

What's the Problem?

- Needed to develop and clarify the use of PPE in the COVID-19 era
- New considerations for infection control in OR
- Unique airway equipment and filter placement considerations
- Potential shortages of equipment and medications, need for conservation
- Need to incorporate human factors principles into protocol release and procedural compliance

We realized that there was no standard protocol for these functions existing in a visually compelling graphic form for wide distribution throughout anesthesia care areas, and sought to create one.

Needed to Address 3 Core Elements:

- PPE (what to wear)
- Team workflow (OR setup, infection control)
- Transport of intubated patient to and from ICU

Cause analysis

Root causes of this problem included:

- Existing OR infection protocols were limited in scope and did not require the same level of precautions anticipated for current pandemic
- Components of equipment setup to minimize infection were confusing
- No existing strategy for reducing contamination of Pyxis and OR workstation




How Might We: Clarify and Protocolize the Anesthesia Team Workflow for the Perioperative Care of COVID+ Patients

Recognizing that these workflows were logistically complex and highly nuanced, we used graphic design and human factors principles to create a document inspired by anesthesia intraoperative crisis checklists. These were posted in the anesthesia workrooms as a reference for providers.



OR Management of the **known or suspected Covid-19 Patient: Anesthesia Team Workflow**

PPE What Should I Wear?

<p>PATIENT INTUBATED</p> 	<p>Standard PPE</p> <ul style="list-style-type: none"> <input type="checkbox"/> N95 + SURGICAL MASK <input type="checkbox"/> Gown and gloves <input type="checkbox"/> Eye protection and face shield 	 <p>N95s CAN BE REUSED</p>
<p>PATIENT NOT INTUBATED</p> 	<p>PLANNED INTUBATION? HIGH AEROSOLIZATION PROCEDURE? (Bronchoscopy, TEE, etc.)</p> <ul style="list-style-type: none"> <input type="checkbox"/> PAPER preferred for intubation; if none available then an N95 + Eye Protection + Gloves and gown is appropriate <p>SEDATION or REGIONAL?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Standard PPE (as above) 	

PPE PAPER Considerations

- PAPER has sufficient **POWER**
- Put on PAPER, gown and gloves **BEFORE** entering OR
- Do **NOT** bring PAPER carrying case into OR

OR Management of the **known or suspected Covid-19 Patient: Anesthesia Team Workflow**

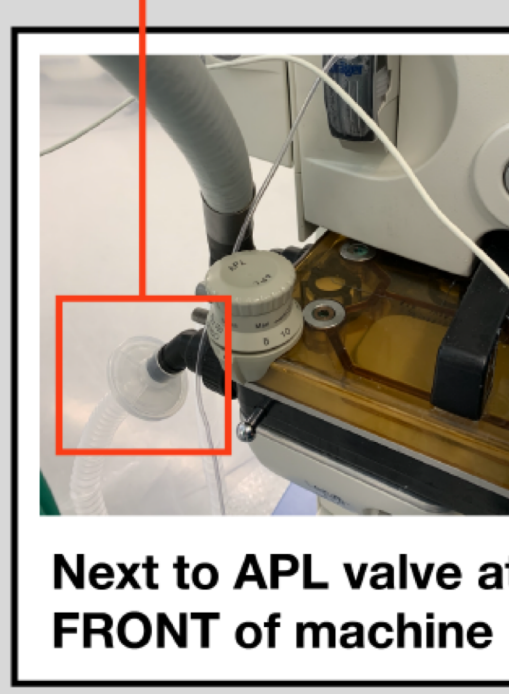
OR Preoperative Setup

- Working **SUCTION**: Halyard and Yankauer
- Anesthesia machine check: HEPA filter at **EXPIRATORY** limb

SAVE OUR RESOURCES

Make a thoughtful decision about what equipment can be **REMOVED** from cart for **LATER USE** before entering OR

KEEP ONLY WHAT YOU NEED ON CART!



Next to APL valve at **FRONT** of machine

- Nonstandard **AIRWAY** as needed
 - Glidescope
 - LMA
- Nonstandard **MONITORS** as needed
 - Arterial line (transducer, pressure bag, chlorprep/EtOH, cable)
 - CVP
 - Ultrasound
 - Central line kit
- Nonstandard **MEDICATIONS** as needed
 - Controlled substances
 - Propofol (for TIVA if indicated)
 - Sugammadex
- Standard **MEDICATION PACKS**

To access search for

 - COVID-19 Anesthesia Pack
 - COVID-19 Emergency Medications

MEDICATION PACKS stocked at

- 5 Gibbon hallway Pyxis outside OR 21
- JHN OR 9A Pyxis

OR Management of the **known or suspected Covid-19 Patient: Transport To/From the OR**

ICU ↔ OR Transport

PATIENT INTUBATED

ICU → OR

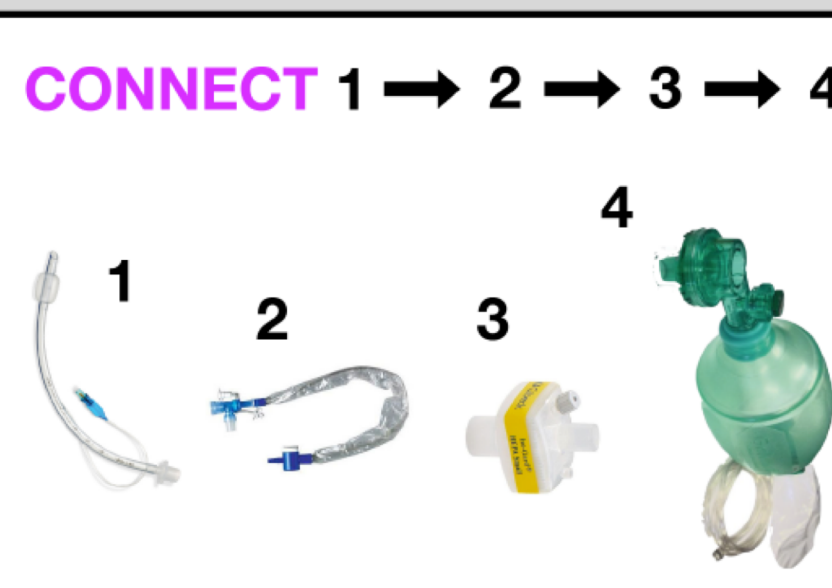
- Wearing **APPROPRIATE PPE**
- CONNECTED** in **SERIES**
 1. ETT
 2. Halyard closed suction
 3. HEPA HME
 4. Ambu-bag
- CLAMP ETT** during circuit disconnection
- Use modules/cables **FROM ICU MONITORS** in OR during case
- CONNECT** anesthesia breathing system to HEPA HME and gas sampling line to HEPA HME port
- Consider **NEUROMUSCULAR BLOCKADE** to prevent coughing or extubation during transport

Fig 1: PPE Guide for intubated vs. non-intubated patients

Fig 2: OR Pre-Op Setup and Workflow for Anesthesia team

Fig 3: Transport To/From OR and Safe airway circuit assembly diagram

Above are 3 sample pages from a 7 page PDF document. Email amo009@jefferson.edu to see complete content