Wuhan Virus
COVID-19

UF Health
North Tower Radiology Plan
Disclaimers

• This is a work in progress
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Document Scope

• What we are currently doing (that I know of)

• What we need to do to prevent transmission

• What we need to do to image/treat a COVID-19 patient
# China/Wuhan Virus (COVID-19) Interventional Radiology Plan

<table>
<thead>
<tr>
<th>Category</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>Risk of hospitalization and nosocomial COVID-19 Infection outweighs benefit of surgical procedure.</td>
<td>Potential impact inpatient bed capacity or other resource.</td>
<td>Potential impact inpatient bed capacity or other resource.</td>
<td>No impact on inpatient bed capacity; discharge home on same calendar day.</td>
<td>Procedure cannot be delayed.</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Outpatients</td>
<td>Outpatients</td>
<td>Outpatients</td>
<td>Outpatients</td>
<td>ED / Inpatient</td>
</tr>
<tr>
<td><strong>Acuity</strong></td>
<td>Elective</td>
<td>Elective</td>
<td>Urgent</td>
<td>Elective / Urgent</td>
<td>Urgent / Emergent</td>
</tr>
<tr>
<td><strong>COVID-19 Risk</strong></td>
<td>High</td>
<td>Immunocompromised</td>
<td>Average</td>
<td>Risk assessment required</td>
<td>Risk assessment required</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elderly (over age 70)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Respiratory disease: COPD, asthma, CF, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other: ASA 4, &gt; 5 cardiac/respiratory meds</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Procedures</th>
<th>These procedures will NOT be performed:</th>
<th>These procedures and those from Category I will NOT be performed:</th>
<th>Only these procedures WILL be performed:</th>
<th>Only these procedures WILL be performed:</th>
<th>All cases considered urgent or emergent will be performed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visceral</td>
<td>CVJ/port removal (completion of therapy)</td>
<td>Visceral</td>
<td>Angio +/- intervention*</td>
<td>Visceral</td>
<td>Catheter (any)/CVL exchange or removal</td>
</tr>
<tr>
<td></td>
<td>Embo: fibroid, gonadal vein, PAE (benign)</td>
<td></td>
<td>CVL/Port/PICC exchange or removal (malfunction or infected)</td>
<td></td>
<td>Dialysis procedures</td>
</tr>
<tr>
<td></td>
<td>Feeding tube exchange (routine)</td>
<td></td>
<td>CVL/Port/PICC placement**</td>
<td></td>
<td>Embo: gonadal vein, liver – tumor</td>
</tr>
<tr>
<td></td>
<td>Hydrocele sclerotherapy</td>
<td></td>
<td>Dialysis procedures</td>
<td></td>
<td>Feeding tube placement/change</td>
</tr>
<tr>
<td></td>
<td>IVC filter removal</td>
<td></td>
<td>Embo: liver – tumor</td>
<td></td>
<td>Hydrocele sclerotherapy</td>
</tr>
<tr>
<td></td>
<td>Nerve injections</td>
<td></td>
<td>Embo: pulm AVM*</td>
<td></td>
<td>IVC filter placement/removal</td>
</tr>
<tr>
<td></td>
<td>TIPS revision: ascites</td>
<td></td>
<td>G/GI exchange – problem</td>
<td></td>
<td>Port/tunneled CVL placement</td>
</tr>
<tr>
<td></td>
<td>Varicos veins</td>
<td></td>
<td>G/GI placement*</td>
<td></td>
<td>TIPS revision: ascites</td>
</tr>
<tr>
<td></td>
<td>Venous sampling</td>
<td></td>
<td>FCN exchange – problem</td>
<td></td>
<td>Tunneled ascites catheter</td>
</tr>
<tr>
<td></td>
<td>Vertebral augmentation</td>
<td></td>
<td>FCN placement</td>
<td></td>
<td>Varicos veins</td>
</tr>
<tr>
<td>MSK</td>
<td>Soft tissue (trigger point) injection</td>
<td></td>
<td>Percutaneous ablation</td>
<td></td>
<td>Venous sampling</td>
</tr>
<tr>
<td>Neuro/Spine</td>
<td></td>
<td></td>
<td>PT/HD placement</td>
<td></td>
<td>Vertebral augmentation, nerve injections</td>
</tr>
<tr>
<td></td>
<td>Sclerotheraphy and Botox injections</td>
<td></td>
<td>PT/HD exchange – problem</td>
<td></td>
<td>Body</td>
</tr>
<tr>
<td>Peds</td>
<td>Barium GI series for chronic conditions</td>
<td></td>
<td>TIPS placement: ascites*</td>
<td></td>
<td>Biopsy: Breast, lymph node, low risk abdominal mass/soft tissue, thyroid FNA</td>
</tr>
<tr>
<td></td>
<td>Renograms</td>
<td></td>
<td>TIPS revision: bleeding</td>
<td></td>
<td>Paracentesis</td>
</tr>
<tr>
<td></td>
<td>VCUGs</td>
<td></td>
<td>Transjugaliver biopsy*</td>
<td></td>
<td>Seroma/superficial abscess drainage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Radiology Core Unit Changes</th>
<th>Separation into high risk and average risk zones</th>
<th>Separation into high risk and average risk zones</th>
<th>Separation into high risk and average risk zones</th>
<th>Separation into high risk and average risk zones</th>
<th>Separation into high risk and average risk zones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>o High risk patients will enter from the back door of the RCU</td>
<td>o High risk patients will be transported with a surgical mask</td>
<td>o Average risk patients will enter from the main door</td>
<td>o Patients will be placed into alternating bed spaces to increase patient distancing</td>
<td>o Patients will be placed into alternating bed spaces to increase patient distancing</td>
</tr>
</tbody>
</table>

*Case by case basis | **If being used for treatment during ED

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**Executive Order #20-72**

"prohibited from providing any ... non-urgent or non-emergency procedure or surgical which, if delayed, does not place a patient’s immediate health, safety, or well-being at risk or will, if delayed not contribute to the worsening of a serious or life-threatening medical condition."
All urgent / emergent inpatient cases will be performed.

Non-emergent cases should be judged on a case by case basis, potentially discharged and seen in clinic when EO has expired. Examples include:

- TIPS for ascites
- Filter removal
- Vertebral augmentation
IR Clinic

• All elective procedures postponed

• All appointments for non-urgent procedures postponed

• All appointments for urgent procedures (cancer treatment) moved to Zoom-PHI if possible
Reduce Possible Transmission in RCU

• Patients bedded in every other space
• High risk patients
  • Escorted by RCU nurse through back door
  • Use beds closest to G205
  • Transported with standard mask
• Low risk patients use space near rooms A & B
• Nurses should only cover one side of the RCU
Institutional Issues

• Patient screening and patient floor/area lockdown
• Employee temperature screening
• Closing/segmenting/reducing eating areas
Department Issues

- Remove breakroom seating to decrease risk
- Reduce patient waiting area by 50% and have them wait upstairs
- Should physicians/staff be put on teams to make sure one team is available if the other is quarantined? How many teams? How often are their shifts?
- PPE training, both donning and doffing (most important)
- Shower
  - Possible staff contamination will require easy access to shower
  - Lockers should be removed from G370T
  - Carpeting should be removed from back hallway
Department Issues

• Better communication – QD, QOD Zoom meeting?
• Inpatients vs Outpatients
  • AM (outpatients), PM (inpatients)?
  • Limit certain rooms to inpatient only?
• Rooms to have terminal cleaning each day with UV light
• Do we have enough CAPRs/PAPRs for N95 failures or aerosolizing procedures?
• Do we need to have negative air pressure in CT/IR for COVID-19 patients?
• Do we have enough eye shields/goggles?
• Move to all automatic doors in high traffic areas (including procedure rooms) – reduce risk of transmitting diseases
Department Issues – Perimeter Control

- Screening point prior to entering department
  - Health declaration
    - No fever
    - No dry cough
    - No travel
  - Temperature
- Reduced foot traffic reduces risk
- Lock down & fob department
IR Attending Staffing – Plan A

• Two teams
  • Alpha and Bravo
  • 3 Attendings, 2 fellows, 1-2 extenders

• All time off cancelled

• One week on, one week off

• Designated 1, 2, 3 – will rotate rooms every week

• When to start? 50 cases in Alachua? 100?
IR Attending Staffing – Plan B

• Three teams
  • Alpha, Bravo and Charlie
  • 2 Attendings, 2? fellows, 1-2 extender

• All time off cancelled

• 2 days on/4 days off

• Designated 1, 2

• When to start? 50 cases in Alachua? 100?

Call Grid

<table>
<thead>
<tr>
<th>M</th>
<th>T</th>
<th>W</th>
<th>R</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>A2</td>
<td>B1</td>
<td>B2</td>
<td>C1</td>
</tr>
<tr>
<td>C2</td>
<td>A1</td>
<td>A2</td>
<td>B1</td>
<td>B2</td>
</tr>
<tr>
<td>C1</td>
<td>C2</td>
<td>A1</td>
<td>A2</td>
<td>B1</td>
</tr>
<tr>
<td>B2</td>
<td>C1</td>
<td>C2</td>
<td>A1</td>
<td>A2</td>
</tr>
<tr>
<td>B1</td>
<td>B2</td>
<td>C1</td>
<td>C2</td>
<td>A1</td>
</tr>
<tr>
<td>A2</td>
<td>B1</td>
<td>B2</td>
<td>C1</td>
<td>C2</td>
</tr>
<tr>
<td>A1</td>
<td>A2</td>
<td>B1</td>
<td>B2</td>
<td>C1</td>
</tr>
</tbody>
</table>
COVID-19 Patient Requiring Radiology

• All imaging and procedures should be done bedside if possible
  • Plain film
  • Nucs (HIDA??, tagged RBC??)
    • Ultrasound: diagnostic and procedural
• MR: can another modality be used?
• Angio/Fluoro: Room 16
• CT
  • CT 2: All procedures and non-stroke CTs
  • CT 4: Stroke (procedure back up)
• Prefer to postpone case (if possible) to normal working hours for full staffing
Requirements for COVID-19 Patient

• Known transport plan
  • Security required
  • Secure entire transport path
  • Open all doors along path
  • Elevators need to be secured
  • Entire transport path to be cleaned after use (esp. elevator)

• Communication with radios (Shands should have available frequencies)

• Securing treatment area
Requirements for COVID-19 Patient

• Signage must be created
  • DO NOT ENTER – INFECTED PATIENT
  • How to use PPE
  • How to remove PPE
  • Steps for moving through clean/dirty areas
  • Who to call (anesthesia, security, EVS)
  • COVID-19 SOP clearly outlined
  • Etc.

• Multiple barriers/curtains
Requirements for COVID-19 Patient

- Additional support staff
  - Donning and doffing equipment
  - Setting up procedure room, clean and dirty rooms
  - Deploying security measures
    - Locking doors
    - Placing signs and barriers
  - Procedural assistance

- Will require additional 5-6 member COVID team in addition to standard room team (and call)

- All cases should be with anesthesia to prevent requiring respiratory or code team to enter room emergently
# Staff for COVID-19 Patient

<table>
<thead>
<tr>
<th>Staff</th>
<th>Role</th>
<th>Attire</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Support Team – No Patient Contact</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>Controller</td>
<td>Maintains command and control of the entire event and to coordinate with various external parties</td>
<td>N95/eye protection</td>
</tr>
<tr>
<td>TC</td>
<td>Traffic Controller</td>
<td>Manages traffic at entry to department for all personnel involved in procedure as well as other parties e.g. staff and patients that use the same hallway</td>
<td>N95/eye protection</td>
</tr>
<tr>
<td>RT</td>
<td>Runner Tech</td>
<td>Circulates outside of room</td>
<td>N95/eye protection</td>
</tr>
<tr>
<td>CoT</td>
<td>Control Tech</td>
<td>Manages control room</td>
<td>N95/eye protection</td>
</tr>
<tr>
<td><strong>Procedural Team</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>Scrub Tech</td>
<td>Operates equipment</td>
<td>Full PPE</td>
</tr>
<tr>
<td>CIT</td>
<td>Circulating Tech</td>
<td>Circulates for procedure inside procedure room to minimize patient contact</td>
<td>Full PPE</td>
</tr>
<tr>
<td>IR</td>
<td>Interventionalist</td>
<td>Performs procedure</td>
<td>Full PPE</td>
</tr>
<tr>
<td>SN</td>
<td>Sedation Nurse</td>
<td>Looks after patient in procedure room</td>
<td>Full PPE</td>
</tr>
<tr>
<td>AN</td>
<td>Anesthesia</td>
<td>Supports patient during procedure</td>
<td>Full PAPR/PPE</td>
</tr>
</tbody>
</table>
Requirements for COVID-19 Patient

• Clean room (don) and dirty room (doff)
• Mirrors to assist in donning equipment
• Moving all extraneous equipment to clean room and covering remaining, unused equipment (visqueen)
• Shower after procedure or contamination
• Teams should have a change of clothes
• No unnecessary people in the room
Room 16 Procedure
CT 2 Exam / Procedure
CT 2

G441 – Clean Room
G439 – Dirty Room
G435 – CT 2
G370T – Shower

Security
Barrier/curtain
Door shut/locked
Patient path

Note change in clean / dirty room
CT 4 Exam / Procedure
CT 4 Path
MR / Nucs – TBD
Radiology: Pre-Procedural Steps

• Controller to gather team, assign roles and discuss case with all members of team

• Patient prep
  • Controller to liaise with floor, anesthesia and security staff
  • Floor to prepare to transfer patient
  • Security to clear route
  • Security meets floor staff at patient location

• Room prep
  • Procedure room cleared of non-essential equipment (put into clean room); remaining items wrapped
  • Clean and dirty rooms cleared and made ready
  • Signages and barriers placed
Radiology: Pre-Procedural Steps

• Procedure team
  • Don full PPE
  • Perform buddy check

• When patient and room are ready, Controller sends for patient

• Transfer patient directly to procedure room
Radiology: Intra-Procedural Steps

• Perform patient checks and transfer to table
• If required anesthesia performs intubation
• Procedure start – all Procedure team personnel remain in room in full PPE
• Patients bed to be cleaned and parked
• Equipment or drugs to be passed into IR suite from Support to Procedure team without physical contact
Radiology: Post-Procedural Steps

- Controller informs floor staff & security
- Patient transferred to floor, escorted by floor staff and security
- Procedure team removes plastic wrapping and wipes down equipment
- Support Team dons PPE to remove PPE from Procedure team in designated order* and locations* and then proceed to shower
- Controller activates EVS to provide terminal cleaning of procedure and dirty room
- Lead should be cleaned

*work in progress
Bedside: Pre-Procedural Steps

- Controller to gather team, assign roles and discuss case with all members of team
- Gather necessary equipment for the procedure
- Proceed to floor
- Wrap imaging equipment
Bedside: Intra-Procedural Steps

• Circulating Tech and Sedation Nurse to don full PPE, enter isolation room, speak with patient, conduct preprocedural checks with Control (radio)

• Scrub Tech enters in full PPE and assists Circulating Tech and Sedation Nurse to position patient

• IR enters in full PPE

• Team members clean and prep patient

• Start procedure
Bedside: Post-Procedural Steps

- Procedure team to remove PPE and equipment per guidance
- Proceed to shower
Bedside: Visual