

C. DISINFECTANTS

CAUTION: Disinfectants are toxic chemicals. Do not eat, drink, breathe, inject, or apply to skin! **To avoid harm and ensure effectiveness, it is imperative to use disinfectants according to their manufacturer's instructions.** Do not mix any disinfectant products; mixing may create toxic fumes. Wear gloves while using disinfectants.

These products must be on the employer's OSHA hazard communication inventory, and employers must make safety data sheets (SDS, formerly called MSDS) available to workers.

Disinfectants used for cleaning must be labeled "EPA-registered" and listed on the EPA N-List tested to be effective against SARS-CoV-2 (<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2-covid-19>).

Only when commonly used disinfectant solutions and wipes (Lysol®, Clorox®) are not commercially available, workers may make 70% alcohol solutions or bleach solutions.

NOTE: 90 proof vodka is about 45% alcohol and is not a EPA-registered disinfectant effective against coronavirus 2.

NOTE: Diluted household bleach: Use 1/3 cup (5 Tablespoons) bleach per gallon of room temperature tap water. If mixed in an open container, the bleach is effective for at least 24 hrs. If stored in a closed container and kept away from light, it can last about 2-3 weeks. If bleach is made in a closed container, make sure it is labeled “Bleach 1/3c per gal” and the date of mixing.

D. UV-C LIGHTS ON ENVIRONMENTAL SURFACES

Ultraviolet light in the electromagnetic spectrum 200-320 nm destroys DNA of microorganisms. UV devices designed for use in healthcare emit UV light from 200-270 nm (most about 254 nm), the UV-C spectrum. Depending on the device, vegetative bacteria are killed in 5 to 25 minutes and *C. difficile* spores are destroyed in about 50 minutes (18). UV-C also kills H1N1 influenza, the coronaviruses that cause the first SARS outbreak and MERS (17). The results from one shows UV-C also kills COVID-19 (19).

It is very important to note that surfaces must be cleaned prior to treatment with UV-C. The light cannot penetrate dirt and only kills organisms within the direct line of its rays. Shine a flashlight around the workplace from the place where the UV light will be placed. Any surface that is not lit by the flashlight beam will not be disinfected by UV light.

Robot-like UV-C machines used in hospitals cost at least \$10,000 and proper training on their use is imperative. Prior to purchasing any UV-C device, the manufacturer should provide evidence of its effectiveness against COVID-19. Only vacuums with UV-C can disinfect carpets.

Education on proper use of the device is imperative. UVC light can cause sunburn within seconds and permanent eye damage. The rays will reflect off shiny surfaces, and if the light reaches the eyes, will cause injury. Additionally, UV is carcinogenic.

E. OTHER DEVICES CLAIMING TO KILL SARS-CoV-2

There exist claims that electrostatic sprayers, electrolytic units, air ionization units, ozone generators, negative ion generators, foggers that emit fog and biocide, and ultraviolet lights are effective in killing SARS-CoV-2. However, these devices are not EPA-registered, and therefore, have not been demonstrated to be effective.

The EPA advises: “If a manufacturer is making claims about a device, they should have scientific data to support the claims.” Demand certified lab reports or peer-reviewed studies showing their safety and effectiveness at killing SARS-CoV-2 under the conditions expected in your workplace. Most likely the data is non-existent.

IX. SHARING THE SAFETY PRECAUTIONS YOU ARE TAKING

Please share these guidelines to help prevent the spread of COVID-19 during fittings to Production Managers, Stage Managers, Directors, Assistant Directors, Choreographers and Actors. It will be useful for all theatre personnel to know best practices for their PPE, personal items and rehearsal clothing in rehearsal spaces, and for actors to know how best to prepare for fittings.

X: REFERENCES:

1. John A Lednicky, Michael Lauzardo, Z. Hugh Fan, Antarpreet S Jutla, Trevor B Tilly, Mayank Gangwar, Moiz Usmani, Sripriya N Shankar, Karim Mohamed, Arantza Eiguren-Fernandez, Caroline J Stephenson, Md. Mahbulul Alam, Maha A Elbadry, Julia C Loeb, Kuttichantran Subramaniam, Thomas B Waltzek, Kartikeya Cherabuddi, John Glenn Morris Jr., and Chang-Yu Wu. Viable SARS-CoV-2 in the air of a hospital room with COVID-19 patients Medrxiv. August 4, 2020. <https://www.medrxiv.org/content/10.1101/2020.08.03.20167395v1>
2. Mandavilli A. ‘A Smoking Gun’: Infectious Coronavirus Retrieved From Hospital Air. August 11, 2020. New York, NY: *New York Times*: <https://www.nytimes.com/2020/08/11/health/coronavirus-aerosols-indoors.html>
3. International Alliance of Theatrical Stage Employees (IATSE) Stagecraft Safety Committee. IATSE stagecraft safety committee recovery plan. July 22, 2020. <https://iatsecares.org/2020/07/22/iatse-stagecraft-safety-committee-releases-covid-reopening-recovery-plan>
4. Marr LC. SARS-CoV-2 in droplets and aerosols. July 7, 2020. Blacksburg, VA: Virginia Polytechnic Institute and State University. https://www.ohcow.on.ca/edit/files/events/2020/occ-covid/linsey_pdf.pdf
5. Fears SC, Klimstra WB, Duprex P, Hartman A, Weaver SC, Plante KS, et al. Persistence of severe acute respiratory syndrome coronavirus 2 in aerosol suspensions. *Emerg Infect Dis*. 2020 Sep [Cited 2020 Aug 4]. <https://doi.org/10.3201/eid2609.201806>
6. Perera RAPM, Tso E, Tsang OTY, Tsang DNC, Fung K, Leung YWY, et al. SARS-CoV-2 virus culture and subgenomic RNA for respiratory specimens from patients with mild coronavirus disease. *Emerg Infect Dis*. 2020 Nov [Cited 2020 Aug 4]. <https://doi.org/10.3201/eid2611.203219>
7. American Society of Heating, Air-conditioning and Refrigerating Engineers (ASHRAE). Standards 62.1 and 62.2: The standards for ventilation and indoor air quality. 2019. <https://www.ashrae.org/technical-resources/bookstore/standards-62-1->

[622#:~:text=ANSI%2FASHRAE%20Standards%2062.1%20and,adverse%20health%20effects%20for%20occupants](#)

8. American Industrial Hygiene Association (AIHA). Reducing the risk of COVID-19 using engineering controls: Guidance document. August 11, 2020. Falls Church, VA: AIHA. <https://aiha-assets.sfo2.digitaloceanspaces.com/AIHA/resources/Guidance-Documents/Reducing-the-Risk-of-COVID-19-using-Engineering-Controls-Guidance-Document.pdf>

9. American Conference of Governmental Industrial Hygienists (ACGIH) Industrial Ventilation Committee. White Paper on Industrial settings during the COVID-19 pandemic. August 2020. Cincinnati, OH: ACGIH.
https://www.acgih.org/tlv-bei-guidelines/vent-comm-position-paper?utm_source=ACGIH&utm_campaign=7ef099c425-EMAIL_CAMPAIGN_2020_08_13_04_06&utm_medium=email&utm_term=0_e0322abe6a-7ef099c425-342774697
10. Furukawa NW, Brooks JT, Sobel J. Evidence supporting transmission of severe acute respiratory syndrome coronavirus 2 while presymptomatic or asymptomatic. EID 2020;26(7) Jul e1-e6. <https://doi.org/10.3201/eid2607.201595>
<https://doi.org/10.3201/eid2607.201595>
11. Centers for Disease Control and Prevention (CDC). Criteria for return to work for healthcare personnel with SARS-CoV-2 infection (interim guidance). Aug 10, 2020.
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/return-to-work.html>
12. Food and Drug Administration (FDA). FDA updates on hand sanitizers consumers should not use. August 12, 2020. <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/enforcement-policy-face-masks-and-respirators-during-coronavirus-disease-covid-19-public-health>
13. Food and Drug Administration (FDA). Enforcement policy for face masks and respirators during the coronavirus disease (COVID-19) public health emergency (revised). Guidance for industry and Food and Drug Administration staff. May 2020.
<https://www.fda.gov/regulatory-information/search-fda-guidance-documents/enforcement-policy-face-masks-and-respirators-during-coronavirus-disease-covid-19-public-health>
14. Occupational Safety and Health Administration (OSHA). OSHA Fact Sheet. Respiratory infection control: Respirators versus surgical masks. May 2009.
<https://www.osha.gov/Publications/OSHA3219.pdf>
15. 3M. Decontamination of 3M Filtering Facepiece Respirators, such as N95 Respirators, in the United States- Considerations. Technical Bulletin. August 2020, Revision 9. <https://multimedia.3m.com/mws/media/18248690/decontamination-methods-for-3m-filtering-facepiece-respirators-technical-bulletin.pdf>
16. World Health Organization (WHO) First data on stability and resistance of SARS coronavirus compiled by members of WHO Laboratory Network. 2003.
https://www.who.int/csr/sars/survival_2003_05_04/en/

17. Darnell MER, Subbarao K, Feinstone SM, Taylor D. Inactivation of the coronavirus that induces severe acute respiratory syndrome, SARS-CoV. J Virol Methods 2004;121:85-91. doi:10.1016/j.jviromet.2004.06.006
18. Collivignarelli MC, Collivignarelli C, Miino MC, Abba A, Pedrazzani R, Bertanza G. SARS-CoV-2 in sewer systems and connected facilities. Process Safety and Environmental Protection. 2020;143:196-203. <https://doi.org/10.1016/j.psep.2020.06.049>
19. Anderson DJ, Chen LF, Weber DJ, Moehring RW, Lewis SS, triplett PF, et al. Enhanced terminal room disinfection and acquisition and infection caused by multidrug-resistant organisms and *Clostridium difficile* (the Benefits of Enhanced Terminal Room Disinfection study): a cluster-randomised, multicentre, crossover study. Lancet. 2017;389(10071):805-814. [https://doi.org/10.1016/S0140-6736\(16\)31588-4](https://doi.org/10.1016/S0140-6736(16)31588-4)
20. Ozog DM, Sexton JZ, Shanthi N, Pretto-Kernahan CD, Mirabelli C Lim HW, et al. The effect of ultraviolet C radiation against SARS=CoV-2 inoculated N95 respirators. Medrxiv. June 26, 2020. <https://www.medrxiv.org/content/10.1101/2020.05.31.20118588v3.full.pdf+html>

XI. RESOURCES:

Institution's Legal Counsel

Institution's Health and Safety Department

State Board of Cosmetology

State and Local Department of Health

Centers for Disease Control and Prevention (CDC) COVID-19
website: www.cdc.gov/coronavirus/2019-ncov Opens In A New Window

Environmental Protection Agency's (EPA) list of approved disinfectants for use against SARS-CoV-2, the virus that causes COVID-19 <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2> Opens In A New Window

Occupational Safety and Health Administration (OSHA) COVID-19
website: www.osha.gov/covid-19 Opens In A New Window

World Health Organization. <https://www.who.int>

Note from the Authors:

The intent of this document is to provide guidelines, not to be prescriptive. Since information on coronavirus 2 is still evolving, new evidence may change some of the recommendations made in these guidelines. At all times, it is important to be aware of, and adhere to your organizational, local, city, state, and federal health and safety guidelines. Your own organizational Health and Safety Department will have important guidelines as well. Please let us know if you learn of additional best practices that you find effective.

If you are a member of a larger institution such as a college, university, or theatre, it is important for you to run your practices past your legal counsel.

You may consult with Teresa Chou, Infection Prevention and Control Consulting, LLC, at chou.teresa@gmail.com.

If you are a Local United Scenic Artist 829 member, consult the Guidelines put out by USA, as well as the most current Joint Industry-Wide Labor-Management Safety Committee Task Force plan. The White Paper (first edition) is dated June 1, 2020. This plan comprises the Proposed Health and Safety Guidelines for Motion Picture, Television, and Streaming Productions during the COVID-19 Pandemic put out by the Alliance of Motion Picture and Television Producers.

Union members with further questions, may also reach out to:

Monona Rossol, MS, MFA Industrial Hygienist. <https://artscraftstheatersafety.org/bio.html>

United Scenic Artists employs Industrial Hygienist, [Monona Rossol](#), M.S., M.F.A., as their Safety Consultant. She can provide you with hard data on hazardous materials and equipment, etc. Members of Local USA 829 may email Monona at actsnyc@cs.com or call her at **212-777-0062** or **646-522-8604** (cell) for information on hazardous materials and equipment, applicable laws and regulations, proper protective equipment, effects of your materials on your health or referral to occupational medical doctors.