



The James F. Wenz, M.D.  
**Orthopaedic Surgery**  
**Resident Survival Guide**

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***“Patient Safety  
is  
Rule Number 1.”***

***“Ask  
if you do not know.”***

***“Do not do anything  
by yourself  
for the first time.”***

# Orthopaedic Surgery Resident Survival Guide



**James F. Wenz, M.D.**

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*"This survival guide is dedicated to James F. Wenz, M.D., a true gentleman, scholar, and innovator. He was the type of patient and resident advocate that all of us should strive to be."*

Kevin Farmer, M.D.  
Class of 2008

## I

**EMERGENCIES**

**“No patient should ever die on the orthopaedic service.”**

*Payam Farjoodi, M.D.*

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## **Compartment Syndrome**

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## **Cauda Equina**

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## **Epidural Hematoma**

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## **Pulmonary Embolism**

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## **Deep Venous Thrombosis**

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## **Chest Pain / Myocardial Infarction**

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## **Hypotension**

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## **Stroke**

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## **Fat Embolism**

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**“The price of safety is never-ending, unremitting vigilance.”**

**“Check & Double Check.”**

**“Never be afraid to ask.”**

*Frank J. Frassica, M.D.*

# Compartment Syndrome

## LEVEL IA

**Pain:** out of proportion to injury

**Pain on passive stretch:** severe pain with passive movement of toes, ankle, fingers, wrist, etc

**Weakness:** 0-5 grading. **Compare** to previous exam

**Numbness:** **Compare** to other side. **Compare** to previous exams.

### Tenseness:

Feel compartments:

Do they feel tight?

Shiny skin? Wrinkles?

Tender to mild palpation?

**Pulses:** **Compare** to opposite side

**Pallor:** Any color changes?

**Diastolic Pressures:** Document in case you check pressures.

### Level IA. Do not Delay!!!!

Have an extremely low threshold for concern.

Can occur following any injury, and in any extremity.

**Don't forget about well leg, can occur in the non-injured extremity due to positioning in OR.**

Due to increased pressure within a fascial compartment.

*Pressure then impedes blood flow into compartment leading to potentially irreversible changes (nerve damage, muscle necrosis, etc).*

**Pain out of proportion to the injury and the physical examination is the most sensitive indicator!**

**YOU MUST see the patient and evaluate.**

**Compare** exam to other side and to previous exams in chart!!!!

Call chief resident with concerns ie: change in exam.

**Never hesitate to call the attending on call.**

**Measure pressures if you can not decide** if a compartment syndrome is present. **Notify Chief before measuring. Time is of the essence. Do not delay!**

## Top priority!!

If patient has compartment syndrome, it is a Level I OR case for fasciotomies.

**DO NOT MISS A COMPARTMENT SYNDROME UNDER ANY CIRCUMSTANCES!!!!**

## HIGHEST RISK FRACTURES

Tibial shaft  
Calcaneus

Both bone forearm  
Anything casted  
High energy mechanism  
Supracondylar Humerus FX

# Measurement of Compartment Pressures

## Location of Stryker Monitors

**JHH** – Zayed 3 OR desk, IIE equipment room

**JHOC** - Chief's Office, Clinic Office

**JHBMC** – OR desk

**GSS** - Clinic Office

**Whitemarsh** - Clinic Office

## Indications for Compartment Measurement

1. Use the Stryker monitor **in situations where there is a question of diagnosis** of compartment syndrome in a susceptible patient.

*There is no need to stick a patient who clearly has or does not have compartment syndrome.*

2. Juniors must inform their chiefs prior to any compartment measurement.

3. This is a procedure and must be taught to juniors by seniors prior to a junior performing the procedure alone. **Prior experience at another institution does not count.**

## Use of the Stryker monitor

1. Preload a disposable syringe with fluid and connect to the measuring instrument. To the other end, add a disposable needle-catheter that comes as part of the set. Check 9V battery if the unit does not turn "On".

2. The device needs to be adequately "charged" for accurate use. Depress syringe until saline fills the chamber & needle.

3. Ask and receive verbal consent for the procedure (potential benefit: early diagnosis and prompt treatment of compartment syndrome vs. discomfort and remote chance of infection, bleeding, damage to nerves).

4. Prep the area to be tested with Betadine, and infiltrate the skin with 1% lidocaine. Do not attempt to

anesthetize any deeper as this may alter your compartment measurements.

5. After the system is purged with some fluid, zero the monitor at the level of the compartment to be tested.

6. Using sterile gloves, insert the needle through the fascia keeping the unit parallel to the floor.

7. The numbers on the monitor screen fall reasonably rapidly, and as the descent levels off a reading of the compartment pressure can be made. Have an assistant record these by each compartment. **MEASURE TWICE!**

8. Remove the needle and apply a dressing.

9. Inform chief of compartment pressures.

10. Write a procedure note. Always use the compartment syndrome stickers. Compare compartment pressure to the diastolic blood pressure. Diastolic blood pressure minus the compartment pressure is perfusion pressure. If perfusion pressure is less than 30, there is a compartment syndrome.

# Cauda Equina

## NOTIFY SPINE FELLOW & ATTENDING

Bilateral buttock & lower extremity pain.

Bowel/bladder dysfunction (especially urinary retention).

Saddle anesthesia.

Lower extremity motor/sensory changes.

### ■ A True Surgical Emergency!

Cauda equina syndrome occurs when the **lumbosacral nerve roots are compressed, cutting off sensation and motor function**. Nerve roots that control the function of the bladder and bowel are especially vulnerable to damage.

If you don't get fast treatment to relieve the pressure, it **may cause permanent paralysis, impaired bladder and/or bowel control, loss of sexual function and other problems**. Even if the problem gets treatment right away, they **may not recover complete function**.

Causes include: **disc herniation, post-op hematoma/swelling, tumor, infection, fracture or narrowing of the spinal canal**. It may also happen because of a **violent impact** such as a car crash, fall from significant height or penetrating (i.e., gunshot, stab) injury. Children may be born with abnormalities that cause CES.

### ■ Have a Low Threshold

**Examine any post-op spine patients with new complaints ie:** incontinence, urinary retention, parasthesias, weakness.

Always perform thorough motor, sensory (pin prick, light touch) **rectal exam**.

Compare exam to previous exams.

Any changes (weakness, sensory changes, decreased rectal tone) should prompt immediate concern.

Call spine fellow immediately. Do not hesitate to call the spine attending on call.

Make NPO.

Will need stat CT Myelogram vs. MRI with Gadolinium vs. straight to OR as Level I.

**Any delays could be catastrophic!**

**THIS IS A PRIORITY EVENT!**

**You can open up the checkbook if it is missed!!!**

# Epidural Hematoma

## Presentation

### Brain:

Mental status changes after a fall  
 May have a lucid interval  
 Severe headache, vomiting, seizure

### Spine

Usually post-op, especially if laminectomy  
 Unrelenting back pain  
 Progressive neurologic deficit

### What is it?

**In Brain:** hematoma between skull and dural membrane.

**In Spine:** hematoma compressing on spinal dura.

## Workup

### Stat non-contrast head CT for all possible head traumas.

*This includes all patients who fall and hit their head while in the hospital.*

*Any unwitnessed falls should get head CT.*

*Do not need radiologist approval for these tests.*

*Don't forget to check the results. Test should only take minutes!*

### Postop Spine Patients

Full neuro exam – meticulous documentation.

Any post-op patient complaining of severe back pain must be re-evaluated!

Does deficit correspond with level of surgical site?

### Any neuro deficits, speak with the spine fellow.

### If can't get in touch with spine fellow then call spine attending.

If decide to observe, must do Q2-4h neuro exams and document results.

Declining neuro exam mandates stat imaging or immediate operative exploration!

### Imaging options if concern for postop hematoma:

#### CT myelogram

*Need to speak with radiologist on call. A radiology team will have to be called.*

#### MRI

*Not as good, especially if hardware in place.*

## Treatment:

### Brain Epidural Hematoma

#### Stat neurosurg consult.

May need immediate evacuation in OR by neurosurg.

ICU / NCCU transfer

### Spinal Epidural Hematoma

#### ORTHOPAEDIC EMERGENCY !

Needs stat decompression in OR as level I.

**YOU MUST** escort patient to monitored setting.

## Pulmonary Embolism

**Have a low threshold to order a spiral CT on any of these patients.**

Tachycardia                      Febrile  
 Hypoxia  
 Tachypnea, or  
 Pleuritic type chest pain.

### ■ A potentially fatal event!

Check vital signs.

Do a cardiac and lung exam

EKG → medicine consult?

**Especially common following total joints, intramedullary rodding of a femur fracture, pelvic fracture.**

**Make sure patient does not have kidney problems prior to ordering spiral CT.**

*Consider mucomyst 600 mg po BID before spiral CT and for 2 days afterwards. Resuscitate them with normal saline IV before and after scan.*

*Consider V/Q scan if patient a high risk for renal failure.*

*Will need a large bore peripheral IV for spiral CT (i.e. 18 gauge).*

### ■ Patient will need long term therapeutic anti-coagulation.

*SICU consult à patient should be in a monitored setting (IMC at least) until therapeutic, if unstable.*

*Medicine consult for management.*

*Make sure arrangements are made to follow INR once discharged (primary care, coumadin clinic, etc).*

**Let chief / attending know ASAP.**

**It is much more acceptable to over order spiral CT then to not order one in a patient who has a PE !!!**

# Deep Venous Thrombosis

## Presentation

Calf pain/cramping

Leg swelling

Palpable cords

### ■ Make sure all patients have anticoagulation plan!!!

Do not do a Homan's sign (low yield, potential to break off clot).

Have a low threshold to order bilateral lower extremity dopplers for any patient with concerning symptoms.

*Vascular lab better than radiology if possible.*

### ■ Above the knee DVT:

#### **Must be treated!**

*Medicine consult.*

*Will need arrangements to have coumadin and INR followed once discharged, preferably by primary care physician.*

### ■ Below the knee DVT:

#### **Treatment:**

*Attending dependent.*

*Continue current pathway and **recheck dopplers in 48 hours to look for propagation.***

Also possible to have DVT in upper extremity. Doppler if concerned.

**Let your chief / attending know if positive for DVT!!**

# Narcotics

## Signs of Narcotic Overdose

Respiratory depression

CNS depression

Miosis

Hypotension

## Appropriate Post-Operative Pain Management

1 mg Morphine

=

0.2 mg Dilaudid

=

100 mcg of Fentanyl

They have differing half-lives

**Dilaudid > Morphine > Fentanyl**

## Treatment of Narcotic Overdose

### A: Maintain Airway

*Call anesthesia if needed*

### B: Maintain Breathing

*Oxygen supplementation*

### C: Circulatory Support

*Place patient on monitor*

### D: Call code if necessary

### E: Stop all narcotic medications

### F: Naloxone (e.g. Narcan)

*0.4mg-2mg q 2-3 min PRN.*

*Has short half-life / will likely need to be re-dosed. Patient should remain on monitor.*

### G: Inform team and transport

*to monitored setting if clinically indicated.*

**Be wary of the narcotic naïve.**

**Be wary of the narcotic seeking.**

**Do not prescribe narcotics on the weekends or evenings.**

**Call the chief resident or attending and let them handle the problem (FJF).**

## Constipation

Colace 100 mg po bid

Senna 2 tabs qDay  
*(increases GI motility)*

**Pediatric patients should have their narcotics managed by the pediatric pain service.**

## Chest Pain / Myocardial Infarction

Let chief / attending know immediately.

### ■ Top priority!!

**YOU MUST** see all patients with complaints of chest pain.

#### Pertinent questions

Radiation? Nausea? Diaphoresis?  
Type of pain? Shortness of Breath?

#### Physical Exam

**Check vitals.**  
**Cardiac/Lung Exam.**

#### Check EKG

*Compare to old EKG.*

**If story not concerning, and EKG unchanged:**

May stop there and monitor.

#### Order:

STAT CHEST X-Ray

Evaluate: PE, pneumonia, pneumothorax, etc.

**If any concerns with story or if any EKG changes:**

1. Send off Cardiac enzymes x 3, timed 6 hrs apart. For first one, you may need to draw the lab yourself.
2. If at night, take EKG and show SICU fellow. Have a convincing story as to why you're concerned.
3. If able to, call cardiology for consult for acute MI if EKG changes or enzymes positive.
4. MONA - morphine, oxygen, nitroglycerin tablets, aspirin.
5. If patient is having an **acute MI**, your job is to **transfer them** from our service and into a monitored setting ASAP- SICU, Cards.

**We should not be managing a MI !**

## SICU Consult

Talk to SICU fellow for any patients with concerns. Don't try to be a hero!! Bump it up if you have a worry. Take EKG, labs, etc. with you to the fellow. They are usually willing to help you out if you present it to them in way that shows you have done all the

necessary work-up and you have legitimate concerns. If they are not receptive, talk to your chief or attending about the situation.

Same situation for the PICU fellow.

## Hypotension

Let chief / attending know.

### ■ Make sure patient is stable.

Check pulse, Urine output.

Is patient alert?

If urine output is low, bolus with  
1 Liter Normal Saline

Check Hct

*Blood > Normal Saline > ½ NS  
for intravascular resuscitation.*

*Be careful with CHF. Consider  
bolusing 500 cc.*

### ■ Differential Diagnosis

*High hypovolemia? Sepsis? PE? A-fib?*

*Low heart failure?*

*Meds: Beta blocker, calcium channel blocker?*

*Check EKG medicine consult?*

*Cards consult for arrhythmia.*

### ■ Treatment

*Start with IV fluid bolus  
D/C any hypertensive meds if patient  
is unstable (unresponsive).*

*Stat SICU consult (they will want to  
know EKG, Hct, WBC, ABG etc).*

*Have blood available.*

*ABC's.*

*Call code if concerned.*

## Stroke

### ■ Document your Neuro Exam as thoroughly as possible.

Check for asymmetry.

Head CT without contrast.

**Call a Brain Attack Team (BAT)  
for code.**

**JHH:  
410.283.7777**

**Bayview:  
410.283.8810**

# Fat Embolism

## Presentation

Pulmonary distress – ARDS-like

Mental status changes

Petechial rash

*Occur transiently in 50%  
Reddish-brown spots in upper body  
and axilla or subconjunctival*

Fever >38.5

Tachycardia >110

**24-72 hrs after long bone  
fracture or pelvic fracture**

## What is it ?

Fat embolism is a release of fat droplets into systemic circulation after a traumatic event.

Fat embolism syndrome is a rare clinical consequence of the above.

Pathophysiology unclear.

## Risk factors

Increased risk with increased number of long bone fractures.

Femur fractures especially.

Non-op treatment has highest risk.

IM nailing? Controversial!

## Diagnosis

CLINICAL DIAGNOSIS!!

Lab and XR findings are non-specific.

## Workup:

### Stat portable CXR

*May see diffuse bilat infiltrates*

### ABG

*Increased Aa gradient*

### CBC, platelets, fibrinogen.

*Anemia, thrombocytopenia,  
low fibrinogen*

Continuous O2 monitor.

Spiral CT to rule out PE when stable.

Non contrast head CT if mental status changes.

## Treatment:

Early supportive pulmonary therapy.

*100% O2 on non-rebreather if on floor  
Continuous O2 monitoring  
May need to be intubated*

ICU or IMC transfer.

SICU fellow consult stat

**Notes:** Mortality 10-20%

# PHYSICAL EXAM

## Motor Exam

Motor exams are critical in orthopaedics. Document your findings accurately. Compare to previous exams.

Every patient's NOS note or H+P should have a motor exam written out so that we can track progress or decline. You should be able to explain every deficit you find, or you should notify someone senior.

## Motor Grades (Not a perfect system!)

*Designed for Spinal Cord Injury and joints with full range of motion, not for orthopaedic trauma.*

Grade 0: Nothing

Grade 1: Flicker

Grade 2: Full range of motion-gravity removed

Grade 3: Full range of motion-against gravity

Grade 4-weak (only grade with +, -)

Grade 5-normal

A patient with a tibial fracture is not going to have 5/5 strength in his foot, even though the nerves may be fine. Document what you see.

Adult spine surgery NOS notes should also include rectal tone, wink & perianal sensation for all thoracolumbar cases & extensive cervical cases.

Do the rectal with a nurse present and warn the patient. **ACDF's do NOT typically need a rectal.**

**Pediatric spine patients do NOT need a rectal.**

Spine surgery patients, adult and peds should also be tested for clonus.

Children with supracondylar humerus fractures are often hard to assess.

Check that anterior interosseous & ulnar nerves are in when you see them in the ER.

*EPL tests the radial nerve.*

*Index finger DIP flexion tests the Anterior Interosseous Nerve (Branch of median)*

*Small finger DIP flexion tests Ulnar Nerve*

Patients with an active nerve block from anesthesia should be reassessed when their block wears off.

**Sensory exam**-Document abnormal sensation as to area, light touch & pinprick (paperclip). **Compare to other side!!!**

**Preop History and Physical**  
Must include Cardiac, lung, & abdomen to be considered complete!!

## Spine Surgery Notes

UPPER EXT	Biceps C5	WristExt C6	Triceps C7	Grip C8	FingerAbd T1
Right					
Left					
LOWER EXT	HipFlex L2	KneeExt L3	FootDorsi L4	ToeExt L5	FootPlant S1
Right					
Left					

# Labs

Early AM Labs can be ordered, especially on weekends. (1st draw AML)

Don't make a habit of signing out labs!

**A lab that is ordered on your patient is your responsibility to check**, no matter whom else ordered it or is following the value.

Get in the habit of looking through POE and EPR (until EPR is discontinued) every day for rogue labs that someone else ordered.

**On the pediatrics service, ask the attending before ordering any labs.**

*Often the kids don't need them and the attendings will be upset that they were ordered.*

## **Pertinent Labs:**

### **Hematocrit**

**Most post op patients** get one the **first day** after surgery.

**Femur fractures and large spinal, hip, knee and shoulder procedures** should get one in the **recovery room**.

If the patient is actively losing blood (recognized by precipitous pressure drop or heavy drain output), order a post-transfusion hematocrit.

### **BMP**

**Watch the creatinine values on joint patients and patients on gentamicin or vancomycin carefully.** These have a tendency to creep up. Keep potassium repleted above 3.5.

### **PT/PTT**

**Watch patients on coumadin like a hawk. Place it in bold letters on sign-out** so that other people know the patient is on coumadin.

**Don't let it jump up!!**

### **UA**

Every hip fracture should have a UA on admission. Others as appropriate.

### **CRP/ESR**

**Every patient suspected of having an infection needs these labs.**

### **Blood Cx**

Less useful in orthopaedics. Not part of our routine post op fever workup unless the fever is high or patient has documented infection.

### **Orthopaedic Tumor Consult?**

Order **CBC, CRP, ESR, BMP, SPEP/UPEP, UA.**

### **Pathology Reports**

Keep track of the patients you have operated on, and review their pathology reports.

# III PROCEDURES

## Joint Reductions

### GOAL:

To reduce ASAP without causing additional damage

### Glenohumeral Joint Reduction (Anterior Dislocation 95%)

#### Traction-Countertraction Method

Requires an assistant. Supine patient.

Assistant: Stands on opposite side of pt. Place sheet under pt's affected axilla/upper trunk and pull/provide countertraction.

Resident: Pulls arm gently opposite axis of countertraction while rotating OR flexes elbow of affected arm to 90°.

Place sheet around flexed forearm and tie same sheet around your waist snugly. Gently pull on forearm while leaning your weight back on sheet and rotate arm.

#### Stimson/Gravity Technique

Patient is prone. Hang arm down at side of bed.

Tie weight (10lb) to distal forearm. You may place weight in stockinette and wrap around distal forearm.

May take several hours to reduce.

#### Post-Reduction

Document NV exam. Obtain axillary view or CT if unstable to ensure reduction.



## Elbow Reduction

(Posterior/Posterolateral 80%)

*Beware of terrible triad: fx of coronoid, fx of radial head, elbow dislocation.*

Document NV exam. Consent patient. Provide pt with conscious sedation/analgesia.

Pt is supine, elbow extended, use assistant if available.

Assistant: Pulls countertraction on humerus.

Resident: Pulls gentle longitudinal traction. Corrects medial/lateral displacement. Use gentle flexion. Should hear clunk if reduced.



## Post-Reduction

Document NV exam. X-Ray AP/ Lateral of elbow to confirm reduction.

Perform range of motion of elbow to ensure stability.

With elbow at 90° place in well padded posterior splint. Sling.



## Distal Radius Fx-Reduction/Splinting Technique

## Hip Dislocation

(Native Posterior more common than Anterior)

Leg will be flexed/IR/Adducted

### Must be reduced within 6 hrs of injury.

Document NV exam. (To see if sciatic nerve injury is present. Peroneal section of sciatic nerve is most commonly injured).

Perform knee ligamentous exam.

Consent patient. Consciously sedate (ask for Etomidate or Propofol).  
Ask for an assistant.

### Allis Technique (Can also be used for dislocated THA)

Requires an assistant.

Supine patient (on bed or on ground with a backboard).

Assistant: Pushes down on pelvis at ASIS.

Resident: Pulls inline traction gently. Flex hip to 60-90° while pulling up on pt's calf with right arm.

Rotational movement of hip along with adduction. Should hear clunk when reduced.

If not successful with 2 closed reductions then take to OR for reduction under general anesthesia.



## East Baltimore Lift (Invented at Hopkins) (not commonly used)

Patient is supine on bed.

Resident: stands at side of dislocation at level of pat's pelvis.

Assistant: stands across bed.

Resident: Places arm under pt's calf and places arm on assistant's shoulder. Uses free hand to stabilize pt's ankle.

Assistant: Places arm under pt's calf and places arm on resident's shoulder. Uses free hand on pelvis for countertraction.

Both resident and assistant stand up on toes and use arms as fulcrum for reduction.

### Post-Reduction

Document NV exam. Range hip to ensure stability. CT to ensure no intra-articular fragments/congruence. If acetabulum fx (usually posterior wall) pt will need femoral traction pin (make sure you have all equipment ready & available to place traction pin after reduction if necessary).

## Knee Dislocation

(Anterior most common)

### (Beware of popliteal artery & peroneal nerve injury)

Kennedy Classification: position of tibia in relation to femur: anterior/posterior/med/lateral.

Schatzker IV is considered a knee dislocation variant.

Dimple Sign: posterolateral dislocation: medial femoral condyle buttonholes through anteromedial capsule. Medial structures become entrapped. Requires open reduction.

Document pulses/peroneal nerve function/compartments of affected extremity.

Perform ABI: Hand-held Doppler and BP cuff. Check UE systolic, ankle systolic of DP & PT (use the one that is higher. LE systolic/UE systolic=ABI. Nmle "I").

If ABI <0.9 or No Pulses cool foot. Consult Vascular surgery. CT angio.

## Anterior Dislocation Reduction

Requires an assistant.

Consent patient. Conscious sedation.

Assistant: Provides counter traction on femur.

Resident: Pulls gently longitudinal traction on tibia and pulls up.

## Posterior Dislocation Reduction

Requires an assistant.

Consent patient. Conscious sedation.

Assistant: Provides counter traction on femur.

Resident: Pulls gently longitudinal traction on tibia and lifts up on tibia.

## Post-Reduction

Document NV exam.

X-Ray: post-reduction AP/lateral knee.

Knee immobilizer: Long bulky splint.

Serial compartment checks.

MRI

## Displaced Ankle Fracture

### Reduction/Splinting Set-Up



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## Splinting

### Adult

#### Adults do not get casts acutely.

Only splint acute fractures with plaster to accommodate swelling. A splint should generally try to immobilize the joint above and the joint below a fracture.

A good splint stabilizes the fracture without causing a pressure ulcer. In general, use at least 3 layers of soft roll to protect the skin from the plaster and 1 layer of soft roll on the superficial side of the plaster so that it doesn't stick to the ACE wrap. **Do not pull** the softroll or ACE wrap.

This is too tight & patients will be calling you in a few hours for blue or tingling fingers. Just roll it on.

Pad bony prominences well! This means putting on extra padding at the elbow joint for sugar tongs or on the heel for AO splints. Can use ABD pads for the heel.

#### Make sure no plaster or thinly padded plaster touches the skin.

This is especially true at the ends of splints.

Make sure your posterior slab for an ankle fracture does not dig into the popliteal fossa. You will be amazed how fast an ulcer can develop.

Upper extremity often requires 10-12 layers of plaster. Lower extremity often requires 12-14 layers. However, modify as necessary. A big person may require more layers. Measure off the good limb.

For fractures that can balloon with swelling, use Robert Jones cotton for extra padding. Overwrap with a softroll to help apply gentle compression to control the swelling.

Fractures that require this are often high energy or have significant comminution – dusted elbows, pilons, tibial plateau fractures. We also tend to splint tibial shaft fractures with Robert Jones cotton and softroll here as well.

However, too much padding may not provide enough support to maintain a reduction. A distal radius needs just enough softroll to protect the skin without losing reduction.

When holding a reduction as a splint hardens, use broad surfaces to apply forces, use the palm of the hand.

Do not use fingers or the plaster will pick up the grooves and cause an ulcer.

Fracture	Splint	Tips
Proximal Humerus	Sling	
Humeral shaft	Coaptation splint	Pad the axilla extension well with ABD's, carry the shoulder extension high, pad the elbow
Elbow	Posterior slab with Buttress consider Jones cotton if dusted	The buttress gives support
Distal radius	Sugar tong	Pad the elbow well, keep splint proximal to MCP's
Boxer's Fracture	Ulnar gutter	Mild wrist extension with as much MCP flexion
Thumb / scaphoid	Thumb spica	
Tibial plateau	Schatzker I-III Bulky Jones with knee immobilizer Schatzker IV-VI Long leg bulky Jones	Use Robert Jones cotton
Tibial Shaft	Long posterior slab including foot with long stirrup	Use Robert Jones cotton
Ankle	Posterior slab with stirrup	Start applying plaster at calf and then double over on foot plate if excess. Apply 1 layer of soft roll in between slab & stirrup
Foot	Posterior slab	

# Casting

## Pediatrics

In general, fiberglass casts are applied with the following layers in sequential order:

- Stockinette (cut out creases);
- Soft roll (at least 2 layers thick);
- Fiberglass (at least 2 layers thick).
- Over-wrap with ACE wrap after bivalving the cast.

Take care to avoid pressure points which may cause cast sores.

**Bivalve all casts** (Dr. Tis prefers univalve & use of spacer) unless there is minimal swelling and a low-energy mechanism with little potential for swelling (i.e. buckle fracture), or a significant time has elapsed since the injuring event (i.e. > 2 days).

Ask a child his or her color preference!

## Short Arm Cast

Volarily do not extend the cast distal to the distal transverse palmar crease so that MCP flexion may occur; dorsally the cast should extend to the metacarpal heads. Leave ample room around the thumb. Obtain a good interosseous (A to P) and ulnar mold (smooth flat ulnar surface).

## Long Arm Cast

As above, but cast with the elbow flexed at 90°. Do not bend elbow >90°. Do not bend elbow after rolling fiberglass. Apply a supracondylar mold. Extend the cast as proximal as possible, but avoid impinging on the axilla. Make sure you wrap the soft roll with the elbow flexed at 90°, so that wrinkles do not develop.

For unstable forearm fxs, forearm fxs which required reduction, & pediatric elbow frxs using neutral rotation.

## Short Leg Cast

**Cast with the ankle dorsiflexed to 90°.** Make sure the tips of the toes are visible. Apply ample soft roll to the heel to avoid a heel ulcer at all costs. Mold the cast in the shape of the tibia (i.e. triangular shape with crest anteriorly).

## Long Leg Cast

Same as for short leg cast. In addition, cast with the knee flexed at 30°. This prevents kids from being able to weight-bear. Apply a supracondylar mold (M to L). Extend the cast as proximal as possible (it is never as high as you think). It often helps to abduct the hip off of the bed to obtain space under the proximal thigh. Make sure you wrap the soft roll with the knee flexed so that wrinkles do not develop. Indicated for tibial shaft fractures and ankle fractures which required reduction.

## SPICA Cast for Femur Fractures

**Requires conscious sedation, the spica table, and usually 2 additional people.**

Usually the unaffected extremity is not casted (single leg spica). Dr. Sponseller includes the foot and ankle; Dr. Tis stops above the ankle (make sure you pad this area well to avoid heel ulcers).

The goal positions are 30-45° of hip abduction, with either 60° of hip flexion and 30° of knee flexion or 45° of hip flexion and knee flexion.

Use of the mini-C-arm to check reduction before and during cast application will prevent the need for recasting and save significant time.



Insert towel(s) into abdomen to allow appropriate space for breathing and abdominal distension. Leave ample perineal space for hygiene; use of safety pins on the stockinette is key.

Wrap soft roll and fiberglass in spica pattern at hips and around perineum.

Apply a strut of fiberglass over the inguinal crease from the thigh to the abdomen on the affected side to reinforce this weak area. Petal cast at completion (Nurses will usually do this).

### **Alignment of Femur:**

No more than 2 cm shortening,  
15 degrees var/valg  
20 degrees sagittal plane



## **Cast Saws**

### **Can still cut and burn skin.**

Use two hands: one to hold the saw, and one to prevent diving in.

Use up and down motion only.

Can wet cast saw with alcohol pad to prevent overheating.

### **DO NOT MOVE THE SAW DISTALLY WHEN ON THE SKIN!**

That is how cuts are made. Use up and down, and only move distally/proximally when on cast surface.

Bivalve entire cast, not just part of it.

## Traction: Skeletal



**Traction serves several purposes: it aligns the ends of a fracture by pulling the limb into a straight position; it ends muscle spasm and relieves pain.**

### Skeletal Traction

Skeletal traction is performed when more force is needed than can be withstood by skin traction. Skeletal traction uses weights of 25-40 pounds.

This is an invasive procedure that is done either in an operating room or in the E.R. with local anesthesia.

Steinman pin trays and traction bows are kept at the Bayview OR and JHH (Zayed 3 OR, 9E SICU, and ER supply room).

### Proximal Tibia

Proximal tibial pins are more commonly used, and are helpful in a femoral shaft fracture in order to keep the patient out to length, and to relieve pain prior to going to the OR.

Contraindications include ligament injury to ipsilateral knee and should never be used in children. These pins are inserted from lateral side to avoid damaging peroneal nerve.

The pin insertion site is 2.5 cm posterior to and 2.5 cm distal to tibial tubercle. Make a skin incision about 1 cm in length, placed about 3 cm below the tibial tubercle.

Use smooth pins. Protect the cut ends of the pins with test tubes or balls supplied.

### Distal Femoral

Distal femoral traction pins are inserted on medial side to avoid injury to the femoral artery.

It is best to flex the knee and thigh on several folded sheets to facilitate pin insertion from the opposite side of the bed and go from medial to lateral. This also facilitates obtaining a lateral radiographic view.

The entry site is just proximal to the adductor tubercle (proximal to medial epicondyle and/or growth plate ~ 1 finger breadth above superior pole of patella when leg in extension).

Distal pin placement risks entering joint at intercondylar notch, and more proximal pin insertion risks injury to femoral artery at Hunter's canal.

Mark the knee joint line with a marker and use that as a guide for pin placement. The pin should be parallel to the joint line.

## Traction: Skeletal cont.

### Preparation

Prep the area well with betadine or chloraprep and have all of your equipment ready in order to keep things sterile.

Inject 1% lidocaine into the skin and down to bone around the areas where your insertion and exit sites will be.

Make your incision as above and place pin medial to lateral.

Finally, check an x-ray after you are finished to make certain you are in bone and not in the joint.

Keep the pin sites covered with sterile gauze or xeroform until going to the OR, where the pin will likely be removed.



### Traction: Skin

The skin should be cleansed and then sprayed with benzoin spray.

Wrap a single layer of non-overlapping softroll around the extremity. Make sure the skin is completely covered with softroll and that the softroll is not overlapping.

Apply adhesive straps to the cotton padding both medially and laterally and connected to a footplate that is connected to the pulley system. Overwrap the adhesive straps with an ACE.

The pulley system is adjusted to obtain the necessary angle of traction. Hip flexion is secured with a folded blanket posterior to the thigh or a sling about the thigh attached to a weight through a pulley system.

The contra-lateral extremity is likewise padded, wrapped, and placed in traction.

Elevate the foot of the bed to prevent a child from sliding down the bed because of the traction.

Skin traction uses five-to seven pound weights depending on the size and weight of the child.

The amount of weight that can be applied through skin traction is limited because excessive weight will irritate the skin and cause it to slough off.

# Aspirations

## General:

1. Sterile technique: alcohol prep, then betadine or chlorhexidine.
2. Lidocaine local.
3. Aspirate with at least 1 ½ inch 20 ga, preferably 19 ga, consider spinal needles.
4. Tap until dry.
5. Send Red and Green tops, sterile collecting cup/tube for culture.  
*Be careful with transferring fluid to tubes.*
6. Place order in POE.
7. Print labels & place in biohazard bag with specimen.

Gram Stain

Cultures-aerobic/anaerobic  
(*add fungal if immunocomp*)

Cell Count and Differential  
Crystals

Sometimes glucose

## 7. Walk it down to lab yourself!!!

## Bursa

Olecranon, prepatellar: Needle only; may leave an angio cath 16 ga for daily lavage if pt is being admitted.

Do not I & D: they drain forever!!

## Elbow

Document neurovascular exam prior to aspiration.

Mark out relevant anatomy (lateral epicondyle, radial head, olecranon).

Midlateral/Direct lateral Approach:  
Draw triangle connecting lateral epicondyle, radial head & olecranon and identify soft spot at center of triangle.

Prep area (see General).

Aspirate with 18/19 gauge needle until dry.

Post aspiration, document neurovascular exam.

## Ankle

Mark out relevant anatomy (anterior tibial tendon, extensor hallucis longus, dorsalis pedis, medial malleolus).

Anteromedial Approach: Identify soft spot medial to anterior tibial tendon.

Prep area (see General)

Aspirate with 18/19 gauge needle until dry.

Post aspiration, document neurovascular exam.

**Hips and shoulders should be done with fluoro guidance to ensure that it is intraarticular.**  
Talk to radiology.

# Injections

## Joint:

Prep the area with betadine and alcohol or chloraprep.

Knee-supralateral or supramedial. Can also go anterolateral/medial, but need to flex knee close to 90°.

## Shoulder

Subacromial bursa: Posterolateral aspect of acromion. Slide under bone.

## Joint

Tough to know if you are really in. Can go from posterolateral shoulder or anterior between coracoid and AC joint. **Discuss with Chief/Attending.**

## ■ Abscess

IVDA: Need x-rays and CT scan w contrast minimum prior to cutting skin.

Gas Gangrene? Needs OR debridement. Call General Surgery.

Be wary of mycotic aneurysms in IVDA patients.

*Consider dopplers if concerned.*

Sterilely prep area. Incise skin along Langer's lines.

Send cultures.

Pack and dress wound.

IV antibiotics vs. po (see if patient can go to EACU).

# IV PREOPERATIVE C A R E

## Preop Checklist

### History

### Physical

NEED heart and lung exam

### Consent

List all attendings on service: (Adult: Osgood, Shafiq, Hasenboehler, Peds: Sponseller, Tis, Ain, Varghese, Lee, & Fellow).

### Standard Risks & Specific Risks

Bleeding, infection, non-union, malunion, injury to nerves or vessels, weakness, numbness, pain, hardware failure, breakage, loosening, compartment syndrome, loss of function, arthritis, need for additional procedures, limp, cosmetic deformity, leg length discrepancy (total hip, femoral nail etc.), reflex sympathetic dystrophy, stiffness.

### Peds Risks

Growth plate injury causing leg length discrepancy

### Blood consent

### Films

All necessary outside films should be uploaded into Ultravisual.

### Chest Xray, EKG

### Labs

CBC	Type & Cross
Chemistry	- 2 Units
Coags	BHC-G
UA	Type & Screen

### Mark Site

### D/C Blood Thinners

Lovenox, Coumadin, ASA, Plavix...

### NPO

### Consults

Medicine      Anesthesia

### Posted

### Patients discharged to follow up.

**Preop fully** - including contact numbers

**Level IA: must stay with patient and personally bring to O.R.**

# V

## OPERATING ROOM SAFETY

### Electrocautery (Bovie)

The Bovie should not be used in the presence of any flammable liquid (alcohol or tincture based agents).

Make sure the patient is not in contact with any metal parts of the table.

Once bovie pad has been placed on body do not remove it and replace it on the skin, once it is removed a new pad should be opened.

When not in use the active electrode (the bovie pencil) should be placed in a clean, dry , nonconductive plastic container within the surgical field.

The electrode gel pad should be placed on the positioned patient, on clean dry skin over a large muscle mass as close to the operative field as possible, limbs with metal implants should be avoided.

The skin should be inspected before and after removal of the pad. Keep area dry avoid allowing liquids especially prep solutions from coming in contact with pad site.

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## Tourniquet

When placing a tourniquet on an extremity the tourniquet should overlap at least 3 inches, but no more than 6 inches.

The cuff should be placed at the point of maximum limb circumference ( i.e. the proximal thigh).

Padding in the form of stockinet supplied with cuff of web role should be applied prior to cuff positioning this should be wrinkle free.

Once applied a cuff should not be rotated to a new position.

Liquids and skin preparations should not be allowed to collect or pool under the cuff.

A U drape should be applied one inch below the distal edge of the cuff prior to the use of skin prep solutions.

Tourniquet pressures depend on the patient's age, blood pressure and limb size, but should never exceed 400mm Hg.

Normal settings are 100mm Hg over the patients SBP.

**Do not leave the tourniquet cuff inflated on an arm for greater than 2 hours or on a thigh greater than 2 hours.**

Prior to inflating the tourniquet the limb should be exsanguinated using an ace wrap or esmarch.

---

## Surgical Site Marking

**The surgeon** (*At Bayview: this is the attending, Downtown: it is the resident who consented the patient or who is doing the surgery*) **should identify the patient and confirm the operative side and level.**

Once this is done he/she **MUST** mark that side and or level with his or her **initials in the center of the surgical field**, as close to the middle of where the patient will be prepped and draped, and so that, **once draped, the initials can be visible** prior to making the incision.

The **Informed Consent** must be complete and must include the patient's name, the description of the procedure and must include the side/site and level of the surgery.

**A time out MUST be performed prior to incision.** This is carried out by the attending physician, the nurse and the anesthesiologist together in a controlled and organized manner.

The circulating nurse will use the consent form and verbally verify with the attending surgeon, and the anesthesia care provider, as well as any scrub personnel caring for the patient, that the patient's name, surgical side, site, and level are correct.

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## Post-Op Orders

Need PT/OT consult.

Need WB status & ROM.

Order DVT prophylaxis.

Post-Op Labs, Antibiotics, X-Rays, Out of bed & Ambulation Orders, Pain Medicines.

### Don't Forget 3 A's:

**Activity**  
**Antibiotics**  
**Anticoagulation**

### Fluoroscopy

Must have lead on prior to operating Fluoro.

Make sure every one in room is covered prior to fluoroscopy – **announce that fluoro is being used.**

**6 feet minimum safe distance** to avoid radiation if not wearing protection.

Make sure that you have informed anesthesia prior to fluoro use so that they are protected.

### Mini C arm

1 foot min safe distance.

Should use xray gown if available.

Mini C arm is located in Peds ER.

**Make sure you return it after use.**

### Plain Xray

**Always x-ray the joint above and below the injury!!!**

At least **2 views** of all extremities: **AP & Lateral. Insist on perfect laterals**, otherwise they will be oblique, and **YOU**, not the XR tech will be spanked at AM board rounds.

On **Hip xrays** obtain **cross table lateral** of affected side.

### Special Views

**Axillary views on all shoulder films, except**, if CT scan shows glenohumeral joint reduced, no need for axillary.

If tech unwilling, you will have to position the arm for the film.

**Pelvis: Judet views.** Evaluate for all possible acetabular fx.

**Inlet Outlet View** if there is possible **disruption of pelvic ring.**

# Radiographic Views for Orthopaedic Trauma

**SPINE: Fracture in one area necessitates x-rays or CT of the whole spine!!!**

**C-SPINE** 1. **AP/LAT/ODONTOID** 2. Flex/Ext views only after talking to senior first 3. CT scan for any frx or non-visualized area (C7-T1)

**T/L-SPINE** 1. **AP/LAT** 2. CT scan for fracture 3. Obliques if you suspect traumatic spondylolisthesis.

**SHOULDER** 1. **AP/AXILLARY VIEW** Do not present a shoulder consult w/o an axillary view!! If tech unwilling, you will have to position the arm for the film. 2. Can get Int/Ext rotation views 3. Get CT scan for operative proximal humerus fractures if intraarticular 4. 40 degree cephalad x-ray & CT scan for SC joint dislocation

**HUMERAL SHAFT** 1. **AP/LAT**

**FOREARM** 1. **AP/LAT**

**ELBOW** 1. **AP/LAT** Lateral must be dead on for pediatric SC humerus frx 2. Obliques & possibly CT for difficult injuries 3. Traction views for comminuted frx 4. Get films of wrist for radial head frxs

**WRIST** 1. **AP/LAT/OBLIQUE** 2. Traction views for ALL distal radius frxs & ALL wrist injuries 3. Scaphoid view (ulnar deviation AP) if indicated

**HAND** 1. 3 views with spot view of fingers if you need it

<b>PELVIS</b>	<b>I. AP PELVIS</b>	2. Inlet/Outlet views if there is possible disruption of pelvic ring (including pelvic rami) - Inlet shows hemipelvis rotation (ie. open book) - Outlet shows hemipelvis vertical translation	3. Judet views for any acetabular fracture - Obturator oblique shows anterior column & posterior wall - Iliac oblique shows posterior column & anterior wall	
<b>HIP</b>	<b>I. DEDICATED AP &amp; LATERAL OF HIP + AP PELVIS</b>	<ul style="list-style-type: none"> <li>- AP Pelvis is not an AP of the hip. Get a dedicated view.</li> <li>- Best AP of femoral neck is a 15 degree internal rotation AP. You often have to hold for these.</li> <li>- Get femur films for templating / looking for distal lesions.</li> </ul>		
<b>FEMORAL SHAFT</b>	<b>I. AP/LAT</b>	2. A/P & lateral of hip to rule out concomitant femoral neck fractures		
<b>KNEE</b>	<b>I. AP/LAT</b>	2. Obliques for tibial plateau fracture	3. CT scan for all tibial plateau frxs that will not be ex-fixed. If ex-fix, can get CT after surgery.	4. Traction views & CT scan for displaced distal femur frx
<b>TIBIAL SHAFT</b>	<b>I. AP/LAT</b>			
<b>ANKLE</b>	<b>I. AP/LAT/MORTISE</b>	2. CT scan for Pilon fractures	3. Stress views for Weber B lateral malleolus frx w/o medial malleolus frx.	4. Tib/Fib for Maisonneuve frx if tender over prox fib  5. Foot films if tender in foot
<b>FOOT</b>	<b>I. AP/LAT/OBLIQUE</b>	2. CT scan for all hindfoot & midfoot fractures	3. Harris (axial calcaneus) for calcaneus frx	4. Weight-bearing AP if you suspect Lisfranc injury

# VII

## POSTOPERATIVE

### C A R E

#### **Fever: Respond to all temps > 38.5.**

Low grade fever within first 24-48 hours of surgery is normal, but do not let that fool you.

UA is the most sensitive test for fever work-up during first 48 hours (due to foley, etc). Send C&S as well.

Check vitals make sure pt is stable.

Examine incision.

Check for calf tenderness. If positive or suspicious for DVT, order Ultrasound.

Chest Xray to eval for Atelectasis and Pneumonia (if lungs sound junky).

Send blood cultures x 2 if concern for sepsis.

#### **Remember:**

**Wind ,Water,Wound,  
Walking, Wonder Drug**

#### **Night of Surgery Notes (NOS)**

Vital Signs. Pain.

*Any concern for compartment syndrome?*

Appropriate exams:

*Spine Exam*

*Neurovascular exam for extremities*

*Look at op note*

Make sure dressing/splints/VACs are intact.

PACU x-rays / Hgb

**Let chief know about any concerns.**

#### **Constipation / Ileus**

All patients on colace. Dulcolax, fleets, soap suds, Mag Citrate, etc as needed.

#### **Urinary Retention**

Check post void residuals on all spine patients. **Cauda Equina?**

Straight cath if it's been greater than 8 hours, leave in if output > 300 cc.

Remove foley next am to let detrusor muscle relax.

If you straight cath a spine patient downtown, perform rectal and

document your exam. Check rectal tone/sensation and rule out saddle anesthesia in spine patients.

Review I&O's, check BUN/Cr for kidney status. Evaluate nephrotoxic drugs such as aminoglycoside or vancomycin.

Evaluate patient for distention. In pediatric patients may be more conservative about cathing. Consider checking post void residuals.

#### **VAC Dressings**

**Must act if suction is not holding.** Cover any openings with op-site etc.

**Non-working VAC sponge is a broth for badness!! Don't let someone get toxic shock syndrome because you didn't check the VAC!!!**

#### **Cultures/Infectious Disease Consultations**

#### **Pathology**

**Keep an eye on all cultures and specimens sent from OR!!!** Don't miss an infection or other badness!!

# VIII

## M E D I C A L

## I S S U E S

### Decubitus ulcers

Air mattress, heels off bed, heels protected, turn q2 hours, wound care nurse.

Check daily.

Waffle boots/heel protectors.

For consults: consider osteomyelitis. W/u should include xray, CT scan, inflammatory markers (ESR, CRP), local wound care-local debridement, wet to dry dressing changes/Silvadene.

### Nutrition

Nutritional status: always an issue for wound healing and preventing infection. Very important in elderly hip fractures.

W/u should include albumin, prealbumin, transferrin. Ensure shakes/pudding/TID.

On discharge recommend osteoporosis/osteopenia work up & calcium supplementation. Nutrition consult.

### Colchicine

**No ortho resident should prescribe colchicine.**

Rheumatology consult to medically manage.

### Antibiotics

#### Post Op:

Ancef one gram IV Q8hr x 24hr.

If PCN allergic Clinda 600mg IV Q8hr or Vanc one gram IV Q12hr.

Revision surgery and prior infection will dictate coverage and may be attending dependant.

### Open Fractures:

**Type I or II:** 1<sup>st</sup> generation cephalosporin.

**Type IIIA:** 1<sup>st</sup> generation cephalosporin + aminoglycoside; add penicillin for grossly contaminated wounds.

Always check levels on nephrotoxic drugs especially on patient with preexisting renal insufficiency or diabetes. (i.e. Gent or Vanc levels).

Cultures from infections should be checked for sensitivities and Infectious Disease recommendations should be followed for proper antibiotic coverage.

### Lack of peripheral I.V. Access

Do not put in central lines or A. lines. 24 hour stop on I.V. team

Femoral, radial, brachial vein/artery sticks for labs, if needed. **Discuss with senior resident first.**

**Make sure patient is not on anticoagulation!!!!**

# IX

## CONSULT ISSUES

**ON-CALL (410.283.1254)**

**All ER 7am-5pm Day**

**All ER All InPatient** *After Hrs & Weekend*

**ADULT ORTHOTEAM (rotating pager)**

**Day Adult InPatient 7am-5pm**

**PEDIATRIC ORTHOTEAM (410.283.4505)**

**Day Pediatric InPatient 7am-5pm**

### HAND

Rotates weekly with Plastics.  
***If we're not on, we don't want it!!!***

Hand includes:  
*Soft tissue distal to elbow.  
Bone distal to distal radius.  
Distal radius is always Ortho.*

**Any microvascular repair goes to Plastics.**

### SPINE Spine Fellow

**Adult:** Shared with neurosurgery.

**Peds:** Basically all spine.  
Discuss case with attending to see if NUS should be involved also.

### RESPONSE TIME

**Call back within 10 minutes!**  
*(Tell OR nurses that you're on call and ask them to return pages).*

**See patients as soon as possible!**

### PRIORITIZE!!!

**See the emergencies first.**

Compartment Syndrome, Cauda Equina, Open Fractures, Septic joint, etc.

*The clavicle fractures, etc can wait until the emergencies are handled.*

# XII O R T H O E-LEARNING

<http://www.netorthodoc.org>

**LOGIN:** jhuortho  
**PW:** resident

*(the Hopkins firewall may ask for these twice, just enter them a second time and disregard the request for a "domain" name)*



## NetOrthoDoc Website

NetOrthoDoc is a password-protected e-learning website of the Johns Hopkins Department of Orthopaedic Surgery.

The site is for resident education, and contains an ever-expanding library of talks with sound and visuals from Grand Rounds, faculty lectures, the JHOrthopaedic Review Course, and other specialty courses.

NetOrthoDoc also has video clips from anatomy courses created by Dr. David Hungerford: "Anatomy of the Knee," and "Anatomy of the Hip."

The syllabi for rotations can also be found at the site. Some have weekly objectives and reading assignments.

Reading materials and instructions for OITE study, Resident Research and Motor Skills labs are on NetOrthoDoc.

You can also link to NetOrthoDoc from the ortho homepage: [www.hopkinsortho.org](http://www.hopkinsortho.org).



## Contact for Ortho E-Learning:

Gail Richter-Nelson  
(o) 410.502.5885, (c) 443.629.3848  
JHOC #5264

## TO CREATE A FILM LIST IN ULTRAVISUAL

- Click **EXAM LIST**
- Click **NEW EXAM LIST**
- Click **ADD TO PRIVATE FOLDERS**
- Give a **NAME** to the LIST
- Change the **DAY** on **STUDIES ACQUIRED** to **2 DAYS**
- Click **ADD**
- Click **COMPOSITE** and/or **NODE** and Click **OK**
- Click on **PATIENT ID**
- In **VALUE** Box, type in **PTS MR#** **without the check digit and no spaces**. Press **OK**.
- To add another patient repeat from Click **ADD** to end.

## BAYVIEW SHAREPOINT

<https://collaborate.johns-hopkins.edu/sites/Orthosignoutsheet/>

- Site is password protected with your **JHED ID** and **Password**
- List of Patients is saved to the shared files daily and can be opened from the site.
- Every consult seen in **ED**, but not admitted should be added to the "TASK" section.
  - Patient's Name, Phone, Bayview #, Diagnosis
- After showing films at board to an attending, task should be updated as to whether this is operative or non-op, and where they should follow up.
- The secretaries at Bayview have access to this site and will use this information to schedule appointments. **MAKE SURE INFO IS CORRECT.**

**JHH ORTHO SHAREPOINT**

<http://ortho.jhu.edu>

**- DOCUMENTS:**

Trauma Postings  
Documents & Resources  
Daily Lists

**- LISTS:**

Trauma Schedule Calendar,  
Patient Phone Calls & Requests

**- Discussions:**

Trauma Patients (Pending  
Surgery),  
Morbidity & Mortality List

**- ON CALL RESIDENT RESPONSIBILITIES**

- Update ALL Adult Consults that  
need or may need surgery

- Click **Trauma Patients** icon under  
Discussions List

- Click **NEW, CREATE NEW DISCUSSION**

- In subject, list patient's name, mrn,  
and injury. Include treatment (nonop, ORIF)

- Provide: who saw, treatment, dispo, contact  
*Subject: Doe, John MR# 1-234-56-789.*

*Left bimalleolar ankle fx requiring ORIF*

*Body: seen by ortho doc on 1/28/2010 and treated  
with closed reduction & splinting.*

*D/C home with plan for OR next wk.*

*Contact (cell): 410-867-5309*

**If consented for surgery FAX CONSENT  
to MMF (1-866-341-2834)**

**DAILY LISTS: ADULT INTERN or ON-CALL RESIDENT**

A copy of list should be uploaded to sharepoint each AM after list is updated with labs **BEFORE ROUNDS**.

- Click **Daily Lists** icon under Documents List

- Click **Upload**

- Select **Upload a document from your computer to this library**

- Upload list

**RETURNING PHONE CALLS: CHIEF, TRAUMA 2, & ON CALL PA**

Laronda Johnson (Dr. Osgood's assistant) lists these phone calls on website. Should be handled daily.

- Click **Patient Phone Calls & Requests** under Lists

- Click on any pending phone call issues

- If request is for narcotics, make sure there are no notes in EPR prohibiting. If not, write script. Leave note in EPR using the "Prescribing Meds" note type.

- DELETE the discussion from sharepoint, so only one Rx is written.

- Leave script on Laronda's desk JHOC 5

## POSTING CASES: CHIEF & TRAUMA PGY-2

- Scheduled surgery, but NOT next or same day ( these must be called in)
- Posting sheet must be created so Laronda can post the case for us. Once she has posted it, it will show up on OR schedule.
- Even if date is not known, posting **MUST BE CREATED** at time patient is consented.

## COMPLETING A POSTING SHEET:

- Open **Ortho Posting Sheet Brief** (if no template exists for your surgery.
- Save file to I drive with header of Patient's Name, MR#, Procedure, and date
- *Subject: Doe, John MR# 1-234-56-789. Left bimalleolar ankle fx, ORIF for IIIIII*
- Fill out posting sheet general info: name, MR#, ICD-9, CPT codes.
- True trauma cases are posted to our room: **OR15**
- All other cases to **ANY OR** (e.g. ROH)
- Outpatients should be seen in **PEC** center and box: **CALL PATIENT** should be checked (not Patient To Call)
- Under **EQUIPMENT**, add what's needed: fluoro, ortho basic, table type, ortho minor, bump, lateral positioning, etc. If you include all info in this section you do not need to fill in boxes on form.

## MORBIDITY & MORTALITY: CHIEF & TRAUMA PGY-2

- Add patients to M&M list after case discussed with Dr. Osgood.
- Cases should be removed or archived once presented at M&M
- Click on **Morbidity & Mortality List** icon under Discussions List
- Click **NEW, CREATE NEW DISCUSSION**
- Subject: Patient's Name, MR#, Treatment, Complication
- Body: Any additional information