

**Basic Skills
Qualifications
2021-22**

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Basic Skills Qualification Abscess Incision and Draining



Evaluation Process

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Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Accurately diagnoses an abscess appropriate for I&D | | |
| Discusses indications and contraindications for I&D procedure | | |
| Performs informed consent and appropriate patient education | | |
| Procedure performance | | |
| Appropriate documentation | | |
| Describes potential complications and their remedies | | |

Prior to starting a medical procedure, the medical team stops for a Time-Out. The Time-Out is a deliberate pause in activity involving clear communication and verbal confirmation. The Time-Out is one element of Universal Protocol, designed to ensure that the appropriate steps are taken to operations and invasive procedures.

Time-Out steps:

1. Everything stops
2. Identify the patient using name and date of birth
3. Correct side and site marked as indicated if applicable.
4. Agreement on procedure to be done, as read from the informed consent document.
5. When two or more procedures are being performed on the same patient, and the person performing the procedure changes, perform a time-out before each procedure is initiated.

Documentation: “Time out was performed. Correct patient was identified, and patient verified the procedure and correct site and side.”

Faculty: _____

Date: _____

Description: Abscesses are localized collection of pus surrounded by inflamed tissue; may be found in any area of the body, but most abscesses presenting for urgent care are found on the extremities, buttocks, breast, perianal area, or from a hair follicle.

Indications:

Abscess on the skin which is palpable

Contraindications:

1. Extremely large abscesses which require extensive incision, debridement, or irrigation (best done in OR)
2. Deep abscesses in very sensitive areas (supralevator, ischiorectal, perirectal) which require a general anesthetic to obtain proper exposure
3. Palmer space abscesses, or abscesses in the deep plantar spaces
4. Abscesses in the nasolabial folds (may drain to sphenoid sinus, causing a septic phlebitis)

Materials:

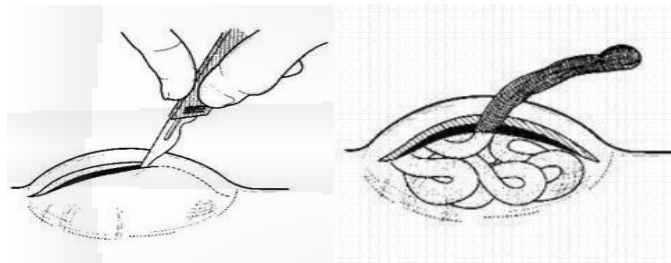
1. Universal precautions materials
2. 1% or 2% lidocaine with/without epinephrine for local anesthesia, 10 cc syringe and 25-gauge needle for infiltration
3. Skin prep solution
4. #11 scalpel blade with handle
5. Draping
6. Gauze
7. Hemostat, scissors, packing strip gauze (plain or iodoform, 1/2")
8. Tape
9. Culture swab

Preprocedure Education:

1. Obtain informed consent
2. Inform the patient of potential severe complications and their treatment
3. Explain the steps of the procedure, including the pain associated with anesthetic infiltration
4. Explain necessity for follow-up, including packing change or removal

Procedure:

1. Use universal precautions
2. Cleanse site over abscess with skin prep
3. Drape to create a sterile field
4. Infiltrate local anesthetic; allow 2-3 minutes for anesthetic to take effect
5. Incise widely over abscess with the #11 blade, cutting through the skin into the abscess cavity. Follow skin fold lines whenever able while making the incision
6. Excising an ellipse may help keep wound open
7. Allow the pus to drain, using the gauzes to soak up drainage and blood. Use culture swab to take culture of abscess contents, swabbing *inside* the abscess cavity
8. Use the hemostat to gently explore the abscess cavity to break up any loculations within the abscess
9. Using the packing strip, pack the abscess cavity, then dress



| Complication | Prevention | Management |
|-------------------------|---|--|
| Insufficient Anesthesia | Anesthesia doesn't work in acidic environment | Use more, use field block, allow more time |

| | | |
|--------------------------|-------------------------------|--------------------------------------|
| No Drainage | Localize it by palpation | Incise deeper or wider |
| Drainage is Sebaceous | Inflamed Sebaceous Cyst | Express material, pack as abscess |

Post Procedure:

1. Send culture if indicated
2. Record the procedure and the outcomes and the plan in the progress note.

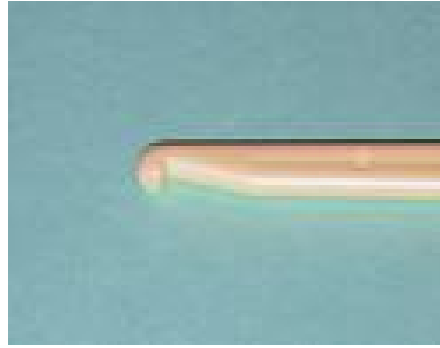
Documentation on the Medical Record:

1. Consent, start and stop time, “surgical pause”
2. Procedure used, prep, anesthetic (and quantity), success of drainage, culture if made
3. Any complications (or “none”)
4. Who was notified of any complication (family, attending MD)
5. Follow-up arrangements:
 - Instruct the patient when to return for dressing change and monitoring.
 - Instruct patient on daily wound care and dressing change and on the signs and symptoms of infection.

May watch the procedure on video at www.medicalvideos.us and type Abscess Incision and Drainage

References: 1. Textbook of Emergency procedures. 2. Basic Skill Qualification tool from Tufts University Family Medicine Residency program. 3. Up-to-Date information.

Basic Skills Qualification Amniotomy



Evaluation Process

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Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Provides appropriate informed consent | | |
| Atraumatically inserts amniotomy hook | | |
| Able to rupture membranes | | |
| Performs assessment for prolapsed cord | | |

Faculty: _____

Date: _____

Key Steps:

- Identify amniotic sac by palpation
- Insert amniotomy hook
- Perform amniotomy and control fetal descent
- Perform post-amniotomy evaluation

You will be expected to demonstrate the following:

1. Explain to the patient the procedure of amniotomy in understandable terms.
2. Place the patient on her back for examination of the cervix.
3. Have continual fetal monitoring in place.
4. Palpate the membranes through the open cervix.
5. Insert the amniotomy hook, shielding the hook with the hand to prevent accidental application to the vagina and cervix.
6. Once the distal aspect of the hook is adjacent to the membranes, rotate the hook to allow it to snag the membranes.
7. The hand in the vagina stabilizes the fetal head in the pelvis; use the other hand to withdraw the hook with the membranes in tow.
8. You should see some amniotic fluid coming from the vagina – evaluate for presence of meconium or odor.
9. Perform a repeat vaginal exam to assess cervical dilation and to check for cord prolapse

Basic Skills Qualification Anoscopy

Evaluation Process

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Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Informed consent | | |
| Positioning: lateral decubitus, knees flexed | | |
| Inspection of external perianal area | | |
| Correct assembly of anoscope including using lubrication | | |
| Insert anoscope gradually | | |
| Slow removal of obturator, and adequate inspection of anal canal | | |
| Safe biopsy technique if needed, hemostasis achieved | | |
| Correct diagnosis of physical findings on anoscopy | | |
| Attention to patient's comfort at all times | | |

Faculty: _____

Date: _____

Indications:

- Initial evaluation of rectal bleeding, anal or perineal pain
- Anal discharge, rectal prolapse, anal fissures
- External/Internal hemorrhoids, perianal condyloma
- Painful DRE or palpable mass on DRE.
- Retrieval of foreign body
- Evaluation of sexual abuse
- Fecal impaction, anal polyps, cancer

Contraindications:

- Unwilling patient
- Severe debilitation
- Acute MI
- Anal canal stenosis

Relative Contraindication:

- Acute abdomen

Complications:

1. Generally a safe procedure, anoscopy has few complications
2. Possible complications: anal discomfort, tearing of perianal skin, tearing or abrasions of hemorrhoidal tissue.

Preprocedure Patient Preparation:

1. Have a medical assistant or RN chaperone procedure
2. Patient must be cooperative and relaxed
3. Frank admission that procedure will be unpleasant and uncomfortable, but not painful.
4. If anal area exquisitely painful, can apply topical anesthetics such as 5% xylocaine 30 min prior to procedure to reduce discomfort.

Technique:

1. Place patient in left/right lateral position preferably with buttocks facing wall not door.
2. Have patient pull up on glutei or have assistant pull glutei laterally so that full inspection of perianal area can be done.
3. Have patient bear down to assess for hemorrhoidal prolapse.
4. Perform digital rectal exam with lubrication jelly
5. Lubricate the anoscope with obturator in place.
6. Gently insert the anoscope into anus, advance instrument in the direction of umbilicus until full length of scope inserted. (May detect resistance. Ask patient to take a couple deep breaths and to bear down slightly).
7. Remove obturator so that mucosa of anal canal is seen. Fecal material may be removed with large swab.
8. Gradually withdraw instrument, observing anal canal as scope is extracted. Rotate Long cylinder anoscope to the right and left to visualize entire canal.

Reference: Pfenniger, JL and Fowler GC, Procedures for Primary Care. Mosby 2003. (Apgar, B. and Pfenniger J., p 763-766)

Basic Skills Qualification Basic OB Ultrasound

Evaluation Process

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Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Explain procedure and purpose to patient | | |
| Select the appropriate probe | | |
| Select the appropriate exam | | |
| Apply USN probe to patient's abdomen and adjust USN device to optimize image | | |
| Determine presence of fetal life | | |
| Determine fetal position | | |
| Determine placental position | | |
| Perform an amniotic fluid index (AFI) | | |
| Interpret results and explain to patient | | |

Faculty: _____

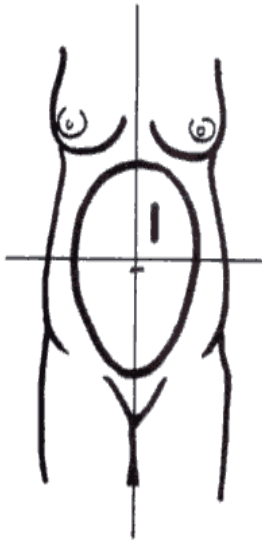
Date: _____

Key Steps

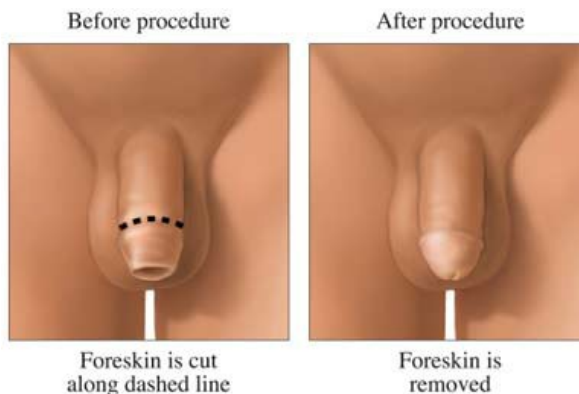
- Identify fetal cardiac activity
- Determine fetal lie
- Determine placental location
- Perform an AFI

You will be expected to demonstrate the following:

1. Explain procedure and purpose to patient
2. Select appropriate probe
3. Select appropriate exam
4. Apply USN probe to maternal abdomen
5. Adjust controls to optimize image (depth, gain, resolution and focus)
6. Identify fetal cardiac activity and fetal movement
7. Determine fetal lie
8. Determine location of placenta
9. Perform an amniotic fluid index (AFI)
10. Interpret results and explain to patient



Basic Skills Qualification Circumcision



Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Informed consent: can state contraindications and describe risks, benefits, alternatives and procedure | | |
| Dorsal penile nerve block | | |
| Selects and draws appropriate anesthetic, typically 1% lidocaine without epinephrine | | |
| Injects 0.5 ml at the 2 and 10 o'clock positions at the base of the penis, with slight medial angulation and approximately 0.5 cm beneath the skin surface, or ring block by injecting circumferentially around the base of the penis, completing a 180-degree half circle. | | |
| Gomco clamp | | |
| Makes dorsal crush and slit | | |
| Breaks adhesions | | |
| Inserts bell over the glans | | |
| Grasps the edges of the dorsal slit and inserts the arms of the bell through the hole of the plate | | |
| Pulls the foreskin upward and adjusts the bell and base | | |
| Assembles and tightens clamp | | |
| Excises the foreskin | | |
| Removes clamp, inspects, applies gauze | | |
| Can state how to manage bleeding and other complications | | |

Prior to starting a medical procedure, the medical team stops for a Time-Out. The Time-Out is a deliberate pause in activity involving clear communication and verbal confirmation. The Time-Out is one element of Universal Protocol, designed to ensure that the appropriate steps are taken to operations and invasive procedures.

Time-Out steps:

1. Everything stops
2. Identify the patient using name and date of birth
3. Correct side and site marked as indicated if applicable.
4. Agreement on procedure to be done, as read from the informed consent document.
5. When two or more procedures are being performed on the same patient, and the person performing the procedure changes, perform a time-out before each procedure is initiated.

Documentation: "Time out was performed. Correct patient was identified, and patient verified the procedure and correct site and side."

Faculty: _____

Date: _____

Consent:

Indications:

Parental desire

Contraindications:

Hypospadias, episadias, megaurethra

Ambiguous Genitalia

Age less than 12 hours or more than 6 weeks

Severe illness

Prematurity

Relative Contraindications:

Short penile shaft (less than 1 cm)

Family history of bleeding disorder

Age over 1 month

Other considerations:

Financial obligations

Risks – Serious (1:500)

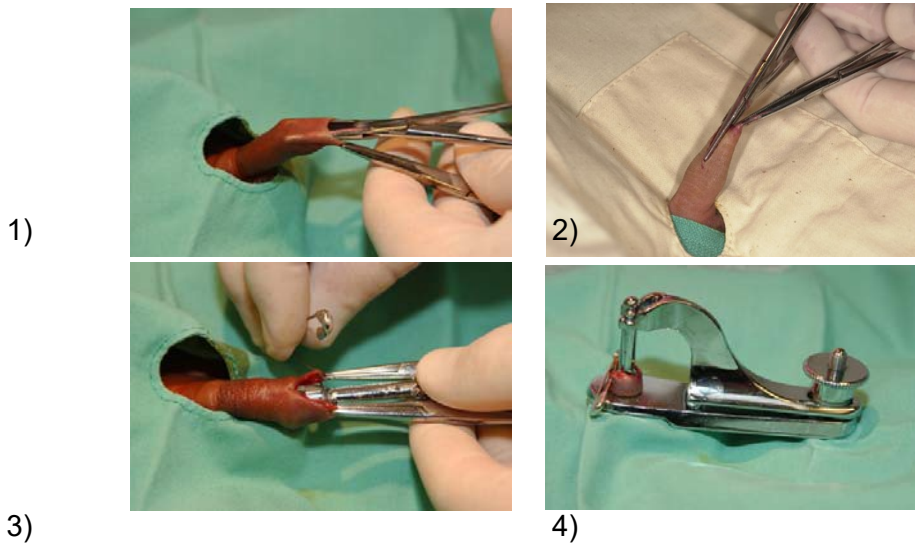
Infections, bleeding, gangrene, scarring, surgical accidents

You will be expected to demonstrate the following:

1. Confirm the following prior to performing the procedure:
 - The infant is at least 12 hours old (preferably 24 hours old)
 - The infant has voided at least once since birth
 - Written parental consent has been obtained
 - The correct infant has been brought to the procedure room
2. Explain procedure to the parent/guardian (risks, benefits, alternatives)
3. Prepare equipment/field; prepare the patient, light the area
4. Identify the anatomy
5. Perform dorsal penile nerve block or ring block under sterile conditions
6. Procedure:
 - Apply two hemostats at the three and nine o'clock positions on the foreskin (fig 1)
 - Use third hemostat and sweep around the glans to break adhesions
 - Clamp the foreskin at the 12 o'clock position so that the hemostat tip is 0.5 cm from the coronal sulcus (fig 2)
 - Retract the foreskin and remove any remaining adhesions
 - Replace the foreskin over the glans

- Place the bell inside the foreskin and over the glans with the apex of the crush injury/incision visible above the rim of the bell (fig 3)
- Slip the handle of the bell through the circular opening of the base plate
- Inspect to ensure that equal amounts of foreskin and mucosa are present circumferentially and judge the amount of the shaft skin left below the corona
- Confirm the crossbar at the top of the bell sits squarely in the yoke of the clamp and tighten (fig 4)
- Carefully remove any remaining tissue in and around the groove that connects the clamp and bell
- Leave clamp secured for a total of five minutes then loosen the thumbscrew and gently remove the clamp and bell
- Inspect the penis for bleeding, especially in the area of the frenulum
- Place a small nonstick bandage or petroleum gauze around the cut edge of the foreskin

7. Provide parent/guardian with information about post-circumcision care



Resources:

1. Up-To-Date
2. Procedures for Primary Care
3. Neonatal Circumcision Model and Competency Evaluation for Family Medicine Residents, Fam Med 2007;39(4):241-3
4. Basic Skill Qualification tool from Tufts University Family Medicine Residency program

Basic Skills Qualification Colposcopy with Biopsy

Evaluation Process

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Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Explains procedure in understandable terms | | |
| Obtains informed consent including performing a “time out” | | |
| Inserts the speculum and adequately visualizes the cervix | | |
| Correctly applies acetic acid solution and identifies the squamocolumnar junction | | |
| Correctly identifies the most severe lesion | | |
| Competently performs an ECC | | |
| Utilizes biopsy instruments effectively | | |
| Obtains hemostasis | | |
| Commits to a colposcopic diagnosis | | |

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Time-Out steps:

6. Everything stops
7. Identify the patient using name and date of birth
8. Correct side and site marked as indicated if applicable.
9. Agreement on procedure to be done, as read from the informed consent document.
10. When two or more procedures are being performed on the same patient, and the person performing the procedure changes, perform a time-out before each procedure is initiated.

Documentation: “Time out was performed. Correct patient was identified, and patient verified the procedure and correct site and side.”

Faculty: _____

Date: _____

Description: Colposcopy is a diagnostic procedure in which a colposcope (a dissecting microscope with various magnification lenses) is used to provide an illuminated, magnified view of the cervix, vagina, or vulva. The primary goal of colposcopy is to identify precancerous and cancerous lesions so that they may be treated early.

Indications:

Colposcopy is used as a follow-up test to evaluate abnormal cervical cancer screening tests (cytology and/or human papillomavirus testing [HPV]) or abnormal findings on gross examination of the cervix, vagina, or vulva.

Contraindications:

There are no absolute contraindications to colposcopy. ECC should be avoided in pregnancy and cervical biopsy performed with caution during pregnancy.

Materials:

1. Gloves
2. Speculum
3. Colposcope
4. 5% acetic acid solution
5. Lugol's solution
6. Swabs
7. Endocervical curettage
8. Cytobrush
9. Cervical biopsy instrument
10. Monsel's solution

Preprocedure Education:

1. Obtain informed consent
2. Obtain a pregnancy test
3. Explain the steps of the procedure
4. Explain necessity for follow-up

Procedure:

1. Confirm results of pregnancy test
2. "Time out" performed with patient and nurse
3. Insert speculum and position the colposcope to allow clear visualization of the cervix. Note any gross abnormalities.
4. Using the green light filter to check for any vascular abnormalities.
5. Apply acetic acid to the cervix with large swab.
6. Identify the squamocolumnar junction in its entirety for 360°.
7. Carefully inspect the cervix for any distinctive changes consistent with dysplasia.
8. Perform ECC using an endocervical curette. Take care not to sample the ectocervix. Appropriately collect specimen using a curette and a Cytobrush.
9. Select appropriate sites for biopsy and reapply acetic acid as needed.
10. Position the jaws of the biopsy forceps to optimize removal of a specimen about 3 mm in size.
11. Regulate the depth of the biopsy by the degree of opening of the forceps jaw.
12. Obtain biopsy cleanly by closing jaws quickly and not withdrawing until biopsy is obtained.
13. Biopsy all areas of concern starting with lesions on the posterior lip of the cervix.
14. Once the biopsies are done, obtain hemostasis using Monsel's solution.
15. Complete colposcopy note and EHR including determination of a satisfactory colposcopy and colposcopic impression.
16. Print photo obtained from colposcopy or diagram findings completely.

Basic Skills Qualification Cryotherapy



Evaluation Process

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Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Discusses indications and contraindications for cryotherapy | | |
| Freezes lesion so has 2-3 mm white border | | |
| Allows lesion to thaw and then refreezes | | |
| Appropriate documentation | | |
| Describes potential complications and their remedies | | |

Faculty: _____

Date: _____

Indications:

- Rapid method of treatment for superficial lesions
- Benign Lesions: wart or seborrheic keratosis
- Premalignant lesion: actinic keratosis.

Contraindications:

- Unclear lesion identification
- Possible malignant melanoma
- Young children due to pain
- Cosmetically sensitive area on the face, lip or eyelid
- Local infection should be treated prior to the procedure
- Use caution on digits due to risk of severe pain and neuropathy.
- Use caution in patients with darker skin, especially on the face.
- Take care in areas with poor circulation, especially in the elderly.

Complications:

- Blisters can develop if freezing too deeply or too long, and infection may occur
- Blood blisters when treating thick lesions such as warts.
- Skin discoloration, especially hypopigmentation in patients with darker skin.
- Hypertrophic scar formation or pyogenic granuloma occur rarely with healing.
- Nerve damage where nerves are superficial like sides of fingers, post-auricular, or the peroneal nerve.
- Permanent nail dystrophy if periungual lesion frozen too deeply.
- Recurrence of the lesion, particularly warts, is possible.

Technique:

Perform cryotherapy using either a cotton swab dipped in liquid nitrogen and applied to the lesion or a liquid nitrogen container equipped with a spray tip to apply the liquid nitrogen directly to the lesion.

1. Freeze each lesion so that the lesion is white and a 1-3 mm white halo or "ICE BALL" around the lesion is maintained for desired time.
2. Allow the lesion to thaw completely.
3. Depending on the lesion type and location, consider freezing another time.
4. The lesion can be pared down prior to freezing.
5. Always better to under freeze than over freeze.

| | Ice Ball Size | Freeze Time | Can Repeat |
|---------------------------------------|---------------|-----------------------------------|-------------------------------------|
| Flat lesions or small papules | 1-3mm | 5-10 seconds | No |
| Thicker warts or Seborrheic Keratoses | 2-3 mm | 20- 40 seconds maintain ice ball. | Yes, after lesion completely thaws. |

Reference: Goldstein, B and Goldstein A. Up To Date: Derm Procedures. Updated 4/30/12.

**Basic Skills Qualification
EKG**

Evaluation Process

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You will be asked to list, for each, the rate, axis, rhythm, and interval, as well as determine the presence of hypertrophy, ischemia, or infarction (six components x 5 EKGs = 30 possible points). To be deemed competent you will need to achieve 25 points and correctly identify all instances of ischemia or infarction, if present.

Resident: _____

| EKG | Points earned | Points possible |
|-----|---------------|-----------------|
| 1 | | 6 |
| 2 | | 6 |
| 3 | | 6 |
| 4 | | 6 |
| 5 | | 6 |

Faculty: _____

Date: _____

EKG Reading

All EKG tracings should be evaluated for the following:

Rate (fig 1) is calculated by:

1) Finding an R wave that falls on a heavy black line. Find the next R wave and count the large boxes between them as follows: 300; 150; 100; 75; 60; 50.

To determine **Axis (fig 2)**:

- 1) Look at the R waves in leads I and aVF
- 2) If both are positive, axis is normal
- 3) Down in I, up in AVF = RAD
- 4) Up in I, down in AVF = LAD
- 5) To more closely estimate axis, find the most isoelectric lead (parts of the QRS above and below baseline are equal); the axis will be 90° away from that.

Rhythm (fig 3a-d) is determined by:

- 1) Do QRS complexes occur regularly? (rhythm strip)
- 2) P before every QRS? QRS after every P?
- 3) Yes + Yes + Yes = NSR
- 4) If irregular, determine pattern: regularly or irregularly irregular
 - a. If *regularly* irregular, determine intervals. Does P-R interval lengthen?
 - b. If *irregularly* irregular, look for dropped complexes, abnormal appearing complexes, and presence of P waves

Intervals (fig 4) determined by:

- 1) PR interval – count the small boxes from the beginning of the P wave in to the beginning of the R wave
 - One small box = 0.04 seconds
 - *Normal PR* ≤ 0.2 *Normal PR*; > 0.2 *First degree AV block*
 - Note whether intervals are constant or variable
 - Need to recognize second degree AV Block Mobitz Type 1 and Mobitz Type 2 (figure 5)
 - Need to recognize third degree AV Block (figure 6)
- 2) QRS interval – beginning of the Q wave to end of the S wave
 - Normal = < 0.08 sec
 - Interventricular conduction delay = 0.08 – 0.12 sec
 - Bundle branch block = $> .12$ sec
 - Look at morphology in anterior chest leads to determine RBBB vs LBBB
- 3) QT interval
 - Start of the Q wave to end of the T wave
 - *QT length is heart rate dependent. If > 0.44 sec for corr. QT = prolonged*
- 4) Wave size is determined by counting small boxes from the beginning to the end of the wave; > 3 boxes (0.12 sec) = QRS widening

Hypertrophy

- 1) LVH: Count small boxes vertically
 - a. S in V1 + R in V5: > 35 is positive, or
 - b. S in V2 + R in V6: > 25 is positive, or
 - c. R in AVL: > 11 is positive
- 2) Atrial hypertrophy:
 - a. Look at P wave in V1
 - If P wave is diphasic (upward and downward component) atrial hypertrophy is present
 - If initial component of diphasic P wave in V1 is largest = Right atrial hypertrophy
 - If terminal component of diphasic P wave in V1 is largest = Left atrial hypertrophy

The signs of **ischemia/Infarction (fig 7)** are:

- 1) Ischemia:
 - a. ST depression > 2 mm
 - b. Inverted or flattened T waves
- 2) Infarction:
 - a. ST elevation > 1 mm
 - b. Q-wave = completed infarction. Significant Q is one small square wide or 1/3 the height of the QRS complex
- 3) Distribution of changes across leads describes location
 - a. Anterior = V1-V4; Inferior = II, III, AVF, Lateral = I, AV

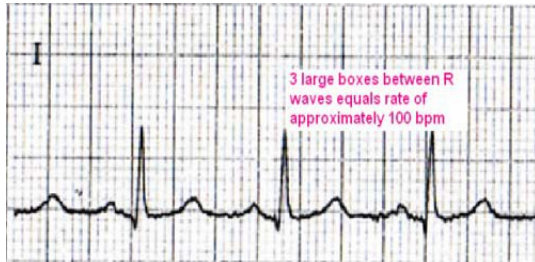


Figure 1

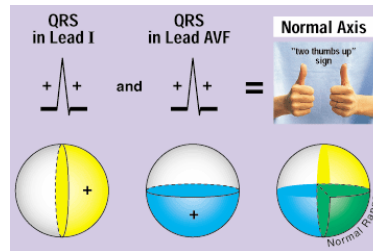


Figure 2



Figure 3a (sinus rhythm)

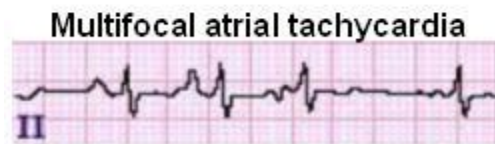


Figure 3 b

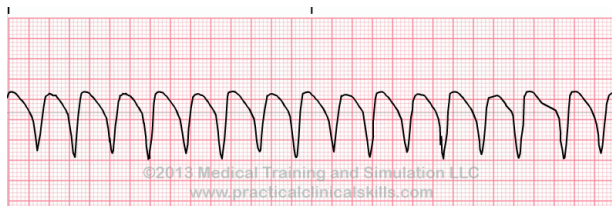


Figure 3c (ventricular tachycardia)

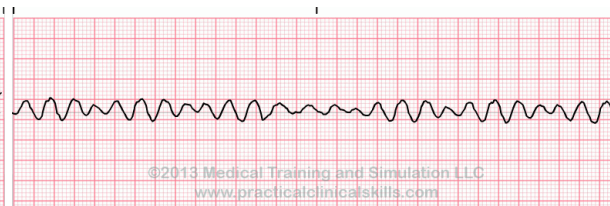
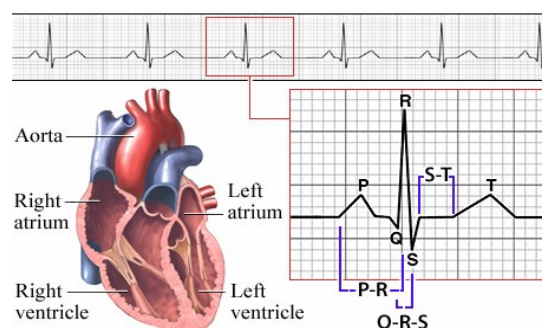


Figure 3d (ventricular fibrillation)

Figure 4



Mobitz I or Wenckebach



Mobitz II



2:1 block



Figure 5

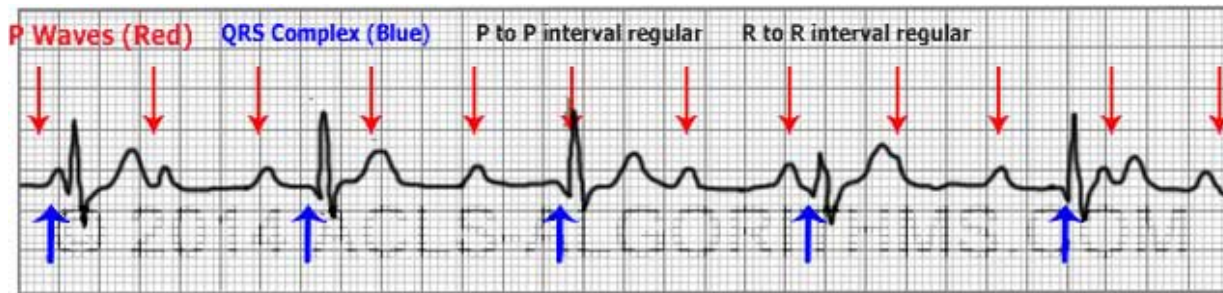


Figure 6

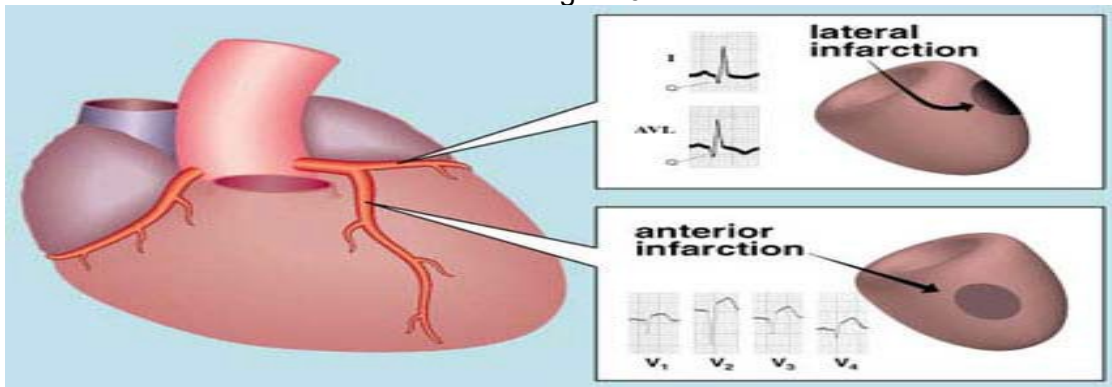
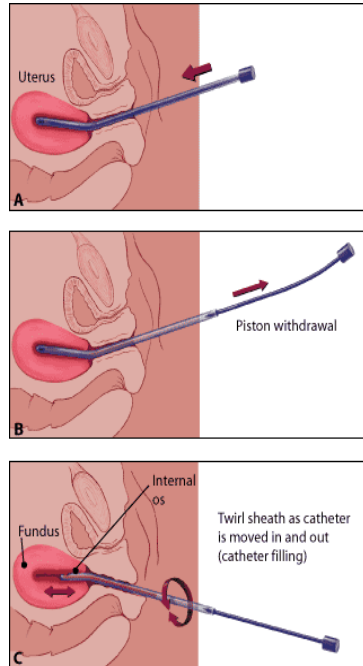


Figure 7

Basic Skills Qualification Endometrial Biopsy



Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Informed Consent, can state Contraindications and describe Indications, risks, and alternatives | | |
| Performs bimanual foruterine position | | |
| Cleanses cervix | | |
| Introduces aspirator, uses Tenaculum pm | | |
| Stabilizes aspirator, draw piston; completely back in one motion to cause negative pressure | | |
| Rotate sheath between thumb and index while moving in and out until adequate sample is obtained | | |
| Withdraw device without pushing piston back in sheath | | |
| Cut off distal tip with scissors and expel sample into formalin | | |
| Remove speculum | | |
| Ask patient to stay supine for 10 min | | |
| Review home care. (nsaids, sex after bleeding stops, report fever, cramping after 48 hours or heavy bleeding) | | |

Prior to starting a medical procedure, the medical team stops for a Time-Out. The Time-Out is a deliberate pause in activity involving clear communication and verbal confirmation. The Time-Out is one element of Universal Protocol, designed to ensure that the appropriate steps are taken to operations and invasive procedures.

Time-Out steps:

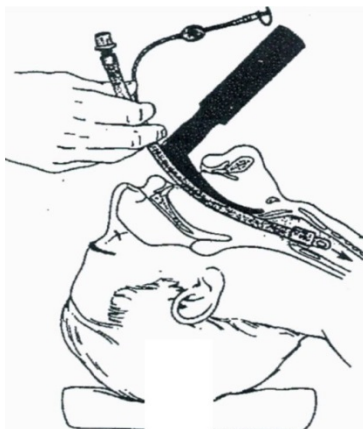
1. Everything stops
2. Identify the patient using name and date of birth
3. Correct side and site marked as indicated if applicable.
4. Agreement on procedure to be done, as read from the informed consent document.
5. When two or more procedures are being performed on the same patient, and the person performing the procedure changes, perform a time-out before each procedure is initiated.

Documentation: "Time out was performed. Correct patient was identified, and patient verified the procedure and correct site and side."

Faculty: _____

Date: _____

Basic Skills Qualification Endotracheal Intubation



Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Informed consent: can state contraindications and describe risks, benefits, alternatives, and procedure | | |
| Positioning: In the sniffing position. Discuss technique for suspected cervical spine injury. | | |
| Identify anatomy of the airway | | |
| Selects proper device, blade and size. Properly sizes endotracheal tube. | | |
| Prepares and discusses alternative methods of ventilation, and difficult intubation | | |
| Proper preoxygenation. Checks equipment. | | |
| Laryngoscope insertion and visualization. Advancement of endotracheal tube. | | |
| Discuss placement confirmation techniques. Confirms proper placement with at least 3 methods. | | |
| Discuss pharmacologically assisted intubation. Discuss rapid sequence intubation | | |

Faculty: _____

Date: _____

Orotracheal intubation via direct laryngoscopy. This route is generally favored in most circumstances, including when cervical spine is suspected.

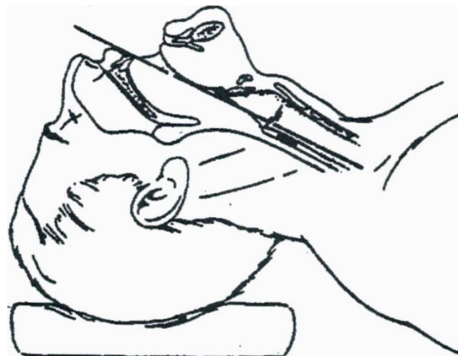
EQUIPMENT

- Bag-mask-valve resuscitation unit with oxygen supplementation
- Medications as selected for analgesia/anesthesia, amnesia, and neuromuscular blockade
- Towel roll or pad for occipital elevation
- Pulse oximeter
- ECG monitor
- Automatic blood pressure device or personnel to provide frequent manual blood pressure monitoring
- Gloves, mask, eye protection
- Laryngoscope handle and blade(s) - usually sizes 3 and 4 curved and 2 and 3 straight Endotracheal tubes (usually 7.0- or 7.5-mm for adult women and 8.0-mm for adult men) Malleable stylet
- Yankauer and tracheal suction catheters, suction device Magill forceps
- 10-mL syringe to inflate cuff
- Qualitative CO₂ detector, CO₂ monitor, or esophageal detector device
- Tape or tracheal tube stabilization device
- Resuscitation cart

Preparation

1. Don gloves, mask, and eye protection
2. Explain the procedure, if patient is conscious
3. Assure patent airway
4. Assure optimal oxygenation and ventilation
5. Assure IV access
6. Apply pulse oximeter, ECG, and blood pressure device
7. Assemble all equipment and ensure proper working order
8. Prepare the endotracheal tube
9. Check cuff integrity by inflating and fully deflating
10. Insert lightly lubricated stylet into endotracheal tube, bend to configuration predicted to assist glottic entry
11. Apply water-soluble lubricant to the cuff end of the tube
12. Connect laryngoscope blade to handle
13. Blade selection (operator's choice)
14. Straight blade - used to elevate the epiglottis anteriorly
Curved blade - inserted into the vallecula
15. Select blade length - #3 blade is proper unless patient's neck is very long
16. Assure that light from bulb is bright OR the screen can be easily seen
17. Place pad or towel under occiput if cervical spine injury not suspected
18. Topically anesthetize the patient's oropharynx
19. Preoxygenate with 100% oxygen for 2 to 3 minutes or using 3 to 4 vital capacity breaths if time permits
20. As necessary, proceed with sedation and neuromuscular blockade.

The operator stands at the head of the bed, and the bed is raised to a position of comfort for the operator. The head of the bed may be flat or raised slightly per operator preference.



Regardless of the operator's dominant hand in other contexts, the laryngoscope is always held in the left hand.

Cricoid pressure should be gently but firmly applied by an assistant as soon as consciousness is lost and should be sustained until endotracheal tube placement is confirmed and the cuff inflated.

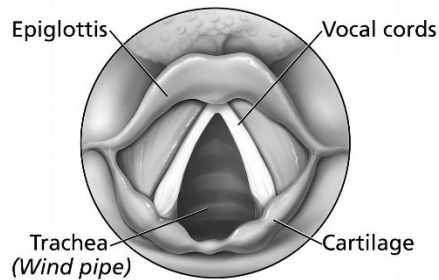
Insert tip of laryngoscope blade into the right side of the patient's mouth; advance the blade to the base of the tongue. Sweep the tongue to left; proper tongue control is key to laryngeal visualization.

Gently advance the blade further to its proper position. A straight blade is placed beneath the epiglottis; a curved blade is placed into the vallecula above the epiglottis.



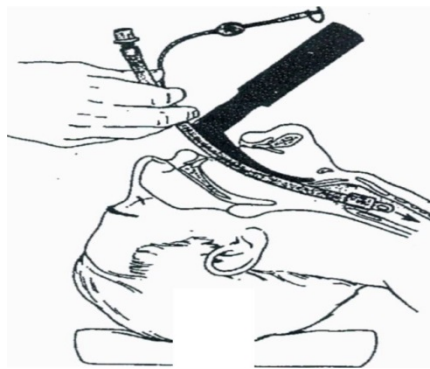
Caution! Traction should be applied only along the long axis of the laryngoscope handle as the laryngoscope lifts the tongue upward away from the larynx, revealing the glottic opening. A rocking or rotating motion of the blade and handle may damage teeth, gingiva, or lips. The base of the laryngoscope blade should never contact the upper teeth!

Visualize the vocal cords and glottic opening.



If the vocal cords and glottis cannot be visualized, it may be helpful for an assistant to grasp the thyroid cartilage between the thumb and index finger and exert pressure in the following sequence: Pressure is applied backward against the cervical vertebrae and then in an upward direction to shift the larynx superiorly. Additional pressure is applied to shift the thyroid cartilage no more than 2 cm to the right side of the patient's neck. (This procedure can be remembered by the acronym BURP: backward, upward, and rightward pressure on the thyroid cartilage).

Gently insert the endotracheal tube through the vocal cords, holding the tube/stylet with the right hand. The stylet, if angled, may interfere with passage of the tube into the trachea. Until resistance is encountered as the tube is advanced, consider having an assistant remove the stylet while the operator holds the endotracheal tube firmly in the glottic opening.



Carefully remove stylet and laryngoscope. The operator must continue to firmly hold the endotracheal tube; position the tube such that the external centimeter length markers on the tube show 21 cm (female) or 23 cm (male) adjacent to the front teeth. Inflate cuff.

To ensure proper position of the tube:

1. Inspect and auscultate chest to assure equal bilateral gas entry
2. Use qualitative CO₂ detector or monitor or esophageal detector device. Lack of color change with a qualitative CO₂ detector or low exhaled CO₂ may occur with a correctly placed tracheal tube in the patient with poor pulmonary perfusion.
3. Observe for condensation in the endotracheal tube during exhalation.
4. Listen for breath sounds through the endotracheal tube as the patient is breathing spontaneously.
5. Obtain chest radiograph (tube tip 2 to 3 cm above carina)
6. Secure endotracheal tube with tape or endotracheal tube stabilization device.

Basic Skills Qualification FAST (Focused Assessment with Sonography in Trauma) Exam

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Demonstrate ultrasound skills required to perform FAST examination in a trauma patient.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Explain the procedure and purpose to patient | | |
| Select the appropriate US probe | | |
| Select the appropriate examination | | |
| Identify presence/absence of fluid in the hepatorenal recess (Morrison's pouch) | | |
| Identify presence/absence of fluid in the perisplenic view | | |
| Identify presence/absence of fluid in the suprapubic window (Douglas pouch) | | |
| Identify presence/absence of pericardial fluid using subxiphoid view of the heart | | |
| Identify presence/absence of fluid in the hemithoraces | | |
| Identify presence/absence of pneumothorax in the anterior chest wall view | | |

Faculty: _____

Date: _____

Indications:

- Ultrasound evaluation of the torso in cases of trauma
- Includes subxiphoid window of the heart to demote pericardial effusion
- The FAST examination is looking for free intraperitoneal, pericardial and pleural fluid to assess for organ damage in a trauma patient.

Basic Skills Qualification Fetal Scalp Electrode (FSE) Placement

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Described two relative contraindications and two potential risk of FSEs | | |
| Explain to patient indication for FSE and placement | | |
| Demonstrate all steps necessary in placing FSE | | |
| Successfully places FSE | | |

Faculty: _____

Date: _____

Description: Internal fetal scalp electrode monitoring involves placing an electrode directly on the fetal scalp through the cervix. This test is performed to evaluate fetal heart rate and variability between beats, especially in relation to the uterine contractions of labor.

Prerequisites:

1. Fetal membranes are ruptured
2. Cervical is sufficiently dilated, at least 1-2 cm

Indications:

1. External monitoring is unable to be used (e.g. Maternal obesity)
2. Inability to obtain a continuous trace externally
3. The signal quality of external monitoring is poor
4. Confirm an abnormal fetal heart tracing

Contraindications:

1. Diagnosed or suspected previa, vasa previa, and uterine bleeding of undetermined origin
2. Infectious risks to fetus (i.e. active maternal herpes, HIV)

Materials:

1. Sterile gloves
2. FSE device

Preprocedure Education:

1. Explain indication for FSE to patient
2. Explain procedure to patient
3. Obtain verbal consent

Procedure:

1. Using a sterile technique, remove the FSE from its package leaving the wires locked in the retention notch at the top of the FSE.
2. Insert the FSE until the presenting part is contacted and ensure the guide tube end is held flat against the presenting part.
3. Press firmly against scalp and twist 3 turns clockwise
4. Tug gently to ensure firm placement
5. Release the wire from the retention notch and removed guide tube
6. Attached to leg adapter
7. Ensure proper functioning
8. Document placement up FSE in the chart

Removing the FSE:

1. Grasp the electric wires as close as possible to the fetal presenting part, turning them counter clockwise until the spiral tip is free from the fetal skin. DO NOT pull the spiral tip from the fetal skin. DO NOT pull the FSE wires apart.
2. Inspect the spiral tip to ensure that it is still attached to the FSE hub

Complications:

1. Lacerate maternal vagina or cervix (inadvertent maternal application)
2. Increased risk of chorioamnionitis or endometritis
3. Lacerate fetal scalp or misplacement of fetal scalp electrode
4. Needle electrode can break with retention of portion of needle in fetal scalp
5. Small increased risk of neonatal infection

Basic Skills Qualification Fluorescein Eye Exam

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|-------------------------------|-----------|------------|
| Describe indications for exam | | |
| Apply fluorescein to eye | | |
| Use of black light | | |
| Describe findings | | |
| Discuss care | | |

Faculty: _____

Date: _____

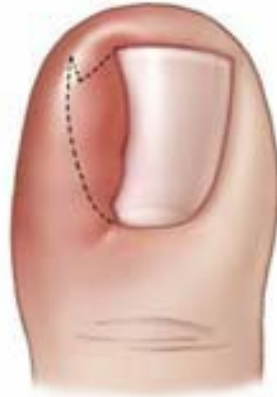
Fluorescein exam is used to evaluate for corneal injuries, i.e., abrasions, ulcerations, foreign body.

Equipment

- Saline or tetra Caine
- Fluorescein strip
- Black light
- Saline irrigation

1. Remove contacts if needed
2. Patient seated or lying
3. Apply drop off saline or tetra Caine to fluorescein strip
4. Apply to lower lid
5. Have patient blink
6. Examine with black light
7. Irrigate eye

Basic Skills Qualification Ingrown Toenail Removal



Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|----------------------------|-----------|------------|
| Informed consent | | |
| Anesthesia | | |
| Lift nail | | |
| Cut nail | | |
| Grasp nail | | |
| Ablate nail bed (optional) | | |
| Dress wound | | |
| Post-op instructions | | |

Faculty: _____

Date: _____

Indications:

- Onychocryptosis (ingrown nail)
- Onychomycoses (fungal infection)
- Chronic recurrent paronychia (inflammation)
- Onychogryposis (deformed nail)
- Traumatic deformation of the nail

Contraindications:

- Uncooperative patient
- Serious infection may need pretreatment with antibiotics
- Marginal vascular status of the digit
- These contraindications require clarification before anesthesia/procedure is started

Procedure:

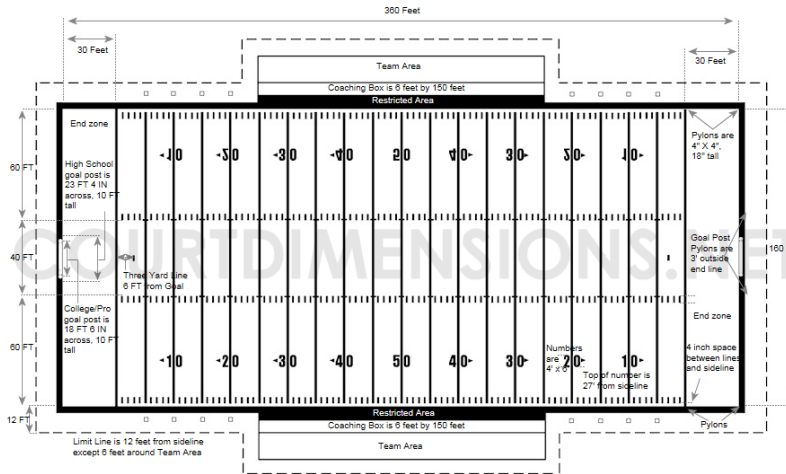
- Informed Consent: discussion of anesthetic choices, benefits and risks of removal, post-procedure expectations, and possible complications
- Provide adequate anesthesia: perform a digital block
 - a mixture of lidocaine and Marcaine may provide longer pain relief
 - ring anesthesia at the base of the toe may help along with numbing of the tip of the toe
- Remove nail:
 - Lift the nail plate off the nail bed using the appropriate tool
 - periosteal elevator or hemostat
 - Lift only the portion of the nail to be removed
 - There is a perceptible “give” when reaching the proximal edge of the nail
 - Use scissors to completely split the nail in a longitudinal direction to include the base of the nail that rests beneath the cuticle
 - Grasp nail with a hemostat or needle driver at the affected edge of the nail
 - Roll the affected edge away from the affected paronychia
 - Ensure all the affected nail has been removed
 - Curette the base
- Nail bed ablation: phenol (optional)
 - Cotton tipped swab applied to nail bed tissues
 - Amount of time phenol is applied varies by provider (30-180 seconds)
 - Swab the area with isopropyl alcohol to neutralize the phenol
- Dress the wound:
 - Use petroleum impregnated gauze and apply to the nail
 - Cover with gauze and wrap in coban
- Post procedure instructions:
 - Leave the applied dressing on for 24 hours
 - The patient may ambulate and wear shoes as comfort allows
 - Dressing may need to be soaked to remove
 - Thereafter, cover with Band-Aid as needed
 - Pain medication – acetaminophen or NSAIDS as appropriate

Basic Skills Qualification Injury Management

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____



| | Competent | Needs Work |
|---|-----------|------------|
| Demonstrates competence in diagnosis and management of: | | |
| -AC separation | | |
| -stingers and burners | | |
| -dislocation of shoulder | | |
| -potential sprains of ACL and MCL ligaments | | |
| -ankle sprains | | |
| -concussion and concussion-like syndromes | | |
| -finger dislocations and fractures | | |
| -suspected neck injury | | |

Faculty: _____

Date: _____

Basic Skills Qualification Intrauterine Pressure Catheter (IUPC)

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Described two relative contraindications and two potential risk of IUPCs | | |
| Explain to patient indication for IUPC and placement | | |
| Demonstrate all steps necessary in placing IUPC | | |
| Successfully places IUPC | | |

Faculty: _____

Date: _____

Description: An IUPC provides a reliable, quantifiable measure of uterine contraction frequency, duration, and strength.

Prerequisites:

1. Fetal membranes are ruptured
2. Cervical is sufficiently dilated, at least 1-2 cm

Indications:

1. External methods do not provide a clear tracing
2. To improve delineation of the relationship between the timing of fetal heart rate decelerations and contractions
3. To determine MVU's in cases of suspected labor dystocia or during labor induction and augmentation
4. To perform an amnioinfusion

Contraindications:

1. Diagnosed or suspected previa, vasa previa, and uterine bleeding of undetermined origin
2. Chorioamnionitis

Materials:

1. Sterile gloves
2. IUPC device

Preprocedure Education:

1. Explain indication for IUPC to patient
2. Explain procedure to patient
3. Obtain verbal consent

Procedure:

1. Open IUPC package
2. Put on sterile gloves
3. Perform cervical exam to confirm adequate cervical dilatation, ruptured membranes, and presenting part. Feel for either 10 o'clock or 2 o'clock position and maintain fingers on target areas
4. Insert catheter gently into uterus (10-14 cm) to the first mark on IUPC catheter. Observe for flashback of amniotic fluid within the catheter. Advance gently, about 45 cm, to the second mark on the catheter.
5. Removed guide tube and attacks to cable
6. Ensure proper functioning
7. Document placement of IUPC in chart

Complications:

1. Placement in extra membranous space between fetal membranes and uterine wall
2. Fetal or placenta trauma
3. Uterine perforation
4. Umbilical cord prolapse
5. Increased risk of maternal and/or fetal infection

Basic Skills Qualification IUD Insertion

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Pre-procedure education to patient—what will happen | | |
| Confirm all needed materials are present and set up appropriately | | |
| Aseptic/sterile technique maintained throughout | | |
| Confirm negative pregnancy test and GCCT (or consider obtaining GCCT), update pap if needed | | |
| Bimanual exam for uterine position, place speculum, adequately visualize cervix and prep cervix with betadine | | |
| Sound uterus – uses tenaculum or dilator as needed | | |
| Correctly deploy IUD following standard insertion protocol for IUD type | | |
| Cut strings to 3-5 cm | | |
| Post-procedure education to patient: -symptom control -return-to-care problems -follow-up -string check | | |

Prior to starting a medical procedure, the medical team stops for a Time-Out. The Time-Out is a deliberate pause in activity involving clear communication and verbal confirmation. The Time-Out is one element of Universal Protocol, designed to ensure that the appropriate steps are taken to operations and invasive procedures.

Time-Out steps:

1. Everything stops
2. Identify the patient using name and date of birth
3. Correct side and site marked as indicated if applicable.
4. Agreement on procedure to be done, as read from the informed consent document.
5. When two or more procedures are being performed on the same patient, and the person performing the procedure changes, perform a time-out before each procedure is initiated.

Documentation: “Time out was performed. Correct patient was identified, and patient verified the procedure and correct site and side.”

Faculty: _____

Date: _____

Indications:

Contraception

Menorrhagia or dysmenorrhea (Mirena)

Emergency contraception (Paraguard)

Contraindications:

Active STI

Pregnancy (when not used as EC)

Uterus < 6cm or >9cm

Undiagnosed AUB

Uterine distortion

Recent PIC

Copper allergy (Paraguard)

Basic Skills Qualification Large Joint Arthrocentesis/Injection - Knee

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.



Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Lists indications for arthrocentesis/injection | | |
| Discusses contraindications | | |
| Determines point of best access | | |
| Discusses decision to use/not use local anesthesia | | |
| Demonstrates appropriate sterile field | | |
| Orders appropriate ratio of anesthesia and corticosteroid | | |
| Inserts needle into joint atraumatically. Aspirates/injects as appropriate. | | |
| Collects samples and orders tests as appropriate | | |
| Discusses appropriate billing code | | |

Faculty: _____

Date: _____

Indications:

Diagnostic:

Differentiate between crystal arthropathies, such as gout and pseudogout, inflammatory and noninflammatory effusions, and hemarthroses.

Demonstration of fat globules in suspected fracture involving joint surface

Therapeutic:

Increased comfort by relief of tense effusion or hemarthrosis

Reduction of inflammatory process and pain with intra-articular corticosteroid

Contraindications:

Bleeding disorder or excessive anticoagulation

Superficial infection or cellulitis

Artificial joint

Immunocompromised patient with non-infected joint

Instructions:

1. Patient is placed in supine position with knee extended or flexed at 20 degrees if the lateral approach is selected or sitting with legs dangling over end of table at ninety degrees if an anterior approach is chosen.
2. In the case of a lateral approach, the patella is identified, and palpation is carried out to determine presence of effusion. The joint will be entered at the upper third of the patella, 1 cm lateral to the patella, through the supra-patellar recess at the superior patellar pole.
3. If an anterior approach is selected, the anterior joint line on either side of the patella tendon is palpated to determine effusion and easiest approach.
4. In either approach, the needle is directed toward the intracondylar notch
5. The planned site of entry may be marked with skin marker at this stage.
6. A local sterile field is created with antiseptic solution.
7. 1% Lidocaine may be injected along the proposed needle track, particularly if an 18-gauge or larger needle is used. (Evacuation of a hemarthrosis). If so, a 25 or 30-gauge needle may be used. A wheal can also be raised as an additional landmark.
8. The needle is directed toward the suspected effusion
9. In the case of a lateral approach, the medial aspect of the joint may be compressed to encourage collection of effusion at target site. This may also stabilize the joint for needle entry.
10. In the case of an anterior approach, the needle should be directed into the joint at approximately 20 degrees to the horizontal plane.
11. In either case, if indicated, fluid should be collected for diagnostic purposes.
12. In the case of tense effusions (usually hemarthrosis) large volumes of extraction - 50 mls at a time - may reduce pain and. Improve function.
13. If corticosteroid is to be injected, or if the sole purpose of the arthrocentesis is injection, the ratio of steroid to anesthetic solution should be 1:2. In the case of a knee joint, 10 mls may be injected.
14. At conclusion, injection site should be covered with a Band-Aid.

A video can be found here:

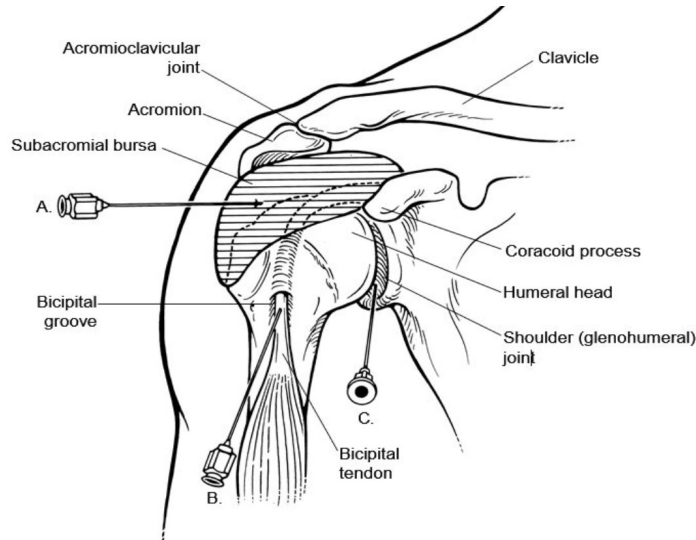
["New England Journal of Medicine - knee arthrocentesis"](#)

Basic Skills Qualification Large Joint Arthrocentesis/Injection – Shoulder

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____



| | Competent | Needs Work |
|---|-----------|------------|
| Lists indications for arthrocentesis/injection | | |
| Discusses contraindications | | |
| Determines point of best access | | |
| Discusses decision to use/not use local anesthesia | | |
| Demonstrates appropriate sterile field | | |
| Orders appropriate ratio of anesthesia and corticosteroid | | |
| Inserts needle into joint atraumatically. Aspirates/injects as appropriate. | | |
| Collects samples and orders tests as appropriate | | |

Faculty: _____

Date: _____

Indications:Diagnostic:

Differentiate between crystal arthropathies, such as gout and pseudogout, inflammatory and noninflammatory effusions, and hemarthroses.

Confirm site of pain apparently arising from shoulder.

Therapeutic:

Increased comfort by relief of tense effusion or hemarthrosis

Reduction of inflammatory process and pain with intra-articular corticosteroid

Facilitate Physical Therapy

Contraindications:

Bleeding disorder or excessive anticoagulation

Superficial infection or cellulitis

Artificial joint

Immunocompromised patient with non-infected joint

A posterior approach is preferred and demonstrated. An anterior approach, lateral to coracoid process, may also be used.

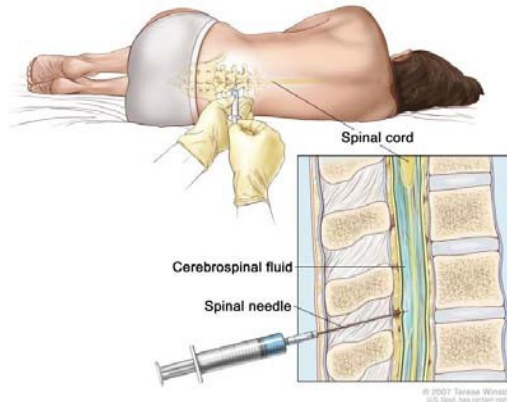
Instructions:

1. Patient is seated with the arm dangling at the side.
2. The following surface anatomy landmarks are identified: spine of the scapula, anterior and posterior ends of acromion, coracoid process.
3. The planned site of entry may be marked with skin marker or ballpoint pen at this stage. This is two finger breadths below, and two finger breadths medial to, the postero-inferior edge of the acromion.
4. A local sterile field is created with antiseptic solution.
5. 1% Lidocaine may be injected along the proposed needle track. Aa 25 or 30-gauge needle may be used for this. A wheal can also be raised as an additional landmark.
6. The needle, 20 gauge and 2.5", is directed toward the coracoid process.
7. If indicated, fluid should be collected for diagnostic purposes.
8. If corticosteroid is to be injected, or if the sole purpose of the arthrocentesis is injection, the ratio of steroid to anesthetic solution should be 1:2. 5 - 10 mls may be injected.
9. At conclusion, injection site should be covered with a Band-Aid.

A video is available here:

["Arthrocentesis - shoulder joint, posterior approach"](#)

Basic Skills Qualification Lumbar Puncture



Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Informed consent: can state contraindications and describe risks, benefits, alternatives and procedure | | |
| Positioning: Lateral decubitus, position, knee-chest, neck flexed, lower lumbar spine should be flexed with the back perfectly perpendicular to the edge of a bed | | |
| Identify anatomy of the lumbar spine correctly | | |
| Sterile technique, universal precaution | | |
| Selects and draws appropriate anesthetic, typically 1% lidocaine without epinephrine | | |
| Stylet and Spinal needle insertion | | |
| Place 3-way stopcock and manometer, measure open pressure | | |
| CSF collection in 4 tubes | | |
| Remove stylet and spinal needle, place bandage over the puncture site | | |

Prior to starting a medical procedure, the medical team stops for a Time-Out. The Time-Out is a deliberate pause in activity involving clear communication and verbal confirmation. The Time-Out is one element of Universal Protocol, designed to ensure that the appropriate steps are taken to operations and invasive procedures.

Time-Out steps:

1. Everything stops
2. Identify the patient using name and date of birth
3. Correct side and site marked as indicated if applicable.
4. Agreement on procedure to be done, as read from the informed consent document.
5. When two or more procedures are being performed on the same patient, and the person performing the procedure changes, perform a time-out before each procedure is initiated.

Documentation: "Time out was performed. Correct patient was identified, and patient verified the procedure and correct site and side."

Faculty: _____

Date: _____

Lumbar Puncture (Adult)

Consent

Indications:

- Suspected CNS infection
- Suspected subarachnoid hemorrhage
- Therapeutic reduction of CSF pressure
- Sampling of CSF for any other reason

Contraindications:

- Local skin infections over proposed puncture site
- Uncontrolled bleeding diathesis
- Lack of patient cooperation

Relative contraindications:

- Raised intracranial pressure (ICP)
- Suspected spinal cord mass or intracranial mass lesion

Other considerations:

- Spinal column deformities (may require fluoroscopic assistance)

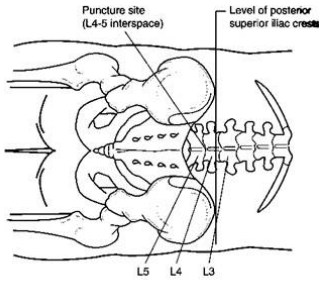
Risks:

- Headache: up to 40% with Quincke needle, 5% with Sprotte or Whitacre needle
- Infection, lower back pain, nerve root irritation, bleeding, spinal hematoma, cranial neuropathy, herniation, are rare.

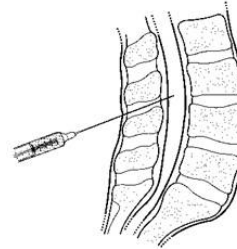
You will be expected to demonstrate the following:

1. Assess indications for procedure and obtain informed consent as appropriate
2. Explain procedure to the parent/guardian (risks, benefits, alternatives)
3. Prepare equipment/field; prepare the patient, light the area
4. Positioning
 - Place the patient in the lateral decubitus position lying on the edge of the bed and facing away from operator.
 - Place the patient in a knee-chest position with the neck flexed.
 - The lower lumbar spine should be flexed with the back perfectly perpendicular to the edge of a bed.
 - The hips and legs should be parallel to each other and perpendicular to the table.
 - The patient's head should rest on a pillow, so that the entire cranio-spinal axis is parallel to the bed.

5. Locate landmarks: between spinous processes at L4-5, L3-4 levels. (See [1]) On obese patients, find the sacral promontory; the end of this structure marks the L5-S1 interspace. Use this reference to locate L4-5 for the entry point. You will aim the needle towards the navel.



1] Anatomy of lumbar spine showing sites for dural puncture



[2] Angling the needle so it passes between the spinous processes of the vertebrae.

6. Prep and drape the area after identifying landmarks.

7. Use lidocaine 1% with or without epinephrine to anesthetize the skin and the deeper tissues under the insertion site.

8. Assemble needle and manometer. Attach the 3-way stopcock to manometer.

9. Insert stylet, then the spinal needle (bevel-up if Quincke needle) through the skin and advance through the deeper tissues.

- A slight pop or give is felt when the dura is punctured.
- Angle of insertion is on a slightly cephalad angle, between the vertebra (see [2]).
- If you hit bone, partially withdraw the needle, reposition, and readvance.

10. When CSF flows, attach the 3-way stopcock and manometer. Measure ICP...this should be 20 cm or less.

- Pressure reading is not reliable if the patient is in the sitting position.

11. If CSF does not flow, or you hit bone, withdraw needle partially, recheck landmarks, and re-advance

12. Once the ICP has been recorded, remove the 3-way stopcock, and begin filling collection tubes 1-4 with 1-2 ml of CSF each.

After tap, remove stylet and the needle, and place a bandage over the puncture site. Instruct patient to remain lying down for 1-2 hours before getting up.

Basic Skills Qualification Lung Ultrasound

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Demonstrate the Bat's wing sign | | |
| Demonstrate pleural sliding | | |
| Demonstrate A-lines | | |
| Demonstrate the BLE points | | |
| Demonstrate Liver, Diaphragm and Pleural space in a single view | | |
| Demonstrate the "Curtain Sign" | | |
| Demonstrate Liver, Diaphragm and Pleural space from PLAPS point | | |

Faculty: _____

Date: _____

Basic Skills Qualification Musculoskeletal Ultrasound I

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____



| | Competent | Needs Work |
|---|-----------|------------|
| Understands, and can select/apply: | | |
| -appropriate program selection | | |
| -appropriate transducer selection | | |
| -appropriate frequency selection | | |
| -appropriate depth selection | | |
| -appropriate focal zone selection and positioning | | |
| -appropriate brightness selection | | |
| -appropriate choice of map | | |
| -appropriate use of compound harmonic imaging | | |
| -transducer handling | | |

Faculty: _____

Date: _____

Explanation

Program

Ultrasound machines are packaged with a collection of factory settings or 'programs' which vary from body part or type of imaging. Additionally, user settings can be saved as protocols. The first step is to choose the appropriate program - in our current use, 'MSK' and one of its sub-programs.

Transducer

Transducers are built for specific purposes - linear probes for high definition, curvilinear probes for deeper tissues, sector probes with small footprints to avoid rib etc. In most instances, MSK will exploit linear probes for their high definition, but not invariably. For example, the hip may be sufficiently deep to require a curvilinear probe.

Frequency selection

The higher the frequency, the shorter the wavelength. (Basic physics). The shorter the wavelength, the higher the resolution - or ability to distinguish two echoes as separate rather than one. However, the higher the frequency, the more it is attenuated by passage through tissue - a trade-off. Consequently, the highest frequency compatible with tissue transmission and depth is usually selected.

Depth selection

The best resolution is usually in the image mid-field. In fact, in machines that minimize operator adjustment such as Sonosite, this is the rule. Consequently, the depth should be adjusted to place the area of interest at mid-depth.

Focal zone and positioning

The generated ultrasound beam is not of uniform thickness but is electronically manipulated to have a narrow waist or focal zone. This zone should be placed at the point of maximum interest. Multiple focal zones can be placed, although there may be disadvantages with this, discussed later.

Brightness

This is an important consideration. Experts insist on low ambient light levels although this may be inconvenient. It is said that beginners invariably 'over-boost' the image.

Map choice

The brightness key allows for two map choices which is a matter of personal preference.

Compound harmonic imaging (CHI)

Tissue reflects signals at twice the sending frequency. For example, if the transmit beam has a frequency of 2 megahertz, it will be returned at 4 megahertz. When harmonic imaging is enabled, the probe listens at twice the frequency. This gives improved imaging, but sometimes worsens the deepest images. Trial and error will be helpful.

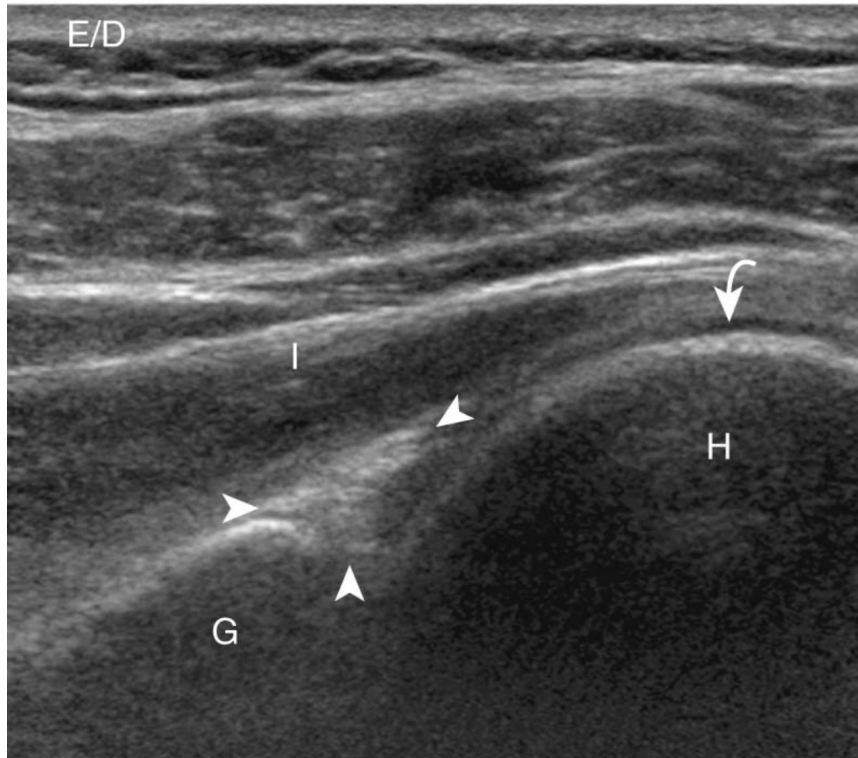
Transducer handling

This is critical, particularly in musculoskeletal imaging, where the incident beam should be 90 degrees, with a tolerance of about 3 degrees on either side. Lack of insonence cause anisotropy, discussed later, and is a common cause of image artifact. Transducer should be held in a "pen type" grip, and the ulnar border of the hand, or ulnar two fingers, should rest on the skin for stability.

Basic Skills Qualification Musculoskeletal Ultrasound II

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.



Resident: _____

| | Competent | Needs Work |
|-------------------------------|-----------|------------|
| Can identify and demonstrate: | | |
| -muscle | | |
| -articular cartilage | | |
| -ligament | | |
| -peripheral nerve | | |
| -tendon | | |

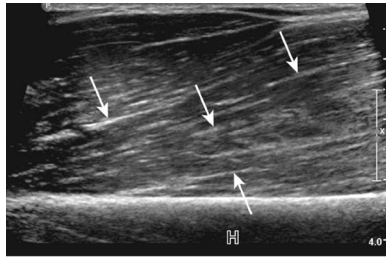
Faculty: _____

Date: _____

Explanation

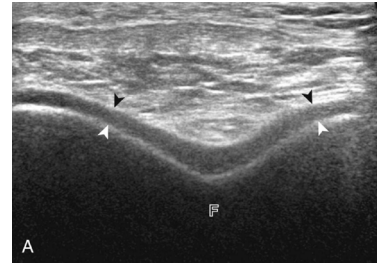
Muscle

- shows hypoechoic muscle fibers and intervening hyperechoic fibroadipose septa particularly in long axis.



Articular cartilage

-shows hypoechoic, regular shadow contasting with underlying hyperechoic bone.

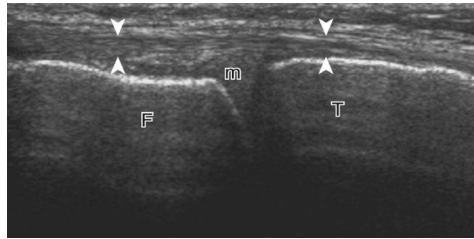


Ligament

-compact fibrillation echotexture

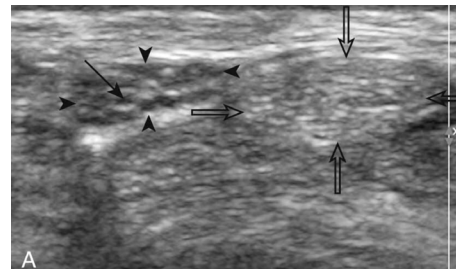
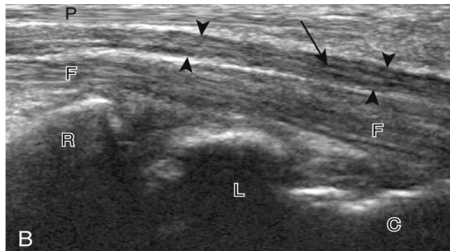
Peripheral nerve

- hypoechoic nerve fascicles on short axis



Tendon

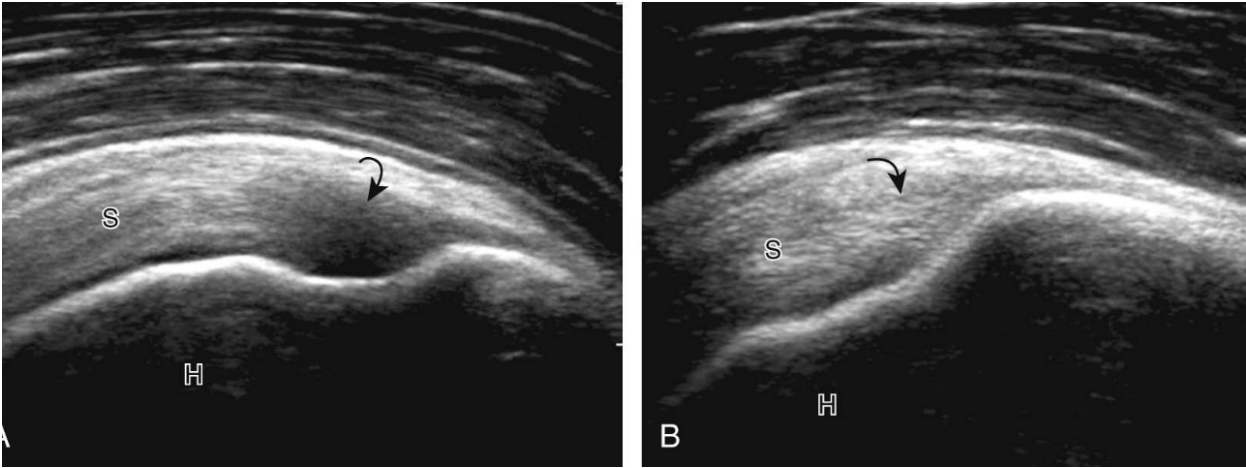
-fibrillation, parallel echotexture



Basic Skills Qualification Musculoskeletal Ultrasound III

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.



Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Can identify and demonstrate following artifacts: | | |
| -anisotrophy | | |
| -shadowing, posterior acoustic | | |
| -shadowing, refractile | | |
| -increased through transmission | | |
| -reverberation artifact | | |
| -comet tail artifact | | |
| -ring down artifact | | |

Faculty: _____

Date: _____

Explanation

Anisotropy

When a tendon is imaged perpendicular to the insonent beam, a characteristic hyperechoic fibrillation structure is seen. However, with deviation from 90 degrees, as little as 5 degrees, normal hyperechoic appearance is lost. This 'anisotropy' involves tendons, ligaments, and muscle to a lesser extent.

Shadowing, posterior acoustic

This occurs when the beam is reflected or absorbed with a resulting anechoic area extending deep from the involved interface. Shadowing interfaces include bone, calcification and some foreign bodies.

Shadowing, refractile

This shadowing may occur at the edge of some structures, such as at the end of a torn Achilles or patellar tendon.

Increased through transmission

...occurs when fluid and solid, soft tissue tumors such as peripheral nerve sheath tumors, and tendon sheath giant cell tumors are imaged. The less attenuated beam will make the deeper soft tissues appear relatively hyperechoic.

Reverberation artifact

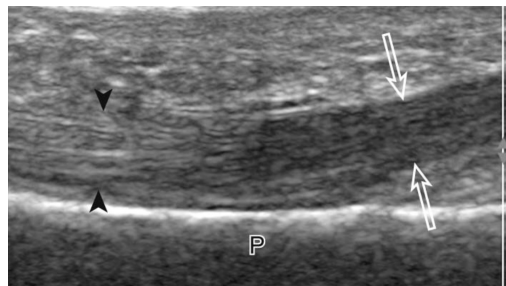
...occurs when the surface of an object is smooth and flat. The sound beam reflects between the smooth surface and the transducer producing a series of linear reflective echoes that extend deep to the structure.

Comet tail artifact

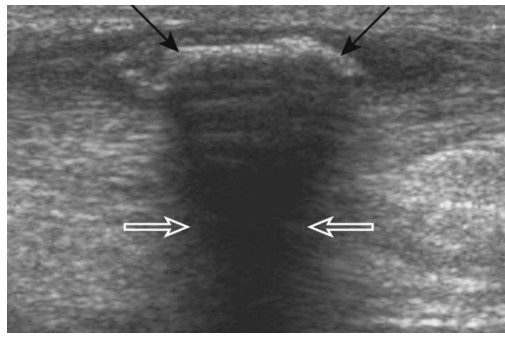
A variety is seen with soft tissue gas when a segment of posterior bright echoes which narrow progressively further from the artifact source.

Ring down artifact

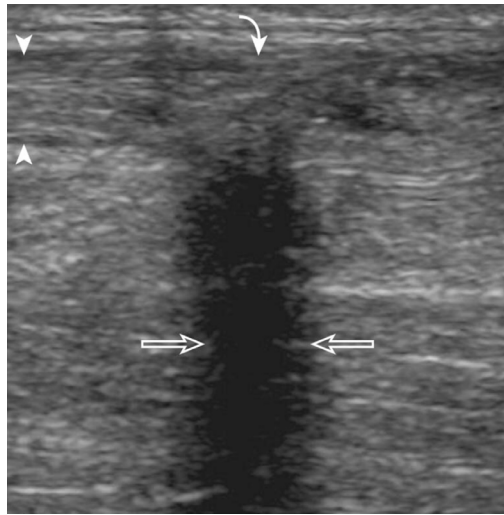
A form of reverberation is ring down artifact, occurring deep to metal hardware, and more continuous deep to the structure creating them.



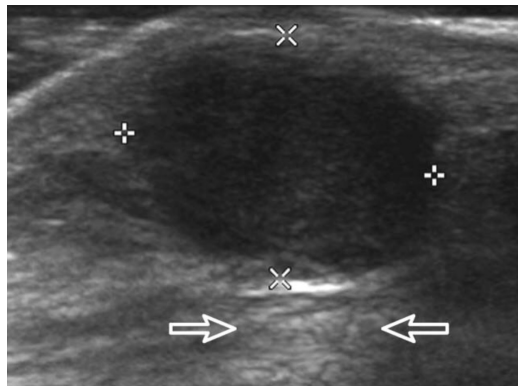
Anisotropy

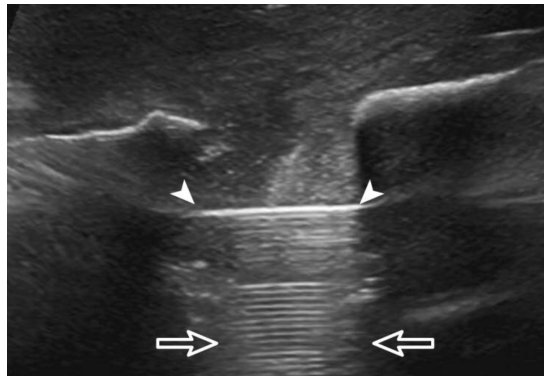


Shadowing, posterior acoustic

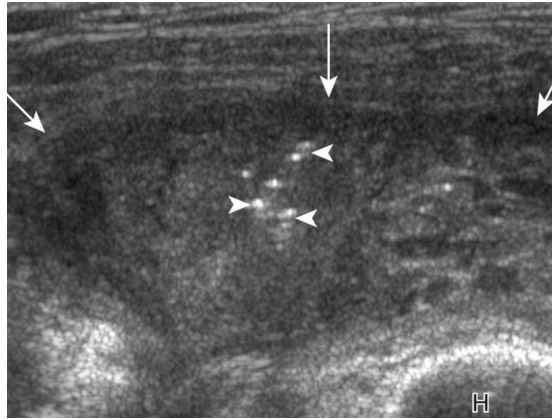


Shadowing, refractile
Increased through transmission

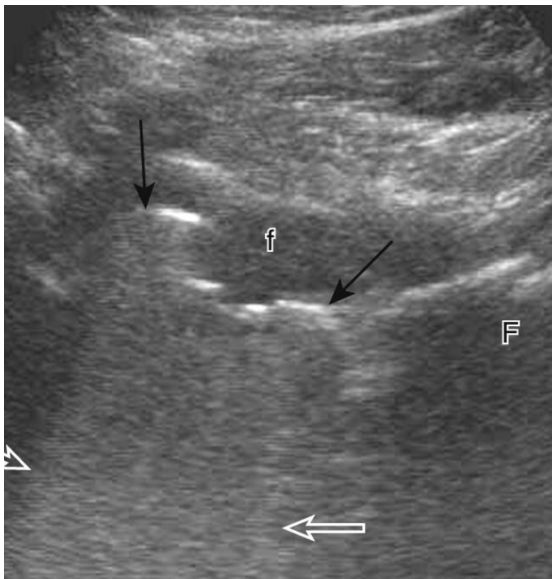




Reverberation artifact



Comet tail artifact



Ring down artifact

Basic Skills Qualification Musculoskeletal Ultrasound - Ankle

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Can identify and demonstrate following: | | |
| -calcaneofibular ligament | | |
| -anterior talofibular ligament | | |
| -peroneus brevis and longus at lateral malleolus, trace proximally and distally, short and long axis | | |
| -anterior tibiotalar joint space | | |
| -tibialis anterior, short and long axis | | |
| -extensor hallucis longus, short and long axis | | |
| -extensor digitorum, short and long axis | | |
| -anterior tibial artery and veins and deep peroneal | | |
| -tibialis posterior at medial malleolus, proximal & distal | | |
| -flexor digitorum, short and long axis | | |
| -tibialis artery, veins and nerve | | |
| -flexor hallucis longus, short and long axis | | |
| -spring ligament | | |

Faculty: _____

Date: _____

References:

Fundamentals of Musculoskeletal Ultrasound, Jon A. Jacobson
 Practical Musculoskeletal Ultrasound, Eugene G. McNally

Basic Skills Qualification Musculoskeletal Ultrasound - Elbow

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Can identify and demonstrate following: | | |
| - Anterior structures at antecubital fossa, including pronator teres, brachial artery, median nerve, brachialis, biceps tendon, radial nerve, brachioradialis | | |
| - ulnar collateral ligament and common flexor tendon | | |
| - radial collateral ligament and common extensor tendon | | |
| - olecranon fossa, fat pad, and triceps insertion | | |
| - olecranon, medial epicondyle, and ulnar nerve | | |
| - ulnar nerve, Osborne's fascia, ulnar and humeral heads of flexor carpi ulnaris | | |

Faculty: _____

Date: _____

References:

Fundamentals of Musculoskeletal Ultrasound, Jon A. Jacobson
Practical Musculoskeletal Ultrasound, Eugene G. McNally

Basic Skills Qualification Musculoskeletal Ultrasound - Hip

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Can identify and demonstrate following: | | |
| - appropriate transducer position to demonstrate hip joint, including identification of major vessels | | |
| - femoral head/neck junction and adjacent structures | | |
| - iliopsoas tendon | | |
| - appropriate transducer position to demonstrate rectus-adductor apponeurosis | | |
| - dynamic imaging of antero-inferior abdominal wall | | |
| - greater trochanter including anterior and lateral facets, gluteus medius and maximus and tendons, and iliotibial band | | |

Faculty: _____

Date: _____

References:

Fundamentals of Musculoskeletal Ultrasound, Jon A. Jacobson
Practical Musculoskeletal Ultrasound, Eugene G. McNally

Basic Skills Qualification Musculoskeletal Ultrasound - Knee

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Can identify and demonstrate following: | | |
| -quadriceps tendon, insertion and musculotendinous junction, two planes | | |
| -suprapatellar recess, quadriceps & prefemoral fat pads | | |
| -patellar tendon, origin & insertion, two planes | | |
| -Hoffa fat pad | | |
| -medial joint recess, patellofemoral retinaculum & lig | | |
| -lateral joint recess, patellofemoral retinaculum | | |
| -trochlear and femoral condyle cartilage | | |
| -medial collateral lig & proximal/distal attachments including per anserinus nerve | | |
| -anterior horn and body of medial meniscus | | |
| -Gerdy tubercle, proximal & distal iliotibial band | | |
| -anterior horn of lateral meniscus | | |
| -lateral collateral lig & proxial/distal attachments | | |
| -biceps femoris insertion and musculoskeletal junction | | |
| -common peroneal nerve | | |
| -medial & lateral gastrocnemius and soleus | | |
| -medial gastrocnemius and tendon | | |
| -tendons of semimembranosis & semitendinosis | | |
| -Baker's cyst (if present) | | |

Faculty: _____

Date: _____

References:

Fundamentals of Musculoskeletal Ultrasound, Jon A. Jacobson
Practical Musculoskeletal Ultrasound, Eugene G. McNally

Basic Skills Qualification Musculoskeletal Ultrasound - Shoulder

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Can identify and demonstrate following: | | |
| -bicipital groove & tendon distal to pectoralis major tendon, short and long axis | | |
| -rotator interval | | |
| -subscapularis, short and long axis | | |
| -supraspinatus, short and long axis, including biceps tendon and interface with, and including, infraspinatus | | |
| -medial joint recess, patellofemoral retinaculum & lig | | |
| -lateral joint recess, patellofemoral retinaculum | | |
| -trochlear and femoral condyle cartilage | | |
| -medial collateral lig & proximal/distal attachments including per anserinus nerve | | |
| -AC joint, SASD bursa and dynamic testing for impingement | | |
| -infraspinatus, teres minor, posterior glenoid labrum | | |
| -AC joint, Subacromial and Subdeltoid bursa and dynamic testing for impingement | | |

Faculty: _____

Date: _____

References:

References:

Fundamentals of Musculoskeletal Ultrasound, Jon A. Jacobson
Practical Musculoskeletal Ultrasound, Eugene G. McNally

Basic Skills Qualification Musculoskeletal Ultrasound - Wrist

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Can identify and demonstrate following: | | |
| - Lister's tubercle | | |
| - six extensor compartments | | |
| - tendon of compartment III crossing tendons of compartment II (distal intersection syndrome) | | |
| - scaphoid and lunate and dorsal intrinsic ligaments | | |
| - TFCC | | |
| - median nerve at carpal tunnel and at widest part of pronator quadratus | | |
| - Guyon's canal | | |
| - A1 tendon pulley | | |

Faculty: _____ **Date:** _____

An approach to wrist pathology

Suggested preparation: 'Visible body - muscle', 'Anatomy.tv' or 'Gray's Anatomy for students'.

Traditional hierarchy of imaging

- 1 X-Ray
 - Fracture
 - Dislocation/subluxation
- 2 Ultrasound
 - DeQuervain's tenosynovitis,
 - Intersection syndrome,
 - TFCC symptoms,
 - Carpal tunnel syndrome,
 - Injury to intrinsic ligaments
- 3 MRI
 - Suspected stress reaction or fracture including scaphoid
 - Scapholunate dissociation
 - Suspected TFCC injury
 - Poorly defined symptoms

Suggested sequence

In the case of the wrist where a majority of common pathologies are relatively superficial, focused ultrasound is effective and rapid and can be used effectively in dynamic examination. The wrist, like the hand and fingers, lends itself to focused examination. Suspected pathology should be viewed in two axes. It should be pointed out that ultrasound examination is least useful when symptoms are non-specific. For a 'wide scan' MRI is more efficient.

Basic Skills Qualification Nexplanon (etonogestrel implant) Insertion

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Describe the appropriate timing for placement | | |
| Identify contraindications and common side effects | | |
| Explain to patient the indication(s) for Nexplanon and the placement | | |
| Obtains written consent and performs appropriate time out | | |
| Demonstrate all steps necessary in placing Nexplanon | | |
| Successfully places FSE | | |

Prior to starting a medical procedure, the medical team stops for a Time-Out. The Time-Out is a deliberate pause in activity involving clear communication and verbal confirmation. The Time-Out is one element of Universal Protocol, designed to ensure that the appropriate steps are taken to operations and invasive procedures.

Time-Out steps:

1. Everything stops
2. Identify the patient using name and date of birth
3. Correct side and site marked as indicated if applicable.
4. Agreement on procedure to be done, as read from the informed consent document.
5. When two or more procedures are being performed on the same patient, and the person performing the procedure changes, perform a time-out before each procedure is initiated.

Documentation: “Time out was performed. Correct patient was identified, and patient verified the procedure and correct site and side.”

Faculty: _____

Date: _____

Description: The Nexplanon (etonogestrel implant) is a single-rod progestin contraceptive placed subdermally in the inner upper arm for long-acting (three years) reversible contraception in women.

Prerequisites:

- Successful completion of Nexplanon training course

Indications:

- Long term reversible contraception

Contraindications:

Standard contraindications to use of hormonal contraceptives are:

1. Known or suspected pregnancy
2. Current or past history of thrombosis or thromboembolic disorders
3. Hepatic tumor or active liver disease
4. Undiagnosed abnormal genital bleeding
5. Known or suspected breast cancer or history of breast cancer
6. Hypersensitivity to any component of the method

Materials:

1. Sterile drape, sterile gloves, antiseptic solution, and sterile marker (optional)
2. Local anesthesia
3. Sterile, preloaded Nexplanon inserter
4. Pressure bandage (Kerlex)

Preprocedure Education:

1. Explain indication for Nexplanon to patient
2. Explain procedure to patient
3. Obtain written consent
4. Perform appropriate time out with nursing staff

Procedure:

1. The implant can be inserted at any time as long as the clinician is reasonably certain that the patient is not pregnant. An appropriately timed pregnancy test (at least two weeks after the last episode of sex) can be obtained if the absence of pregnancy is uncertain.
2. Have the woman lying on her back on the examining table with her non-dominant arm flexed at the elbow and externally rotated so that the wrist is parallel to her ear or the hand is position next to her head. This allows full exposure of the insertion site at the crease between the biceps and triceps muscles.
3. Identified the insertion site, which is at the inner side of the non-dominant upper arm about 8-10 cm above the medial epicondyle of the humerus.
4. Optional: Make two marks with a sterile marker- First, mark the spot where the Nexplanon will be inserted and second, mark a spot a few centimeters proximal to the first to serve as a guide during insertion.
5. Cleaning the insertion site with an antiseptic solution and apply sterile gloves.
6. Anesthetize the insertion area by injecting 2 mL of 1% lidocaine under the skin along the planned insertion tunnel.
7. Removed the sterile pre-loaded Nexplanon applicator from its package.
8. Hold the applicator just above the needle at the texture surface area. Remove the transparent protection cap by sliding it horizontally in the direction of the arrow away from the needle.
9. With your freehand, stretch the skin around the insertion site with the thumb and index finger.
10. Puncture the skin with the tip of the needle angled about 30°.
11. Lower than Nexplanon applicator to a horizontal position. While lifting the skin with the tip of the needle, slide the needle to its full length. You may feel slight resistance but did not exert excessive force.
12. Keep the applicator in the same position with the needle inserted to its full length. Unlock the purple slider by pushing it slightly down. Move the slider fully back until it stopped. The purple tip of the obturator should be visible in the inserter upon removal.

13. Always verify the presence of the Nexplanon in the woman's arm immediately after insertion by palpation. You should be able to palpate both ends of the Nexplanon and confirm the presence of the 4 cm rod.
14. Place a small adhesive bandage over the insertion site. Request that the woman palpate the implant.
15. Apply a pressure bandage with sterile gauze to minimize bruising. This may be removed in 24 hours.
16. Provide the patient with the User Card that accompanies the Nexplanon.
17. Abstinence or back-up contraception is suggested for the first 7 days after insertion if the implant is inserted >5 days since the beginning of the patient's last menstrual period.

Complications:

Complications are rare, reported in 0.3 to 1 percent of insertions. Potential complications include infection, hematoma formation, local irritation or rash, expulsion, and allergic reactions. The implant may migrate a short distance (less than 2 cm) over time.

Basic Skills Qualification Office Spirometry



Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Discuss procedure indications | | |
| Coach good effort for 6 seconds of exhalation | | |
| Obtain 3 acceptable trials | | |
| Interpret FEV1, FVC, FEV1/FVC ratio | | |
| Administer bronchodilator and repeat testing (optional) | | |

Faculty: _____

Date: _____

Indications:

- Identify pulmonary disease and assess severity
- Monitor for disease progression and assess response to treatment
- Establish baseline prior to initiation of medications with pulmonary toxicity
- Risk stratification for surgical patients
- Evaluate for occupational or Social Security disability

Contraindications:

- Symptoms that would affect performance (nausea/vomiting, vertigo)
- Hemoptysis of unknown etiology
- Pneumothorax
- Recent abdominal, thoracic or eye surgery
- Recent MI or unstable angina
- Thoracic aneurysm

Technique:

- Discuss procedure in detail to patient
- Fit mouthpiece into spirometer, place disposable nose clip (or plug nose with hand)
- Have patient exhale as deeply as possible with spirometer away from mouth, insert mouthpiece into mouth with teeth clamped and lips closed around it to form seal
- Have patient exhale as hard and fast as possible, continuing for a full 6 seconds (coaching is key)
- Inhale fully at the end of expiration to create a full flow/volume loop (optional)
- Repeat until spirometer confirms 3 acceptable results
- Interpret and explain results to patient

Basic Skills Qualification One-hand Knot Tying

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Demonstrates all steps necessary to proficiently tie a secure one-hand know | | |

Faculty: _____

Date: _____

Procedure:

One-Hand Technique

https://warwick.ac.uk/fac/med/study/ugr/mbchb/societies/surgical/events/suture_workshop/surgical_square_knot.pdf

Basic Skills Qualification Pap Smear Collection

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Performs the test for an appropriate indication | | |
| Explains to patient the procedure | | |
| Demonstrate appropriate gentle insertion of speculum | | |
| Properly obtains specimen sample | | |
| Demonstrates appropriate follow up recommendations | | |

Faculty: _____

Date: _____

Description: The pap smear is an effective tool for cervical cancer screening and detection.

Indications:

1. Screening for cervical cancer
2. DES-exposed offspring
3. Abnormal vaginal bleeding or discharge
4. Post treatment for follow up of cervical dysplasia or carcinoma
5. Visible or palpable lesion of the cervix

Contraindications:

1. No absolute contraindications
2. Relative contraindication may be vaginal bleeding. Clinician must weight benefits versus risk of poor sample under these circumstances.

Materials:

1. Drape for patient
2. Gloves
3. Various sized speculums
4. Light for speculum
5. Water soluble lubricant
6. Large swab for gently blotting excess discharge or bleeding
7. Cytobrush
8. Collection container properly label with patient identifiers

Preprocedure Education:

1. Explain indication for the pap smear to patient
2. Explain procedure to patient
3. Ensure patient is modestly draped

Procedure:

1. Place patient in dorsal lithotomy position with appropriate draping
2. Proper gloving should occur at this time
3. Inspect external genitalia for any abnormalities
4. Ensure speculum light is on
5. Place a small amount of water-soluble lubricant onto speculum
6. Gently insert speculum by placing a hand on the inner thigh and then proceeding to insert the speculum into the vagina. Carefully advance the speculum by applying gentle pressure posteriorly.
7. Ensure adequate visualization of cervix. Identify transformation zone and evaluate for any cervical lesions such as leukoplakia, cyst, etc.
8. Obtain pap smear by using the Cytobrush. Broom is inserted into the endocervical canal and rotated five times in one direction. Make sure to include the transformation zone during the sampling.
9. Broom is removed and placed into collection container. Upon completion of the pap smear, the brush is vigorously swished in the container to transfer sample to the container fluid. Make sure container is properly labelled.
10. Slowly remove the speculum and inspect the vagina for any abnormalities during removal of the speculum
11. Timely notification to the patient of the pap smear results and recommended follow up based on most recent pap smear guidelines

Complications:

The pap smear is a screen test. False negative can occur. More frequent screening or colposcopy may be indicated based upon patient history, physical exam finding or risks of malignancy.

Basic Skills Qualification Perineal Laceration Repair



Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Informed consent: Clearly communicates with the patient regarding need for repair and what to expect; informal consent obtained | | |
| Assures adequate anesthesia, either through epidural anesthesia or local infiltration | | |
| Thoroughly inspects the vaginal, cervical, and perineal area; rules out injury to anal sphincter or mucosa (involves help if present) | | |
| Selects the appropriate suture and instruments needed. Demonstrates proper knot-tying technique and safe use of the needle | | |
| Demonstrates appropriate re- approximation of tissues, with appropriate use of running, locking, and subcuticular suturing as needed. | | |
| Explains post-procedure expectations to patient regarding pain, sutures, healing | | |

Faculty: _____

Date: _____

First and Second-Degree Laceration Repair



Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

- Clearly communicates with the patient regarding need for repair and what to expect. Informal verbal consent obtained, as formal written consent is not required. Communicates appropriately with patient throughout the procedure as needed.
- Assures adequate anesthesia, either through epidural anesthesia or local infiltration of lidocaine or marcaine.
- Performs a thorough inspection of bleeding sites and area requiring repair, including cervix, vagina, perineum and rectum.
- Identifies any involvement of the anal sphincter or rectal mucosa and elicits assistance if needed.
- Is able to identify the anatomy and show the re- approximation needed.
- Selects the appropriate suture and instruments needed. Demonstrates proper knot-tying technique, and safe use of the needle.
- Identifies the apex and places an appropriate anchoring stitch. Closes the vaginal laceration in locking stitches for hemostasis, or running if preferred.
- Re-approximates the hymen, and closes any deep space in the perineum.
- On the perineum, performs subcuticular stitches so that there is proper cosmesis and limited areas for suture to irritate patient. Buries the final stitch appropriately.
- After the procedure, explains to the patient what she can expect for pain, healing, and complications to watch for (hematoma, infection, bleeding, discharge). Answer any questions the patient has.

Basic Skills Qualification Point-of-Care Ultrasound

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Currently, the resident should demonstrate proficiency with both the handheld Vscan and GE Logic. The transducers chosen reflect the need to understand footprint and frequency while avoiding needless duplication of effort.

Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Identify A lines – sector probe (Vscan) – C1-5 and L4-12t (logiq e) | | |
| Identify lung sliding – linear and sector probe (Vscan) – C1-5 and L4-12t (logiq e) | | |
| Obtain windows of: | | |
| Cardiac – sector probe (Vscan) | | |
| Aorta – sector probe (Vscan) | | |
| IVC | | |
| Liver, kidney, diaphragm: | | |
| Spleen, kidney, diaphragm – sector probe (Vscan) | | |
| Gallbladder – sector probe (Vscan) | | |
| Bladder | | |

Faculty: _____

Date: _____

Basic Skills Qualification Presentation Basics

Evaluation Process

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Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Understands connection between auditory and visual retention | | |
| Knowledgeable of average attention span | | |
| Understands concept of major points and illustrations of each point | | |
| Links learning issues appropriately | | |
| Has appropriate introduction and recapitulation | | |
| Controls complexity of topic under discussion | | |
| Does NOT violate font legibility standards | | |

Faculty: _____

Date: _____

Background

Audience:

- Remembers more when presented with less
- Remembers most when material relates to a patient-at-hand
- Adult attention span is 10 - 15 minutes
- Optimal learning is 20 minutes of long lecture

- 20% of what is heard is retained
- 30% of what is seen is retained
- 50% of what is seen and heard is retained

Consequently:

- Tell them what you will tell them
- Tell them and show them
- Tell them what you told them

- Maximum of 4 points
- 2 - 3 illustrations per point
- Connecting piece between each section
- Introduction and Recap at end

Covering Too Much

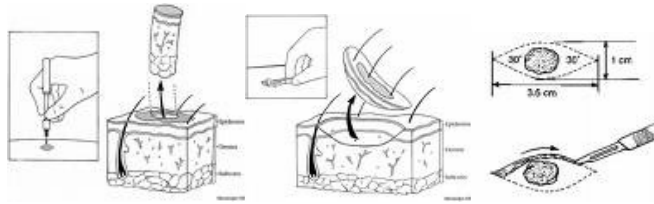
- The most common problem
- Example: hyponatremia, way too much
- Better method:
- initial approach to hyponatremia, or differential diagnosis of euvolemic hyponatremia

Get guidance on topics and resources

Most Important!

- Primary font - 38 or higher
- Secondary font - 32 or higher
- Do not violate or don't expect audience retention to be good**

Basic Skills Qualification Common Skin Procedures: Punch Biopsy Shave Biopsy/Excision Excisional Biopsy



Evaluation Process

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Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Informed consent obtained | | |
| Identifies lesion and describes appropriate rationale for technique choice (punch, shave, or excision) | | |
| Selects and administers appropriate anesthetic | | |
| Demonstrates good technique for punch biopsy | | |
| Demonstrates good technique for shave biopsy | | |
| Demonstrates good technique for excisional biopsy | | |
| Sends specimen to pathology when indicated. | | |
| Demonstrates appropriate post- procedural patient education and follow-up plan for suture removal if indicated. | | |
| Completes documentation of procedure | | |

Prior to starting a medical procedure, the medical team stops for a Time-Out. The Time-Out is a deliberate pause in activity involving clear communication and verbal confirmation. The Time-Out is one element of Universal Protocol, designed to ensure that the appropriate steps are taken to operations and invasive procedures.

Time-Out steps:

1. Everything stops
2. Identify the patient using name and date of birth
3. Correct side and site marked as indicated if applicable.
4. Agreement on procedure to be done, as read from the informed consent document.
5. When two or more procedures are being performed on the same patient, and the person performing the procedure changes, perform a time-out before each procedure is initiated.

Documentation: “Time out was performed. Correct patient was identified, and patient verified the procedure and correct site and side.”

Faculty: _____

Date: _____

Indications:**Punch Biopsy**

- Obtain full-thickness tissue sample for histopathology
- Complete removal of skin lesion < 5mm.

Shave Biopsy

- Removal of protruding portion of raised skin lesion when full thickness sample isn't required.

Excisional Biopsy

- Technique used in removal of an entire skin lesion when full-thickness specimen is needed.

Contraindications:

- Significant coagulopathy
- Patient with allergy to anesthetics, preservatives, or other materials which are used for procedure
- If melanoma is suspected, partial-thickness biopsy is contraindicated. Do not use epinephrine in local anesthetic for biopsies involving ear nose, digits, or penis.

Complications:

- Infection, bleeding, scarring, pain, missing correct diagnosis by wrong technique and inadequate sample, allergic reaction to agents used during procedure

Procedural Steps:

- For ALL skin biopsies, obtain informed consent from the patient.

Punch:

1. Prepare site with antiseptic
2. Place ring of local anesthetic around lesion
3. Use appropriate sized tool (2-5 mm)
4. Stretching skin away from site, perpendicular to lines of minimal tension, may reduce scarring
5. Push biopsy tool vertically into the skin, rotating it to cut through skin and subcutaneous tissue.
6. Withdraw tool, push down with fingers on each side of biopsy
7. Gently grasp specimen with forcep, cut at subcutaneous base with sharp tissue scissors
8. Provide hemostasis with direct pressure, may consider aluminum chloride if needed.
9. Large punch biopsies require 1 or 2 interrupted sutures.

Shave:

1. Prepare site with antiseptic
2. Instill local anesthetic within dermis beneath skin lesion
3. Excise lesion by shaving with slightly bowed, flexible, single-edged razor, or with scalpel blade (blade is kept parallel to skin)
4. Skin defect after removal should be essentially level, or minimally depressed
5. Provide hemostasis with direct pressure, 5.5 pen cautery.
6. Silver nitrate for hemostasis (can cause discoloration of skin)

Excisional:

1. Set up for sterile procedure and prepare site with antiseptic
2. Anesthetize area using field block
3. Use surgical marking pen to outline planned margins of excision, orienting the long axis of the biopsy parallel to lines of minimal skin tension.
4. Shape of the ellipse should have length measure 3 times width, with 30° corners
5. Using a #10 or #15 scalpel, make incision along outline
6. Free up corner of ellipse, and excise full thickness of skin from end to center, then opposite end to center and put in specimen jar.
7. Undermine skin edges and close with simple, single layer sutures.

Basic Skills Qualification Slit Lamp Exam



A slitlamp is used to view the interior of the eye



Evaluation Process

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Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Discusses indications & contraindications for the exam | | |
| Dilates the pupils if appropriate. Positions the patient with chin in the chin rest and forehead against the head rest. Examiner position is in reach of the eye. | | |
| Turns on power, focus the eyepiece, darken the room. Adjust the light source appropriately | | |
| Describes a systematic exam of the eye including: -Lashes & lids, demonstrate eversion of the upper lid -Conjunctiva -Cornea with fluorescein -Anterior chamber -Iris and lens | | |
| Demonstrates atraumatic removal of a corneal foreign body | | |
| Discusses findings and appropriate aftercare. | | |

Faculty: _____

Date: _____

Describe when to use and not use the slit lam

Demonstrate appropriate technique for the exam

The slit lamp is used to do a thorough exam of the eye to diagnose conditions such as corneal abrasions, keratitis, iritis, hyphema, and for foreign body removal. An incandescent light source passes through a condenser (the slit) and a lens, and the light is reflected by an inclined mirror onto the patient's eye. The intensity, height & width of the light beam can be adjusted to view different parts of the eye. Magnification of the observed structures can also be adjusted depending on the tissue being viewed.

Indications:

- Need for bright illumination or magnification to see anterior eye structures for trauma, red eye, foreign body sensation, UV light or chemical exposure to the eye. Same as for routine fluorescein exam
- When routine fluorescein exam is inconclusive
- Deep, large or central eye abrasions
- If foreign body removal is unsuccessful using standard fashion
- With suspected long-standing inflammation: iritis, ciliary blush, photophobia

Contraindications:

- Exposure to caustic chemicals - **needs copious irrigation 1st**, then slit lamp exam
- Uncooperative patient

Mandatory slit lamp exam, then referral to Ophthalmology:

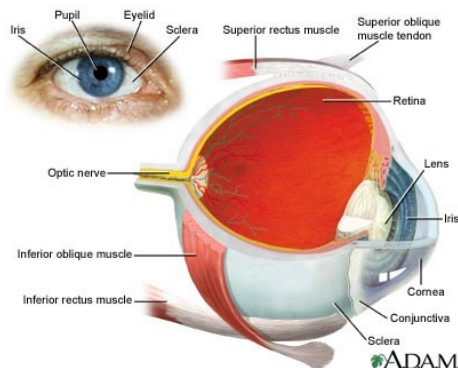
- Suspected high velocity injury to eye
- Ruptured globe
- Infected FB
- Large metal FB with potential for rust ring
- Apparently deep or centrally imbedded FB

Equipment:

- Topical anesthetic 0.5% tetracaine or proparacaine
- Sterile fluorescein strips
- Isotonic ophthalmic irrigant (NS)
- Sterile cotton-tipped swabs

Procedure:

- Seat the patient comfortably with head in chin and head rest
- Sit comfortably to be able to reach the patient's eye and the eyepiece
- Turn on power and adjust eyepieces to 1x if wearing corrective lenses. Set intrapupillary distance. Change magnification as needed
- Move the light source and focus depth to view the eye
- Systematically view each structure of the eye



Basic Skills Qualification Social Media



Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Post is accurate | | |
| Free of errors | | |
| Shows FMR/Altru in a positive light | | |
| Written at an 8 th grade level | | |
| Informative, succinct, captivating | | |
| Follows Altru’s Social Media Policy | | |
| Understands permanence and long-term consequences of posting to social media | | |

Faculty: _____

Date: _____

Indications:

- Avenue to share information to patients, staff, prospective residents & fellows
- Engage with our community
- Contraindications:
 - Confidential or proprietary information must not be shared
 - Be aware that no activity online is completely private

Procedure:

- Create a blog post or video with medical related information to better the health and understanding of our community

Basic Skills Qualification Splinting and Casting

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.



Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Correctly describes fracture or injury type | | |
| Identifies correct splint or cast to place | | |
| Identifies correct duration of immobilization | | |
| Informed Consent obtained | | |
| Places splint or cast correctly | | |
| Verifies correct positioning of injured joint and intact distal neurovascular function | | |
| Reviews cast care, pain control, s/sx of compartment syndrome and follow-up plan | | |

Faculty: _____

Date: _____

Casting vs. Splinting

Benefits of splinting: Always splint acute fractures initially because of anticipated further swelling. Stabilize soft tissue injuries, pain relief, easily removable for icing and monitoring, provides temporary support prior to surgery.

Benefits of casting: Provides marked stability, significant pain relief.

Indications:

- Immobilization of stable, non-displaced, closed fractures
- Reduced dislocations
- Injuries to muscle, tendons, and ligaments including grade three ligament sprains
- Treatment of congenital and acquired deformities like congenital clubfoot

Contraindications:

- Early/Premature casting: casting before maximal swelling has occurred can cause necrosis and compartment syndrome
- Open Wound: Can cause infection, can use cast window to monitor
- Unstable fractures that require surgical fixation. Splint only until definitive treatment can be provided

Complications:

- Nerve entrapment: Compression of the peroneal nerve at the fibular head can lead to foot drop
- Compartment syndrome: Casting before swelling has reached its maximum. (Look for pain with resisted plantar flexion of the great toe)
- Cast loosening: Inadequate stability and immobilization
- Skin necrosis: Pressure over bony prominences
- Joint stiffness

Basic Principles of Splinting and Casting

1. Decide whether injury or fracture appropriate for splinting or casting and if so what type: Short arm, ulnar gutter splint, sugar-tong splint, long arm, thumb spica, short leg, long leg, etc.
2. Decide estimated duration of immobilization.
3. Obtain informed consent.
4. Measure stockinette to allow extra to fold over ends and remove all transverse wrinkles.
5. Place joint in neutral position (90 degree of ankle flexion, wrist slightly extended and in position of function, etc.
6. Apply cast padding over stockinette, overlapping 50% with each consecutive wrap, and providing two complete layers. Provide extra padding over bony prominences like the heel, malleoli, metatarsal heads, proximal fibula, anterior tibia, flexion creases and fulcrum points.
7. Apply plaster or fiberglass rolls after removing excess water same way as cast padding. First turn with 100% overlap and second turn with 50%. Fold ends of stockinette onto initial layers before placing final cast layers. Apply 4-6 layers of cast evenly with extra reinforcement in areas of increased stress.
8. Smooth the cast using both hands to make sure it conforms to the contours of local anatomy.
9. Recheck positioning of the injured joint: ankle at 90 degrees and wrist slightly extended and relaxed. Verify distal perfusion with color, temp, sensation and cap refill.
10. Post Procedure Education: Keep extremity elevated for 48 hours and use ice over splint or cast. Keep cast dry. Do not insert anything between cast and skin. Call provider if increased pain, tightness or irritation, numbness, discolored or cool toes.

Reference

Pfenninger, JL and Fowler GC, Procedures for Primary Care. Mosby 2003. (Marolf, G, Kovan, J and Russell White, Eathorne, S, and Shepherd, Todd, p 1391-1418.

Basic Skills Qualification Stress Testing

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|-----------------------------|-----------|------------|
| Informed consent | | |
| Identify indications | | |
| Identify contraindications | | |
| Identify complications | | |
| Identify protocols | | |
| Select appropriate protocol | | |
| Perform stress test | | |
| Result interpretation | | |

Faculty: _____

Date: _____

Indications:

- Evaluation of chest pain and/or SOB
- Assess functional capacity
- Evaluation of exercise-induced arrhythmia
- Evaluate BP response to exercise

Contraindications:

- Recent acute MI
- Left bundle-branch block
- Unstable angina
- Severe symptomatic left ventricular dysfunction
- Potentially life-threatening dysrhythmia
- Acute pericarditis, myocarditis, endocarditis
- Severe aortic stenosis
- BBP greater than 200 mm Hg systolic or 120 mm Hg diastolic
- Acute pulmonary edema, embolus, or infarction
- Acute thrombophlebitis or DVT
- Any general illness that precludes exercise
- Inability or lack of desire to perform the test
- ACLS equipment and provider not available

Complications:

- Hypotension
- Congestive heart failure
- Cardiac arrhythmia

- Cardiac arrest
- Acute myocardial infarction
- Acute central nervous system event such as syncope or stroke
- Death

Pre-procedure education:

- Do not eat for at least 2 hours before the test
- Hold beta blockers, long-acting nitrates, and calcium channel blockers the day of the procedure
- Instruct patient to bring shoes and clothing conducive to exercise

Procedure:

1. Review medical history and physical exam
2. Select the protocol
 - Choose a protocol that starts at low level (2-3 METS)
 - A protocol with stage durations of at least 3 minutes allowing physiologic adaptation
 - Work load increases no greater than 1-3 METS at each stage allowing for physiologic adaptation
 - Choose a protocol that allows completion within 20 minutes
 - Most common protocols
 - Bruce
 - Modified Bruce
3. Obtain resting blood pressure and EKG
4. Begin exercise test using preselected protocol
5. Instruct the patient to give adequate warning before he or she wants the test stopped. Encourage the patient to go as far as they can.
6. Monitor the patient's symptoms and pulse rate at all times.
7. Record a 12-lead EKG at the end of each stage, if the patient develops symptoms (chest pain, palpitations, etc.), immediately on stopping, and every minute for 8 minutes post exercise
8. Test termination criteria
 - Systolic blood pressure drops below resting value
 - Worsening angina chest pain
 - Central nervous system symptoms (pre-syncope, etc.)
 - Signs of poor perfusion (pallor, cyanosis)
 - Serious arrhythmia
 - Severe shortness of breath
 - Patient request to stop
 - Marked EKG ST-segment changes
 - Technical problems
 - Hypertensive response (SBP > 240, DBP > 115)
 - Development of left bundle-branch block

Test Interpretation:

- Stress test is adequate only if:
 - Goal HR obtained ($220 - \text{age} \times .85$)
 - Double product (peak SBP X peak HR) > 20,000
 - Minimum of 4 METS is achieved
- Normal clinical response to exercise can include:
 - A gradual increase in pulse to maximum rate achievable to the patient ($220 - \text{age}$)
 - A rise in systolic blood pressure to approximately twice the resting value
 - A return of systolic blood pressure to its baseline by approximately 6 minutes postexercise
 - A minimal change (no > 10 mm Hg) or decrease in diastolic bp during exercise
 - EKG changes
 - P-wave amplitude increases
 - PR interval decreases
 - R wave amplitude decreases if HR > 150

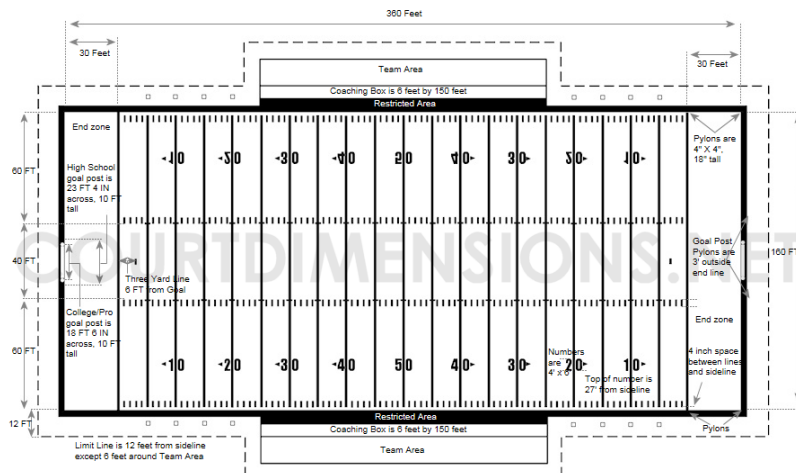
- J-point, or the junction between the S wave and ST segment, is depressed at maximum exercise and gradually returns to baseline during recovery
 - ST segment upsloping 40-60 ms after J-point
 - Development of right bundle-branch block
 - Isolated T-wave inversion without ST-segment displacement
- Abnormal clinical response to exercise
 - EKG changes
 - ST segment depression
 - Flat and down sloping most specific
 - Upsloping least specific
 - Must occur in three consecutive beats in two consecutive leads
 - Should be measured 60 ms from J-point
 - Varying opinion on the amount of ST segment depression that indicates an abnormality
 - < 1 mm – low probability for presence of myocardial ischemia
 - 1-2 mm – intermediate probability for the presence of myocardial ischemia
 - > 2 mm – high probability for the presence of myocardial ischemia
 - ST segment elevation suspicious for ischemia
 - Ventricular tachycardia as well as multifocal and frequent PVC's (> 30% of contractions)
 - Transient atrial fibrillation or flutter
 - Exercise-induced second- or third-degree block
 - A drop in SBP or a SBP that does not rise with exercise intensity

Basic Skills Qualifications Team Travel

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____



| | Competent | Needs Work |
|--|-----------|------------|
| Demonstrates: | | |
| -punctuality in team travel and relevant meetings | | |
| -appropriate dress code | | |
| -ascertainment of available medical resources | | |
| -introduction/support for visiting team personnel | | |
| -appropriate sideline etiquette | | |
| -appropriate physician/trainers roles and respect | | |
| -appropriate triage and training staff support | | |
| -continuity of care if other health professionals | | |
| -attendance at post-game clinics and coordination with other staff | | |

Faculty: _____

Date: _____

Explanation

Punctuality

There is tension and some anxiety as athletes are prepared for competition. This translates into a military precision in all aspects and lack of punctuality is not tolerated. You will be left if late.

Dress Code

Official UND polo and khaki pants and sneakers. Polo varies from home and away games. The safest course is to have training staff keep you informed. This also applies to decisions as to whether suit coat is required for travel. Carry identification (driver's license) to satisfy airport security.

Medical Resources

It is sound practice to scrutinize the facility for potential hazards near the playing or practice surface. The availability of x-ray, ultrasound, ambulance services etc. should also be confirmed. The locker room should be evaluated for placement of suture and casting materials, etc.

Liaison with Visiting Staff

Hospitality and assistance from home team physicians and training staff is usually flawless. Likewise, all assistance should be offered to visiting staff including facilitating x-ray, advanced imaging, preferential ER response, and any needed prescriptions.

Sideline Etiquette

"Six feet outside the border of the field, or six feet from the sidelines, is an additional broken white line, the restraining line that defines an area in which only coaches and substitute players may stand. Six feet farther behind this broken white line is where the bench area begins, between the 30 yard markers. The team congregates in the bench area during a game, watching teammates play or resting on the benches. Within this area, team doctors and trainers also examine injured players". If you stand outside this area, you are in violation of rules and could create a technical foul.

Respect of Roles

The UND 'care of the athlete' model is based on the principle that the physician's role is adjunctive and supportive to the training staff, who are charged with the 24-hour responsibility for the athlete's welfare. This should be universally respected despite observed breaches by others.

Triage

Triage at games, home or away, is not different from the skills that should have been developed during training room and practice attendance. Basically, a level of comfort should be evident in the initial diagnosis and management of AC separation, stingers and burners, dislocation and reduction of the shoulder, sprains of medial collateral and anterior cruciate ligament, multiplicity of ankle sprains, concussion and concussion-like syndromes, finger dislocations and fractures, management and consequences of suspected neck injury, safety and stability, return to play and Go/No-Go decisions.

Continuity of Care

The sports medicine service is constructed around the concept of primary care of the athlete. Consequently, the primary, ongoing responsibilities to the athlete supersede, and are independent of, any specialty services which may be required for optimal care.

Post-game Clinic Attendance

These clinics occur on the post-game day, regardless of the time of the team's arrival home. Their importance cannot be over-emphasized. Diagnosis is confirmed, or further diagnostic testing arranged expeditiously, on-site discussion with specialty services may occur, and decisions about fitness for practice and play are made. This culminates in an injury report to coaching staff on which personnel planning is based.

**Basic Skills Qualifications
TeleHealth**

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

Date: _____

Competency Checklist for TeleHealth:

| NAME: | | DATE: | |
|-------------------------------|--|--------------|-----------|
| No. | TeleHealth Provider Checklist | Yes, No, N/A | Comments: |
| Provider-Side Set Up | | | |
| 1 | Ensures provider-side environment is secure and private | | |
| 2 | Ensures appropriate TeleHealth visit is scheduled in provider’s schedule | | |
| Patient Engagement | | | |
| 3 | Determines the provider and patient can see and/or hear each other adequately | | |
| 4 | Confirms appropriate patient is selected in EPIC and present in the TeleHealth visit | | |
| 5 | Reviews privacy of the TeleHealth visit | | |
| Teleprovider Behaviors | | | |
| 6 | Looks directly at the camera and maintains an appropriate level of eye contact | | |
| 7 | Introduces self and role | | |
| 8 | Balances attention appropriately between patient and documentation | | |
| 9 | Maintains professional behavior throughout the visit | | |
| 10 | Asks appropriate TeleHealth HPI questions with the use of open-ended questions | | |
| 11 | Directs an appropriate physical exam | | |
| 12 | Seeks additional assistance from faculty if indicated | | |
| 13 | Concludes the visit by reviewing the diagnoses, treatment plan and appropriate follow up. Provides time for the patient to ask any further follow up questions | | |
| Encounter | | | |
| 14 | Resident documents encounter through EPIC | | |

Supervising Faculty

Basic Skills Qualification Ultrasound Transducer Preparation

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| <p>Understands that:</p> <ul style="list-style-type: none"> - External transducers that only come into contact with clean, intact skin are considered noncritical devices and require cleaning after every use. i.e. the removal of visible soil (eg, organic and inorganic material) from objects and surfaces and normally accomplished manually or mechanically using water with detergents or enzymatic products. - Manufacturer's recommendations by Sani-Cloth supplied beside each transducer and is bacteriocidal, tuberculocidal and viruscidal meets the above requirements. - Interventional percutaneous procedure transducers, used for percutaneous needle or catheter placement, such as vascular access, thoracentesis, paracentesis, arthrocentesis, pericardiocentesis, lumbar puncture, ultrasound-guided regional/local anesthesia, and other percutaneous procedures, should be cleaned using low-level disinfectants and be used in conjunction with a single-use transducer cover. | | |
| <ul style="list-style-type: none"> - Level of transducer cover sterility is dictated by level of procedure sterility, e.g., clean procedures requiring nonsterile transducer covers include peripheral vascular intravenous line placement, whereas procedures requiring full sterile transducer covers include percutaneous biopsies. Transducer covers can be condoms or commercial covers as long as they fulfill institutionally set infection control guidelines and procedure sterility requirements. If there is reason to believe that the transducer cover may have become compromised, the transducer must be high-level disinfected before the procedure. - Internal transducers should be covered with a single-use transducer cover as described above, when feasible. If a transducer cover is used, the level of transducer cover sterility is dictated by the level of procedure sterility. These transducers are therefore classified as semi-critical devices. | | |

| | Competent | Needs Work |
|--|-----------|------------|
| <p>- Nonsterile Gel. Single-use gel packets or multidose containers may be used. If multidose containers are used, care should be taken to:</p> <ul style="list-style-type: none"> ● Discard and replace multidose containers when empty; these should not be refilled; ● Appropriately seal the container when not in use; and ● Avoid direct contact between the gel container dispensing tip and any persons or instrumentation, including the ultrasound transducer. If gel is to be used on a patient who is under droplet or contact precautions, discard the multidose container after use, or use a single-use gel packet. <p>- Sterile Gel. Sterile single-use gel packets are preferable to nonsterile gel when possible infection is a concern. Such situations include but are not limited to:</p> <ul style="list-style-type: none"> ● All invasive procedures that pass a device through a tissue (e.g., needle aspiration, needle localization, and tissue biopsy); ● All ultrasound examinations performed on neonates; and ● All ultrasound examinations or procedures performed on nonintact skin or near fresh surgical sites. <p>Sterile or bacteriostatic gel should be considered for endocavitary examinations performed on intact mucous membranes (e.g., esophageal, gastric, rectal, and vaginal).</p> | | |

Faculty: _____ Date: _____

References:

1. Kac G, Podglajen I, Si-Mohamed A, Rodi A, Grataloup C, Meyer G. Evaluation of Ultraviolet C for Disinfection of Endocavitary Ultrasound Transducers Persistently Contaminated Despite Probe Covers. Paris, France: Hygiène Hospitalière; 2010.
2. Adhikari S, Blaivas M, Morrison D, Lander L. Comparison of infection rates among ultrasound-guided versus traditionally placed peripheral intravenous lines. *J Ultrasound Med* 2010; 29:741–747.
3. Spaulding E. Chemical disinfection and antisepsis in the hospital. *Hosp Res* 1957;9:5–31.
4. Casalegno J, Carval K, Elbach D, et al. High risk HPV contamination of endocavity vaginal ultrasound probes: an underestimated route of nosocomial infection? *PLoS One* 2012; 7:e48137.
5. Westerway SC, Basseal JM, Brockway A, Hyett JA, Carter DA. Potential infection control risks associated with ultrasound equipment: a bacterial perspective. *Ultrasound Med Biol* 2017; 43:421–426.
6. Westerway SC, Basseal JM. The ultrasound unit and infection control: are we on the right track? *Ultrasound* 2017; 25:53–57.
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8. Sartoretti T, Sartoretti E, Bucher C, et al. Bacterial contamination of ultrasound probes in different radiological institutions before and after specific hygiene training: do we have a general hygienical problem? *Eur Radiol* 2017; 27:4181–4187.
9. Gottlieb M, Sundaram T, Holladay D, Nakitende D. Ultrasound-guided peripheral intravenous line placement: a narrative review of evidence-based best practices. *West J Emerg Med* 2017; 18:1047.
10. Dargin JM, Rebholz CM, Lowenstein RA, et al. Ultrasonography-guided peripheral intravenous catheter survival in ED patients with difficult access. *Am J Emerg Med* 2010; 28:1–7.
11. Au AK, Rotte MJ, Grzybowski RJ, et al. Decrease in central venous catheter placement due to use of ultrasound guidance for peripheral intravenous catheters. *Am J Emerg Med* 2012; 30:1950–1954.
12. Shokoohi H, Boniface K, McCarthy M, et al. Ultrasound-guided peripheral intravenous access program is associated with a marked reduction in central venous catheter use in noncritically ill emergency department patients. *Ann Emerg Med* 2013; 61:198–203.

Basic Skills Qualification Ultrasound Guided Intravenous Access

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|---|-----------|------------|
| Understands, and can apply, the concepts of: | | |
| Angle, Axis and Point | | |
| Can identify and demonstrate following (Phantom): | | |
| -normal vein with full compression | | |
| -incompressible vein containing clot | | |
| -vein diameter and depth | | |
| -cannulation of vessel, in-plane and out-of-plane | | |
| Can identify and demonstrate following (Live subject): | | |
| -cephalic, basilica and brachial veins | | |
| -can make appropriate selections | | |
| Understands concept of angle and distance | | |
| -can demonstrate vein cannulation with needle | | |
| -can demonstrate vein cannulation wit catheter | | |
| Can demonstrate cannula in two places: | | |
| Knows the anatomical landmarks of internal jugular vein | | |
| Can demonstrate carotid artery, internal jugular vein on US | | |
| Can demonstrate effect of head position on relationships | | |

Faculty: _____

Date: _____

Basics of Intravenous Cannulation

This is a fundamental skill. Residents are frequently called to challenging patients in the evening or early hours of the morning, after iv resource teams have left and available staff have been unable to secure iv access. Attempts to involve interventional radiology at these times will be unpopular. Competence in this module will be helpful.

All other things considered, axis, angle and tip are fundamental and cannot be ignored. Long axis and short axis have their respective advantages and disadvantage, and either – or both – should be employed depending on circumstances. Fundamentally, the needle tip – not the shaft – must be kept in view, whether by moving or tilting the transducer. Failure to do so converts the procedure to a ‘blind procedure’. Additionally, the angle of needle insertion is important, but can be estimated in advance by the depth of the target. For example, a venous target at a depth of 1 cm can be accurately approached from a 45-degree angle if the needle insertion point is 1 cm from the transducer midline. This information is readily obtained from the ultrasound screen.

The phantom will contain two simulated veins, one superficial and one deep. Attempts to cannulate either should confirm numerous statements that veins significantly deeper than 1 cm with a diameter less than 1 cm are poor choices for the long-term retention of catheters.

This basic skill involves both lab and human subjects. Consequently, thanks for the help and guidance are due to Coco Peterson, lab staff and iv resource nurses.

References:

New England Journal of Medicine

Ultrasound guided peripheral IV placement

Siegfried Emme

Ultrasound guided peripheral IV access by Siegfried Emme

Crit-IQ

Infernal Jugular Vein Insertion

Basic Skills Qualification Ultrasound Transducer Preparation

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

When prepared, you will demonstrate capability of transducer cleaning and preparation and appropriate application in accordance with AIUM practices. An observing faculty member will attest using listed criteria.

Resident: _____

| Understands that: | Competent | Needs Work |
|--|-----------|------------|
| - External transducers that only come into contact with clean, intact skin are considered noncritical devices and require cleaning after every use. i.e. the removal of visible soil (e.g., organic and inorganic material) from objects and surfaces and normally accomplished manually or mechanically using water with detergents or enzymatic products | | |
| - Manufacturer’s recommendations but Sani-Cloth supplied beside each transducer and is bacteriocidal, tuberculocidal and viruscidal meets the above requirements. | | |
| - Interventional percutaneous procedure transducers , used for percutaneous needle or catheter placement, such as vascular access, thoracentesis, paracentesis, arthrocentesis, pericardiocentesis, lumbar puncture, ultrasound-guided regional/local anesthesia, and other percutaneous procedures, should be cleaned using low-level disinfectants and be used in conjunction with a single-use transducer cover. | | |
| - Level of transducer cover sterility is dictated by level of procedure sterility. E.G., clean procedures requiring nonsterile transducer covers include peripheral vascular intravenous line placement, whereas procedures requiring full sterile transducer covers include percutaneous biopsies. Transducer covers can be condoms or commercial covers as long as they fulfill institutionally set infection control guidelines and procedure sterility requirements. If there is reason to believe that the transducer cover may have become compromised, the transducer must be high-level disinfected before the procedure. | | |
| - Internal transducers should be covered with a single-use transducer cover as described above, when feasible. If a transducer cover is used, the level of transducer cover sterility is dictated by the level of procedure sterility. These transducers are therefore classified as semi critical devices. | | |
| - Nonsterile Gel. Single-use gel packets or multidose containers may be used. If multidose containers are used, care should be taken to: <ul style="list-style-type: none"> ● Discard and replace multidose containers when empty; these should not be refilled; | | |

| | | |
|---|--|--|
| <ul style="list-style-type: none"> • Appropriately seal the container when not in use; and • Avoid direct contact between the gel container dispensing tip and any person or instrumentation, including the ultrasound transducer. If gel is to be used on a patient who is under droplet or contact precautions, discard the multidose container after use, or use a single-use gel packet. | | |
| <p>- Sterile Gel. Sterile single-use gel packets are preferable to nonsterile gel when possible infection is a concern. Such situations include but are not limited to:</p> <ul style="list-style-type: none"> • All invasive procedures that pass a device through a tissue (e.g., needle aspiration, needle localization, and tissue biopsy); • All ultrasound examinations performed on neonates; and • All ultrasound examinations or procedures performed on nonintact skin or near fresh surgical sites. <p>Sterile or bacteriostatic gel should be considered for endocavitary examinations performed on intact mucous membranes (e.g., esophageal, gastric, rectal, and vaginal).</p> | | |

Faculty: _____

Date: _____

References:

1. Kac G, Podglajen I, Si-Mohamed A, Rodi A, Grataloup C, Meyer G. Evaluation of Ultraviolet C for Disinfection of Endocavitary Ultrasound Transducers Persistently Contaminated Despite Probe Covers. Paris, France: Hygiène Hospitalière; 2010.
2. Adhikari S, Blaivas M, Morrison D, Lander L. Comparison of infection rates among ultrasound-guided versus traditionally placed peripheral intravenous lines. *J Ultrasound Med* 2010; 29:741–747.
3. Spaulding E. Chemical disinfection and antisepsis in the hospital. *Hosp Res* 1957;9:5–31.
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9. Gottlieb M, Sundaram T, Holladay D, Nakitende D. Ultrasound-guided peripheral intravenous line placement: a narrative review of evidence-based best practices. *West J Emerg Med* 2017; 18:1047.
10. Dargin JM, Rebholz CM, Lowenstein RA, et al. Ultrasonography-guided peripheral intravenous catheter survival in ED patients with difficult access. *Am J Emerg Med* 2010; 28:1–7.
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12. Shokoohi H, Boniface K, McCarthy M, et al. Ultrasound-guided peripheral intravenous access program is associated with a marked reduction in central venous catheter use in noncritically ill emergency department patients. *Ann Emerg Med* 2013; 61:198–203.

Basic Skills Qualification Vasectomy

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Demonstrate the appropriate counseling and informed consent utilizing the consent form set | | |
| Determine the incision site(s) | | |
| Manually isolate the vas deferens | | |
| Anesthetize the skin and perform the vas block on each side | | |
| Use the appropriate tool to fix the vas against the skin of the scrotum | | |
| Make incision and remove a segment | | |
| Interpose fascial layer between the ends of the vas | | |
| Repeat on the opposite side | | |

Prior to starting a medical procedure, the medical team stops for a Time-Out. The Time-Out is a deliberate pause in activity involving clear communication and verbal confirmation. The Time-Out is one element of Universal Protocol, designed to ensure that the appropriate steps are taken to operations and invasive procedures.

Time-Out steps:

1. Everything stops
2. Identify the patient using name and date of birth
3. Correct side and site marked as indicated if applicable.
4. Agreement on procedure to be done, as read from the informed consent document.
5. When two or more procedures are being performed on the same patient, and the person performing the procedure changes, perform a time-out before each procedure is initiated.

Documentation: "Time out was performed. Correct patient was identified, and patient verified the procedure and correct site and side."

Faculty: _____

Date: _____

Indications:

Desire for permanent sterilization

Contraindications:

- Poorly defined spermatic cord anatomy
- Local infectious process
- Active bladder or prostate infection
- Poorly characterized bleeding disorder
- Unable to give appropriate informed consent
- Testicular mass

1. Discuss with the patient all the topics in the counseling outline
2. Complete the informed consent and ensure that it gets scanned into the HER
3. Prep the scrotum using betadine
4. Drape the patient exposing the scrotum
5. Isolate the vas deferens using the 3-finger technique
6. Use local anesthetic to raise a wheal on the skin and perform the vas block. Repeat on the opposite side
7. Using a clamp isolate the vas against the skin of the scrotum
8. Using the vas dissector/scalpel, open the skin of the scrotum and continue dissecting the fascia away from the vas until the vas is clean. The better job you do, the less bleeding there will be
9. Cross clamp the vas using the vas dissector; hemi-sect the vas closest to the prostatic end; cauterize the vas and withdraw slowly. Completely cut the vas and allow the prostatic end to fall back into the fascial layer
10. Close the fascial plane using the surgical clip
11. After ensuring hemostasis, allow the open end of the vas to fall back into the scrotum.
12. Repeat the procedure above on the opposite side
13. Using gauze, cover the scrotal wound
14. Using the patient supplied scrotal support; ensure that the bulky dressing is all in the cup of the support
15. Discuss the post-operative instructions with the pt. and give the written instructions to the patient
16. Give the patient the bag containing the instructions for obtaining the post vas sample at 6 weeks
17. Document the procedure and code

Basic Skills Qualification Venipuncture

Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The "Basic Skills Qualification" is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs work |
|--|-----------|------------|
| Can properly identify patient with 2 patient identifiers | | |
| Can identify and demonstrate appropriate vein choice | | |
| Can demonstrate proper hand hygiene, skin cleansing technique, and PPE use | | |
| Understands concept of angle and distance and can demonstrate vein cannulation with needle | | |
| Syringe draw # 1 Syringe draw #2 Syringe draw #3 | | |
| Vacutainer draw #1 Vacutainer draw #2 Vacutainer draw #3 | | |
| Butterfly draw #1 Butterfly draw #2 Butterfly draw #3 | | |
| Can identify and demonstrate correct order of draw | | |
| Can identify proper tube selection | | |
| Can demonstrate proper use of blood transfer devices | | |
| Can demonstrate proper labeling techniques | | |
| Can demonstrate proper disposal of materials/supplies in designated containers | | |

Faculty: _____

Date: _____

Basics of Venipuncture

Venipuncture Procedure:

1. Positively identify patient with two forms of identification (state first and last name, DOB)
2. Review requested tests and gather tubes and supplies needed for draw.
3. Position patient in chair or sitting or lying on a bed.
4. Wash hands. Wear appropriate gloves.
5. Select appropriate site for venipuncture by placing tourniquet 3 to 4 inches above selected puncture site on the patient. Do not leave tourniquet on for longer than 1 minute.
6. Put on gloves and palpate vein.
7. When vein is selected, cleanse the area in a circular motion beginning at the site and working outward. Allow the area to air dry. After the area is cleaned, it should not be touched or palpated again.
8. Grasp the patient's arm firmly using your thumb to draw the skin taut and anchor the vein. Swiftly insert the needle through the skin into the lumen of the vein. The needle should form a 15-30 degree angle with the arm surface. Avoid excess probing.
9. When the last tube is filling if using a vacutainer method, remove the tourniquet. Otherwise, withdraw appropriate amount of blood to fill requested tubes for testing.
10. Remove the needle from the patient's arm using swift backward motion.
11. Place gauze immediately on the puncture site. Apply and hold adequate pressure to avoid formation of a hematoma. After holding pressure for 1 minute, tape a fresh piece of gauze or Band-aid to the puncture site.
12. If using syringe or butterfly, use transfer device to fill tubes to stated draw volumes. Gently mix all gel barrier and additive tubes with gentle inversion 5 to 10 times immediately after the draw. Efficient blood transfer is key to avoid clotting.
13. Dispose of contaminated materials/supplies in designated containers.

Order of draw:

Blood collection tubes must be drawn in a specific order to avoid cross contamination of additives between tubes. The recommended order of draw for plastic vacutainer tubes is:

1. First- blood culture bottles
2. Second- coagulation tube (light blue top)
3. Third- non-additive tube (red top)
4. Last draw- additive tubes in this order
 - a. SST (gold top)
 - b. Sodium heparin (dark green top)
 - c. PST (light green top)
 - d. EDTA (lavender top)
 - e. Oxalate/fluoride (light gray top)

Labeling the sample:

All specimens must be received by the laboratory with legible label containing at least 2 unique identifiers.

The specimen must be labeled with the patient's full name and one of the following:

- MRUN
- Patient's full date of birth
- Unique requisition identifier/label

Basic Skills Qualification Wound and Laceration Repairs



Evaluation Process

Prior to seeking BSQ certification, a resident should be confident in his/her skills. The “Basic Skills Qualification” is printed and given to the supervising physician, where after, the resident performs the procedure under direct observation of the supervising physician. The competency assessment is completed by the supervising physician with his/her signature and given back to the resident. The resident then returns the competency assessment to the Academic Coordinator.

Resident: _____

| | Competent | Needs Work |
|--|-----------|------------|
| Obtains informed consent after explaining risks and benefits in terms the patient understands | | |
| Assures adequate anesthesia. Selects the appropriate agent, including whether epinephrine is appropriate or not | | |
| Irrigates the wound. Inspects thoroughly for evidence of damage to deep tissues. Uses radiographs appropriately | | |
| Creates and maintains a sterile field | | |
| Selects the appropriate suture and instruments needed. Demonstrates proper knot-tying technique and safe use of the needle | | |
| Demonstrates appropriate placement of sutures, degree of tension, and techniques to optimize cosmesis and healing | | |
| Explains post-op expectations, correct timeframe for return, and orders antibiotics or TD as need | | |

Faculty: _____

Date: _____



To demonstrate competence in wound and/or laceration repair, the resident will include the following elements:

- Obtains informed, written consent with clear explanation of risks and benefits of procedure – including (but not limited to) scarring, infection, or bleeding. Explains procedure in terms patients can understand, and answers all questions. Clarifies any allergies to anesthetics or iodine.
- Outlines indications for the repair, and the decision-making process regarding type of repair: with wound adhesive, wound tape (steri strips), staples, or sutures. Is able to articulate whether primary closure is appropriate or not in the patient's circumstances.
- Provides appropriate and adequate anesthesia. Demonstrates appropriate choice of epinephrine or not, depending upon site and procedure.
- Thoroughly irrigates any wound at risk for infection.
- Inspects the wound thoroughly and identifies any foreign bodies or injuries to underlying structures. Elects to use radiographs as needed.
- Selects proper suture materials for the site (absorbable vs non-absorbable, gauge, needle size and type)
- Selects appropriate patient positioning and is attentive to patient comfort throughout. Conducts procedure in a sensitive manner.
- Creates a sterile field and maintains sterile technique throughout.
- Demonstrates proper use of deep sutures, if appropriate. Demonstrates ability to undermine if appropriate.
- Demonstrates appropriate placement of curricular stitches, either continuous or interrupted. Demonstrates appropriate knotting technique.
- Provides appropriate patient instruction on wound care, signs of infection, return for follow-up and timeframe for suture removal as appropriate.
- Orders tetanus vaccination as needed (if >5 yrs since prior). Evaluates need for antibiotic coverage or not.

Finer Points: Optimally, the resident can demonstrate understanding and skill in creating neat closures with optimal treatment to facilitate healing. These include:

- eversion of the wound with proper needle placement
- forceps placement into dermis, to avoid tissue destruction to epidermis
- when delayed primary closure may be considered
- consideration of Langer's Lines and tension of wound
- vertical and horizontal mattress sutures as needed for areas of tension or need for greater eversion
- usually the optimal needle is reverse cutting, P is best (plastic), but also appropriate are C (cutaneous) or FS (for skin)
- when alternatives to sutures might be best