COVID-19 OR Resource Binder

Updated April 8, 2020

COVID Contacts
COVID Airway Phone: 650-387-5008
(passcode 202020)
COVID Airway Pager: 13064
ICU Triage Fellow: x48820
SICU: x53234
Respiratory Therapist: x36941
Emergency/ Code Blue: 211
OB Anesthesia Attending: 650-721-0865
Pre-anesthesia Clinic: x41429, x35927
(attending office phone)
Clinical Lab: x36671/ x36111
Blood Gas: x54382
Employee Health (OHS): x35922
Emergency Dept: x37337

500P
Scheduler/ MSD 1 Call Attending: x60249
Anesthesia Tech: x40219
Control Desk: x37251
OR Charge Nurse: 650-788-5784
Biomed: 628-273-3352
Pharmacy: x71723
Preop: x73187
PACU: x73133

300P
Scheduler: x33430
Anesthesia Tech: x61850
Control Desk: x75468
OR Charge Nurse: x44590
Biomed: x57454
300P/ E2 ICU Pharmacy: x55902
Preop: x58742
PACU: x36631

300P OOR: Endo/ MRI/ CT/ Cath
Endo/ MRI Anesthesia Tech: x46359
CT/ Cath Anesthesia Tech: x44587
300P Cath Control Desk: x37676
300P Cath Preop/ PACU: x34328
Endoscopy: x58817
PET-CT/NucMed: x58263
MRI Control Desk: x36335

ASC
ASC Scheduler: x48812
Anesthesia Tech: x62120
Control Desk: x56102
ASC Cath Control Desk: x53615
OR Charge Nurse: x49420
Biomed: x58186
Preop: x35991
PACU: x35917

Our resources and guidelines are constantly changing.
Please see the Ether COVID website for the most updated information: ether.stanford.edu/covid-19
If you have suggestions or want to see updated material in this binder, please contact:

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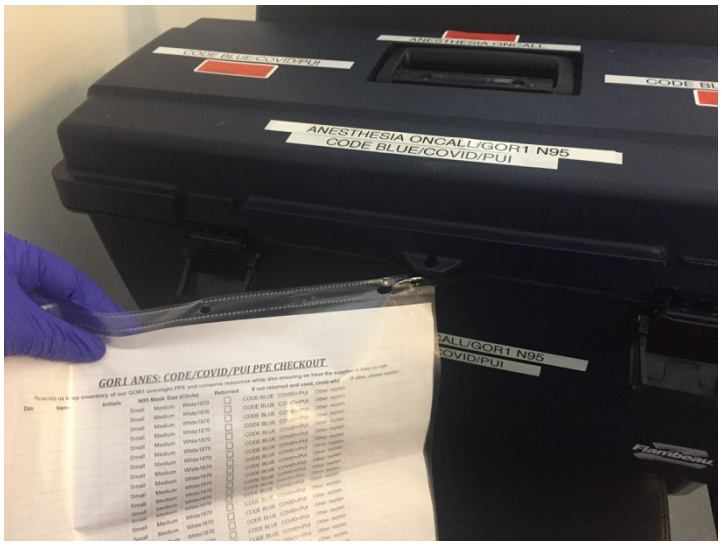
PPE

Code Blue PPE Box at 500P OR Front Desk

At the beginning of your shift, please fill out N95/ PPE check out form.



(Credit: Hannah Bechtold, MD)

COVID-19 GUIDELINES FOR PPE USE—Updated 4/3/20

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Purpose: To provide clear guidance on appropriate use of personal protective equipment (PPE)

As we stop the spread of COVID-19, the safety of our staff, providers, and patients is our top priority

CURRENT RECOMMENDATIONS

Our current practice meets and/or exceeds the current CDC and state guidelines. These guidelines do ***not*** recommend the use of an N95 mask when treating asymptomatic patients. Most of the evidence suggests that this is transmitted only by droplet. Decisions regarding the use of additional personal protective equipment (PPE) must be made based upon the best use of available resources.

Recommendations prioritize healthcare worker safety and PPE preservation over education during the COVID-19 pandemic. The ABSOLUTE minimum number of providers involved in care requiring PPE MUST be observed for any encounter.

Please note the distinction between *single use* and *re-use* for masks of all types.

Ambulatory and Inpatient *Non-Procedure* Patient Encounters

Non-immunocompromised patients

Risk of Exposure to Providers/Staff			
High—In-patient and Ambulatory	Moderate—Ambulatory	Moderate	Low
• Patient confirmed with COVID-19 • Patient under investigation (PUI)	• Influenza-like symptoms but not PUI for COVID-19 (e.g. Cancer Center)	• Exam involving asymptomatic patients	• Non-direct patient care roles • Non-clinical environments
Patient			
Procedure mask	Procedure mask	Nothing	N/A
Provider/Staff			
• Single use N95 mask* • Goggles • Gown • Gloves	• Procedure mask • Goggles/Face Shield* • Gown • Gloves	• Procedure mask* • Gloves	• Social Distancing Recommended • Optional: Procedural mask with re-use* • Refer to PPE Decision Tree for non-clinical roles

* Refer to "Recommendations for N95 and Face Mask Extended Use and Re-use" Document for guidance for extended use in drive-thru testing centers and/or dedicated COVID-19+ units or re-use in moderate risk for exposure

** Homemade masks are not recommended by any regulatory agency

Immunocompromised patients

Includes patients undergoing active chemotherapy, active radiation, active immunotherapy, lung transplant, ≤ 1 y of other solid organ transplant or bone marrow transplant, rejection treatment, neutropenia), both patient and provider/staff should wear a procedure mask unless patient falls into high risk exposure category, then the provider should wear an N95 mask.

COVID-19 GUIDELINES FOR PPE USE

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Purpose: To provide guidelines on the appropriate use of PPE for specific patient encounters

As we stop the spread of COVID-19, the safety of our staff, providers, and patients is our top priority

INTERVENTIONAL PROCEDURES

High-Risk Procedures

Intubation & Extubation, procedures involving the upper respiratory tract and gastrointestinal tract with risk for aerosolization, such as endoscopy, bronchoscopy, and laryngoscopy.

Risk of Exposure to Providers/Staff	
High Risk of Exposure ***Must be approved by chair of primary surgical dept.* *SHC: Dr. Pearl and Dr. Wald* *LPCH: Surgeon-in-Chief Dr. Dunn and Dr. Fehr*	**Low Risk of Exposure**
• Patient confirmed with COVID-19 • PUI	• Asymptomatic patients • or COVID-19 negative tested in last 72 hours
Patient	
Procedure mask	Nothing
Provider/Staff	
• Single use N95 mask* or PAPR if EMERGENT procedure when aerosolization is most difficult to control • Goggles or Face Shield • Gown • Gloves	• Surgical mask with goggles or face shield • May choose re-use N95 mask; MUST use face shield to allow for mask re-use*** (see pic B pg 3) • Gown • Gloves

*PAPR available if provider/staff failed N95 fit test

*** Refer to "Recommendations for N95 and Face Mask Extended Use and Re-use" Document

Low-risk Procedures^:

^These recommendations do not apply to the intubation portion of the procedure

Non-aerosol generating procedures of the aero-digestive tract and all other procedures

Risk of Exposure to Providers/Staff	
High ***Must be approved by chair of primary surgical dept.* *SHC: Dr. Pearl and Dr. Wald* *LPCH: Surgeon-in-Chief Dr. Dunn and Dr. Fehr*	**Low**
• Patient confirmed with COVID-19 • PUI	• Asymptomatic patients
Patient	
Procedure mask	Nothing
Provider/Staff	
• Single use N95 mask* • Goggles or Face Shield • Gown • Gloves	• Surgical mask • Goggles or face shield • Gown • Gloves

*PAPR available if provider/staff failed N95 fit test

Please note the distinction between *single use* and *reuse* for masks of all types.

COVID-19 GUIDELINES FOR PPE USE

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Purpose: To provide guidelines on the appropriate use of PPE for specific patient encounters

Please note the distinction between *single use* and *reuse* for masks of all types.

A. Procedure Mask and Face Shield

Asymptomatic patients undergoing nose, mouth, throat exam

B. N95 Mask and Face Shield

Aerosol Generating Procedures in Low-Risk Asymptomatic Patients and Exams ONLY

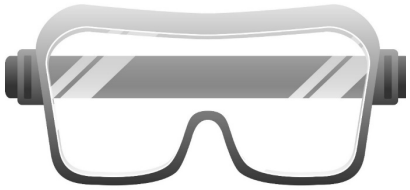
Examples of PPE: Supply appearance subject to change based on availability

N95 Masks

Procedural Masks

Face Shield

Goggles



Gown

Gloves

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COVID-19 N95 and FACE MASK EXTENDED USE AND RE-USE GUIDELINES

Purpose: To provide guidelines on the appropriate extended use and re-use of masks

Definitions

Types of PPE use:

Normal use	The practice of using PPE for one encounter with one patient and then disposed.
Extended use	Per CDC: Extended use refers to the practice of wearing the same N95 respirator for repeated close contact encounters with several patients, without removing the respirator between patient encounters.
Re-use	Per CDC: Re-use refers to the practice of using the same PPE for multiple encounters with patients but removing it after each encounter.

Types of masks:

Face mask, including procedure mask and surgical mask	Mask covering nose and mouth to protect the wearer and/or the environment from respiratory droplets. Face masks are rated level 0-3 based on their fluid resistance; Level 2-3 are prioritized for use in the OR and for patient care involving risk for fluid exposure.
N95 mask	Respirators used to protect the wearer from airborne particulates. These masks are also rated for fluid resistance. These require fit testing and fit checking.

Implementation:

Re-use of procedure masks in direct patient care areas

Safe re-use of procedure masks—re-use in settings with low risk of exposure is critical to conserve PPE: below is the guidance to reduce the risk of self-inoculation.

- Care must be taken to ensure that the health care provider does not touch the outer surface of the mask during care.
    - Perform hand hygiene before and after touching **OR** adjusting the procedure mask
- Mask removal and replacement must be done in a careful and deliberate manner to avoid self-inoculation.
- The mask must be discarded if soiled, damaged, difficult to breathe through, or at the end of a single shift.
- Masks should be carefully folded for storage so that the outer surface is held inward and against itself.
    - Perform hand hygiene after touching the mask.
- The mask must be stored in a clean paper bag labeled with the user's name.
- Re-use of procedure masks may be used with a face shield during low- or moderate-risk exposure patient encounters to help protect the mask from moisture

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COVID-19 N95 and FACE MASK EXTENDED USE AND RE-USE GUIDELINES

Purpose: To provide guidelines on the appropriate extended use and re-use of masks

Re-use of procedure mask in non-direct patient care areas

- Masks must be discarded if they become soiled, damaged, or difficult to breathe through
- Masks should not be touched with the wearer's hands while being worn
- If the employee touches the mask, hand hygiene should be performed immediately
- If the employee needs to remove the mask (e.g. lunch break)
    - Masks should be carefully folded for storage so that the outer surface is held inward and against itself
    - Perform hand hygiene after touching the mask
- The mask must be stored in a clean paper bag labeled with the user's name.

Extended use of N95 respirators and face shields

- N95 Respirators may be used for extended periods of time only if:
    - Staff are working in a COVID-19 testing area **OR**
    - Staff are working in an inpatient COVID-19 landing zone with all confirmed COVID-19 patients
- Respirators must be used with a full face shield, in order to decrease the likelihood of contaminating the respirator
- Respirators and face shield may be used for continuous use for the entire shift, unless grossly soiled or compromised
- Discard N95 respirators that have become grossly soiled or compromised
    - Full Face shield (see cleaning & disinfection tip sheet) must be cleaned after each aerosol generating procedure
- Perform hand hygiene before and after touching **OR** adjusting the respirator or face shield

Re-use of N95 respirators

- Re-use of N95s in combination with a face shield may occur for use during low-risk exposure encounters for patients who are not suspected or confirmed COVID-19, as defined in the "Recommendations for PPE Use" document
- N95 respirators may be re-used for patients with suspected or confirmed TB
    - The mask should be removed in the anteroom (hallway for LPCH) and stored in a paper bag with the user's name
    - The mask may be re-used for one healthcare worker for one shift
    - If mask becomes grossly soiled or compromised during use, dispose of mask
- COVID-19 and other respiratory pathogens may also be transmitted by contact, therefore respirator re-use is **NOT** recommended

References:

https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/face-masks.html

https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html

PPE Decision Tree: Ambulatory & Inpatient Non-Procedure Patient Encounters

Purpose: guide staff and providers in the selection of appropriate PPE based on patient status to prioritize healthcare worker safety and conserve PPE

The following decision tree ONLY applies to direct patient care in the outlined scenarios. When employees are not providing direct patient care to these specific patient populations, social distancing must be followed with procedure mask for re-use

PATIENT STATUS		PPE GUIDELINES
• **COVID-19 positive <u>or</u>** • **Patient Under Investigation (PUI)**	YES	**<u>Patient:</u>** Procedure Mask **<u>Provider/Staff:</u> Use <u>Contact</u>, <u>Droplet</u>, and <u>Airborne</u> precautions** • Gloves • Gown • Goggles • Single use N95 mask* • Post all 3 precaution signs on door
NO		
Influenza like symptoms but <u>not</u> PUI for COVID-19	YES	**<u>Patient:</u>** Procedure Mask **<u>Provider/Staff:</u>** • Gloves • Gown • Goggles • Procedure mask
NO		
Other exam in <u>asymptomatic</u> patient	YES	**<u>Patient</u>**: Procedure Mask **<u>Provider/Staff</u>:** • Gloves • *Procedure mask with re-use**
NO		
When not providing direct patient care	YES	**<u>Provider/Staff</u>:** • Social Distancing Required • *Procedure mask with re-use**

*Refer to "Recommendations for N95 and Face Mask Extended Use and Re-use" Document

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PPE Decision Tree: Interventional Procedures

Purpose: guide staff and providers in the selection of appropriate PPE based on patient status to prioritize healthcare worker safety and conserve PPE

The following decision tree ONLY applies to direct patient care in the outlined scenarios. When employees are not providing direct patient care to these specific patient populations, social distancing must be followed with procedure mask for re-use

PATIENT STATUS/PROCEDURE

COVID-19 positive or PUI or Unable to assess patient status *(i.e. unresponsive trauma patient), unable to delay* **and is having a HIGH-RISK PROCEDURE:**

- Intubation & Extubation
- Procedures involving the upper respiratory tract and gastrointestinal tract with risk for aerosolization, such as endoscopy, bronchoscopy, and laryngoscopy.
- Endoscopic nasal skull base surgery or mastoid surgery involving powered instrumentation

YES

PROVIDER/STAFF PPE GUIDELINE

Use Contact, Droplet, and Airborne precautions

- Gloves
- Gown
- Eye protection/Face Shield
- Single use N95 mask OR
  - PAPR if
    - unable to wear N95 **OR**
    - **EMERGENT procedure when aerosolization is most difficult to control**
- Post "Contact, Droplet, and Airborne precaution signs on door for the duration of the procedure

NO

Asymptomatic or COVID-19 Negative within last 72 hours, and is having a HIGH-RISK PROCEDURE:

- Intubation & Extubation
- Procedures involving the upper respiratory tract and gastrointestinal tract with risk for aerosolization, such as endoscopy, bronchoscopy, and laryngoscopy.
- Endoscopic nasal skull base surgery or mastoid surgery involving powered instrumentation

YES

Use High Exposure Risk PPE

- Gloves
- Gown
- Eye protection/Face shield
- Surgical mask
- May choose re-use N95 mask*. Must wear full face shield with re-use mask
- Post "High Exposure Risk" sign on door for the duration of the procedure

NO

Asymptomatic or Covid-19 Negative within last 72 hours, and is having a LOW-RISK PROCEDURE:

- Non-aerosol generating procedures of the aero-digestive tract and all other procedures

YES

Use Universal Precautions & Aseptic Technique

- Surgical/Procedural team:
  - Gloves
  - Gown
  - Eye protection/face shield
  - Surgical mask
- Circulator:
  - Surgical mask
  - Eye protection
  - Don gloves for direct patient care
- Anesthesiologist:
  - Don High Risk PPE during intubation & extubation. Use full face shield if wearing re-use N95 mask*.
  - Use regular PPE during the Low-Risk surgical/interventional procedure

*Refer to "Recommendations for N95 and Face Mask Extended Use and Re-use" Document

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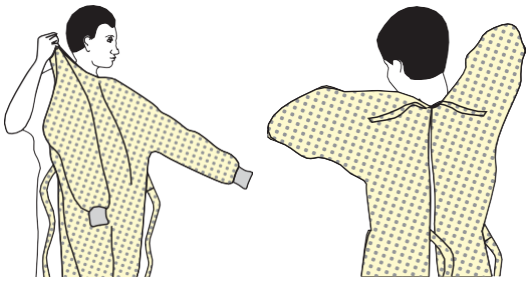
SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

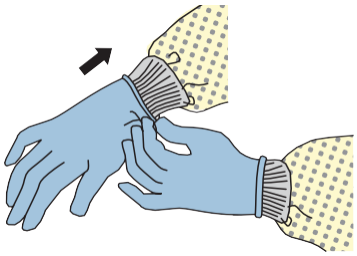
- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator

3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit

4. GLOVES

- Extend to cover wrist of isolation gown



Stanford HEALTH CARE

Scan for video for ALL PPE Don&Doff

USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

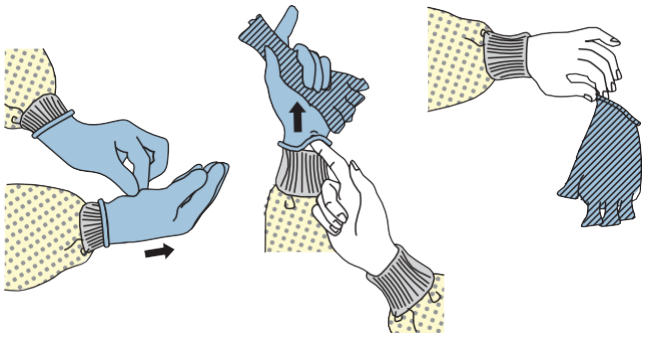
- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

HOWTO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container

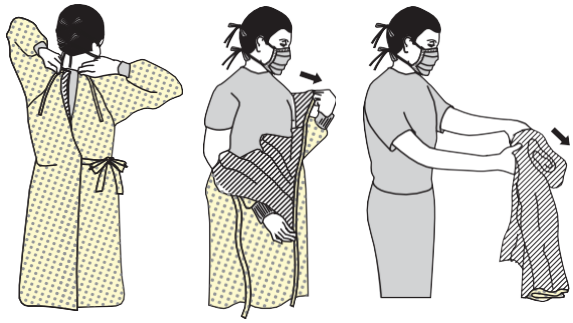


2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

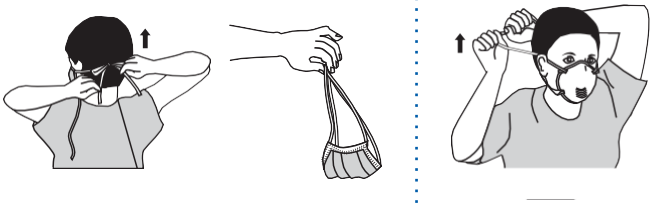
3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

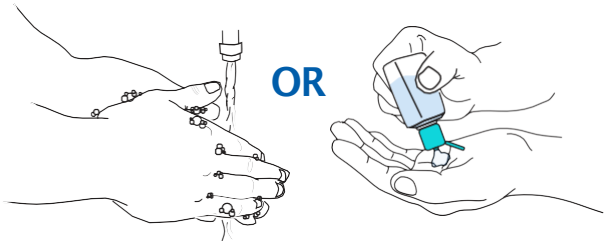


4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

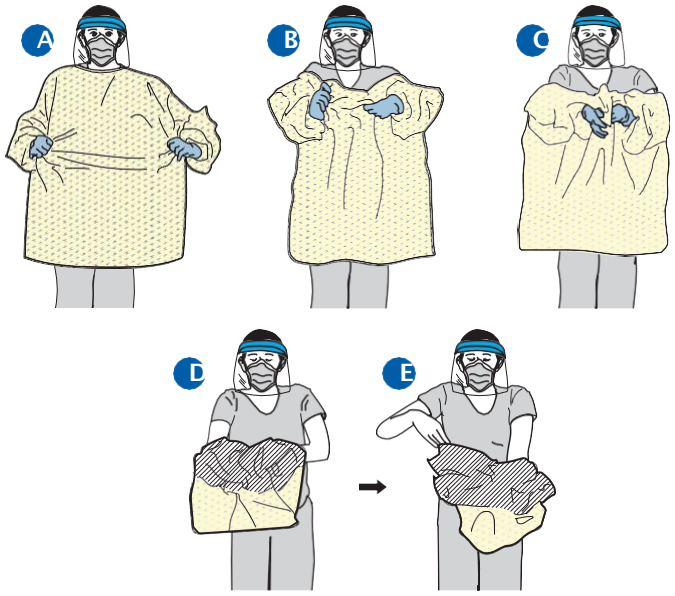
CS250672-E

HOWTO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 2

Here is another way to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GOWN AND GLOVES

- Gown front and sleeves and the outside of gloves are contaminated!
- If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands
- While removing the gown, fold or roll the gown inside-out into a bundle
- As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into a waste container

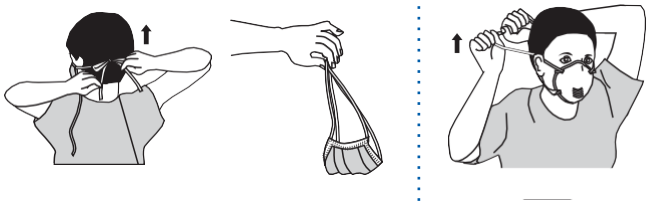


2. GOGGLES OR FACE SHIELD

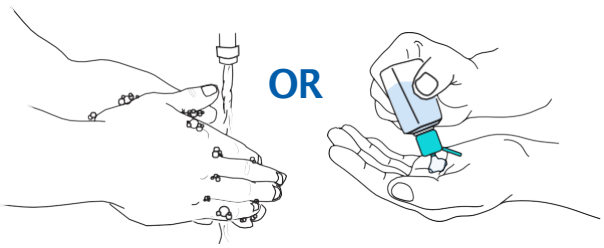
- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band and without touching the front of the goggles or face shield
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

3. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



4. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

CS250672-E

MAXAIR® SYSTEMS

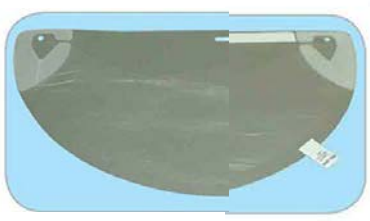
protecting you with every breath

710-DLC CAPR®

Important: Before use, be sure to thoroughly read User's Instructions, PIN 03521015

ASSEMBLY

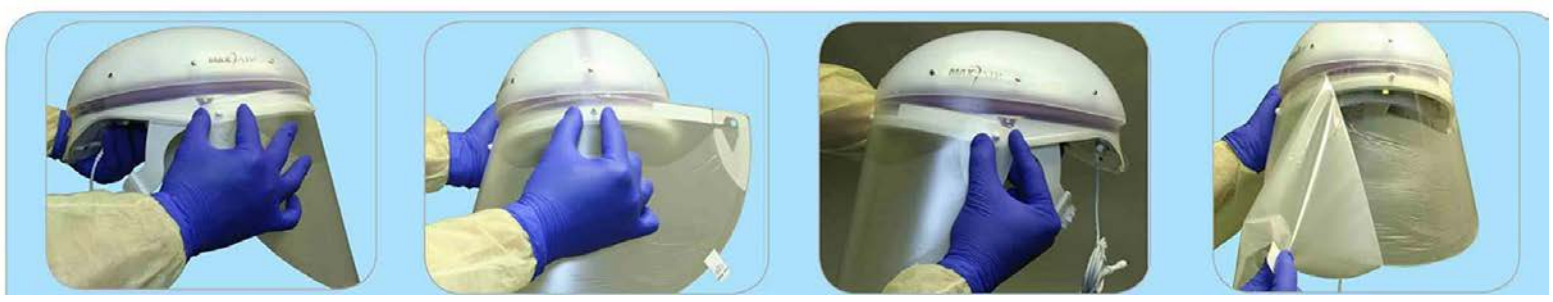
DLC



Liner

The 2071-01 Liner comes assembled to the helmet.

(See *User's Instructions for details.*)



- *(Cuffon Inside)* Snap DLC Attachment Hole to respective HelmetAttachmentPoston oneside*(eitherleftorrightside).*
- Pull DLC across Helmet *(front)* and place DLC center Alignment Hole over Helmet Alignment Post.
- SnapDLCAttachmentHole over HelmetAttachment Post on the other side.
- Remove Lens Protector - graspPeelTab, lift up and pull from right to left.

Scan for video of donning and doffing of the MaxAir CAPR System

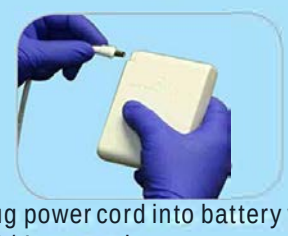
SCAN ME

DONNING

1. Don Battery

Step A:

Remove a fully charged Battery from Battery Charger.



Plug power cord into battery with a 1/4 turntwist.

ENSURE cord connector is fully seated at bottom of battery connector.

Step B:

Place battery in pocket.

-OR-

Clip Battery to Belt and adjust Belt for proper waist fit.

Secure Belt around waist; position Battery over right hip.

2. Don Helmet

- Tum Ratchet Knob counter clockwise to loosen headband prior to donning.
- Hold Ratchet Knob in one hand and top of cuffin the other. Place chin in "cup" between cuff and lens and pull helmet down onto head.
- Tighten Ratchet Knob tight and comfortable to ensure security during all activities.
- ENSURE cuff has slight tension against face from chin to templeson both sides.

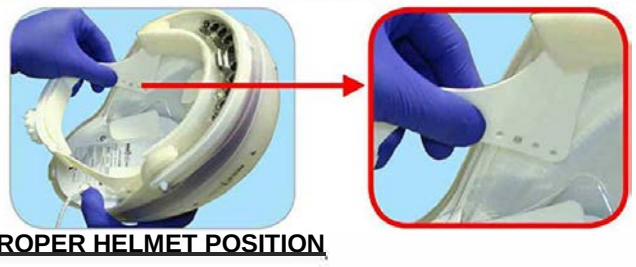
!!! IMPORTANT !!! Ensure Proper Fit of DLC and Helmet Position

PROPER FIT OF DLC

Start with 2365-02 ML; for very small faces use 2365-02SM

1. Secure cuff tension against face by sliding fingers along cuff from chin bottom to temples.
2. Ensure flappers are within 1/4 inch of temples.

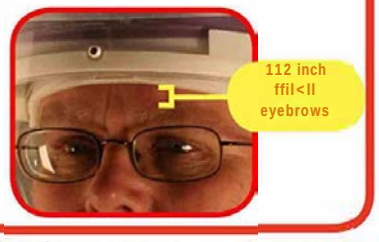
3. If 1. and 2. are not achieved, use 2365-02 SM



PROPER HELMET POSITION

Position height adjustment tabs, same hole position on both sides, and tighten ratchet knob to ensure…

1. Helmet is secure for all activities and motions
2. Front headband is within 1/2 inch of eyebrows so Safety LEDs are visible in peripheral vision



DOFFING

- Reverse Donning Steps 1 and 2, dispose of DLC as appropriate, then connect battery to charger.

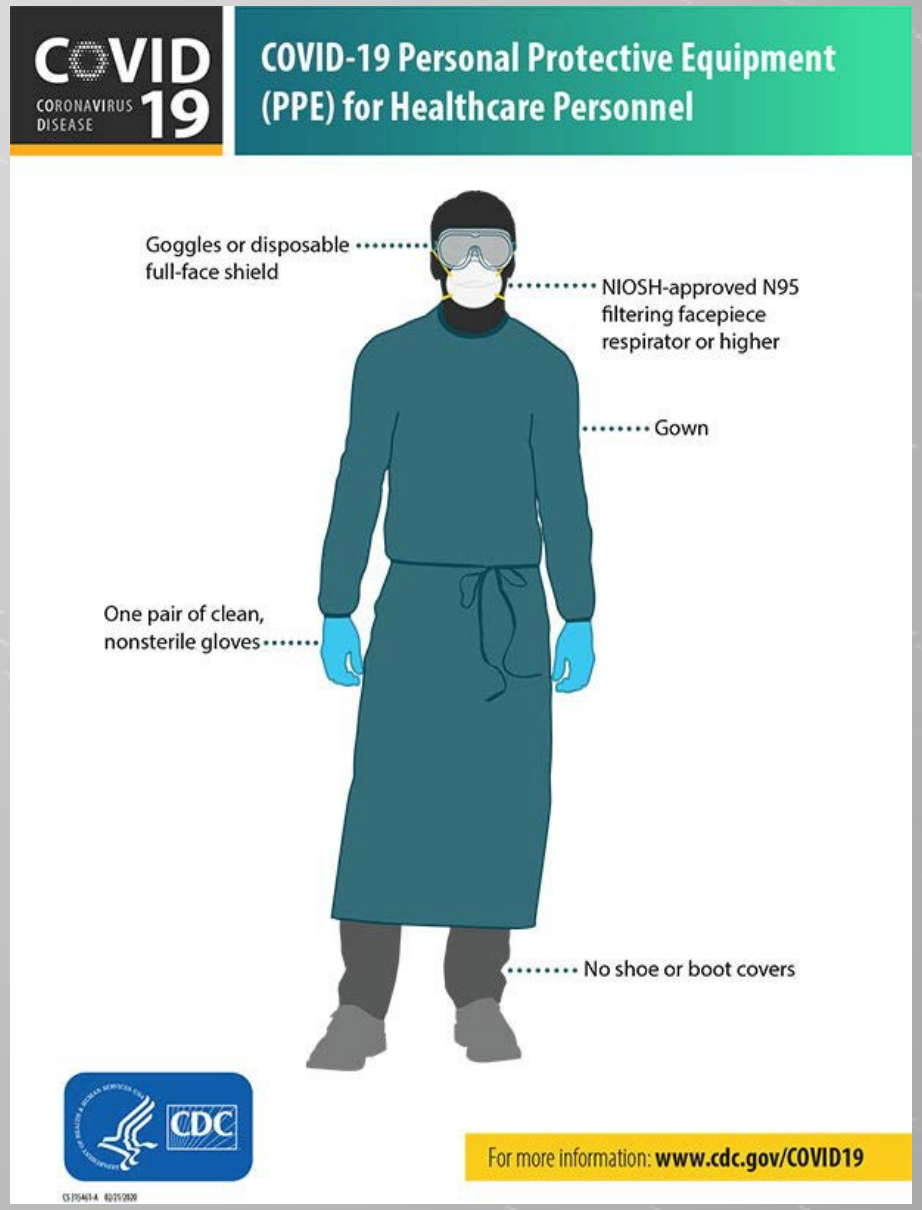
Bio-Medical Devices Intl 17171 Daimler Street • Irvine, California 92614 • (800) 443-3842 • www.maxair-systems.com

IPOLCCAPR11 0512

Approved 3/4/2020, Stanford Healthcare

KEY POINTS FOR PPE USE FOR SUSPECTED OR CONFIRMED COVID-19 PATIENTS

DO	DO NOT
• Do follow Airborne, Droplet and Contact Precautions and the correct CDC and SHC policy sequence for donning and doffing PPE	• **Do NOT** reuse any PPE under any circumstance
• Do conduct a seal check each time a respirator is used	• **Do NOT** use non-hospital provided PPE while at work
• Do use the correct fit sized respirator as instructed by Occupation Health	• **Do NOT** remove your respirator in the patient room
• Do perform hand hygiene between PPE donning and doffing if contamination is suspected	• **Do NOT** provide N95 masks or CAPR/PAPR respirators to visitors, patients, or family members
• Do remove your eye protection in the patient room	• **Do NOT** use double gloves for patient care
• Do remove your respirator in the ante-room	• **DO NOT** use chemotherapy PPE



Approved by Professional Practice & CEPD on 3.5.2020

STAFF PAPR/CAPR USAGE FOR COVID-19 PRECAUTIONS

USE CAPR/PAPR :	DO NOT USE CAPR/PAPR:
• During administration of aerosolized treatments or for intubation procedure • Examples of Aerosolized Treatments/Emergency Procedures include: Oxygen and medication aerosol, bronchoscopy, sputum induction, intubation, non-invasive CPAP or BiPAP • If you have been fit-tested for the use of the CAPR/PAPR respirator	• If you have been fit-tested for an N95 mask providing routine patient care • If you are unsure of which respirator to use • If you have NOT been signed off on proper donning and doffing • For routine patient care

If you are unsure of which respirator to use, or your N95 no longer has a good seal, go to the Occupational Health Department to confirm size and/or to be refitted.

Occupational Health
300 Pasteur Drive, Room H0124, Stanford, CA 94305
Phone: (650) 723-5922
Email: occhealth@stanford.edu

Approved by Professional Practice & CEPD on 3.5.2020

OR Protocols

OR Checklist for Emergency Cases, COVID-19 Pandemic

PREP:

Anesthesia Techs

- ❑ HME filter x 2
- ❑ Working video laryngoscope (Glidescope if C-mac not functional or desired by team)
- ❑ Transport circuit
- ❑ Plastic sheet x 4 to cover equipment
- ❑ Large biohazard bag for reusable items
- ❑ Assist with anesthesia setup and removal of unnecessary equipment from OR

Nursing

- ❑ Remove unnecessary equipment from OR
- ❑ Place isolation precaution signage on doors from hallway and core

Anesthesia Providers

- ❑ COVID PPE per current recommendations and availability
  - See ether.stanford.edu "ROUTINE CARE PPE GUIDELINES," "COVID-19 CAPR/PAPR GUIDELINES," and "COVID-19 Anesthesia Tips"
- ❑ Sani wipes, gloves, and hand sanitizer immediately accessible
- ❑ Easily accessible stand for items needed during case (e.g. tegaderm, tape, syringes, etc.)
- ❑ Video laryngoscope and RSI drugs
- ❑ HME filter x2 (one for case, one extra)
- ❑ Anesthesia mask x2 (one for start, one for end if considering extubation)
- ❑ Empty 1L bottle secured IV pole to hold suction (reduces environmental contamination)
- ❑ Disposable pen and marker
- ❑ Clamp for ETT during disconnection

INTUBATION and EXTUBATION:

- ❑ Refer to "COVID-19 Anesthesia Tips" on ether.stanford.edu
- ❑ Ensure HME filter attached between ETT and circuit
  - Ie. patient -> ETT -> HME filter -> EtCO2 and circuit
- ❑ Whenever circuit disconnected from ETT, ensure ETT is clamped and FGF are low

TRANSPORT:

- ❑ Ensure HME filter between O2 mask/ETT and transport circuit
- ❑ Assistant to interact with environment (doors, badge, buttons). Does NOT touch patient

Pre-Operative:

1. **How does COVID+/PUI patient get from ED/ward/ICU to OR?**
   See Inpatient transport flowchart on Ether (COVID-19 OR Protocols)

2. **My patient is in ED/ICU. Can I intubate the patient in ED, then transport to OR? If yes, who would help me intubate?**
   Yes, you can intubate an OR-bound patient in ED. Airway COVID team attending is in-house 24/7, and can help with intubation. If they are unavailable/busy, the next option is to call in Anesthesia attending back up. Use COVID protocol for intubation, including HME filter in circuit for transport to OR.

3. **I have an inpatient/ED/ICU patient who is not COVID+/PUI, but I think the patient history is clinically suspicious for COVID and no COVID test has been done. How do I proceed?**
   Discuss your concerns with the primary team, explore the possibility of delaying surgery, and testing. If urgent/emergent case and your concerns are not addressed, please contact Dr. Pearl (?).
   Our current practice is for intubating/primary attending to use N95, face shield, gloves, and gown for asymptomatic patients.

4. **I am doing an asymptomatic-for-COVID case. Can I use CAPR even if I am fit-tested and able to use N95?**
   The recommendation is to wear N95 for asymptomatic cases, and reserve CAPR for COVID/PUI intubations. See Ether COVID-19 hot links (Stanford Health care intranet latest update on PPE).

5. **If my patient is coming to OR from ward/floor/ED, not intubated, where can I start my anesthesia care/where can I intubate?**
   If patient is already in a negative pressure room on floor/ward, intubation can be done in that room, then transport to OR intubated.
   In 500P, procedure room 34 is a negative pressure room, and can be used for intubation. Neg pressure in 500P: room 34 (500P), preop bays 5, PACU bay 61.
   In 300P: Isolation/ante room next to the front desk. After intubation-Airway COVID team can help if available, if not consider calling in backup anesthesia

attending, for PPE guidelines see Ether COVID-19 hot links Remember to use an HME filter next to ETT, clamp ETT if disconnecting circuit.
500P OR 21 will be set up for COVID patients.

6. **Can I take the Anesthesia machine still attached to the patient, to the OR for surgery, after having intubated the patient in a negative pressure room/bay? Can the Anesthesia machine still function if it is disconnected from the wall outlet?**

   Yes, the Anesthesia machine can run even when not plugged in to wall outlet, provided it was kept plugged in and the battery is charged beforehand. The Apollo machines can run for upto 30 minutes without battery and the Perseus machines for upto 60 minutes.

7. **Where should I extubate my COVID+/PUI patient?**
   Preferably extubation should happen in a negative pressure room. If patient is ICU-bound, consider taking the patient intubated to ICU and extubation there.

8. **Should I stay in PPE for transport?**
   Yes, for COVID+/PUI patients all patient contact including transport must be in PPE. It might be necessary to change outer gloves frequently if contaminated, with hand hygiene performed while keeping on inner gloves.

9. **What about stroke/Interventional procedures in COVID+/PUI?**
   See Ether (OR Protocols) MAC/GA Guidelines for COVID/PUI.

10. **Who will be my 'runner' to get me items when I am in PPE/intubating?**
    Anesthesia techs can be your runner for Anesthesia specific items.

11. **What about a donning/doffing buddy?**
    For intubation if the Airway COVID team member is available that person and the MSD attending can be donning buddy. For doffing (under discussion) Resource RN.

12. **I will bring an intubated ICU patient to the OR, using an ICU transport ventilator Is it possible to connect the ICU transport**

ventilator also (in addition to the already connected OR anesthesia machine) to the wall gas outlets in the OR?
The wall gas outlet could be set up with a Y-connector to run the transport ventilator. This can be done, and Diane Alejandro-Harper will communicate this with the techs during their morning huddle**.**

Intra-Op:

1. **Where would I obtain plastic sheets to drape the Anesthesia machine, Omnicell, etc? Who does the draping?**
   Anesthesia techs have drapes and will drape the machine and Omnicell.

2. **Do we have dedicated Anesthesia machines for COVID+/PUI?**
   Yes, the anesthesia techs have prepared Anesthesia machines for such cases.

3. **Do we have dedicated ORs for COVID+/PUI cases?**
   500P OR 21. 300P OR20. Avoid negative pressure room 34 for clean surgeries (ok to use for intubation and extubation).

4. **Where do I obtain CAPRs?**
   Central Supply for OR cases. ED has their own CAPRs. (For Code Blues, Resource RN will come to Code with a backpack containing CAPRs, and other PPE).

5. **Where do I don PPE for OR cases?**
   Donning can be done in OR or just outside, in Core. Have a red trash bag and hand sanitizer available nearby.

6. **Where do I doff PPE for OR cases**?
   Doff everything except CAPR/N95/Face shield, just inside OR door, into a red plastic biohazard bag. Perform hand hygiene. Then step just outside and doff face CAPR hood, helmet, N95 and face shield, just outside the OR door into a red plastic biohazard bag. Have hand sanitizer placed just outside the door.

7. **Donning/doffing buddy?** Anesthesia techs have some basic training in CAPR assembly, donning, doffing, but having never done it before, they are not experienced. Ideally an RN/MD would be donning and doffing buddy. We have

requested Sam Wald for a Resource RN familiar with donning/doffing process, waiting to hear back.

8. **Help! I don't know how to organize the donning/doffing procedure to keep us all safe.**
   Workflow suggestions below -

   In room:

- portable hand sanitizer that can be near door for the person who is doffing one at a time to hand hygiene but not be turning around in the room to the sanitizer mounted on the wall
- glove box at the doorway
- red trash bag/bin to collect discarded gowns/gloves

   Outside room:

- 2 red trash bins
- nearby wash station and hand sanitizer
- for OR 34 since there is a little ante-hallway, one option is to have the CAPR helmet outside the mini-hallway so we could keep people sequentially exiting. In positive pressure room this would also just be outside the OR.
- stand/shelf/table with chucks on it and Sani wipe container
- after person doffs shroud into the red trash bin, they do hand hygiene, re-glove.
- Then step down the "assembly line" to the table with shucks, each user then takes off their helmet and wipes it down with Sani wipes and let sit on table for 2 min to dry
- after drying, in order to keep the CAPR unit together, place each CAPR helmet/belt/battery back in a brown bag, which was then carried down to SPD for re-processing. (ORA can carry CAPRs back to central supply)
- need a spotter to help people DOFF and read DOFF checklist. (We are trying to arrange for this with OR administration).
- ideally, another "watcher" to help watch/instruct the process of wiping down the CAPR helmet with Sani wipe and placing in brown bags properly as everyone is doing this for first time and we want to make sure the units are appropriately processed and sent back so we have them to use again the next time.
- IF this is done in a regular, positive pressure OR, the "watcher" who is helping the wipe down might need to help direct hallway traffic round this process during the critical time of exiting the room to avoid extra foot traffic at this time.

9. **What if I need to go to the restroom during a COVID+ case?**
   Ask for relief. Relieving anesthesiologist dons PPE, enters OR,and takes over. Exiting anesthesiologist doffs PPE as detailed above. Entire process repeats upon return of the anesthesiologist responsible for the case.

10. **Can the CAPR shroud be reused if the primary anesthesiologist returns to OR after a break?**

    CAPR shroud is designed for one-time use. It is difficult to take off the shroud without ripping it and difficult to prevent self contamination if you were to try to re-don same shroud.

Post-Op:

1. **Where should COVID+/PUI be extubated?**
   Current hospital recommendation is that extubation may occur in a negative pressure room or negative pressure PACU bay. Please see After Case Flowchart on Ether: Ether-COVID Resources- OR Protocols- After Case Flowchart.

2. **How should I transport my intubated post-op patient back to ICU?**
   Transport intubated patient back to the ICU with an ICU ventilator. Extubate in ICU, if appropriate. Ensure that the HME filter is connected to the ETT. Please see After Case Flowchart on Ether: Ether-COVID Resources- OR Protocols- After Case Flowchart.

Guidelines For MAC/Sedation, COVID-19

- For majority of cases, consideration of anesthetic type (MAC vs GA) will follow clinical considerations
- For COVID+/PUI patients, consider GA as per COVID ICU guidelines for intubation criteria

MAC vs. GA	• Minimize sedation administered to patient to decrease possibility of respiratory depression leading to emergent intubation • Intubation and extubation are considered aerosol-generating procedures (AGP), compared to MAC or moderate sedation • Consider video laryngoscopy and/or RSI for COVID+/PUI patients as back-up • Consider GA if case emergent/urgent or patient obtunded (ie typically accepted clinical considerations)	
Oxygen delivery device and flows	• Consider nasal cannula (NC), oxygen mask **OR** if clinically indicated, consider anesthesia face mask (FM) + HME filter (secured with straps) • Minimal flows (recommended ≤6 L NC, ≤10 L NRB) needed to maintain SpO2 ≥ 92% • Consider procedure type specifications: eg. Patil face mask for EGD) • Avoid high flow oxygen delivery systems (e.g. Optiflow)	
Risk Level	**COVID-19 + or PUI**	**Asymptomatic/Low risk**
Provider PPE	Gloves Gown Full face shield + N95 (single use)	Gloves Gown At minimum, use surgical mask **OR** depending on procedure (if clinically indicated or AGP) → consider face shield + N95 (reuse)
Patient PPE	• Place surgical mask (if not using anesthesia FM) and not interfering with procedure over NC or oxygen mask • Consider keeping oxygen mask and/or surgical mask over face during PACU/ICU transport	

Additional recommendations:

- When possible, minimize number of providers administering sedation/anesthesia
- For cases in Endoscopy Suite, please refer to endoscopy COVID/PUI guidelines

SNACC
SOCIETY FOR NEUROSCIENCE IN ANESTHESIOLOGY AND CRITICAL CARE

Endovascular Therapy for Acute Ischemic Stroke

(All EVTs Should Proceed With Airborne Precautions)

Discussion between anesthesiologist and interventionalist regarding optimal anesthetic technique to occur prior to the patient entering IR suite (ideally in the ED)

Do any of the following apply?

- ❑ Acute respiratory distress / hypoxemia / requiring high flow oxygen
- ❑ Active cough
- ❑ Inability to protect airway
- ❑ Active vomiting
- ❑ Posterior circulation / dominant cerebral hemisphere occlusions
- ❑ High NIHSS (>15) or low GCS (<9)
- ❑ Agitated / uncooperative / aphasic patients

No → Proceed with preferred institutional techniques for EVT

YES → Consider General Anesthesia (GA)

Proceed with preferred institutional techniques for EVT → Monitored Anesthesia Care

Proceed with preferred institutional techniques for EVT → General Anesthesia

Consider General Anesthesia (GA) → Can anesthesia be induced safely in a negative-pressure location in ED?*

Can anesthesia be induced safely in a negative-pressure location in ED?*

No → Induce GA in IR suite

YES → Induce GA in ED

Monitored Anesthesia Care → Emergency Conversion to GA

Emergency Conversion to GA → General Anesthesia

Induce GA in IR suite → General Anesthesia

Induce GA in ED → General Anesthesia

Monitored Anesthesia Care

- Patient should wear surgical mask
- Avoid high flow nasal cannula oxygen
- Careful titration of sedation to avoid oro- or nasopharyngeal airway insertion or chin lift/jaw thrust.
- Consider use of expiratory viral filter on oxygen masks.

General Anesthesia

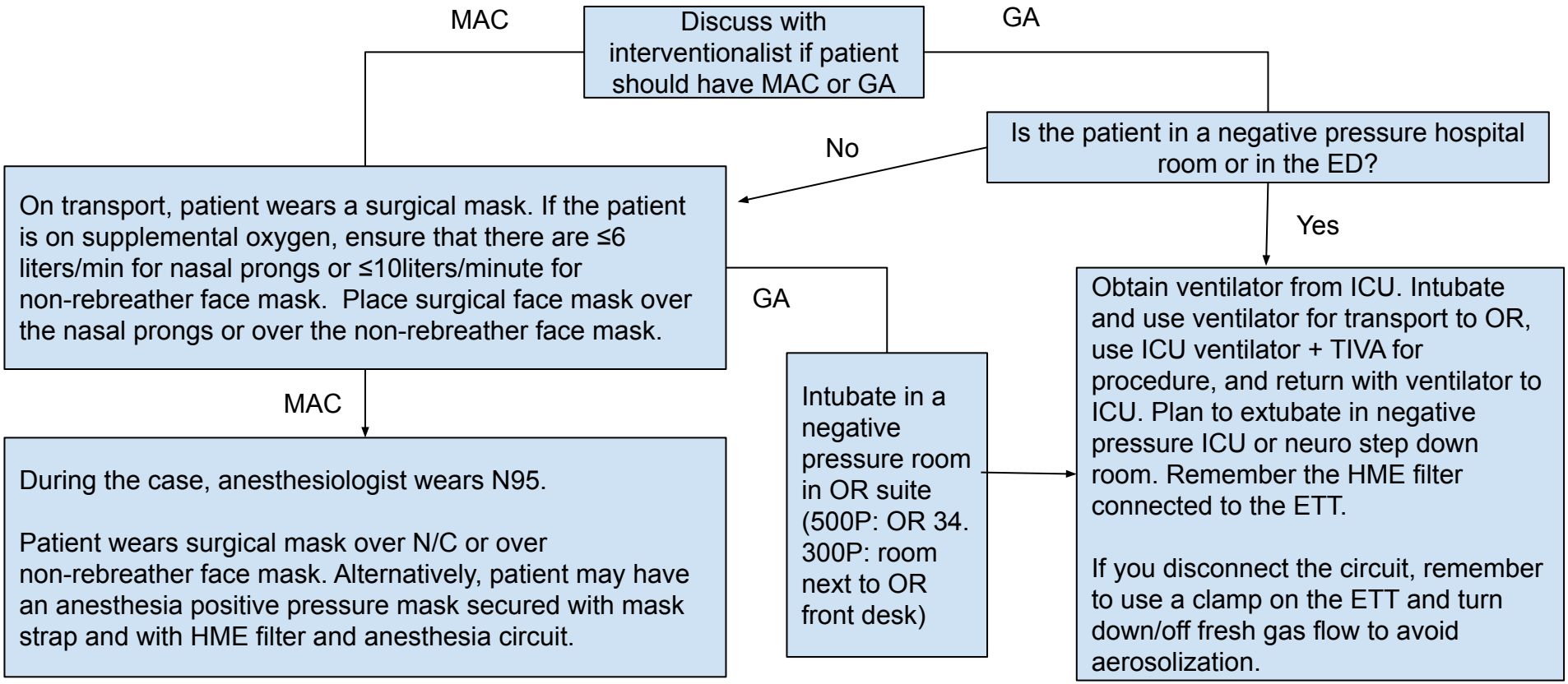
- Only essential personnel
- Avoid high flow pre-oxygenation
- Rapid sequence induction using video-laryngoscopy (most experienced person available to intubate)
- Vasopressors immediately available.
- Maintain SBP >140mmHg, SpO_2 >94%, normocarbia
- HEPA filter on ETT and CO_2 sampling line
- Avoid circuit disconnections
- Extubate preferably in a negative pressure location avoiding coughing

*It is recognized that patients in acute respiratory distress / hypoxemia may require emergent intubation in ED. Patients suffering from AIS while already in hospital and requiring GA for EVT should be intubated safely is a suitable negative pressure location while minimizing delays in reperfusion.

COVID/PUI Stroke Code Patient Transport to OR

Becky Wong M.D., Sunita Sastry M.D., Will Gostic M.D., Fred Mihm M.D., Amy Lu M.D.

Version 4/9/2020 ****please check back often for updates****



- COVID Airway Team will intubate if available.
- Anesthesiologist transporting patient wears gown, gloves, N95, face shield.
- One transport person will interact with the environment (push buttons, open doors), but will not provide direct patient care. This person should be in appropriate PPE and germicidal wipes to clean any accidental contamination.
- Consider taping all breathing circuit connections to prevent accidental disconnection.
- After patient transfer to the OR table, the stretcher/bed should remain in the room if possible. Otherwise, it needs to be thoroughly decontaminated and removed to the hallway.

COVID/PUI ED Patient Transport to OR

Becky Wong M.D., Sunita Sastry M.D., Ana Crawford M.D., Fred Mihm M.D., Amy Lu M.D.

Version 4/9/2020 ****please check back often for updates****

Can the patient be safely intubated in an ED room (negative pressure or room with HEPA filter)?

No

On transport, patient wears a surgical mask. If the patient is on supplemental oxygen, ensure that there are ≤6 liters/min for nasal prongs or ≤10liters/minute for non-rebreather face mask. Place surgical face mask over the nasal prongs or over the non-rebreather face mask.

Plan for intubation location ahead of time- ideally intubate in negative pressure room in OR suite (500P: OR 34. 300P: room next to front desk). Anesthesiologist intubates with appropriate PPE.

Yes

Intubation at the discretion of ED Attending. Will the patient go to the ICU postop?

No

Intubate in ED and hand bag ventilate to OR. Remember the HME filter connected to the ETT.

Yes

Obtain ICU ventilator from ICU. After intubation in ED, use ICU ventilator to the OR, keep patient on ventilator for surgery with TIVA, and return with ICU ventilator to ICU. Remember the HME filter connected to the ETT.

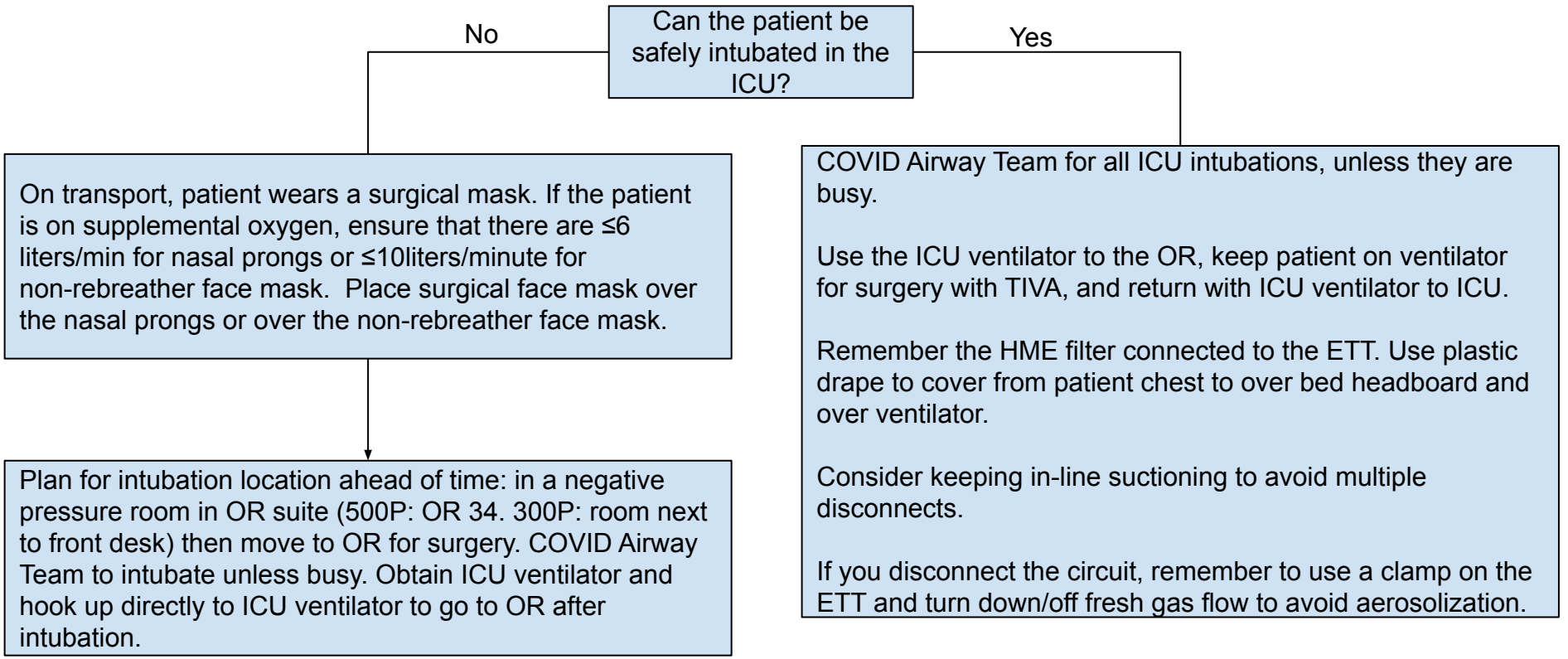
If you disconnect the circuit, remember to use a clamp on the ETT and turn down/off fresh gas flow to avoid aerosolization.

Notes:

- COVID Airway Team to intubate if not busy. Anesthesiologist transporting patient wears gown, gloves, N95, face shield.
- One transport person will interact with the environment (push buttons, open doors), but will not provide direct patient care. This person should be in appropriate PPE and germicidal wipes to clean any accidental contamination..
- For aerosolizing GI or ENT procedures, consider covering the IV pole/patient's head/anesthesia machine with plastic drape to avoid contamination.
- After patient transfer to the OR table, the stretcher/bed should remain in the room if possible. Otherwise, it needs to be thoroughly decontaminated and removed to the hallway.

COVID/PUI ICU Patient Transport to OR

Becky Wong M.D., Sunita Sastry M.D., Ana Crawford M.D., Fred Mihm M.D., Amy Lu M.D.
Version 4/9/2020 ****please check back often for updates****

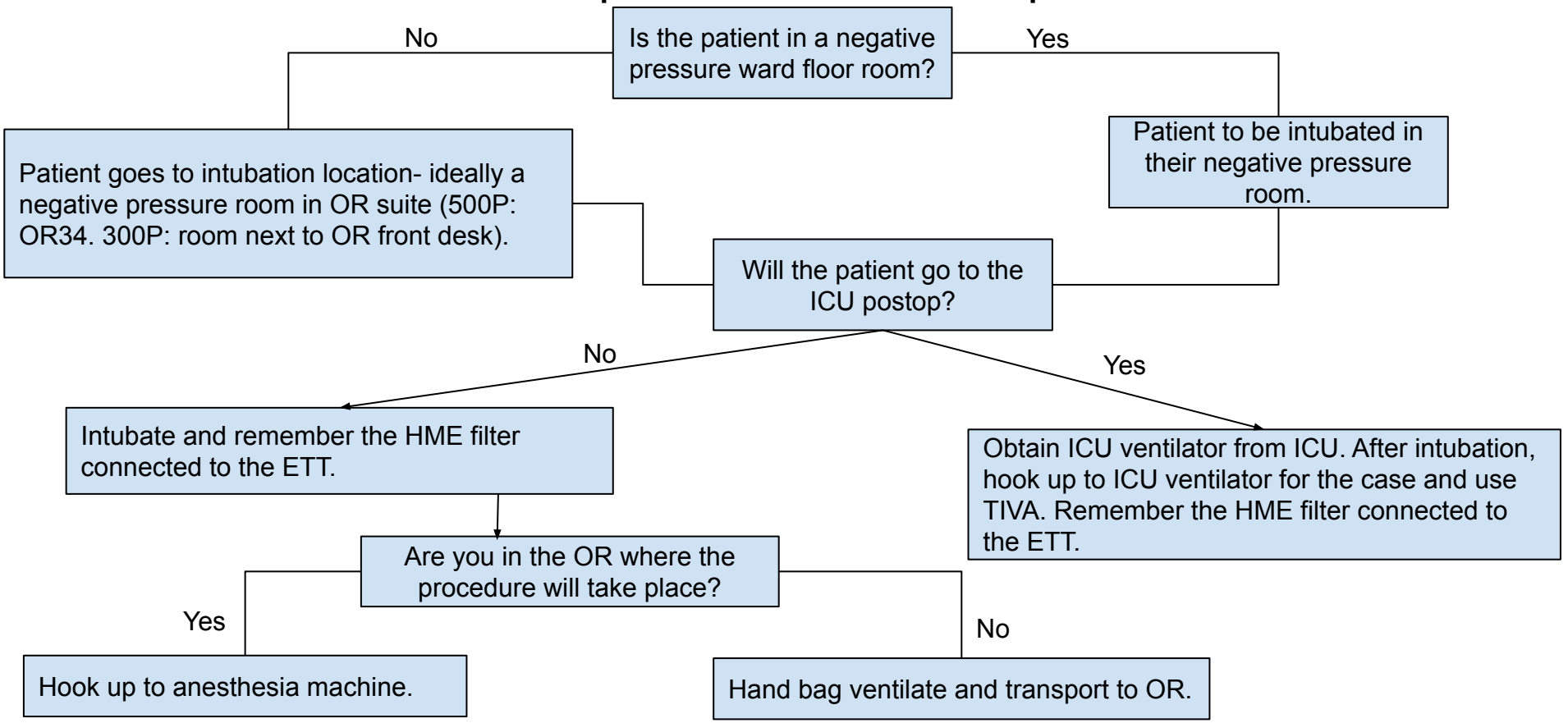


- Anesthesiologist transporting patient wears gown, gloves, N95, face shield.
- One transport person will interact with the environment (push buttons, open doors), but will not provide direct patient care. This person should be in appropriate PPE and germicidal wipes to clean any accidental contamination.
- ICU RT will help transport with ventilator.
- Consider taping breathing circuit connections.
- For aerosolizing GI or ENT procedures, consider covering the ICU IV pole/patient's head/anesthesia machine with plastic drape to avoid contamination.
- After patient transfer to the OR table, the stretcher/bed should remain in the room if possible. Otherwise, it needs to be thoroughly decontaminated and removed to the hallway.

COVID/PUI Ward Floor Patient Transport to OR

Becky Wong M.D., Sunita Sastry M.D., Will Gostic M.D., Ana Crawford M.D., Fred Mihm M.D., Amy Lu M.D.

Version 4/9/2020 ****please check back often for updates****



Tips:

- COVID Airway Team to intubate if available.
- If you disconnect the circuit, remember to use a clamp on the ETT and turn down/off fresh gas flow to avoid aerosolization.
- For aerosolizing GI or ENT procedures, consider covering the ICU IV pole/patient's head/anesthesia machine with plastic drape to avoid contamination.
- After patient transfer to the OR table, the stretcher/bed should remain in the room if possible. Otherwise, it needs to be thoroughly decontaminated and removed to the hallway.

Inpatient OR Cases back to ICU or ward floor

Becky Wong M.D., Sunita Sastry M.D., Ana Crawford M.D., Fred Mihm M.D., Amy Lu M.D.
Version 4/9/2020 ****please check back often for updates****

After procedure, where is the patient going?

ICU patient

Transport the intubated patient. Ensure that the HME filter is connected to the ETT.

Anesthesiologist transporting patient wears gown, gloves, N95, face shield.

One transport person will interact with the environment (push buttons, open doors), but will not provide direct patient care. This person should be in appropriate PPE. Consider bringing germicidal wipes to clean areas of accidental contamination along the way.

ICU patient

Transport back to the ICU with ICU ventilator. Extubate in ICU, if appropriate.

Floor patient

For extubation, transfer patient to a negative pressure room (500P: OR 34, PACU Pt Bay 61. 300P: Room next to front desk). Extubate and recover in the same room.

For transport back to ward floor, place non-rebreather oxygen mask and then a surgical mask over that. Do not transport the patient out of the OR to their isolation room until coughing or the need for suctioning have subsided.

Consider transport monitor for O2 saturation.

COVID ICU
Airway Manual

COVID19
AIRWAY & PROCEDURES
TEAM MANUAL

TABLE OF CONTENTS

GUIDING PRINCIPLES

SAFETY FIRST

Developing an expert team of ANES Airway experts confident and trained in DON/DOFF procedures is the best way to ensure the safety of valuable healthcare providers.

- Limit personnel exposed to Sars-CoV2
- Ensure all providers are properly protected with PPE including during Don/Doff procedures
- Protecting trainees (student, resident, fellow) by limiting involvement in high risk patient care and/or high risk patients

HIGH RISK PATIENTS:

COVID+ or PUI

HIGH RISK PATIENT CARE:

Aerosolizing procedures such as intubation, open suctioning, bronchoscopy, some ENT procedures, high-flow or high-pressure oxygen delivery (BMV, NIPPV, HiFlow NC), chest compressions

GOALS of AIRWAY TEAM PROCEDURES:

1) **Limiting Exposure/Contamination**

2) **Decreasing Aerosolization**

- Preference for most experienced person performing high-risk patient care
  - Most experienced at procedures AND Don/Doff procedures i.e. COVID-Airway Team
  - Anesthesia attendings only on COVID Airway Team
- Use most protective form of PPE available at the time
  - Order of preference CAPR shroud > CAPR Shield > N95 + Full face shield
  - **IF** N95 + face shield, **THEN** consider surgical hood (blue cloth) or other neck coverage during aerosolizing procedures
  - Use checklist **EVERY TIME**
  - Use DON/DOFF buddy **EVERY TIME**
  - **DOFFING IS MOST DANGEROUS TIME FOR CONTAMINATION**
  - **HAND HYGIENE, HAND HYGIENE, HAND HYGIENE**
  - Bring only what you need into room
    - Create a "contamination" bin/bag in which to place equipment/meds & bring in room

CONSIDER	AVOID
RSI + VL as 1st choice	bag-ventilation
Early LMA over BMV	Patient coughing
Low pressure and low volume if bag used	HFNC, NIPPV
O2 by NC <6 LPM or NRB =15L/min	Large Vt or High pressures with bag

RESPONSIBILITIES and PRIORITIES

Why a COVID Airway Team?
ROLE CLARITY: A Team of Airway Experts and Proceduralists
who are also Experts in safe DON/DOFF Procedures

- **1st Priority**: Offloading the ICU teams during COVID19 Surge
    - Perform COVID+/PUI non-emergent intubations
        - ICU decides when to intubate but will ask for our opinion as we are the airway experts
        - Discuss with the ICU teams, plans for ventilator settings, oxygen delivery, sedation, hemodynamic management
            - prior to intubation
            - after extubation
        - readiness to extubate?
            - **NO PM EXTUBATIONS**
        - ease/difficulty of re-intubation
        - presence at the bedside until patient is stable after extubation
    - Assist with all procedures in the ICU, including but not limited to arterial lines, central lines, feeding tubes, chest tubes, difficult IV placement, others
    - Assist with airway control during prone/supine positioning for ICU-ARDS patients
    - Critical care decisions should be made by critical care team
        - The COVID Airway Team member should work to stabilize the patient pre-procedure, intra-procedure, and post-procedure but sign out to ICU fellow and nurse once appropriate
- **2nd Priority:** Airway Coverage
    - If available - respond to all CODE Blue airways, whether PUI/COVID+ or NOT
    - REDUNDANCY in the airway coverage system in time of COVID19 SURGE
    - The COVID Airway Team is NOT to replace any current airway responder or change the current workflow
- **3rd Priority:** Safety and support of other ANES providers
    - Supervising and assisting OR ANES with intubations/extubations
    - Help with transporting COVID+/PUI patients
    - Teaching PPE
    - Sharing TIPs and guidance
- **4th Priority:** Helping everywhere else Wards/ED/Other
    - We may occasionally be called to help with other procedures across the hospital
    - This is the decision of each COVID Airway Team member, but we encourage all to help others to ensure the greatest safety for all providers and all patients
    - Just remember to write a note and charge capture wherever you are able!

DAILY WORKFLOW
SUBJECT TO CHANGE

7am – 6pm Day shift:

- DAY TIME WORKFLOW:
  - 7 am: Sign into VOALTE on COVID Airway Phone
    - Once in-hospital 24/7 we can do warm handoffs with phone
    - Respond to CODE BLUE TEST page: **Pager 13064**
  - "COVID AIRWAY TEAM LIST" under shared patient lists
    - Review MICU and SICU patient lists for COVID+/PUI patients that may be unstable or require procedures
    - Review the "Active Covid-19 Infection" list and add any patient with increasing oxygen requirements to the COVID Airway Team list
    - Intubated patients should stay on the list until extubation and subsequent stability of airways
    - PUI patients that receive negative test results should be removed from the list
  - Review ANES Airway Schedule to determine who is on CODE Blue response team (Periop Attending, 500P Scheduler, 300P scheduler, ANES resident) and touch base about CODE Blue response - They are primary & we respond if available
    - 7:30 – HUDDLE (E2ICU front desk)
      - Charge RN, Response RN, MICU Triage fellow, others
      - Discuss patients at risk for intubation
      - Discuss patients for possible extubation
      - Discuss patients needing proning
      - Communicate needed workflow around intubations
      - All stakeholders should understand equipment, personnel, processes
  - Verify with Anesthesia techs understanding of workflow
      - Non-emergent ICU airways
      - CODE Blue
      - 500P 724-0219
      - 300P 736-1850
  - **Frequent check in with MICU Triage Fellow during the day** (Find role MICU TRIAGE FELLOW on Voalte or call 650-724-8820, ext 48820 in the hospital)

        - They will keep you updated on how patients are doing on the floor and those that are being moved to the ICU due to worsening resp failure
        - Check in on procedures needed in ICU patients
    - **Critical Care Resource Nurses and Administrative Nursing Supervisor:** These nurses are invaluable at monitoring the hospitals for deteriorating patients and will call you if they think intubation may be likely
    - **Mid-morning ~ 10 AM** : Prone Protocol
        - Patients are supine 8 AM – 6 PM (8hrs) and prone for 16 hrs (6 PM to 10 AM) so we turn them prone at the end of the day. This is why day shift ends around 6 PM, you will be responsible to help prone these patients. If volume becomes too large you could activate the night person to help prone patients
        - As ICU personnel become more familiar with proning, this role may subside
    - **During the afternoon check in with the MICU teams** (Find Role on Voalte: MICU GREEN FELLOW OR MICU BLUE FELLOW)
        - Discuss how patients are doing and err on the side of an early intubation for those that are not doing well and have had escalation on their oxygen requirement, requires multidisciplinary discussion
        - Check in on procedures needed in ICU patients
    - Respond to CODE BLUE
        - Be sure to coordinate with other ANES Airway attendings as able
- 5-6 pm – SIGNOUT Considerations
    - MICU Triage fellow
    - +/- MICU attending
    - COVID Night MD (by phone if available)
- 6pm: Sign out of VOALTE

6pm – 7am Evening Shift:

- In-House WORKFLOW:
- 6pm: Sign into VOALTE on COVID Airway phone
    - Touchbase with the MSD Faculty on call as you two will be first responders to CODE BLUEs
- **CALLED FOR INTUBATION PROCEDURE BY MICU WORKFLOW:**
    - Review patient info with MICU by phone:
        - Patient location
            - Can they move to ICU?
        - Current Oxygen requirement
            - Place on NRB @10-15L for pre-oxygenation
        - Potassium and relevant labs

        - Airway exam
        - Tell MICU to Initiate:
            - "Intubation Order Set"
            - "Post-intubation sedation orders"
            - "Place ventilator order and settings"
            - "Inform nurse to setup for COVID intubation workflow"
            - "Call RT to setup for COVID intubation set-up"
            - "Call PHARM to assist with medication preparation"
- **CODE BLUE WORKFLOW**
    - **IF** unable or unlikely, **THEN** call ICU and discuss activation of back-up COVID Airway or CODE Blue if necessary
        - Calling 211/CODE BLUE is always the best way to get all needed resources quickly
        - AVOID calling "CODE Difficult Airway" unless surgeon is needed
    - **IF** primary COVID Airway team member is unavailable, **THEN**:
        - Direct MICU to call in back-up team member
        - Primary COVID Airway calls in back-up COVID Airway person
        - MICU should activate 211/CODE BLUE

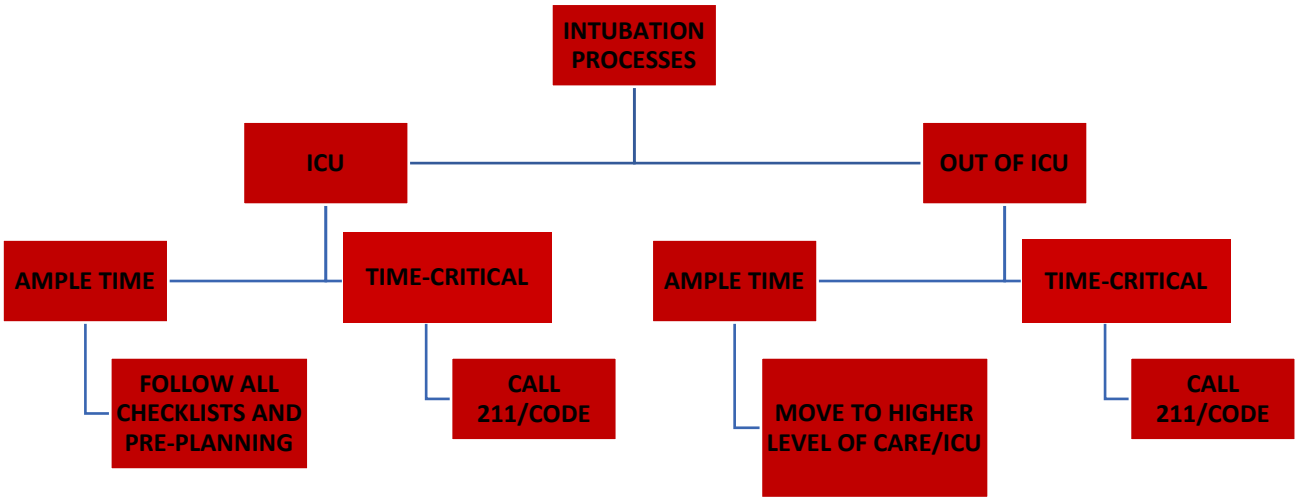
Call/Shift Credit
(as of 3/23/2020 per Dr. Pearl/Lorenzo)

Starting this Monday March 23, 2020, the day credit is a regular clinical day credit
For now, **PLEASE KEEP TRACK OF YOUR SHIFTS AND HOURS and submit to Nicky Chu/Rosario Ngo by email**

INTUBATION PROCESSES

In this section:

- Scenario 1: Urgent Intubations - CODE Blue
- Scenario 2: Non-urgent Intubations - ICU
- Equipment Lists
- Difficult Airway Considerations
- Medication Considerations
- Useful Tips from COVID Airway Colleagues



AIRWAY RESPONSE TEAM
EMERGENT SCENARIO

CODE BLUE

Although some intubations will be controlled in the ICU with time for pre-planning and organization, many will be time-sensitive or time-critical. CODE BLUE response teams are the same as pre-COVID19 with the exception of our team added as ADDITIONAL airway responders. We are experts in airways AND experts in safe DON/DOFF workflows.

IF we are unavailable, **THEN** the MSD ANES attending will need to intubate.

****Please carry your own N95 & Face shield. You may arrive prior to the resource nurses. Your safety is NOT to be compromised for any reason ****
We have COVID Airway Team Backpack for PPE

We have a dedicated iPhone **[(650) 387-5008; Passcode 202020]** and a dedicated COVID Airway pager number: **13064.** We will receive all CODE BLUE pages through this phone. COVID+/PUI patients will be designated on the CODE BLUE as "**COVID**."

Airway intubation procedure in order of preference during CODE BLUE is as follows:

- Primary = COVID Airway Attending
- Secondary = Anesthesia Attending (Scheduler 500P, Scheduler 300P, Peri-op Attending)
- Third order = Most skilled airway provider available who is confident with PPE
    - try to spare our trainees at all costs

GUIDELINES:

- PPE is NOT to be compromised for any reason
- Anesthesia residents and technicians should NOT enter the room but should remain on standby
- Providers in anteroom must have gown, N95, face shield, gloves
- **IF** no anteroom, **THEN** providers close to room door must don PPE or step away
- ALL NON-ESSENTIAL PERSONNEL must step away from room to avoid contamination from aerosolization
- Doors to anteroom and/or patients room MUST REMAIN CLOSED as much as possible
- **IF** anteroom, **THEN** ONLY ONE door can be open at a time
- USE CHECKLISTS
- Refer to Stanford Hospital Airborne Precautions Policy

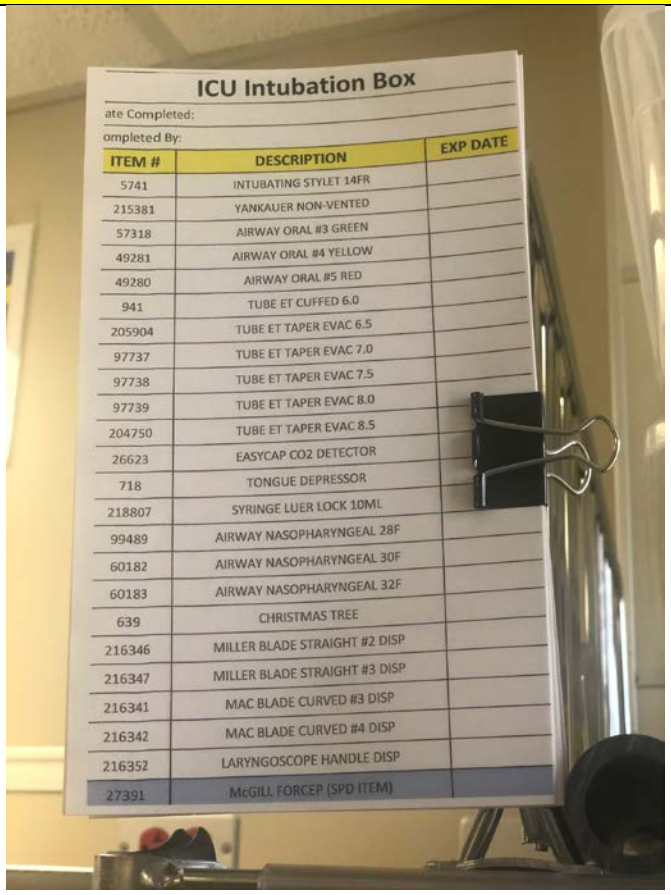
AIRWAY RESPONSE TEAM
NON-EMERGENT SCENARIO

ICU INTUBATIONS

Unlike intubations on the floor or during CODEs, ICU intubations allow and require more planning, discussion, and management of sedation and hemodynamics. See equipment lists and medication considerations below.

There is significant overlap in this workflow and roles between the COVID Airway Team member and the ICU Team. Communication is key. Please discuss with the ICU team resident or fellow, regarding the management of the patient's procedure and the medications needed:

- EPIC Intubation Order set
    - Anxiolysis
    - Induction
    - Muscle relaxant for RSI
        - Check all electrolytes
    - Post-intubation sedation
        - Midazolam and Dilaudid prefered
    - Hemodynamic management (hypotension, hypertension, bradycardia, tachycardia)
        - Review hemodynamic trends during chart review
        - Echo
- Pharmacy should be called to assist with medication preparation for all intubations
- Use Intubation Checklist
- Use DON Checklist
- Use DOFF Checklist
- Review Equipment List, medication considerations, difficult airway considerations, and TIPs below

EQUIPMENT LIST	
1. Obtain from Bedside RN or Charge Nurse or Nursing Supervisor:	
PPE	Specify number of PPE needed Preference: CAPR-Shroud > CAPR-Shield > N95+goggle/shield
2. Obtain from Anesthesia Workroom/Anesthesia Technicians:	
VIDEO LARYNGOSCOPE (CMAC or Glidescope)	On stand with clear plastic equipment cover
COVID Airway Kit (See Below)	
3. Obtain in ICU Storage Room (RN can grab for you):	
ICU Intubation Box	 **Select only what you will need to take into the room**
4. Confirm with RN:	
Suction (Avoid if possible)	
Preferred Yankaur available	
Canister set-up and turned ON	
IV and Drips	
IV fluid bag and tubing	Ensure it runs freely; ENSURE IV WORKS; Opposite arm from NIBP
IV manifold for infusions	Ensure enough ports for post-intubation drips
SpO2	Audible at highest volume, Opposite arm from NIBP
Whether A-line is needed and if kit available	
5. Confirm with RT:	
Ambu Bag with filter (VFE 99.9%)	Avoid bag-ventilation if possible; Consider LMA early

Mechanical Ventilator with filter (VFE 99.9%)	Set with PEEP & FiO2 per ICU
PetCO2 on side port	Calibrated and running on monitor
i. INSIDE Room: ANES: decides equipment needed in room, place in contamination bag or bin, leave rest outside, notify RUNNER or ASST if additional items needed in room	
ii. OUTSIDE Room (If need anticipated; or call EARLY)	
Difficulty Airways Cart	Fiberscope 4.0 mm and 5.0 mm; AMBU Scope and Screen
Airway assistant should be available inside or outside room if anticipated difficult airway with PPE available or DONned.	

COVID Airway Kit (Brought by Anes Techs)	
Surgical Hoods (blue cloth)	**Neck protection if CAPR-Shroud unavailable**
Video Laryngoscope (CMAC Blades 3, 4, & D)	**CMAC or Glide with clear equipment cover**
Bougie	**----**
Stylets	**D-Blade stylet - OR - regular stylet for CMAC 3, 4**
iGel	**Sizes 3, 4**
Clean Equipment cover	**For post-procedure transportation after cleaning**

DIFFICULT AIRWAY CONSIDERATIONS
* IF non-emergent, THEN have airway assistant available OR in room with PPE
* Call for help early ❼ Activate second ANES attending
* Call for difficult airway cart
* Place iGel early to avoid Bag-Ventilation
* Try D-Blade on CMAC
* AVOID surgical airways

MEDICATION CONSIDERATIONS		
Intubation Medications (ANES/RN give; PHARM prepares)		
TIP: ANES choses which meds he/she plans to use TIP: PHARM prepares meds unless unavailable, then ANES/RN prepare TIP: Avoid coughing RSI and adequate sedation/paralysis TIPS from COVID Airway Team Providers: - Concern regarding awareness → Midazolam pre-induction - Succinylcholine wears off and patient coughs → Rocuronium for RSI - Patients are coughing after extubation → Use Dilaudid drip for post-intubation sedation - Hypotension is common → have rescue drugs and drips ready - During DOFFing full focus is needed → communicate with other providers to manage sedation/hemodynamics -		
Medication	**Amount (TBW)**	**Notes**
Midazolam	4 mg IV	syringe
Fentanyl	100mcg IV	syringe
Dilaudid	2 mg IV	syringe
Propofol	2.5 mg/kg	syringe
Ketamine	1-2 mg/kg	syringe
Etomidate	0.3 mg/kg	syringe
Rocuronium	1.5 mg/kg	syringe
Succinylcholine	1.5 mg/kg	syringe
Post-Intubation Sedation (ICU orders, RN prepares)		
Dilaudid	1 -2 mg/hour	Infusion + pump
Propofol	0 – 100 mcg/kg/min	Infusion + pump
Dexmedetomidine	0.7 – 1.2 mcg/kg/hour	Infusion + pump
Midazolam	1 - 5 mg/hour	Infusion + pump
Rescue Medications (ANES gives, PHARM prepares)		
Phenylephrine	100 mcg/mL	syringe
Epinephrine	10 mcg/mL	syringe

USEFUL TIPS FROM COVID AIRWAY COLLEAGUES

TIP: Medications

- ANES choses which meds he/she plans to use
- PHARM prepares meds unless unavailable, then ANES/RN prepare
- Avoid coughing RSI and adequate sedation/paralysi
- Concern regarding awareness → Midazolam pre-induction
- Succinylcholine wears off and patient coughs → Rocuronium may be better for RSI
- Patients are coughing after extubation → Use Dilaudid drip for post-intubation sedation
- Hypotension is common → have rescue drugs and drips ready and accessible
- During DOFFing full focus is needed for ANES, RT, RN → communicate with other providers to manage sedation/hemodynamics
-

TIP: SAFE DON/DOFF Procedures

- Go Slow
- Use a Buddy
- DOFF one at a time
- Use a DOFF checklist
- Hand Hygiene between EVERY step
- Remember your neck
- Some units have someone to DOFF your CAPR helmet into a bag so you may not need to wipe it down
- Change your scrubs

TIP: Communication is Key

- Run checklists before entering room
- Communication is difficult in PPE
- Use written communication as needed: paper or whiteboard and pen in room

TIP: Limit Contamination

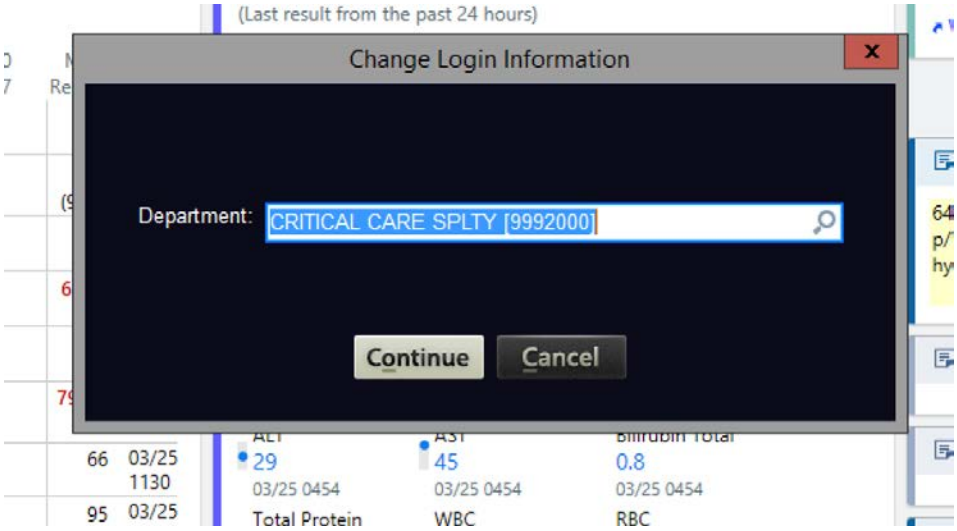
- Use Negative pressure rooms when available
- Bring in only what you need as anything brought into room is contaminated
- Clean equipment thoroughly prior to leaving patient room, then clean again outside room
- Hand Hygiene, Hand Hygiene, Hand Hygiene
- Please wipe the VL down inside the room and remove clear cover, then after DOFF final PPE outside the room, clean thoroughly again to protect our anesthesia techs.

EPIC NOTES AND CHARGES
FOR INTUBATIONS AND LINES

After all procedures, we must write procedure notes and capture charges in EPIC. DO NOT create an OOR record.

"Change context" from "ANESTHESIOLOGY" to "CRITICAL CARE SPECIALTY" by clicking the down arrow to the right of the "Log Out" button

Search for and choose CRITICAL CARE SPECIALTY IN THE POP-UP WINDOW



- Procedure notes
  - Please use "Create in NoteWriter" option and click through options for intubations, a-lines, other procedures
- Evaluation Progress Note
  - NOT Mandatory but if you find useful information or have an airway exam this is a good way to store it for others
  - Use Smart Phrase ".AMCCOVAW" or create your own

Billing for Critical Care Time for Prone-Supine Positioning

Please follow these steps:

You will need a Note to bill for Critical Care Time. The note needs a physical exam, a list of critical care activities that justifies time and a ROS. Luckily, this is all in a smartphrase and it will take you less than 5 minutes to write this note.

Use these same steps when turning a patient from prone to supine just be mindful to change in the note a few things to clarify if you are turning supine versus prone.

Step 1:

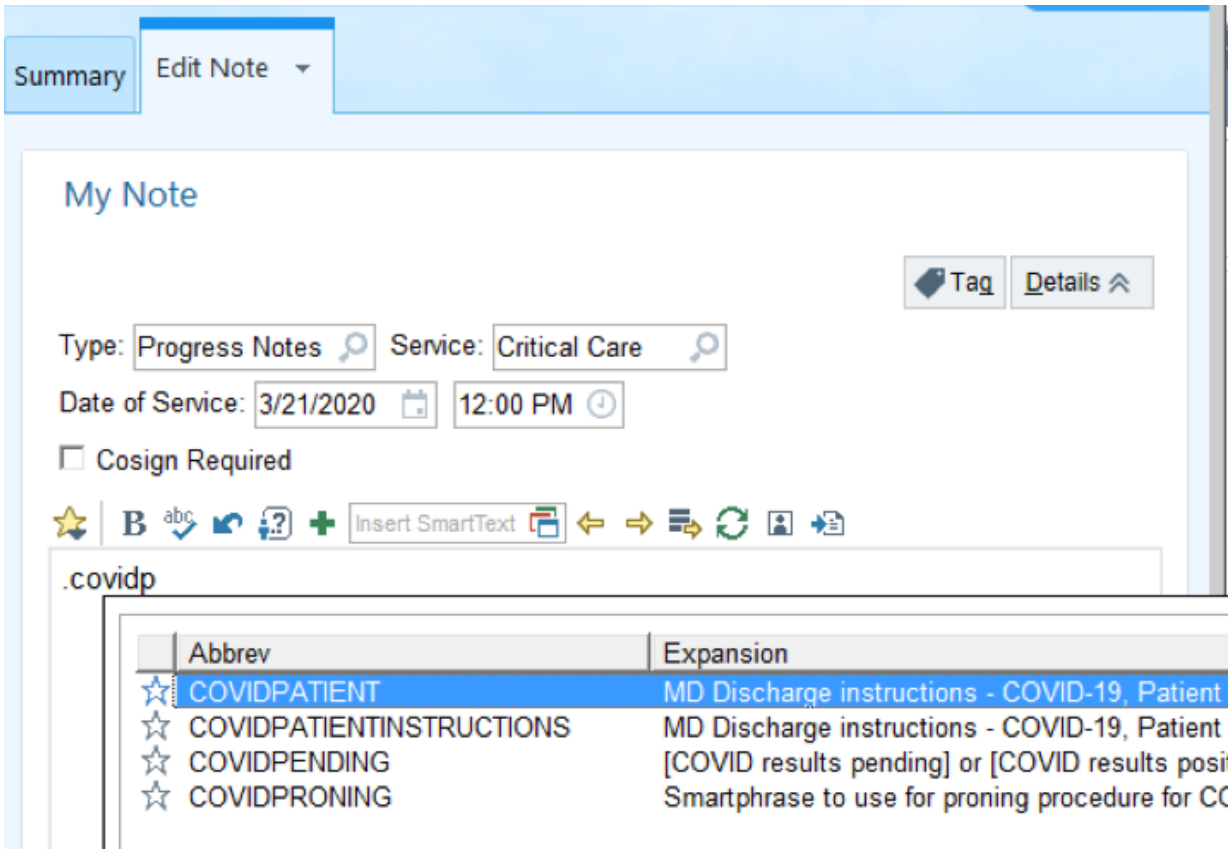
Log into EPIC under Critical Care SPLTY (NOT ANESTHESIA SPLTY)

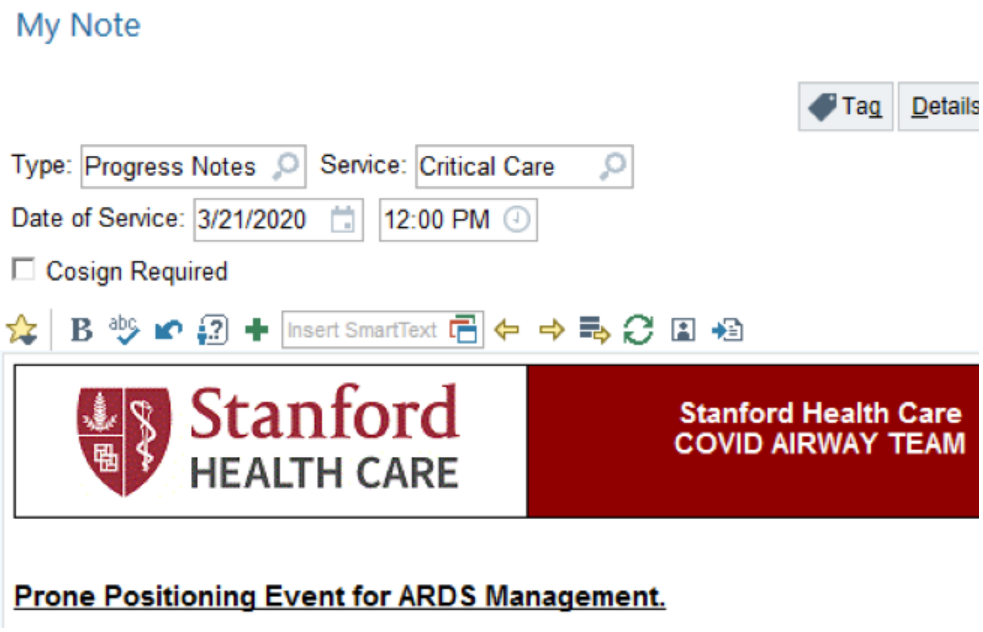
Step 2:

Open a new Note, designate this note as a "Progress Note"

Use smartphrase: .COVIDPRONING

It should look like this:





Step 3:

The smartphrase will generate a note you will have to press F2 to work through all the required fields. You'll need to write a brief summary line for the patient. It can be very brief: "70 M with severe ARDS due to COVID-19 infection. The rest of the note should look like this:

Prone Team identified and sequence of event discussed and reviewed outside of room
PPE donned (contact, airborne and droplet precautions)
FIO2 turned to 100% approximately 10 mins before proning
EKG leads placed anteriorly
Circuit connections taped to minimize disconnection.
Hemodynamics managed with drips and IV pushes as needed
Oropharynx suctioned
Patient turned supine with prone team
Pressure point padded and eyes checked
IV tubing checked, no kinks or disconnects
Infusions resumed and ventilator settings checked.

Physical Exam

General Appearance: {NO ACUTE DISTRESS:26277::"No acute distress"}
HEENT: {ENT:26278::"Not examined"}
Neck: {NECK:26279::"Not examined"}
Lungs: {EXAM;ICU;PULMONARY:30413406::"Normal symmetry and expansion"}
Cardiac: {EXAM;ICU;CARDIAC:30413405::"Regular rate and rhythm"}
Abdomen: {ABDOMEN:26280::"Normal bowel sounds"}

Step 4:

Work through all the details of the physical exam. You do not need all the systems but you should focus on the most important:

Example:

Gen: Intubated and Sedated

Lungs: Bilateral breath sounds, intubated.
Cardiac: RRR
Abdomen: Soft, nontender, nondistended
Skin: Warm, intact, etc

Step 5:

Select the Critical Care Services Performed. For the most part you will select almost all of them.
Select "Critically Ill"
Select time spent doing this from start to finish. Usually 45 min – 60 mins (could be longer)
See below:

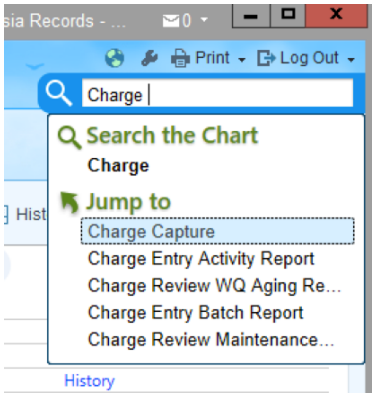
Critical Care Services Performed
Telemetry review
Hemodynamic measurement interpretation
ECG interpretation
Ventilatory management
Blood gas interpretation
Radiology image review
Laboratory data interpretation
Discussion of patient's care with other medical staff

Current Status of the Patient
Critically ill: I personally spent 40 minutes performing critical care services.
Critical Care Time: 99291 (1st hour)

Javier Lorenzo, MD
3/27/2020, 4:37 PM

Step 6:

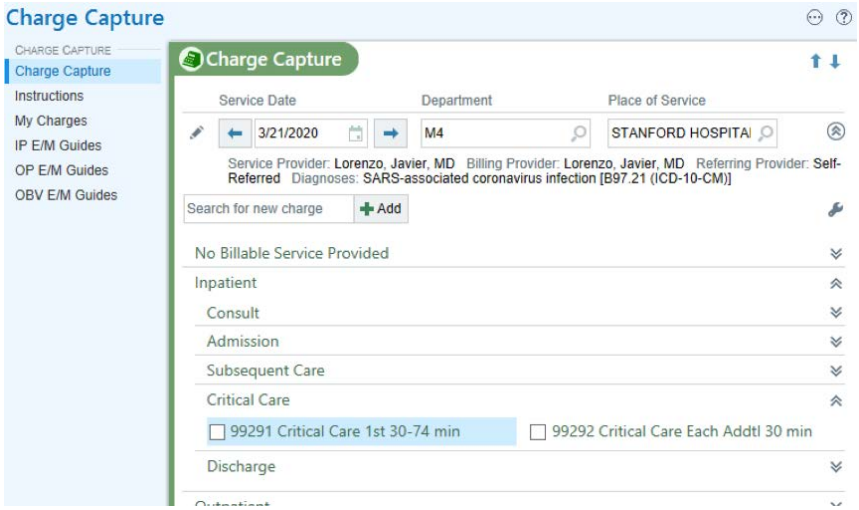
Go to Charge Capture Tab
NOTE: if you can't find a Charge Capture Tab you can always go to the Chart Search bar in the top right corner and "Jump To" Charge Capture, see below:



Step 7:

Select "Charge Capture" in Left Column
Select "Inpatient"
Select "Critical Care Time:

Select the designated time you took (usually “30-74 mins”, if longer you can bill for an additional 30 mins, you’d have to select them both if longer than 75 mins)



Step 8:

Select the Critical Care Charge by clicking on it

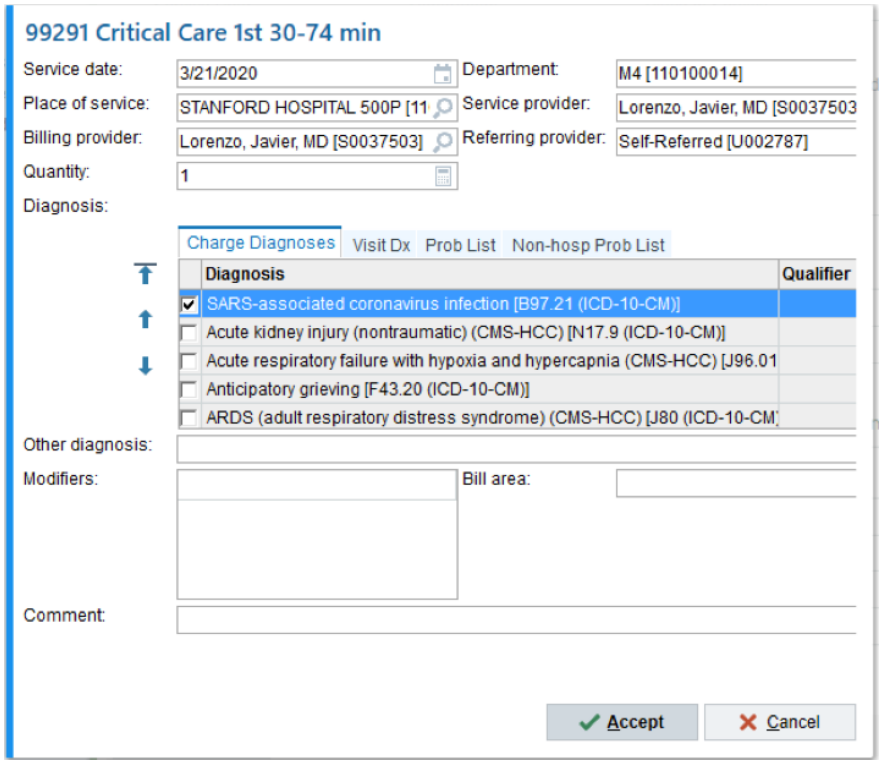
It will open a window (see below)

Here you can link to a diagnosis.

Use SARS-associated coronavirus infection

If no diagnosis listed you can always search for it under “other diagnosis”

Click ACCEPT



CHECKLISTS ARE DRAFTS ONLY
NOT STANFORD APPROVED DOCUMENTS

COVID+/PUI INTUBATION
Checklist

PRE-PROCEDURE

1 | People
- Notify RN
- Notify RT
- Notify PHARM
- Identify Runner
- Discuss with ICU team/Chart review

2 | Equipment
- PPE (From bedside RN, ANS **or** Crisis RN)
  CAPRs (shield/shroud) or N95 (with full face shield)
- Anesthesia technicians
  - *300P: 736-1850*
  - *500P: 724-0219*
  - *Video Laryngoscope w/ clear equipment cover*
  - *COVID Airway Kit*
- ICU Equipment Room
  ICU Intubation Box
- Contamination bin or bag
  Place needed equipment to bring in room
- Large biohazard receptacle outside room
  For DOFFing head PPE and final gloves

3 | Drugs
- Induction and muscle relaxant
- Rescue medications
- Sedation drips

4 | Verify with RN
- Suction canister with Yankaur turned on
- IV Bag and tubing free flowing
- Post-intubation
  Drips made, programmed, connected, ready
- IV Manifold
  Ports for medication push and sedation drips

5 | Verify with RT
- Viral Filter on Bag and Ventilator
- Bag ventilation
  Ambu or Jackson-Rees at Low Vt
- Oxygen
  Nasal cannula, non-Rebreather
- Ventilator
  Appropriate LPV parameters set
- PETCO2
  Connected, callibrated, monitor waveform present

6 | Verify with RT and RN
- Review checklist and plan prior to procedure start

Stop: Go to Don checklist

PROCEDURE/TIME OUT
- Preoxygenate 5 minutes with NC and NRB
- RSI and Video Laryngoscopy
- AVOID aerosolization, bag-vent or coughing
- Think early LMA, not bag-vent
- Inflate ETT cuff before ventilation

POST-PROCEDURE
- Remove outer gloves
- Clean VL cord & visualizer with germicidal wipes; Place in bin; Remove clear equipment cover

Stop: Go to Doff checklist

- DOFF gown & gloves with BUDDY
- Hand Hygiene, then clean gloves
- Open door and Exit with CMAC
- DOFF head PPE and final gloves
- Wash hands, forearms, neck as needed for 2 minutes
- Call anesthesia technicians for pick up
  - *300P: 736-1850*
  - *500P: 724-0219*

DONNING
Checklist

DON CAPR SHROUD

BEFORE ENTERING A PATIENT'S ROOM • USE A DON BUDDY

1. Hand Hygiene
   Gel or soap and water for 2 minutes
2. Assemble helmet and shroud
   Sizes: Sm or Med/Lg secondary and filter cap
3. Place head covering
   Bonnet or hair covering cap
4. Battery on waist
   Use belt if necessary
5. Gown
6. Surgical gloves
   Longer to cover wrists
7. Nitrile gloves
   Second pair to assist doffing later
8. Helmet cord
   Pass cord down back inside gown and plug into battery
9. Helmet face shield
   Chin in first then adjust inner shield to seal in face
10. Helmet fit
    Adjust knob at occiput clockwise to tighten
11. Shroud
    Pull down over shoulders
    High tie under chin
    Low tie through loops at sternum

DON CAPR SHIELD

BEFORE ENTERING A PATIENT'S ROOM • USE A DON BUDDY

1. Hand Hygiene
   Gel or soap and water for 2 minutes
2. Assemble helmet and shield
   Snaps to helmet
3. Battery on waist
   Use belt if necessary
4. Gown
5. Surgical gloves
   Longer to cover wrists
6. Nitrile gloves
   Second pair to assist doffing later
7. Helmet cord
   Pass cord down back inside gown and plug into battery
8. Helmet face shield
   Chin in first then adjust inner shield to seal in face
9. Helmet fit
   Adjust knob at occiput clockwise to tighten

DON N95

BEFORE ENTERING A PATIENT'S ROOM • USE A DON BUDDY

1. Hand Hygiene
   Gel or soap and water for 2 minutes
2. Place head covering
   Hair Bonnet and/or Surgical Hood
3. N95 mask
   Verify size and seal check
4. Face/Neck covering
   Full face shield
6. Gown
7. Surgical gloves (under)
   Longer to cover wrists
8. Nitrile gloves
   Second pair to assist doffing later

DOFFING
Checklist

BEFORE LEAVING A PT'S ROOM

USE A BUDDY/MONITOR

1 Remove outer gloves
- *Contaminated by intubation or procedures*
- *Grasp outside of glove at wrist*
- *Peel glove away from body inside out*
- *Throw 1st outer glove away*
- *Place clean finger(s) inside second outer glove at wrist*
- *Peel second outer glove off inside out*
- *Throw away 2nd outer glove*

2 Hand hygiene
Gel sanitizer on surgical under glove

3 Re-glove
New nitrile glove over surgical under glove

4 Equipment
Clean any equipment with OXIVIR wipes and place near door

5 CAPR Shroud
- *Undo upper tie and pull over head toward face bringing it into view*
- *Tie upper tie strands together to control and keep in view*
- *Undo lower tie and pull forward in front of body and tie together to control two strands*
- *Starting from occiput, pull hood forward toward face peeling the hood inside out*
- *Hood should be inverted, surrounding head like a lion's mane*
- *Inside toward face is contaminated*
- *Outside toward back is "clean"; do not touch*

6 Outer gloves
Remove as above (Step 1)

7 Hand hygiene
Gel sanitizer on under glove

8 Gown
- *Remove gown by pulling forward, away from body, breaking ties and neck connection*
- *Surgical under glove will be removed with gown*
- *Discard gown*

9 Hand hygiene and re-glove
Gel sanitizer

10 Leave patient's room to antechamber room or outside

IN ANTECHAMBER ROOM/OUTSIDE

11 Open door
Use sanitized but gloved hand

12 Remove head PPE
Doff head PPE into red biohazard bin/trash outside room

13 Remove gloves

14 Hand hygiene
Gel sanitizer on bare hands

15 Re-glove with clean nitrile gloves
Clean CAPR helmet and cord with OXIVIR wipes and place in return bag

16 Hand hygiene
- *Remove gloves*
- *Hand wash for 2+ mins with soap & water up to elbows*
- *Consider scrubs change*

COVID AIRWAY TEAM SCHEDULE AND USEFUL CONTACTS

https://docs.google.com/spreadsheets/d/1V8Er_ZhmO_0mICad7AGLOCuLtGdDiExv6Rzna5Mvcws/edit#gid=1079804413

COVID AIRWAY TEAM iPHONE

- Role: SHC Attending
- Unit: SHC Anesthesiology
- Voalte "name": SHC COVID Airway
    - Username: covidair
    - Password: 11111
    - Team: COVID19 Airway Access
- Phone Number: 650-387-5008
    - Passcode 202020
- Pager Number 13064
- iPhone owner: Patient Care Services
    - Contact person: Amanda Giordano

Alphabet Acronym Soup (AAS)

CCRN	**Critical Care Resource Nurse**
ANS	**Administrative Nurse Supervisor**
AAU	**Adaptive Acuity Unit**
ACRT	**Acute Care Response Team**
PCS	**Patient Care Services**
MERC	**Medical Emergency Response Committee**
CNO	**Chief Nursing Officer**
OPL	**One Point Lesson**
CORT	**CLinical Operations Resource Team (Top Stanford Clinical Leadership)**

ONLINE RESOURCES

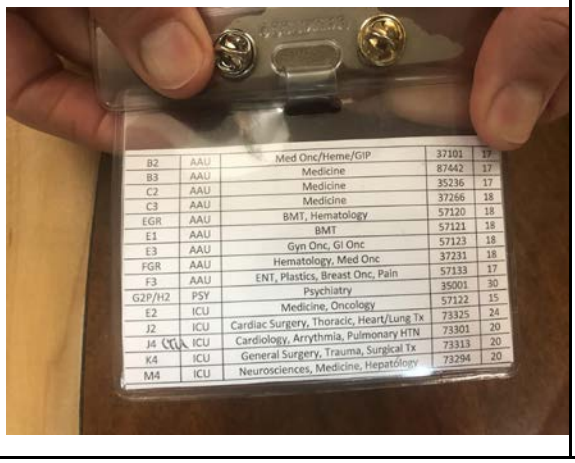
COVID19 ICU Task Force: https://sites.google.com/view/stanford-covid/home

Stanford Intranet: https://stanfordhealthcare.org/campaigns/portal.html

Departmental Resources: http://ether.stanford.edu

CDC DON/DOFF Video:
https://cdnapisec.kaltura.com/html5/html5lib/v2.75/mwEmbedFrame.php/p/2550282/uiconf_id/44123452/entry_id/0_kahwkhtn?wid=_2550282&iframeembed=true&playerId=kaltura_player&entry_id=0_kahwkhtn&flashvars

HOSPITAL MAPS & UNITS



B2	AAU	Med Onc/Heme/GIP	37101	17
B3	AAU	Medicine	87442	17
C2	AAU	Medicine	35236	17
C3	AAU	Medicine	37266	18
EGR	AAU	BMT, Hematology	57120	18
E1	AAU	BMT	57121	18
E3	AAU	Gyn Onc, GI Onc	57123	18
FGR	AAU	Hematology, Med Onc	37231	18
F3	AAU	ENT, Plastics, Breast Onc, Pain	57133	17
G2P/H2	PSY	Psychiatry	35001	30
E2	ICU	Medicine, Oncology	57122	15
J2	ICU	Cardiac Surgery, Thoracic, Heart/Lung Tx	73325	24
J4	ICU	Cardiology, Arrythmia, Pulmonary HTN	73301	20
K4	ICU	General Surgery, Trauma, Surgical Tx	73313	20
M4	ICU	Neurosciences, Medicine, Hepatology	73294	20

J5	AAU	Cardiac Surgery, Heart Transplant	73219	22
J6	AAU	Thoracic Surgery, Heart/Lung Tx, Vascular, Cardiac Surgery	73253	22
J7	AAU	Cardiology, Pulmonary HTN	73281	22
K5	AAU	Hepatobiliary, MIS	73240	22
K6	AAU	Colorectal, Urology, Surgery Oncology	73268	22
K7	AAU	Trauma, General Surgery, Ortho Trauma	73290	22
L4	AAU	Neurosurgery	73306	20
L5	AAU	Neurology, Stroke	73228	22
L6	AAU	Medicine, Orthopedics Overflow	73262	22
L7	AAU	Orthopedics	73286	22
M5	AAU	Hepatology, Nephrology, Liver/Abd Tx	73214	22
M6	AAU	Advanced Lung Disease, Medicine	73246	22
M7	AAU	Medicine	73275	22