Surgical Critical Care Service

Resident Orientation

http://www.pennsicusu.org
Mission Statement

Improving the quality of care delivered through thoughtful resource management and, when available, evidence based practice.
The Team

“Right Care Right Now”

• Faculty
• Nurse Practitioners
• Fellows (Trauma, SCC, Anesthesia, Pulmonary, EM)
• Residents (Surgery, Anesthesia, Emergency Medicine, OB/GYN, Ortho, ORL, OSR, N-surg)
• Critical Care Nurses
• Respiratory Therapy
• Clinical Nutritionists
• Critical Care PharmD.
• Medical, Nursing, NP students
Surgical Critical Care Faculty

**Surgery**

- **Jose Pascual, MD, PhD**  
  *(Co-Medical Director)*
- Benjamin Braslow, MD
- Jeremy Cannon, MD
- Dan Holena, MD, MSCE
- Patrick Kim, MD
- Niels Martin, MD
- Shariq Raza, MD
- Patrick Reilly, MD
- Mark Seamon, MD
- Adam Shiroff, MD
- Carrie Sims, MD, PhD
- Brian Smith, MD

**Anesthesia**

- **Maurizio Cereda, MD**  
  *(Co-Medical Director)*
- Andrea Gabrielli, MD
- C. William Hanson III, MD
- Jiri Horak, MD
- Meghan Lane-Fall, MD
- Howard Nearman, MD
- Hazel Werlhof, MD
- Rachel Hadler, MD

[http://www.pennsicu.org]
Surgical Critical Care Nurse Practitioners

- Compliance
- Admission/Transfers
- Clinical
- Communication

http://www.pennsicu.org
Role of the SCCS NPS

- Clinical Service coverage (1 Gr, 1 Au)
- Transfers out (Navicare, Orders, Medication Reconciliation, Sign Out)
- Admissions 7am-5pm
- PACU/VICU 7am-7pm
- SCC Outreach
- Procedures
- SCC Database
- Multidisciplinary conference
- 7 day/week coverage

http://www.pennsicu.org
Surgical Critical Care Service: Rhoads 5

RRT

Arbitration

http://www.pennsicu.org
Off-Site ICU Patients

Rhoads 2 and Founders 5 ICU

- = odd
- = even

http://www.pennsicu.org
SCC Teams

• Green / Gold Teams
  – Anesthesia residents (PGY 2-4/CA2)
  – Surgery, EM, OB, subspecialties residents (PGY 1)
  – 0700 to 0700 24hr Call and 0700 to 1700 Rounding
  – Q 4 call template
  – Night person discharged by 10:30 am

• Shared faculty/fellows/NP’s

• Weekends are NOT different…
  ** Early dismissal from the ICU may only be approved by FOW or attending **

http://www.pennsicu.org
CALL SCHEDULE

- http://www.PennSICU.org

- All questions, concerns, or requests must be submitted by email to Tina Taylor (Tina.Taylor2@uphs.upenn.edu)

- Switches MUST be approved by either Drs. Pascual or Cereda

** Early dismissal from the ICU may only be approved by FOW or attending **
### Schedule

<table>
<thead>
<tr>
<th></th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
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</thead>
<tbody>
<tr>
<td><strong>Pre-round / sign out</strong></td>
<td>6:30 am</td>
<td>6:30 am</td>
<td>6:30 am</td>
<td>6:30 am</td>
<td>6:30 am</td>
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<tr>
<td><strong>AM Rounds</strong></td>
<td>8 am</td>
<td>8 am</td>
<td>8 am</td>
<td>8:30 am</td>
<td>8 am</td>
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<td></td>
<td></td>
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<td></td>
<td>8 am (7:00 am for Pulm. conf)</td>
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<tr>
<td><strong>Conference/ Lecture</strong></td>
<td></td>
<td>2:30PM GOLD attending</td>
<td>12:00PM Noon lecture</td>
<td>2:30PM GREEN attending</td>
<td></td>
</tr>
<tr>
<td><strong>Afternoon Rounds</strong></td>
<td>3:30 PM</td>
<td>3:30 PM</td>
<td>3:30 PM</td>
<td>3:30 PM</td>
<td>3:30 PM</td>
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<tr>
<td><strong>PM rounds with fellow</strong></td>
<td>10 pm</td>
<td>10 pm</td>
<td>10 pm</td>
<td>10 pm</td>
<td>10 pm</td>
</tr>
</tbody>
</table>

**No Conference series on Sat or Sun**
Semi-Closed SICU & The Primary Surgical Service

• Communication
  – Admission, Transfers, Status changes, Order entry
  – Fellow, NP directed

• Collaborative approach within support of CPGs
  – Reference NPs or Fellows with controversies

• Attending/Attending communication for discrepancies

• Attending preferences…
Daily Rounds

- Two SCC teams rounding concurrently

- AM rounds: Attending driven
  - Resident presentation:
    - Clinical/24^0 Hx and problem list, systems review, plan
  - Orders entered by resident, consults initiated real-time
  - Creation of “to do” list by team real-time

- Work Rounds:
  - Review “to do” list after rounds
  - Additional orders entered by resident
  - Daily plans made/guided by fellow
  - Review “to do” list after rounds

- PM rounds: Fellow of the week (FOW) driven
  - RN presentation
Fellow Call Triggers

- Patient requires intubation
- Decisions to extubate
- Change in ventilator mode or increased requirement
- > 2 L fluid resuscitation
- Transfusion decisions
- Persistent hypotension
- Addition of pressors or escalating doses
- Oliguria > 2 hours or anuria
- Addition of antibiotics
- All orders for hypertonic saline
- ANYTHING you are concerned about
Evening/Morning Extubations

Patients who are known to have a difficult ventilation/intubation OR who are anticipated to have difficult ventilation/intubation ARE NOT TO BE EXTUBATED during the evening/early morning unless the fellow has specifically discussed this with the Critical Care attending.
Post-extubation order set and risk assessment

**Required Post-Intubation (MV) Orders**

1. Ventilator Settings
2. POC ABG within 15 minutes
3. Stat CXR for tube position
4. Sedation to cover paralysis
5. GI prophylaxis
6. HOB elevation
7. Chlorhexidine mouth care

Optional: Sputum/ET aspirate Culture and MRSA swab

**Extubation Risk Screen Criteria**

1-3 = Difficult Airway:
1. Difficult bag ventilation
2. Difficult intubation
3. Known Difficult Airway

4-8 = High Risk Airway
4. Upper airway pathology
5. Neck immobilization
6. Prior head/neck radiation
7. Tracheal pathology
8. Other

STANDARD PROCESS FOR ALL INTUBATED PATIENTS

SCCS
STEP 1: Post-Intubation Order Set (aka MV Order Set)

- New admits/OSH transfers on MV -> Use ICU Admission Order Set (See immediate/required MV orders detailed on back)
- ICU intubations --> Use separate Post-Intubation (MV) Order Set

STEP 2: Extubation Risk Screen

Anesthesia Team/ED Intubations

- Anesthesia Team/ED completes risk screen and completes Extubation Screening Note
- If screening is not complete, call ED provider or Anesthesia Team depending on who intubated patient

ICU Faculty / OSH Intubations

- ICU provider discusses intubation with intubator +/- RT & reviews intubation note. ICU provider enters Procedure Tab to complete the Extubation Screening Note using built in criteria (detailed on back).
- If uncertain/or ICU provider calls Anesthesia Team to perform screening

If Patient Meets High Risk Extubation Criteria

HUP and PPMC

1. Anesthesia consulted (automated) and enters extubation plan in EPIC
2. Anesthesia fills out High Risk Extubation Card
3. ICU Team confirms that High Risk Extubation Card is posted on wall
4. RT places red sticker on endotracheal tube pilot balloon
5. Implement extubation plan prior to extubation order

PAH and CCH

- ICU provider asks RT to place red sticker on endotracheal tube and calls anesthesia prior to extubation to supervise
Order Set Management

** ONLY SCCS MAY WRITE ORDERS (except immunosuppression) **

• SICU Admission order set (PENNCHART)
  – Indicate in pennchart as SICU Green or Gold as “Covering Provider”

• MD-MD / NP-NP report

• Communication is SCC responsibility

• **Immunosuppression is ordered by TXP**
Penn E-lert

Remote intensivists available by pressing button in each room 7PM to 7AM

Remote intensivist and CCRN coverage of RP5

Video recording of emergent situations
Documentation

- In PENNCHART
  - Please ensure service is “Critical Care”
  - Please route all notes to the ICU Attending of Record
- Admission to the ICU note
  - Use established SCC templates
- Also, **YOU MUST DOCUMENT MAJOR EVENTS**
  - Codes (in progress notes)
  - Major changes in status (in progress notes)
    - New pressors, unexpected intubations, major complications
  - All procedures (use procedure note template)
Creating an admission note in the SICU

In the search bar, type "Smartphrase" and wait, DO NOT hit enter, then click on SmartPhrase Manager.
A box will pop up. Type in user “Geller, Ashley” and hit “Go”
A Workbench list will open. Double-click on “SCCSCENTRAL APP Admission Note – General Surgical”

*Feel free to highlight other notes (for procedures) as you see fit as well.
Click on “Owners & Users”
Click “Add Myself” then click “Accept”
Open a patient's chart. Click on “Notes” on the Left. Click on “Progress” tab at the top. Click on “Create in NoteWriter”.
Once you hit “Create in NoteWriter”, a box will pop up. Click on “Blank Note”
A blank note will pop up. Type ".sccsgeneral" and hit enter. Be patient for a moment while it loads.
Hit “F2” and fill out the admission note as appropriate based on the specific patient. Hit “Pend” to save and return later. Hit “Sign” to complete the note.
Clinical Practice Guidelines

Evidence based

- DVT/PE Prophylaxis
- Stress Bleeding Prophylaxis
- Resuscitation in Septic Shock
- Analgesia & Sedation
- VAP
- TBI (w/ Neurosurgery)
- Nutrition
- Anemia

http://www.pennsicu.org
<table>
<thead>
<tr>
<th>Source of sepsis</th>
<th>Community-acquired</th>
<th>Hospital-acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Onset of symptoms ≤ 3 days after admission in patient who has not been recently</td>
<td>Onset of symptoms &gt; 3 days after admission or in patient who has recently been</td>
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<tr>
<td></td>
<td>admitted to hospital or long-term care facility</td>
<td>admitted to hospital or long-term care facility</td>
</tr>
<tr>
<td></td>
<td><strong>Preferred Therapy</strong></td>
<td><strong>Preferred Therapy</strong></td>
</tr>
<tr>
<td>Abdominal</td>
<td>Piperacillin-tazobactam 4.5 grams Q8H</td>
<td>Cefepime 1 gram Q8H AND Amikacin <em>(dosing link)</em> AND Metronidazole 500 mg Q12H AND</td>
</tr>
<tr>
<td></td>
<td>AND Vancomycin <em>(dosing link)</em></td>
<td>Vancomycin <em>(dosing link)</em></td>
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<tr>
<td></td>
<td>Levofloxacin 750 mg Q24H AND Tobramycin <em>(dosing link)</em> AND Metronidazole 500 mg Q12H AND Vancomycin <em>(dosing link)</em></td>
<td>Levofloxacin 750 mg Q24H AND Amikacin <em>(dosing link)</em> AND Metronidazole 500 mg Q12H AND Vancomycin <em>(dosing link)</em></td>
</tr>
<tr>
<td>Complicated skin and soft tissue infections**</td>
<td>Levofloxacin 750 mg Q24H AND Vancomycin <em>(dosing link)</em></td>
<td>Cefepime 1 gram Q8H AND Amikacin <em>(dosing link)</em> AND Metronidazole 500 mg Q12H AND</td>
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<td></td>
<td>AND Vancomycin <em>(dosing link)</em></td>
<td>Vancomycin <em>(dosing link)</em></td>
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<tr>
<td>Central line</td>
<td>Levofloxacin 750 mg Q24H AND Vancomycin <em>(dosing link)</em></td>
<td>Levofloxacin 750 mg Q24H AND Vancomycin <em>(dosing link)</em></td>
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<tr>
<td></td>
<td>AND Cefepime 1 gram Q8H AND Amikacin <em>(dosing link)</em></td>
<td>AND Vancomycin <em>(dosing link)</em></td>
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<tr>
<td></td>
<td>Vancomycin <em>(dosing link)</em></td>
<td>AND Vancomycin <em>(dosing link)</em></td>
</tr>
<tr>
<td>Neutropenia</td>
<td>Vancomycin <em>(dosing link)</em></td>
<td>Vancomycin <em>(dosing link)</em></td>
</tr>
<tr>
<td>Absolute neutrophil count (ANC) ≤ 500 or &lt; 1000 and likely to decrease to ≤ 500</td>
<td>Cefepime 1 gram Q8H AND Amikacin <em>(dosing link)</em> AND Vancomycin <em>(dosing link)</em></td>
<td>Vancomycin <em>(dosing link)</em></td>
</tr>
<tr>
<td></td>
<td>Vancomycin <em>(dosing link)</em></td>
<td>AND Vancomycin <em>(dosing link)</em></td>
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<tr>
<td></td>
<td>AND Cefepime 1 gram Q8H AND Amikacin <em>(dosing link)</em></td>
<td>AND Vancomycin <em>(dosing link)</em></td>
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<td></td>
<td>AND Vancomycin <em>(dosing link)</em></td>
<td>AND Vancomycin <em>(dosing link)</em></td>
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<tr>
<td></td>
<td>AND Caspofungin</td>
<td>AND Vancomycin <em>(dosing link)</em></td>
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<tr>
<td></td>
<td><strong>ADD</strong> Metronidazole 500 mg Q12H if an abdominal source of infection is suspected</td>
<td><strong>ADD</strong> Metronidazole 500 mg Q12H if an abdominal source of infection is suspected</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>Ceftriaxone 1 gram AND Azithromycin 500 mg AND Vancomycin <em>(dosing link)</em></td>
<td>Cefepime 1 gram Q8H AND Amikacin <em>(dosing link)</em> AND Vancomycin <em>(dosing link)</em></td>
</tr>
<tr>
<td>Urinary system (Urosepsis)</td>
<td>Cefepime 1 gram Q8H AND Tobramycin <em>(dosing link)</em></td>
<td>Cefepime 1 gram Q8H AND Amikacin <em>(dosing link)</em> AND Vancomycin <em>(dosing link)</em></td>
</tr>
<tr>
<td></td>
<td>Levofloxacin 750 mg Q24H AND Vancomycin <em>(dosing link)</em></td>
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<td>Piperacillin-tazobactam 4.5 grams Q8H AND Vancomycin <em>(dosing link)</em></td>
<td>Levofloxacin 750 mg Q24H AND Amikacin <em>(dosing link)</em> AND Metronidazole 500 mg Q12H AND Vancomycin <em>(dosing link)</em></td>
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<tr>
<td>Unknown source</td>
<td>Cefepime 1 gram Q8H AND Amikacin <em>(dosing link)</em> AND Metronidazole 500 mg Q12H AND Vancomycin <em>(dosing link)</em></td>
<td>Levofloxacin 750 mg Q24H AND Amikacin <em>(dosing link)</em> AND Metronidazole 500 mg Q12H AND Vancomycin <em>(dosing link)</em></td>
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www.uphs.upenn.edu/antibiotics

Also use the TEQQA app
Resident Core Curriculum
2:30 Tues/Thurs

• Mechanical Ventilation
• ARDS
• Acute Kidney Injury
• Shock/Surviving Sepsis

• ID/Abx
• Neurologic Emergencies
• Nutrition
• Endocrinopathies of Critical Care
INTRODUCTION: During the course of your stay in the Intensive Care Unit (ICU) it may become necessary to insert some specialized vascular catheters that will allow your condition to be more closely monitored. These catheters include an arterial catheter (A-line), a central venous catheter (CVC) and a pulmonary artery catheter (PAC). It is also possible that you may need some assistance with your breathing which could result in the need for you to be intubated (insertion of a breathing tube) and placed on a ventilator. In addition, in order to further evaluate and examine your lungs, it may become necessary to perform a bronchoscopy. We are asking you to read and sign this form so that we can be sure you understand these potential procedures and potential benefits, along with the associated potential risks, complications, alternatives, the likelihood of achieving the goals, and the recuperative process. Please ask questions about anything on this form that you do not understand.

PROCEDURE: An arterial catheter is a thin, sterile plastic intravascular tube that is inserted into an artery (a blood vessel carrying blood from the heart) in either your groin or forearm. This catheter may be used to continuously monitor your blood pressure and obtain blood samples.

A central venous catheter is a thin, sterile plastic intravascular tube that is inserted into a large blood vessel (central vein) in either your neck, upper chest, or groin. After the catheter insertion procedure is finished, an x-ray will be taken to make sure that it is in the correct location. The catheter may be used to monitor your central venous pressure and administer fluids, medications, and intravenous nutrition.

A pulmonary artery catheter is a long, thin, sterile, plastic intravascular tube that has a balloon at the tip and is inserted into a large blood vessel (central vein) in either your neck, upper chest, or groin. Once the catheter is inserted into the blood vessel, it is passed through two of the heart chambers and into the large blood vessels of the lungs. Electronic monitoring and/or an x-ray machine will be used to help guide the catheter through the heart and into the large blood vessels of the lungs. If an x-ray machine was not used during insertion of the catheter, after the procedure is finished an x-ray will be taken to make sure that it is in the correct location. Once the catheter is in the correct position, the balloon will be periodically inflated and used to monitor the function of your heart and lungs, along with the pressures inside your heart and the blood vessels of your lungs.
Consent for ICU Care

- To be obtained by resident for every patient admitted to SICU
- Covers the majority of typical ICU procedures
  - intubation, central line, a-line, bronch, PAC placement
- Negates the need for individual procedural consents
- Each procedure must be discussed with the patient or proxy
Medication Reconciliation

- JCAHO mandate and HUP policy
- Must be completed ON ADMISSION to the SICU
  - All home meds / outside hospital meds and dosing are to be listed on a medication reconciliation form
  - NP or resident **must** note whether medication will be continued, held, or discontinued
  - **Signed** by person completing admission and reconciliation and **placed in chart**
Signout Document

- Updated daily in CARELIGN by residents
- Includes:
  - HPI, PMH, Home meds
  - Include dated significant events
  - Culture data
  - “to do” list
  - Resident, fellow, NP phone numbers
SICU Procedures

• **MUST** be certified to perform each procedure independently
  – If you aren’t certified or don’t know if you are you cannot perform procedures independently

• Consent

• Time Out

• Procedure Note
Consult Gift of Life on all Vent-Dependent Patients w/a Non-Recoverable Neurologic Injury/Illness

To preserve the organ donation option for patients/families, call **1-800-KIDNEY-1** according to the following criteria: *(regardless of age, medical history, current hospital course, hemodynamic status)*

1. At the first indication the patient has suffered a non-recoverable neuro injury/illness (pt. begins to lose some neuro reflexes)
2. Prior to the first formal brain death examination
3. Prior to family discussion of DNR or withdrawal of support
4. Patient has suffered: Head Trauma, Anoxia, CVA

**Call Gift of Life – 1-800-KIDNEY-1**  
(1-800-543-6391)

In collaboration with the care team, Gift of Life will initiate the first mention of organ donation (after it has been determined that the patient is a medically suitable candidate for donation).
Unit Based Clinical Leadership

- UBCL includes RN, CRNP and MD leadership
- All ICU readmissions and mortalities are reviewed concurrently
  - Learn from issues and identify improvement opportunities
- Document items present on admission
Hospital associated infections

3. CLABSIs
   - Practice flawless hand hygiene
   - Do not place central venous access (including PICC lines) for convenience
   - Do not tell patients that they will no longer require peripheral blood draws if they have a central line
   - Housestaff cannot draw blood from central lines. This practice is restricted to certified nursing staff.
   - Assess need for central venous access daily and remove lines as soon as possible
   - Assess central line site and dressing daily

4. CAUTI
   - Evaluate for a UTI when clinical signs and symptoms are consistent with the diagnosis
   - Send a urinalysis to evaluate for pyuria prior to ordering a urine culture if the patient is stable
   - Do not send urine cultures to evaluate cloudy or foul smelling urine
   - Only certified personnel may insert urinary catheters
   - Assess need for urinary catheterization daily and remove as soon as possible

5. C. difficile
   - Only obtain stool studies for C. difficile when clinically indicated (loose watery bowel movements associated with fever and leukocytosis in the appropriate clinical setting).
   - Do not send stool for C. difficile if the patient has received laxatives or stool softeners in the past 48 hours.
   - Hand hygiene – use soap and water when caring for patients with C. difficile
   - Appropriate utilization of antibiotics (Antimicrobial Stewardship)
6. **HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems)**
   - Patients want to be treated with courtesy and respect. Practice the “2-3-4”
     - 2: Knock 2 times on the door
     - 3: Wait 3 seconds for the patient to allow you to enter
       1) Ask for permission to enter and proceed to enter quietly
       2) Announce that you be turning on the light and tell the patient to watch their eyes before you do so
     - 4: 4 Must-Dos when you are in the room
       1) Make eye contact and introduce yourself and the team
       2) Ask for permission to examine the patient, change dressings, etc.
       3) Sit if possible and explain the plan of care
       4) Ask the patient if they have any questions for you
   - Communication with Doctors Domain (HCAHPS questions)
     - During this hospital stay, how often did doctors treat you with courtesy and respect?
     - During this hospital stay, how often did doctors listen carefully to you?
     - During this hospital stay, how often did doctors explain things in a way you could understand?
FAQs

• Service cell phones
  – Green 215-410-2221
  – Gold 215-410-2222

• Tina Taylor- Admin. Asst. 349-8775
SCCS Nurse Leadership

• Sebastian Ramagnano RN, BSN, BS
  ➢ Nurse Manager, Rhoads 5
  ➢ 267-283-8781

• Julianna Santine, MSN, RN, CCRN
  ➢ Assistant Nurse Manager, Rhoads 5
  ➢ 215-490-6209

• Christine Aiello, MSN, RN, CCRN
  ➢ Clinical Nurse Specialist, Rhoads 5
  ➢ 267-586-3361
Critical Care Resources

- http://www.SCCM.org
- http://ricu.sccm.org
- CPG Binders
Questions?