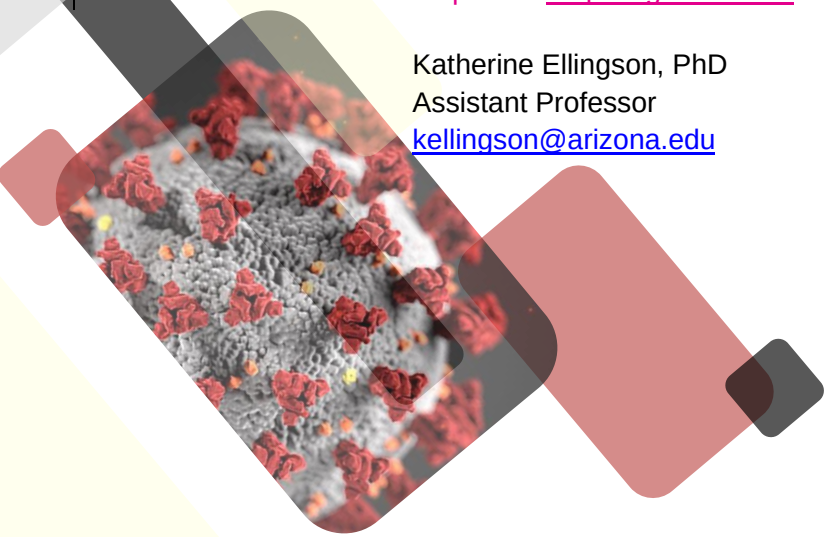
AZ-ASCEND
Arizona Antimicrobial Stewardship Collaborative

COVID-19: Interim Resource Materials

COVID-19 is a novel respiratory disease that poses high risk of severe illness to older adults. This document serves to support long-term care facility (LTCF) healthcare professionals on best practices to protect themselves and their residents during this pandemic. Included within this document are solutions that address~~ing~~ specific challenges for LTCF's, based on guidelines from the Centers for Disease Control and Prevention (CDC), Arizona Department of Health and Human Services (ADHS), multiple professional health organizations~~, various health institutions~~, and peer-reviewed literature.

Although COVID-19 is not within the ~~formal~~ initial scope of AZ-ASCEND, our team aims to be a resource for you and your team. In addition to organizing the following information, we are available to support your facility with ~~with~~ solving logistical challenges and ~~resource acquisition~~acquiring resources.



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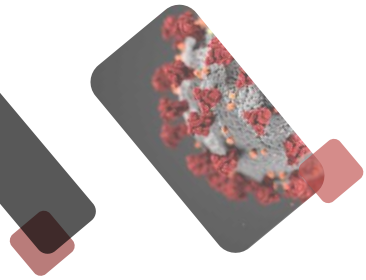

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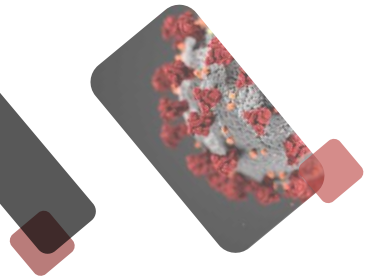
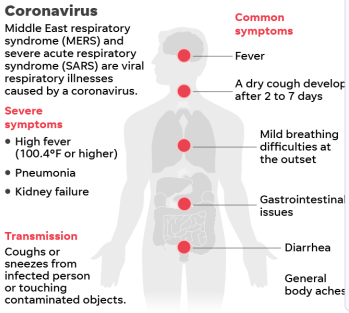


Explaining COVID-19 to Residents & Families

Residents within long-term care facilities are vulnerable to severe outcomes associated with COVID-19, and living in close quarters puts them at high risk for acquiring and transmitting the virus. Residents and families may need information about the public health response to COVID-19, and preventative strategies to support a safer environment for their loved one. Below are frequently asked questions that LTCF residents and families may have:

I. **What is COVID-19?**
   a. Coronavirus Disease 2019 (COVID-19) is caused by a new respiratory virus that was first identified in China in late 2019. This virus is not the same as other coronavirus types associated with outbreaks that you may have heard of, such as SARS, and MERS. There are at least four human coronavirus types that cause common colds. *The virus that causes COVID-19 is different*. It is more easily transmissible than SARS or MERS, and is associated with far more severe illness and fatality than the common cold.

II. **What are the symptoms?**
   a. Most COVID-19 infections are not severe, and symptomatic infections range from mild to critical. When symptoms do occur, they are most commonly mild to severe respiratory illness with fever, cough, and difficulty breathing. Additional symptoms that have been noted in patient
      i. Chills
      ii. Muscle aches
      iii. Runny nose
      iv. Sore throat
      v. Shortness of breath
      vi. Nausea or vomiting
      vii. Headache
      viii. Abdominal pain
      ix. Diarrhea



III. **How does the disease spread?**
   a. The virus is spread person-to-person directly or indirectly via droplets (i.e. when someone coughs or sneezes on you or an object you touch).

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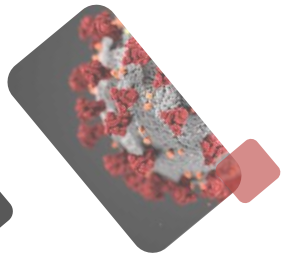
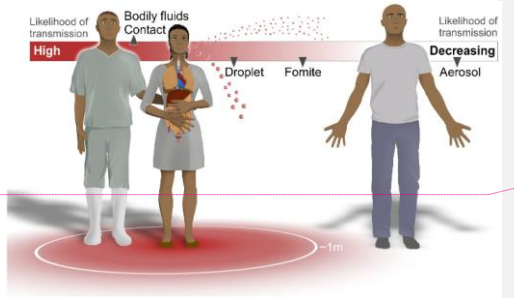
Commented [KE3]: I would expand this list – there are many more symptoms now. Typical signs are fever and cough. More severe cases will experience difficulty breathings. The following have also been noted in patients with active COVID-19:
Fever
Chills
Muscle aches
Runny nose
Sore throat
Cough (new onset or worsening of chronic cough)
Shortness of breath
Nausea or vomiting
Headache
Abdominal pain
Diarrhea



b. The virus can survive on surfaces from four hours to three days, depending on the surface. Disinfectants have been shown to be effective at removing the virus.

c. Airborne transmission *may be possible* but likely plays a small role in transmission compared to droplet.



IV. **Who is at risk for serious illness?**

a. Older adults) and people with preconditions such as heart disease, diabetes, and lung disease are at ***highest risk*** for developing severe illness. Healthcare workers at all ages can acquire the virus, and some will develop severe infections, which is why you will see enhanced personal protective equipment (PPE) use in the facility. While young people are less likely to suffer from severe outcomes, 20% of hospitalizations in the US were among individuals aged 20-44.

V. **What are the treatment options for people infected with COVID-19?**

a. There is no vaccine or approved medical treatment for COVID-19. Supportive care is available to relieve symptoms in mild cases and intensive care – including ventilator support – is necessary in severe cases. You may have seen or heard about "cures" from various media sources. Currently, none of these drugs or practices have been tested in clinical trials, although there are many ongoing trials to test for safety and efficacy. Please note there have been fatal overdoses associated with people taking hydro chloroquine for protection, however, it has not yet been proven effective against COVID-19 in human patients.

VI. **How can I protect myself and my loved one from disease?**

a. Adhere to the facility's visitation policies. They are in place to protect both residents and healthcare workers during this time. Exceptions can be made for end-of-life situations.

b. Wash your hands often with soap and water for at least 20 seconds. If these are not available, use an alcohol-based hand sanitizer.

c. Avoid touching your eyes, nose, and mouth.

d. Cover your cough or sneeze with a tissue, or the corner of your elbow if a tissue is not available.

VII. **What if I am experiencing flu-like symptoms?**

a. *Residents* should immediately report new symptoms to a staff member. Residents should immediately isolate themselves in their room and avoid movement until further instruction. In addition to adhering to facility policies that reduce communal activity, closely follow additional distancing instructions provided by staff.

b. *Family members* should avoid visiting facilities, regardless of health status. It is possible that visitors are asymptomatic carriers of COVID-19; subsequent exposure for residents, who are inherently more vulnerable to disease, may be

Commented [JR4]: Does "direct" person-to-person transmission occur through "airborne" transmission? Droplets can be airborne, so this might be a little confusing.

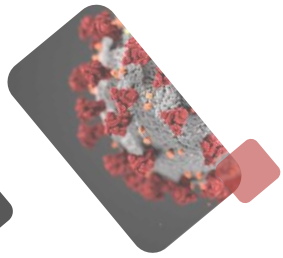
Commented [JR5]: Citation?

Commented [KE6]: I like the message but doesn't belong here.

Commented [JR7]: This sentence needs rewording. Should it be two sentences?

Commented [KE8]: Remember, these Q&A are likely more practical for family

Commented [KE9]: See if you can write from the perspective of a family member.



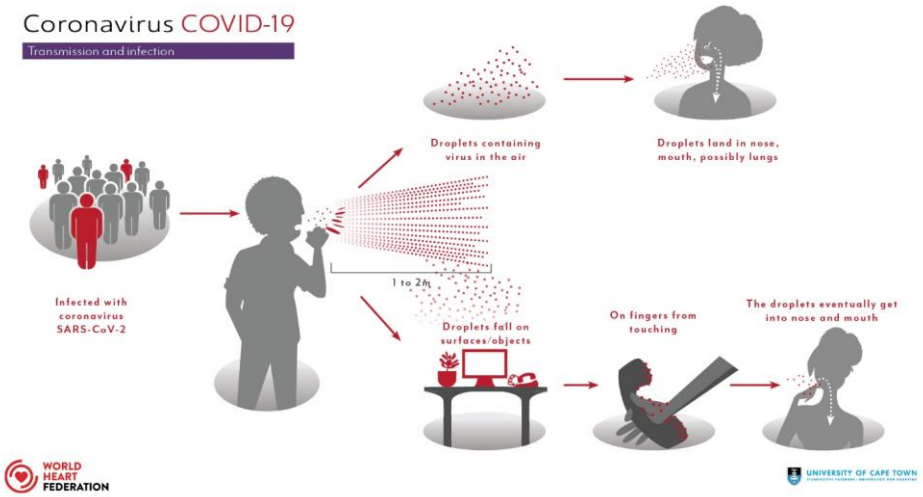
avoided by stopping all visitation. If a family member has recently visited and has begun experiencing symptoms, inform the facility, and isolate the resident(s) who have shared contact.

c. *HCW's* are advised to immediately remove themselves from the facility if any symptoms are noted. Inform your Infection Preventionist or the DON of previous work activity remotely (via phone or video).

VIII. **How many people have been infected?**

a. The number of COVID-19 cases are still increasing daily. Certain countries including China are rapidly declining after public health measures. For verified daily updates see the CDC's U.S. case count.

b. Community transmission, defined as the spread of an illness for which the source of infection is unknown, has been confirmed nationally. The ADHS updates the number of cases in Arizona daily. These cases are suggested to be spread



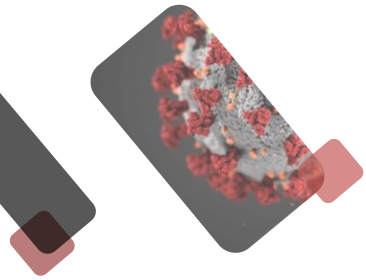
community transmission (so not from a close contact or while travelling), meaning that the virus is being shed and picked up within the environment.

IX. **Why am I not allowed to have in-person visitors?**

a. Federal guidelines recommend visitation be restricted for all visitors and non-essential health care personnel. Additional guidance recommends cancelation of communal activities. These policies are temporary and help protect you and those around you. We recommend using virtual communication options to stay connected until normal operations are restored.

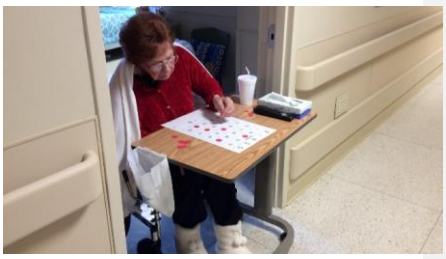
Commented [KE10]: Let's give them a little more perspective than the CDC #s. We want to convey the fact that we indeed have wide-spread community transmission, despite the numbers. This will help in having families understand why there are such serious precautions being taken in long-term care.

Commented [KE11]: Would be great if we could provide useful examples that have worked in these settings – maybe even an image…



i. See one facility has kept engagement high with online bingo alternatives.
ii. iHeart radio has a list of online games to play while isolated.

b. In lieu of regular activities, Partners in Health have provided a list of tips to help support mental health.



Prevention Measures

The CDC has developed a COVID-19 Preparedness Checklist for Nursing Homes and other Long-Term Care Settings. Your Infection Preventionist should use this document to ensure your facility has a plan in place to address key aspects of a potential outbreak. The section includes additional prevention measures not explicitly described in the checklist. Additional information regarding the checklist can be found here. A synopsis of national recommendations can be found here.

Education

Residents, Families, Community

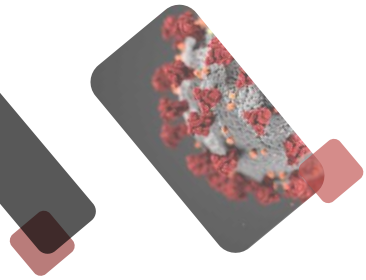
- Inform both residents and family members of policy changes and prevention efforts. The CDC has developed a LTCF letter to inform on changes.
- Use visual alerts at signs and entrances in strategic places (e.g. waiting areas, elevators, cafeterias) to reinforce transmission reduction strategies.
- Provide supplies for respiratory hygiene and cough etiquette when possible.

Commented [KE12]: Define who these stakeholders are

Staff

The following materials can be provided to LTCF HCWs to educate on challenges and recommendations to reduce transmission.

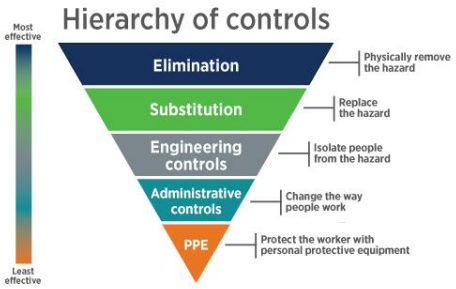
- CDC: Preventing COVID-19 Spread in Retirement Communities and Independent Living Facilities
- NEJM: Epidemiology of COVID-19 in a LTCF
- AHCA: Preventing the Spread of COVID-19
- Washington State DOH: Recommendations for LTCFs



- Minnesota DOH: Recommendations for LTCFs
- John's Hopkins Center for Health Security: Reducing spread in LTCFs

Control Recommendation Highlights

The hierarchy of controls is a methodology used to protect workers. The idea behind this hierarchy is that the control methods at the top of the graphic are potentially more effective and protective than those at the bottom. Elimination and substitution, while most effective at reducing hazards, also tend to be the most difficult to implement in an existing process. Engineering controls are favored over administrative and personal protective equipment (PPE) for controlling existing worker exposures in the workplace because they are designed to remove the hazard at the source, before it comes in contact with the worker. Administrative controls and PPE are frequently used with existing processes where hazards are not particularly well controlled.



Engineering controls

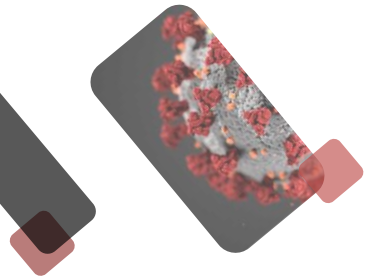
I. Limit facility entry points.
II. Install physical barriers (glass or plastic windows) at reception areas.
III. Provide supplies for respiratory hygiene and cough etiquette.
IV. Employ physical barriers or partitions to guide patients through triage areas.
V. Whenever possible preform procedures in resident's rooms.
VI. Use curtains between patients in shared areas.

Administrative controls

I. Cancel group activities
II. Postpone elective procedures
III. Nurse-directed triage protocols should be used to manage patients requests for respiratory infection evaluation.
    a. See PAHO triage protocols in the event of a pandemic.
    b. The Communications Network is developing Coronavirus Crisis Comms Triage Kit — to share and crowdsource best practices, resources, and examples of effective crisis comms covering many of the tasks you're attending to. Check the document regularly for new updates.
    c.
IV. Resident examinations:
    a. Residents should be observed and asked about the presence of symptoms of respiratory illness at regular intervals. Incorporate questions about new onset of respiratory symptoms into daily assessments.
    b. During examinations isolate the resident away from others.

Commented [KE13]: Examples we can share from facilities who have posted?

Commented [FR14R13]: Aside from two resources listed, I unfortunately didn't spot anything. This can definitely be iterative – if you or anyone find something else, amazing.



Personal Protection Equipment

I. Dedicate medical equipment to care for patients with known or suspected COVID-19.
II. Ensure that environmental cleaning and disinfection procedures are followed.
III. Routine cleaning and disinfection procedures are still appropriate in healthcare settings.

Resident Procedures

When collecting diagnostic respiratory specimens to test for COVID-19, HCP should observe the following precautions:

I. HCP should wear an N95 respirator, eye protection, gloves, and a gown.
II. Only HCP essential to care and collection should be present.
III. Collection should occur in a closed environment.
IV. Procedure room surfaces should be sterilized promptly following collection.

Aerosol-generating procedures (procedures likely to induce coughing) should be performed cautiously and avoided if possible. If required use the same measures for collecting diagnostic respiratory specimens (above). For more information follow the CDC's interim control recommendations: https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html

Resident Transfers & Isolation

The Washington State Health Department has developed a set of guidelines for admitting residents with COVID-19 who are no longer ill. This may be necessary due to the need to create capacity in acute care hospitals. The following are a summary of these recommendations, and apply to all resident transfers with suspected or confirmed COVID-19

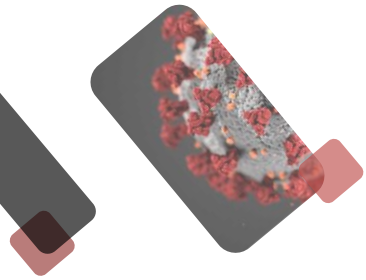
Preparation

Facilities should consider designating entire units within the facility, with dedicated HCPs, to care for known or suspected COVID-19 patients.

I. Facilities should consider staffing needs in the event of a COVID-19 outbreak
II. Residents with undiagnosed respiratory illness should not be placed in the same unit as those with confirmed disease.

Resident movement

I. If being re-admitted, place resident in a (non-airborne) isolation room with closed door (if possible).
    a. Airborne isolation is only necessary for aerosol producing procedures, NOT for routine care.
II. If a separate isolation room is not available, the patient can be cohorted with other resident with confirmed COVID-19.



III. Symptomatic residents should wear a facemask (if tolerated) and be separated from others
IV. If a resident is readmitted, or has suspected COVID-19, the resident should leave the room only if absolutely necessary and should wear a facemask (if tolerated) or use tissues to cover their mouth and nose.

Staff precautions

I. Standard PPE for HCW should include gown, gloves, facemask, and eye protection.

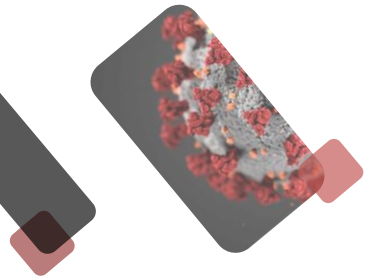
Residents with respiratory symptoms

I. Prioritize triage of patients with respiratory symptoms
II. Use source control and provide a facemask to symptomatic resident (if tolerated).
III. Triage personnel should have a supply of facemasks and tissues for patients with symptoms of respiratory infection.

Visitation

To reduce risk of community exposure CMS, CDC, and ADHS have implemented new guidelines restricting visitation. Facilities are advised to limit visitation to compassionate (end of life) situations. The following steps should be executed to ensure limited visitation:

I. Send letters or emails to family members to advise postponing visitation. Offer alternative means of communication such as:
    a. Virtual communication (phone, video)
    b. Creating listserv communication to update families
    c. Assigning staff as primary contact for inbound calls
    d. Offering a phone line with the facilities operating status, such as when it is safe to resume visits. Update daily.
II. Post signage at entrances to not enter if exhibiting fever or symptoms of a respiratory infection. For those entering, follow-up by asking:
    a. If they have exhibited recent symptoms
    b. If they have travelled within the last 14 days outside of the state. A list of high-risk international areas is provided here.
    c. If they have had contact with an individual with COVID-19
III. Visitors should be instructed to limit their movement in the facility.
IV. Visitors are not to be admitted during aerosol-generating procedures.
V. Limit entry to those who need to enter the facility.



Resources

Optimizing Personal Protective Equipment

In response to the nationwide shortage of PPE government agencies recommend using a *combination* of interventions from the hierarchy of controls to increase overall protection and conserve resources. The FDA has issued a guidance letter to providers with levels of capacity strategies; conventional capacity, contingency capacity, and crisis/alternative strategies. Engineering, administrative, and Personal Protection have been emphasized within the hierarchy of controls as measures to reduce the overall need of limited equipment. Additional optimization strategies are in consideration and recorded via CDC hosted webinars. If there are a shortage of resources, they should be prioritized for:

I. Aerosol-generating operations
II. Care activities where splashes and sprays are anticipated
III. For more information:
    a. See the FDA's full recommendations at: https://www.fda.gov/medical-devices/letters-health-care-providers/surgical-mask-and-gown-conservation-strategies-letter-healthcare-providers
    b. See the CDC's full optimization strategy at https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html

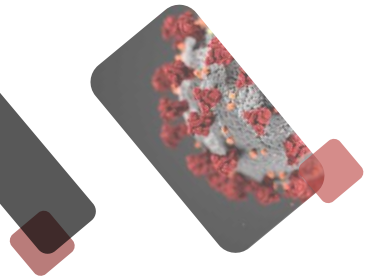
Reuse & Extended Use

Reuse refers to the practice of using and removing PPE between multiple patient encounters. **Extended use** refers to the practice of wearing the same PPE for repeated close contacts without removal. Extended use is favored to reuse as it is expected to involve less touching and therefore lower contamination risk. The following recommendations have been adapted and summarized from the FDA and CDC to address crisis/alternative situations alone (when demand exceeds supply). These measures are *not* commensurate with current U.S. standards of care, however, may be considered during PPE shortages.

Most PPE is designed to be single use; however, ADHS, FDA, CDC, and OSHA have identified exceptions in limited resource situations. Prior to implementing reuse or extended use, CDC recommends minimization of the number of individuals who need to use respiratory protection through implementation of engineering and administrative controls.

Surgical masks reuse or **extended use** may occur when maintained in a common area for multiple patient encounters with the same diagnosis or exposure. Masks may be reused for extended periods when protecting patient from droplets from the provider. Masks may not be reused under the following conditions:

- Contamination
- Surgical settings
- Working in high transmission risk areas



N95 respirators reuse or **extended use** has been authorized by the CDC. Use the checklist for optimizing the supply of respirators; in the event of reduced supplies, use subsequent control measures.

- *In the event of low supplies* respirators that are not NIOSH-approved, or even not preforming adequately for healthcare delivery can be employed.
- *When respirators are exhausted* employ the following controls:
    - Engineering controls:
        - Use an expedient patient isolation room
        - Use a ventilated headboard to decrease provider risk to aerosol
    - Administrative controls:
        - Exclude providers at high risk from contact with COVID-19 patients
        - Designate convalescent providers to care for COVID-19 patients
    - PPE:
        - Use non-compliant NIOSH or homemade respirators

Gown reuse or **extended use** may occur after adequate laundering, sterilization reducing pathogen contamination to a negligible level. Gowns must be FDA cleared for reuse.

Expired PPE (gowns, respirators, face masks) may be reused beyond the reported shelf life after passing visible inspection. If degraded materials or visible tears are present, they should be discarded.

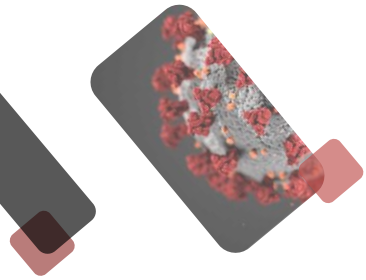
High-Contact Care Activities

Reuse or extended PPE use is inappropriate after performing high-contact resident care activities. These activities may provide opportunity for transfer of pathogens to the hands or clothes of providers:

- Dressing
- Bathing/showering
- Transferring
- Providing hygiene
- Changing linens
- Changing briefs or assisting with toileting
- Device care or use
- Wound care

Burn rate calculator

The CDC has developed a PPE burn rate calculator to help facilities plan and optimize PPE. Entry instructions are provided in the spreadsheet, and include gowns, surgical masks, gloves, respirators and face shields. Find the spreadsheet, download instructions, and system requirements here: https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/burn-calculator.html



PPE Exhaustion

In the event that Surgical Masks, gowns, or respirators are no longer available, see the CDC's full Recommendations for Selecting Protective Clothing: https://www.cdc.gov/niosh/npptl/topics/protectiveclothing/

Supplemental Resources

The ADHS is currently receiving and distributing life-saving medical supplies from the federal Strategic National Stockpile (SNS). In the event that you are running low on supplies, or have not yet received supplemental resources, the AHCA recommends taking the following steps in this order:

Recommendation		Contact
Step 1:	Preserve supplies according to CDC guidelines	--
Step 2:	Contact your health care coalition, Arizona Coalition for Healthcare Emergency Response (AzCHER)	Laura Dix ldix@azhha.org
Step 3:	Contact ADHS	<MISSING CONTACT>
Step 4:	Contact your local health department	See NACCHO website
Step 5:	Contact local hospital(s) and other health care providers in your area about possibly sharing equipment	--

Face masks: In the event of severe shortages, the University of Wisconsin-Madison has shared an open-source design for face shields. The projected cost to make 990 face shields is approximately $1500. Click here for the design: https://making.engr.wisc.edu/shield/

Face Masks: Providence St. Joseph Health has additionally provided instructions for manufacturing face masks: https://psjh.blob.core.windows.net/covid/2020-%20PSJH_CLINICALFACEMASK_%20Instructions%20-%20Final.pdf

Additional PPE can be requested at GetUsPPE, a grassroots movement purposed at redistributing PPE to HCWs in need: https://getusppe.org/?mod=article_inline

Commented [KE15]: Let's see if we can figure out the local distribution chain – I'm still trying to nail this down (hope to find out more Monday) so that we can ensure they know who to call and where to go if they are running out of PPE

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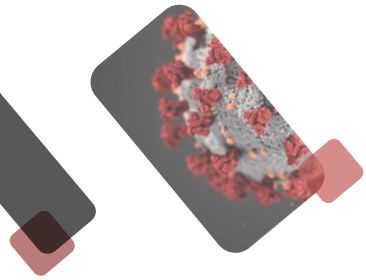

Literature

An interactive web-based dashboard to track COVID-19 in real time
"The dashboard…illustrates the location and number of confirmed COVID-19 cases, deaths, and recoveries for all affected countries. It was developed to provide researchers, public health authorities, and the general public with a user-friendly tool to track the outbreak as it unfolds."

The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak – an update on the status
"[A summary of] the latest research progress of the epidemiology, pathogenesis, and clinical characteristics of COVID-19, and discussed the current treatment and scientific advancements to combat the epidemic novel coronavirus."

COVID-19: what is next for public health?
"COVID-19 seems to have different epidemiological characteristics from SARS-CoV. COVID-19 replicates efficiently in the upper respiratory tract and appears to cause less abrupt onset of symptoms, similar to conventional human coronaviruses that are a major cause of common colds in the winter season."

Priorities for the US Health Community Responding to COVID-19
"While it is clear now that SARS-CoV-2 will spread widely in the world, including in the US, the effect of this disease among those who become ill and broader society will be substantially influenced by the preparedness and response work of the health care and public health communities."

Presumed Asymptomatic Carrier Transmission of COVID-19
"If the findings in this report of presumed transmission by an asymptomatic carrier are replicated, the prevention of COVID-19 infection would prove challenging. The mechanism by which asymptomatic carriers could acquire and transmit the coronavirus that causes COVID-19 requires further study."

The reproductive number of COVID-19 is higher compared to SARS coronavirus
"R_0 for COVID-19 is expected to be around 2–3, which is broadly consistent with the WHO estimate."

Fair Allocation of Scarce Medical Resources in the Time of Covid-19
"The rapidly growing imbalance between supply and demand for medical resources in many countries presents an inherently normative question: How can medical resources be allocated fairly during a Covid-19 pandemic?"