Chapter 5

SURGICAL GUIDES

Formatted: Font: Palatino Linotype, 10 pt, Font color: Auto

Formatted: Font: Palatino Linotype, 10 pt

Formatted: Title, Line spacing: single

Formatted: Font: Palatino Linotype, 10 pt, Font color: Auto

Formatted: Font: Palatino Linotype, 10 pt

ABBREVIATED—FORWARD RESUSCITATIVE SURGICAL DETACHMENT (FRSD), ROLE 2*

AMPUTATION*

CESAREAN SECTION

CRANIOTOMY (EMERGENCY, DECOMPRESSIVE)*

EXTERNAL FIXATOR APPLICATION*

FASCIOTOMY*

IRRIGATION AND DEBRIDEMENT

LAPAROTOMY*

OPEN REDUCTION AND INTERNAL FIXATION

RESUSCITATIVE ENDOVASCULAR BALLOON OCCLUSION OF THE AORTA (REBOA)

STERNOTOMY

THORACOTOMY*

VASCULAR SHUNT

BLANK SURGICAL GUIDE

**Procedures prescribed as mission critical for the FRSD, Role 2*

Deleted: –

Deleted:

Formatted ... [1]

Formatted ... [3]

Formatted ... [4]

Formatted ... [2]

Deleted:

Formatted ... [5]

Formatted ... [6]

Deleted: C-

Formatted ... [7]

Deleted:

Formatted ... [8]

Formatted ... [9]

Deleted:

Formatted ... [10]

Formatted ... [11]

Deleted:

Formatted ... [12]

Formatted ... [13]

Formatted ... [14]

Formatted ... [15]

Deleted:

Formatted ... [16]

Formatted ... [17]

Formatted ... [18]

Formatted ... [19]

Deleted: REBOA (

Deleted:)

Formatted ... [20]

Formatted ... [21]

Formatted ... [22]

Formatted ... [23]

Deleted:

Formatted ... [24]

Formatted ... [25]

Formatted ... [26]

Formatted ... [27]

Formatted ... [28]

Formatted ... [29]

Formatted ... [30]

Deleted:

Deleted: *Forward Resuscitatve Surgical Detachment (*

Deleted: *)*

Formatted ... [31]

INTRODUCTION

This chapter covers specific perioperative surgical guides for the cases that most likely will be encountered in Role 2 and Role 3 environments. The guides can be used as checklists, references, and training tools for surgical teams. The intent of these guides is to give both trained and untrained perioperative staff members a reference to review before trauma patients arrive. (Note: surgeon's plans may deviate from the information below on the basis of their own training and experience.) For additional information, consider obtaining a copy of Borden Institute's latest edition of ***Emergency War Surgery*** *. In addition, there is a blank guide at the end of this chapter; this is to provide teams with a customizable form.*

The first guide, placed purposely at the forefront of this chapter, serves as an abbreviated version of the subsequent guidelines. This guideline outlines the supplies needed for a variety of damage control surgery in the Role 2 environment. It does not include rationale or explanation; its purpose is to be simple, fast, and well understood by experienced teams.

This subsequent guides are more in-depth and provide rationale where applicable. Each subsequent guide contains the patient diagnosis, planned surgical procedure, anatomy, physiology, pathophysiology, indications for surgery, concept of operation, steps of the surgical procedure, patient positioning and considerations, skin preparation and considerations, incision type, specimen, fluids, medications, implants, grafts, suture, dressings, drains and tubes, procedure specific considerations, sterile supplies, primary sterile instrument sets, secondary or special instruments sets, and further considerations.

ABBREVIATED – FORWARD RESUSCITATIVE SURGICAL DETACHMENT, ROLE 2

Deleted: →
Deleted: *the*
Deleted: *most likely surgical*
Formatted: Font: Italic
Formatted: Font: Italic
Deleted: *se*
Deleted: *tilized*
Deleted: *"go-to guide" that should serve as a*
Deleted: *utilize*
Deleted: *Keep in mind that*
Deleted: *based on*
Deleted:
Deleted: *your free*
Deleted: *the*
Deleted:
Formatted: Font: Italic
Formatted: Font: Italic
Commented [JC1]: 1.Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.
Deleted: "
Deleted: "
Deleted: *book.*
Deleted: *was placed*
Formatted: Font: Italic
Formatted: Font: Italic
Formatted: Font: Italic
Deleted: *and allow them to anticipate surgical before the* ... [32]
Formatted: Font: Italic
Formatted: Indent: First line: 0"
Deleted: *cuts to the chase*
Deleted: *on*
Deleted: *what*
Deleted: *are*
Deleted: *,*
Deleted: *detailed*
Deleted:
Formatted: Font: Italic
Deleted: ¶ ... [33]

Case	Required Supplies
	Drapes, open for every case: Surgical towels (x2 packs) Split drapes (x2)
Exploratory laparaotomy	Major basic surgical instrument set Surgical towels (x1 additional pack, total of 4 packs) Laparotomy sponges (x4 packs, total of 20) Electrosurgical pencil and grounding pad #10 surgical blade #15 surgical blade Flat closed-suction surgical drains (x2 boxes, total of 20) 16 or 18 Fr dual lumen nasogastric tubes, plus Y-connector (x2) 0-silk suture ties 0-silk suture tapered needles (x2) 2-0 vicryl free tie sutures Gastrointestinal (GI) 2-0 silk sutures on small half circle (SH) __controlled release needle Liter of normal saline (NS) for irrigation Large antimicrobial isolation drape
Bowel Injury Augmentation	All exploratory laparotomy supplies above, and; Gastrointestinal anastomosis (GIA) surgical stapler, 75mm Blue load reload staples, 75mm
Spleen Augmentation	All exploratory laparotomy supplies above, and;

Deleted: 2 packs of …urgicalblue ... [34]

Deleted: 2 …S ... [35]

Deleted: L

Deleted: B…sic surgical iI…strument sS ... [36]

Deleted: Blue

Deleted: S

Deleted: Bovie…pP…ncil and gG ... [37]

Deleted: 10-f…at closed-suction surgicalJP…dD…ains (x2 boxes, total of 20)) ... [38]

Deleted: Salem sump…nN…sogastric tubes,GTs ... [39]

Deleted: S…lk suture tT ... [40]

Deleted: S…lk sS…tures…tT…pered nN ... [41]

Deleted: V…cryl free tT…e suturess ... [42]

Deleted: Pack …I) 2-0 sS…lk sS ... [43]

Deleted: Ioban

Deleted: E…ploratory IL…parotomy sS…pplies above, and, plus… ... [44]

Deleted: Ethicon…sS ... [45]

Commented [PSSMCUMC(2]: Is this a linear cutter?

Deleted: L…ad rR ... [46]

Formatted: Highlight

Formatted: Highlight

Formatted: Highlight

Deleted: E…ploratory IL…parotomy sS…pplies above, andplus… ... [47]

	GIA stapler, 55mm GIA TVC 55 staple loads: (white staple loads) VASCULAR 57mm staple height (x2) Additional 0-silk sutures, SH (x2) 0-silk suture (x1)
Vascular Injury	Vascular instrument set Large vessel loops (x4) Medium clip applier Rummell tourniquets (x2) 5-0 polypropylene sutures on taper point needles, 3/8 circle (x2) 4-0 polypropylene suture, SH *Prepare, but do not open:* carotid artery shunt kit
Thoracotomy	Major basic surgical instrument set Thoracic surgical instrument set (add on with straight DeBakey aortic clamp) Vascular instrument set (add on) Surgical pledget suture supports (x2) 3-0 polypropylene double-arm MH needles (x2) 75mm GIA stapler blue load (have available, unopened) 55mm GIA stapler white loads + reloads (have available, unopened) 75mm blue staple reloads (x2, available) 75mm green staple reloads (x2, available)

Deleted: Ethicon…sS ... [48]

Deleted: S

Deleted: …ilk sutures, - ... [49]

Deleted: S

Deleted: I…strument sS ... [50]

Deleted: *Prepare but do not open* the Argyle Shunts¶ ... [51]

Deleted: C…ll ... [52]

Deleted: o…mell tT ... [53]

Commented [PSSMCUMC(3]: Ok?

Deleted: Prolines…on taper point BV1 ... [54]

Commented [PSSMCUMC(4]: Ok?

Deleted: Prolene

Deleted: …B…sic surgical iI…strument sS ... [55]

Deleted: add-ons…surgical iI…strument sS…t (add on withhas…straight Dd…Bb ... [56]

Commented [PSSMCUMC(5]: Ok?

Deleted: add-ons… I…strument s S ... [57]

Deleted: Teflon…pledget suture supportss ... [58]

Deleted: Prolene

Deleted: but…unnot ... [59]

Deleted: but not…unopened)) ... [60]

Commented [PSSMCUMC(6]: Is this another have available but unopened?

Formatted: Highlight

Formatted: Highlight

	36 Fr straight chest tube 90° angled chest tube (available) Large antimicrobial isolation drape

AMPUTATION

Diagnosis:	Planned Surgical Procedure:
Hypotension or Hypovolemia Sepsis Diseased limb	Extremity amputation

Anatomy/Physiology/Pathophysiology:

Obvious injury, infection, or disease to an associated extremity that is beyond vascular repair.[1]

Figure 5-1. An amputated foot. Image courtesy of Major Corey Campbell (Ret).

Indications:

Preserving life is the most common reason for conducting an amputation in the deployed setting. Amputations may also be performed to control blood loss (when the extremity is beyond repair) or limit systemic spread of toxins from an infected or diseased extremity.[1] Surgical amputations immediately after an injury by a surgical team are considered "primary amputations," versus "traumatic amputations" resulting from the injury itself, and "secondary amputations," which are performed >90 days after the initial injury.[16]

Deleted: deg

Deleted: Large Ioban

Deleted: /

Deleted:

Commented [JC7]: 1.Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Formatted: Highlight

Formatted: Highlight

Formatted: Highlight

Deleted: A

Deleted: T

Deleted: purpose

Deleted: is to

Deleted: preserve life.

Deleted: done in order

Deleted: to

Commented [JC8]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Deleted: s done

Formatted: Highlight

Deleted: ‘

Deleted: P

Deleted: ‘ (

Deleted: compared to

Deleted: ‘

Deleted: ‘

Deleted: ‘

Deleted: ‘

Commented [MAB9]: 16. Gordon, W., Balsamo, L., Talbot, M., Osier, C, Johnson, A., Shero, J., Potter, B., Stockinger, Z. (2016, July 01). *Amputation: evaluation and treatment (CPG ID: 07)*. Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Amputation_Evaluation_and_Treatment_01_Jul_2016_ID07.pdf ... [61]

Deleted: done

Deleted:

Deleted:)

Formatted: Highlight

Concept of the Operation:

The surgeon will assess the location and level of viable tissue and incise at that point. A pneumatic tourniquet will be placed proximal to the viable tissue.[5] Non-viable tissue and crushed bone will be removed, and the remaining bone will be smoothed. If the patient's physiology will tolerate it, all attempts will be made to leave as much viable tissue as possible to aide in future reconstruction efforts (regardless of whether the flaps conform to traditional amputation technique or not).[1,16] Blood vessels and nerves will be sutured, and skin and muscles will be manipulated so that the patient has the best chance for successful prosthesis use.[1] *At Role 2, all amputation wounds must be left open[16]; no attempt should be made to create a flap or create a definitive amputation. Refer to the amputation clinical practice guideline (CPG) for information on temporizing the wound and moving patient to definitive care, as able.*

Steps of the Procedure:

1. A TIME OUT is conducted to identify the patient, planned procedure, and laterality (at a minimum).
2. The level of amputation is determined and incision site marked, *recognizing that traumatic amputation level may be uncertain until surgical exploration is performed.*
3. Anesthesia is performed.
4. Positioning and skin prep performed, to include addressing any field tourniquet previously applied.
5. The patient is draped, and a sterile tourniquet is applied after the extremity is raised. *If possible, the limb should be exsanguinated.* The pneumatic tourniquet is inflated per surgeon direction.
6. The incision is made. Muscle and soft tissue are divided and periosteum is raised with an elevator.
7. Bones are cut with an oscillating saw or bone cutters. A rongeur or bone rasp may be used to

Deleted: /…evel of viable tissue and incise at that point. ; Aa…pneumatic tourniquet will should ... [62]

Commented [JC10]: 5. Rothrock, J.C. (2014). *Alexander's Care of the Patient in Surgery* (15th ed.). Elsevier Health Sciences.

Formatted: Highlight

Formatted ... [63]

Deleted: , …emaining bone will be smoothed. …If the patient's physiology will tolerate it, all attempts willshould…be made to leave as much viable tissue as possible to aide in future reconstruction efforts (; …egardless of…of whetherif…the flaps conform to traditional amputation techniques. ... [64]

Commented [MAB11]: 16. Gordon, W., Balsamo, L., Talbot, M., Osier, C, Johnson, A., Shero, J., Potter, B., Stockinger, Z. (2016, July 01). *Amputation: evaluation and treatment (CPG ID: 07).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Amputation_Evaluation_and_Treatment_01_Jul_2016_ID07.pdf

Deleted:

Formatted: Highlight

Commented [JC12]: 1.Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Deleted:

Deleted: *the…Role 2, all amputation wounds must be left open[16]; no attempt should be made to create a flap or create a definitive amputation. Refer toFollow…the amputation clinical practi* ... [65]

Formatted: Highlight

Formatted: Font: Italic

Commented [JC13]: 16. Gordon, W., Balsamo, L., Talbot, M., Osier, C, Johnson, A., Shero, J., Potter, B., Stockinger, Z. (2 ... [66]

Deleted: All amputation wounds must be left open at the Role 2.[16]¶

Formatted: Font: Italic

Deleted: … … …Perform …a…TIME OUT is conducted to identify the patient, planned procedure, and laterality ... [67]

Formatted: Font: Italic

Deleted: … … …Anesthesia is performed.↵
4. … … Positioning andperformed,…skin prep perfor ... [68]

Deleted: … … The After …p…tient is draped, and a sterile tourniquet is applied after the extremity is raised. and ... [69]

Formatted: Font: Italic

Deleted: *an Esmarch (if available) is used to drain venous blood…* The pP…eumatic tourniquet is inflated per surgeon di ... [70]

smooth and bevel the anterior aspect. The specimen is then handed off the surgical field.

7. The stump is gently irrigated until hemostasis is achieved.

8. A drain may then be applied.

9. Per the Joint Trauma System (JTS) CPG, traumatic amputations are NOT closed initially. Closure will occur after definitive surgery at higher roles of care.

10. Dry sterile dressings are applied to the open wound.

11. A postoperative stump dressing is applied. *A vacuum-assisted closure of a wound (VAC) with open cell foam has been shown to improve amputation wound healing and is safest for aeromedical evacuation. Vacuum should be set to -125 mmHg.*

Patient Position:

Most likely supine; however, may go lateral, soft, or lazy lateral depending on disposition of the patient.

Positioning Considerations:

- Hand tables (if available) or double arm boards may be used for upper extremities.[5]
- Ensure unaffected boney prominences are padded.
- Lateral positioning may require a bean bag (if available) or "bumping" the patient with a soft device (ie, rolled towels, chest rolls, or pillows under the patient's hip).[5]
- A tourniquet may be required (if available) to reduce blood loss.[5]

Skin Preparation:

- Circumferentially prep the limb with povidone-iodine, extending to the shoulder if the arm is involved, or extending to hip if the leg is involved.

Deleted: … … …The stump is will be …ently irrigated untiland…hemostasis is achieved.
8. … … …A drain may then be applied.
9. … … …Per the Joint Trauma System (JTS) CPG, traumatic amputations are NOT closed initially. …Closure will occur after definitive surgery at higher roles of care.
10. … Dry sterile dressings areis…applied to the open wound.
11. … … [71]

Commented [PSSMCUMC(14]: Source/reference?

Deleted: *wound*

Deleted: *(if available)*

Formatted … [72]

Formatted: Highlight

Formatted … [73]

Formatted: Font: Italic

Deleted:

Deleted: L…kely supine; however, , …ay go lateral, / … [74]

Deleted:

Formatted … [75]

Deleted: …..,. … [76]

Formatted: Highlight

Commented [JC15]: 5. Rothrock, J.C. (2014). *Alexander's Care of the Patient in Surgery* (15th ed.). Elsevier Health Sciences.

Deleted: T…urniquet use … [77]

Formatted: Highlight

Formatted … [78]

Deleted: Betadine Paint… extending to the shoulder if the arm is involved, or; … [79]

Skin Preparation Considerations: • Full circumferential prep is required for the extremity being amputated.[5] • Prevent surgical fires by clipping the patient's hair prior to the prep and allow sufficient time for alcohol-based prep solutions to dry prior to draping.	
Incision: • Surgical site specific	Specimen (include method of fixation) : • Small specimens may be placed in a specimen cup and larger specimens should be double-bagged.
Fluids: • 0.9% sodium chloride	Medications: • Surgeon preference
Implants: • None	Grafts: • Only if a flap is not achievable; typically performed at Role 4 CONUS facilities
Suture Absorbable: • Synthetic absorbable braided suture on ties (small vessels) • Synthetic absorbable braided suture on suture (2-0/3-0 stick ties) • Synthetic absorbable braided suture on for deep dermal suture • Synthetic absorbable monofilament suture on (closure)	Non-Absorbable: • Silk ties (large vessels) • Nylon (closure)

Deleted:

Commented [JC16]: 5. Rothrock, J.C. (2014). *Alexander's Care of the Patient in Surgery* (15th ed.). Elsevier Health Sciences.

Formatted: Highlight

Deleted:

Deleted:

Deleted:

Deleted: S

Deleted: C

Deleted: ,

Commented [PSSMCUMC(17]: Did you mean suture on suture?

Formatted: Highlight

Formatted: Highlight

Commented [PSSMCUMC(18]:

Commented [PSSMCUMC(19]: Suture on...?

Deleted:)

Formatted: Highlight

Procedure Specific Considerations:

Set up and Preparation:

- Suction (x2), electrocautery, and small bone drill system (recommend placing at the foot of the bed)
- Both monopolar (x2, regular) and bipolar cautery are needed for adequate hemostatic control
- Grounding pad (x1 per monopolar device used)
- Pneumatic tourniquet, if available
- Orthopedic specific cutting implements

TeamSTEPPS®® (Team Strategies and Tools to Enhance Performance and Patient Safety):

- Verify laterality of incision site.
- Be prepared for blood loss.
- Ensure all equipment and supplies are available prior to start of surgery.

Patient Interview:

- If patient is awake and stable, verify surgical site and laterality, allergies, current medications, past medical and surgical history

Patient Arrival:

- Safely move the patient to the operating room (OR) table.
- Ensure patient is comfortable and warm.
- Assist anesthesia with intubation, as needed.

Start of Procedure:

- Verify surgical laterality with the surgeon prior to incision.

Deleted: U

Deleted:

Deleted: best

Deleted: p

Deleted: ed

Deleted:

Deleted: Bovie

Deleted: one

Deleted:

Deleted: TeamSTEPPS

Formatted: Font: Palatino Linotype, 10 pt, Superscript

Deleted: and

Deleted: /

Deleted: th

- Place forced-air patient warming system blanket or warm sheet on all non-operative areas (to mitigate hypothermia secondary to blood loss).
- Place a grounding pad on a large non-operative site.
- Ensure patient is padded with wearily before placing tourniquet on appendage.
- Verify full circumferential prep of the appendage.
- Drape patient with upper or lower extremity drape (depending on appendage).
- Verify all required ties and sutures are on the sterile field.

During Surgery:

- Ensure suction and electrosurgical instruments are working properly.
- Be prepared to inflate and deflate tourniquet multiple times as the surgeon verifies hemostasis of affected vessels.
- Have necessary containers available for specimen collection.

End of Surgery Preparation:

- Label and prepare specimen for laboratory (if no laboratory, specimen should be ready for disposal). Remember cultural considerations for host nation personnel (ie, discern if the specimen needs to travel with the patient to a host nation hospital).
- Have necessary dressing available for amputation.
- Gather information for reports (ie, blood loss, fluids or blood administered, and urine output). This information will assist in patient homeostasis for the unit recovering the patient.

After Extubating:

- Safely transfer the patient to a hospital bed.
- Ensure specimen is transferred to laboratory, disposal, or transported to next level of care.

Deleted: Bair Hugger

Deleted: Bovie

Commented [PSSMCUMC(20]: I don't understand this...

Formatted: Highlight

Formatted: Highlight

Deleted: /

Deleted: Bovie

Deleted: e properly

Deleted: /

Deleted: .

Deleted: Does

Deleted: d

Deleted: ?

Deleted: .e.

Deleted: (EBL)

Deleted: /

Deleted: (UO))

Sterile Supplies:	Primary Sterile Instrument Set/Sets:
• Drapes: extremity drape (upper vs lower) • Drains: surgeon preference of surgical drain type and size or wound VAC • Dressing: dry dressing, wound VAC if available • Hemostasis: tourniquet • Miscellaneous: suction tubing, Yankauer suction catheter	• Amputation set (including a bone rongeur and bone rasp) If no power: • Gigli saw, bone cutter
Further Considerations • Consider measures to mitigate blood loss (ie, tourniquet options, blood products).	

Deleted: /

Deleted: vac

EMERGENCY CESAREAN SECTION

Diagnosis:	Planned Surgical Procedure:
Unstable pregnancy requiring surgical intervention	Emergency cesarean section
Anatomy/Physiology/Pathophysiology: During pregnancy, women undergo many physiological and hormonal changes to ensure that the needs of the fetus are met. A full term pregnancy is between 39 weeks 0 days to 40 weeks 6 days of gestation. Vaginal birth is the preferred method of delivery, but some conditions or circumstances may necessitate cesarean section surgery. Normal cesarean section involves "delivery of fetus through incision in the abdominal wall and the uterus".[39] Several conditions may warrant an emergency cesarean section, including: fetal or maternal distress, prolapsed umbilical cord, maternal hemorrhage, placenta abruption, and uterine rupture.	
Indications:	

Deleted: C

Deleted: S

Deleted:

Deleted:

Deleted: c

Deleted:

Deleted: c

Commented [JC21]: 39. Goldman M. (2007). *Pocket Guide to the Operating Room* (3rd ed.). F.A. Davis Company.

Safely deliver the fetus while preserving the mother's life. United States service members are unlikely to be in full term labor in the deployed setting. Understand if your medical rules of engagement allow for intervention with host nation civilians requiring obstetric or gynecological surgery prior to intervening.

Concept of the Operation:

The surgeon will deliver the fetus (or fetuses) through abdominal laparotomy and uterine hysterotomy incisions. The incisions may either be infraumbilical midline vertical incisions or low transverse Pfannenstiel incisions, which are long enough to allow for retrieval of the infant. After the infant and placenta are delivered, the uterus, fascial tissue, and skin will be sutured closed.

Steps of the Procedure:

1. The surgeon makes an infraumbilical midline vertical incision or lower transverse (Pfannenstiel) incision to allow access to the abdomen; length of the incision is dependent on fetus size.[40]
2. The abdomen is opened in layers, as in laparotomy. The rectus and pyramidalis muscles are separated in the midline by sharp or blunt dissection to expose the underlying transversalis fascia and peritoneum.[5]
3. The peritoneum is elevated with two hemostats about 2 cm apart, then palpated to rule out inclusion of bowel, omentum, or bladder.

Deleted: S

Deleted: S

Deleted: M

Deleted: (MEDROE)

Deleted: OB/GYN

Deleted:

Deleted:

Deleted:

Deleted: s

Commented [JC22]: 40. Frey, K.B., & Ross, T. (Eds.). (2012). *Surgical Technology for the Surgical Technologist: a Positive Care Approach* (4th ed.). Cengage Learning.

Formatted: Highlight

Formatted: Highlight

Commented [JC23]: 5. Rothrock, J.C. (2014). *Alexander's Care of the Patient in Surgery* (15th ed.). Elsevier Health Sciences.

Formatted: Highlight

Formatted: Highlight

Deleted:

4. The surgeon opens the peritoneum and the abdominal cavity and retracts tissue, with Army-Navy retractors or large Richardson retractors.
5. The surgeon quickly palpates the uterus to determine the size and presenting part of the fetus, as well as the direction and degree of rotation of the uterus.
6. The uterus is opened with a #10 blade through the lower uterine segment 2 cm above the bladder flap. The incision can be extended with scissors.
7. Any free fluid is suctioned (no suction tip is preferred).
8. Any retractors used previously are removed to make room for delivery of infant. Once the head is delivered, the shoulders and extremities are delivered using transabdominal fundal pressure.
9. A bulb syringe is used to aspirate the nares and mouth of the infant, minimizing risk for aspiration of amniotic fluid and its contents.
10. The umbilical cord is clamped and cut. The surgeon will then pass the infant off the surgical field for infant care.
11. The edges of the uterine incision are promptly clamped with forceps.[40]
12. The placenta is delivered and placed in an area on the back table for post-surgical examination.[40]
13. The first closing count is performed before the uterus is closed. The second closing count is performed when the fascia is closed and the final closing count is completed when skin is closed.
14. Before closing, the surgeon will explore for any blood clots, vernix, and amniotic fluid in the pelvis and peritoneal cavity. The fallopian tubes and ovaries are also inspected. If indicated, the pelvic cavity may be lavaged or irrigated.[40]

Deleted: a
Deleted:
Deleted: n
Deleted:
Deleted: about
Deleted: Suction a
Deleted: ;
Deleted:
Deleted:
Deleted:
Deleted:
Commented [JC24]: 40. Frey, K.B., & Ross, T. (Eds.). (2012). *Surgical Technology for the Surgical Technologist: a Positive Care Approach* (4th ed.). Cengage Learning.
Formatted: Highlight
Commented [JC25]: 40. Frey, K.B., & Ross, T. (Eds.). (2012). *Surgical Technology for the Surgical Technologist: a Positive Care Approach* (4th ed.). Cengage Learning.
Formatted: Highlight
Formatted: Highlight
Deleted:
Deleted:
Commented [JC26]: 40. Frey, K.B., & Ross, T. (Eds.). (2012). *Surgical Technology for the Surgical Technologist: a Positive Care Approach* (4th ed.). Cengage Learning.
Formatted: Highlight
Formatted: Highlight

Patient Position:

- Supine with roll or wedge under right hip to reduce uterine pressure on the vena cava.
- Bilateral arms extended < 90° and secured
- Safety belt is placed over patient's upper thighs
- Sequential compression devices (SCDs) are placed on bilateral legs

Positioning Considerations:

- Pad all bony prominences.

Skin Preparation:

- Use chlorhexidine gluconate if time permits, allowing for three minutes of drying time.
- Prep from suprasternal notch to pubis line.

Skin Preparation Considerations:

- If time doesn't allow, use povidone-iodine prep (unless otherwise contraindicated)

Incision:	Specimen (include method of fixation) :
• Infraumbilical midline vertical • Low transverse Pfannenstiel	• Placenta (permanent) • Cord blood (send to lab in purple top)
Fluids: • 2L NS for irrigation in fluid warmer x2 bottles	Medications: • Surgeon dependent • Hemostatic agents
Implants: • Not applicable (NA)	Grafts: • NA

Deleted:

Formatted: Font: Palatino Linotype, 10 pt

Formatted: List Paragraph, Bulleted + Level: 1 + Aligned at: 0.25" + Indent at: 0.5"

Deleted: degrees

Deleted:

Deleted:

Deleted: raprep

Deleted: must

Deleted: 3

Deleted: to

Deleted: betadine

Deleted: ;

Deleted: ;

Deleted: ¶

Deleted: such as thrombin, Gelfoam, Surgicel, and Floseal

Deleted: /A

Deleted: /

Suture Absorbable:	Non-Absorbable:
• 0 synthetic absorbable monofilament suture on CTX x 2 • 0 synthetic absorbable braided suture on CTX x 2 • 2-0 synthetic absorbable braided suture on CT-2 x 2 • 4-0 spiral knotless suture (if available, surgeon dependent)	• 0/2-0 synthetic non-absorbable monofilament suture on CT taper point needle, looped (fascial closure)
Dressing: • Surgeon dependent	Drains/Tubes • Foley catheter

Procedure Specific Considerations:

Set up and Preparation

- Basic trauma care—*once you get the call, open the pack, necessary trays, and supplies.*
- Be prepared to open, scrub-in, and set–up at any time.
- If possible, two circulators are preferred; one to focus on the surgical field and one on the needs of the infant.
- If time permits, ask surgeon for any special requests.
- Have trauma laps and hemostatic agents in the room.
- Prepare basinet and warmer for infant.
- Prepare the room and gather all necessary supplies:
  - step stool
  - headlamps

Deleted: S
Deleted: S
Deleted: S
Deleted: (
Deleted:)
Deleted: S
Commented [PSSMCUMC(27]:
Commented [PSSMCUMC(28]:
Commented [PSSMCUMC(29]: Is this ok for a generic term?
Deleted: Stratafix
Deleted:
Deleted: ¶
Deleted: U
Deleted: T
Deleted: C
Deleted: -
Formatted: Font: Italic
Deleted: ,
Deleted:
Deleted: S
Formatted: Bulleted + Level: 2 + Aligned at: 0.75" + Tab after: 1" + Indent at: 1"
Deleted: H

- equipment: electrosurgical instruments, suction, SCD, basinet, lamp or warmer for infant, fetal monitor
- specimen cup and specimen labels
- set up preps (chlorhexidine gluconate prep or dry prep set with povidone-iodine and sterile gloves)
- Foley catheter
- electrosurgical generator set to 30/30
- mesh briefs and postpartum pads (for after case)
- sponge counters ready and available

- Retrieve fluid warmer with x2L normal saline for warmer.
- Perform instrument count if time permits, or obtain x-ray if pre-procedure count not accomplished.

TeamSTEPPS® (if time permits)

- Confirm position, preps, and supplies.
- Confirm antibiotic.
- Verify specimens.

Patient Interview

- Verify consent for any other procedure.
- Place sequential compression device (SCD) cuffs.
- Note antibiotic orders, as they are not usually indicated.

Deleted: E
Deleted: Bovie
Deleted: S
Deleted: S
Deleted: aprep
Deleted: betadine
Deleted: Bovie
Deleted: M
Deleted: eri pad
Deleted: S
Deleted: I
Deleted: x-ray
Deleted: TeamSTEPPS
Deleted:
Deleted: –

Patient Arrival

- Apply and plug in electrosurgical pad.
- Plug in and turn on SCD.
- Position patient and secure with safety strap.
- Prep and drape patient's abdomen.

During Surgery

- Ensure surgeon and scrub technician have needed items.
- Monitor bleeding.
- Check bed for oxygen (O_2) mask, O_2 tank, slide board, and bed sheet (in preparation for transfer).
- Ensure counts are correct and inform the surgeon.

After Extubation

- Apply dressing to abdominal incision.
- Apply mesh briefs and perineal pad after transfer to gurney.
- Communicate report to receiving team.

Sterile Supplies:	Primary Sterile Instrument Set/Sets:
• Drapes: cesarean section or laparotomy drape • Drains: 16 FR Foley • Sharps: #10 blade	• Cesarean section set • Simpson Retractors • Kelly clamps x4

Deleted: Bovie

Deleted: 2

Formatted: Subscript

Formatted: Subscript

Deleted: panties

Deleted: C-

Deleted: S

Deleted: C-Section

Deleted: Simpson

Deleted: R

• Dressing: surgeon dependent, perineal pad, mesh briefs • Misc: electrosurgical pad, chlorhexidine gluconate prep, Poole suction tip, 60cc syringe x2, povidone-iodine paint x2, bulb syringe, cord blood container, blood gas containers	Secondary or Special Sterile Set/Sets: • Abdominal hysterectomy set • Balfour retractor

Further Considerations:

- Be prepared for emergent hysterectomy if bleeding is not controlled.
- Ensure the abdominal hysterectomy set and Balfour retractor are in the room and available at all times.
- If the case becomes emergent, open additional suction, electrosurgical pencil, and trauma laps.

CRANIOTOMY

Diagnosis: Subdural hematoma Subarachnoid hematoma	Planned Surgical Procedure: Craniotomy Craniectomy

Anatomy/Physiology/Pathophysiology:

Any trauma to the head may cause swelling and bleeding within the limited space of the skull. As this happens, intra-cranial pressure (ICP) rises, leading to decreased levels of consciousness. If left

Formatted: Indent: Left: 0.5", No bullets or numbering

Deleted: Bovie

Deleted: r

Deleted: oprep

Deleted: Poole tip suction

Deleted:

Deleted: Betadine

Deleted: P

Deleted:

Deleted: is

Deleted: bovie

Commented [PSSMCUMC(30]: laparascope?

Formatted: Highlight

Formatted: Highlight

Deleted: ¶
¶
¶
¶

Deleted: H

Deleted: H

Deleted:

Commented [JC31]: 41. John Hopkins Medicine. (n.d.) *Craniotomy*. Retrieved June 18, 2018, from https://www.hopkinsmedicine.org/healthlibrary/test_procedures/neurological/craniotomy_92,P08767

Deleted: (LOC)

Formatted: Highlight

untreated, increasing pressure can lead to brain herniation and possibly even death. There are several areas within the skull where swelling and hematomas may develop. Most commonly, they occur within the subdural and subarachnoid spaces.[41] A surgeon can either perform a craniotomy or a craniectomy to evacuate hematomas, provide the brain with extra space to swell, reduce ICP, and decrease the potential for brain herniation.

A craniotomy may be performed to create a limited opening through which blood or fluid may be evacuated, while the craniectomy removes an entire portion of the skull.[39]

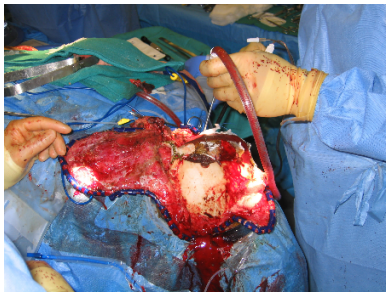


Figure 5-2. Craniotomy. Image courtesy of Captain Brian King.

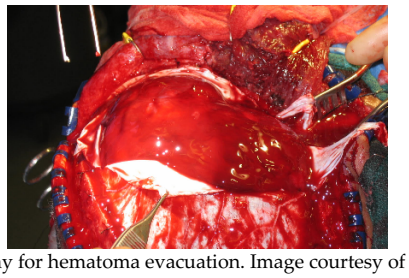


Figure 5-3. Craniectomy for hematoma evacuation. Image courtesy of Captain Brian King.

Indications:

Presence of hematoma(s), intracranial bleeding, and/or ICP ≥ 20.[1-42] Failure of medical management (head-of-bed elevated, hypertonic saline); agreement with intervention after consultation with

Deleted: s

Deleted: will

Commented [JC32]: 41. John Hopkins Medicine. (n.d.) *Craniotomy.* Retrieved June 18, 2018, from https://www.hopkinsmedicine.org/healthlibrary/test_procedures/neurological/craniotomy_92,P08767

Deleted: either

Formatted: Highlight

Deleted: thus

Deleted: ing

Commented [JC33]: 39. Goldman M. (2007). *Pocket Guide to the Operating Room* (3rd ed.). F.A. Davis Company.

Formatted: Highlight

Deleted:

Commented [JC34]: 41. John Hopkins Medicine. (n.d.) *Craniotomy.* Retrieved June 18, 2018, from https://www.hopkinsmedicine.org/healthlibrary/test_procedures/neurological/craniotomy_92,P08767

42. Hanft, S., & Bruce, J.N. (2017, December 21). *Craniotomy.* Medscape. https://emedicine.medscape.com/article/1890449-overview.

Deleted: ,4

Deleted:

Formatted: Highlight

Deleted: HOB

Deleted: .

Deleted: A

neurosurgeon; or inability to transfer patient to Role 3 and neurosurgery capability within four hours. Intra-theater or ADVISOR Line neurosurgery consultation should be sought before neurosurgical procedures by other than a trained neurosurgeon.

Concept of the Operation:

The morbid procedure is best performed by a neurosurgeon at the Role 3 facility. If unable to treat patient medically and evacuate patient in a timely manner, then the surgeon will make an opening in the skull to evacuate a hematoma or to relieve increased ICP until the patient is stabilized.[42]

Steps of the Procedure:

1. Perform a TIME OUT to identify patient, planned procedure, and laterality (at a minimum).
2. A semi-circular incision is made over the area of the skull where the injury has occurred using #10 blade.
3. Bleeding along incision is controlled using scalp clips.
4. Scalp flap is reflected posteriorly back.
5. If a craniotomy is performed, a hole is drilled at the appropriate location on the skull until the pre-defined depth is reached. Dura is then breached with a sharp instrument.
6. If a craniectomy is performed, a bone flap is cut using two drills, and subsequently removed.
7. Dura mater is exposed and opened with #15 and #11 blades and Metzenbaum scissors.
8. The hematoma is exposed and suctioned.
9. Bleeding vessels are repaired with hemostatic agents and electrocautery.
10. ICP monitor may be placed.

Deleted: .

Deleted: I

Deleted: 4

Deleted:

Commented [JC35]: 42. Hanft, S., & Bruce, J.N. (2017, December 21). *Craniotomy*. Medscape. https://emedicine.medscape.com/article/1890449-overview.

Deleted: ha

Formatted: Highlight

Deleted:

Deleted: S

Deleted: f

Deleted: , then

Deleted: then

Deleted: H

11. Dura mater is sutured closed with allograft and 4-0 nylon suture.

12. Depending on brain swelling, the bone flap may or may not be replaced:

    - If the swelling is too great for replacement, the skull flap is either discarded or implanted in the abdomen for future re-implantation. For US casualties, the vast majority will have the bone flap discarded, as there is an increased risk of infection with insertion into abdomen.
    - If the swelling has sufficiently decreased, the skull flap is reaffixed with a plate and multiple screws.
    - In the Role 2 setting, the bone flap will rarely be replaced. The defect will likely be re-explored by the neurosurgeon at the Role 3 facility.

13. The skin is closed with staples or 3-0 synthetic absorbable monofilament sutures.

14. Dressing is applied, usually using an antimicrobial occlusive dressing or antibiotic ointment with gauze bandaging.

15. For craniectomies, the dressing is marked with "no skull" (or other obvious precautionary indicators).

Patient Position: Supine with arms tucked at side and head turned per the surgeon's direction

Positioning Considerations:

- The prone position may be indicated when the hematoma is located in the posterior head. Utilize two gel rolls, two pillows, and foam padding for positioning. Rolled sheets or blankets may be substituted if unavailable.
- Ensure patient's arms are secured, bony prominences are padded, and all invasive lines are unobstructed, as they will not be visible during the procedure.

Deleted:
Deleted: -
Formatted: Bulleted + Level: 1 + Aligned at: 0.82" + Indent at: 1.07"
Deleted:
Deleted: (
Deleted:)
Deleted:
Deleted: -
Deleted:
Deleted: -
Deleted: S
Deleted: S
Deleted: on sutures
Deleted: xeroform
Deleted: bacitracin
Deleted: and kerlix
Deleted: mark
Deleted:
Deleted:
Deleted:
Deleted:
Deleted: P
Deleted: 2
Deleted: 2
Deleted:

Skin Preparation:

Paint povidone-iodine at the incision site and wide around the face and neck, then extend beyond the face to include the ears.

Skin Preparation Considerations:

- Prep with caution to prevent fluid pooling in mucous membranes and ears.
- Transparent film dressing may be placed over the eyes prior to prep.
- Antimicrobial occlusive dressing or cotton balls may be placed in ears.
- To prevent surgical fires, clip the patient's hair prior to the prep and allow sufficient time for the alcohol-based prep solutions to dry prior to draping. (The hair may also be pinned back or tied.)

Incision:	Specimen (including method of fixation) :
• Semi-circular on patient's scalp	• In limited cases, the excised bone flap will be placed in a sterile container and frozen until the swelling has subsided and it can be reapplied.
Fluids:	**Medications:**
• 1 liter 0.9% sodium chloride for irrigation	• Hemostatic agents, if available • Local anesthetic prior to incision, if available (eg, lidocaine hydrochloride 1% with epinephrine 1:100,000)

Deleted:

Deleted: Betadine Paint

Deleted: may

Deleted: to

Deleted: ,

Deleted: ing

Deleted:

Deleted: Tegaderm

Deleted: Xeroform

Deleted: e

Deleted: removed

Deleted:

Deleted: (i.e. Thrombin 20,000 units, Gelfoam, Floseal, Surgiflo, Surgicel)

Deleted: if available

Deleted: L

Deleted: w/

Implants:	Grafts:
• Cranial fixation instrument set, if available, and skull fixation if desired	• Bilayer collagen matrix graft
Suture Absorbable:	**Non-Absorbable:**
• 0/2-0 synthetic absorbable braided suture on CR (CT-1) • 3-0 synthetic absorbable monofilament suture on PS-2	• 4-0 nylon TF
Dressing:	Drains/Tubes
• Bacitracin ointment • Antimicrobial occlusive dressing strip with non-adherent covering • Skin stapler	• 16F Foley catheter • 7/10 Fr round drain with bulb
Procedure Specific Considerations: Set up and Preparation • Suction (x2), electrocautery, and drill are best placed at the foot of the bed • Both monopolar (regular) and bipolar cautery are needed for adequate hemostatic control TeamSTEPPS® • Verify laterality of incision site Patient Interview • If conscious, check for existing neurologic deficits such as speech or motor deficits.	

Deleted: Duragen

Deleted: s

Deleted: S

Deleted: S

Deleted:

Deleted: Xeroform

Deleted: w/telfa

Deleted: U

Deleted: TeamSTEPPS

- Physical injuries that are visible may not match internal injuries due to coup or contrecoup injuries.

Patient Arrival

- The patient will arrive rapidly to the OR as their condition can suddenly deteriorate. Be prepared to shave the patient's hair and prep immediately. A horseshoe-shaped headrest should already be attached to the bed before the patient is transferred. Assist anesthesia providers with line management as well as pharmaceutical interventions.

Start of Procedure

- Verify with the surgeon prior to incision that they are operating on the correct laterality (right versus left).

During Surgery

- Continually assist anesthesia with fluid and medication management, as the patient's status can change rapidly.
- Monitor the patient's urine output (this will be important to the anesthesia providers).
- Ask the surgeon whether the skull flap will be stored within the patient's abdomen (for non-IS personnel) or if it will be discarded.
- Prepare to gather drains and other closing supplies as cranial surgeries can and usually end quickly.

End of Surgery Preparation

- The patient will need to be transferred to a higher echelon of care (either facility or intensive care unit, ICU).

Deleted: /

Deleted: a

Deleted: Pt

Deleted: to

Deleted: rapidly

Deleted: suddenly

Deleted: pts

Deleted: Mayfield

Deleted: positioner

Deleted: pt.

Deleted: pt.

Deleted: t.

Deleted: as

Commented [PSSMCUMC(36]: US?

Commented [PSSMCUMC(37]:

Formatted: Highlight

Deleted: /

Deleted: Pt

Sterile Supplies:	Primary Sterile Instrument Set/Sets:
• Drapes: craniotomy drape • Drains: small round drain (7/10 Fr) with bulb • Dressing: bacitracin ointment, antimicrobial occlusive dressing, non-adherent gauze, skin stapler • Hemostasis: electrosurgical tips (x2)—monopolar and bipolar; scalp clip applier or remover; bipolar bayonet with micro tip and cord; and cotton neurosurgical patties in various sizes • Misc: suction, blades (#11 and #15) x2, skin stapler	Craniotomy tray Skull drill Kerrison rongeur Rongeur pliers Pituitary forceps If no power: Hudson brace hand drill, brain retractor, and Gigli saw Secondary or Special Sterile Set/Sets: Skull fixation tray

Further Considerations:

- The priority should be to complete surgery as safely and quickly as possible to expedite patient transfer to higher echelons of care with increased monitoring capabilities.
- Data indicates no difference in outcomes for patients who do or do not receive a craniectomy.
- Careful consideration should be given before committing to this procedure at the Role 2 setting as these patients often do best with an expedited transfer to a neurosurgeon at Role 3.

EXTERNAL FIXATOR APPLICATION

Deleted: ¶
Deleted: C
Deleted: S
Deleted: s
Deleted: B
Deleted: s
Deleted: xeroform and
Deleted: telfa
Deleted: /
Deleted: Bovie
Deleted: –
Deleted: ,
Deleted: &
Deleted: /
Deleted: ,
Deleted: ,
Deleted: variety of
Deleted: cottonoid
Deleted: S
Deleted: P
Deleted: as
Deleted: in order
Deleted: the
Deleted: the
Deleted: ¶
... [80]

Diagnosis: Long bone fracture, sometimes accompanied by vascular injury	Planned Surgical Procedure: External fixation or Ilizarov Method

Anatomy/Physiology/Pathophysiology:

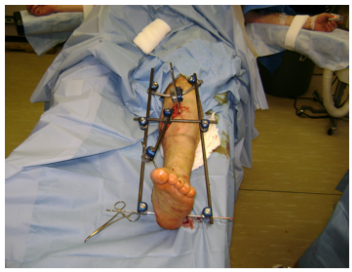
Temporizing external fixation is the preferred method of treatment for long bone fractures in the setting of acute tissue trauma, skin grafting or muscle flaps, and in patients with compromised skin or tissue integrity due to polytrauma or disease processes.[1] This technique can be limb-saving in the setting of high-energy trauma with soft tissue damage in the medically unstable patient and in any circumstance where definitive repair must be delayed (ie, when the patient requires immediate transport to a higher level of care).[1]

Indications:

To provide fast, minimally-traumatic stability to a fractured limb

Concept of the Operation:

External fixation consists of percutaneously-placed pins secured to external scaffolding, which provides support and stabilization to a bone or joint in the trauma setting (usually Role 2 and above). The most common battle injuries require external fixation of the femur, tibia, knee, and ankle.[43] There is an increasing use of external fixator for upper extremity injuries as well—especially for the humerus.



Deleted: F

Deleted: /

Deleted:

Deleted: and/

Commented [JC38]: 1.Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Deleted: /

Deleted:

Formatted: Highlight

Formatted: Highlight

Formatted: Highlight

Deleted: ,

Deleted: .

Deleted: .

Commented [JC39]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Formatted: Highlight

Formatted: Highlight

Formatted: Highlight

Deleted:

Deleted:

Deleted:

Deleted:

Deleted: to

Deleted: /

Deleted: /

Commented [JC40]: 43. External skeletal fixation application. (n.d.). Retrieved June 28, 2018, from http://cal.vet.upenn.edu/projects/orthopod/csfr/terms/esfapplicationimex.htm

Formatted: Highlight

Formatted: Highlight

Commented [PSSMCUMC(41]: Ok?

Deleted: ,

Formatted: Highlight

Formatted: Highlight

Figure 5-4. External fixator application. Image courtesy of Major Corey Campbell (Ret).

Steps of the Procedure:

1. If available, contact the radiology department to ensure technician availability prior to patient transport to OR. At Role 2, non-orthopedic clinicians will benefit from the use of portable x-ray devices to confirm pin location. *The use of ultrasound for external fixator pin placement has not been studied, but may be beneficial.*
2. Transfer patient to the OR table.
3. Ensure essential lines (intravenous, arterial, and central lines) are placed.
4. Place Foley catheter, as needed.
5. Position patient with the operative lower extremity in a neutral position utilizing rolls under the buttocks and shoulder; if gel rolls are not available, improvise by making a roll out of folded sheets. For upper extremity fixation, place the extremity on a hand table in neutral position.
6. Apply a pneumatic tourniquet.
7. Clip patient's hair if necessary, and then prep skin with povidone-iodine (if the patient has an open wound) or chlorhexidine gluconate (if the skin is intact), circumferentially extending to the fingers and shoulder (if the arm is the surgical site) or to the toes and groin (if the leg is the surgical site).
8. Drape patient with an upper or lower extremity drape (depends on the limb).
9. Perform a TIME OUT to identify patient, planned procedure, and laterality (at a minimum).
10. The clinician will determine the first fixation point by placing a smooth Steinmann pin against the bone and taking an x-ray, if available.

Deleted: AJ
Formatted: Highlight
Deleted:
Deleted: the
Deleted: x-ray
Formatted: Font: Italic
Deleted: /or
Deleted:
Deleted: Betadine Paint
Deleted: Chloraprep
Formatted: Font: Palatino Linotype, 10 pt
Deleted: /
Deleted: p
Deleted: shooting
Deleted: x-ray

11. The clinician will make a small incision over a stabilization point using #11 or # 15 blade loaded on a #3 knife handle.
12. A hole is drilled with either a Jacobs chuck or a slow speed drill.
13. The pin is extended through the far cortex of bone enough so that some threads are visible between the bone and the trocar tip of the pin.
14. The chuck key is used to tighten the chuck and secure the pin while being inserted.
15. Steps 10 to 14 are repeated on the bone opposite the fracture site of the previously inserted fixation pin.
16. Optimal frame strength comes with using a minimum of two proximal and two distal fixation pins that are connected with connecting bars using clamps. Make sure the bolts are on the side facing the bone. The clamps should also be placed on the pins so there is enough space between the clamps and the surface of the skin to allow for soft tissue swelling (this can be approximated using the width of one finger).
17. A final x-ray is taken to confirm the proper alignment of the bone.
18. If a wound is open, the procedure will be followed by a wound wash-out, using 3–9 L normal saline with cystoscope tubing.

Patient Position: supine; affected extremity is position-dependent

- Upper extremity: bilateral arms extended with the injured arm on the hand table and legs secured.
- Lower extremity: bilateral arms extended with rolls and pillows available for hip bump. Unaffected leg is padded and secured with silk tape.

Positioning Considerations:

Deleted: -
Deleted:
Deleted: ;
Deleted: F
Deleted: X
Deleted: –
Deleted:
Deleted: ,
Deleted:

- The patient should be positioned in a manner that will leave the operative extremity exposed and the rest of the body secured.
- Patient is usually positioned on OSI flat top table (radiolucent).

Skin Preparation: dependent on injury

- Open wound: paint povidone-iodine onto entire extremity, starting at wound bed first and working outwards.
- Closed: apply chlorhexidine gluconate to the entire extremity, starting at anticipated incision site and working outwards.

Skin Preparation Considerations:

- It might be necessary to conduct a two-person prep (one person to hold the extremity, the other to prep).
- Allow sufficient time for prep to dry.

Incision:	Specimen (include method of fixation) :
• Usually less than 1 cm wide and sufficient for the placement of the Steinmann pins • If the wound is open, no need for incision	• Usually, anaerobic and aerobic swabs will be taken from the wound site
Fluids: • If followed by wound wash-out, 3L 0.9% sodium chloride for irrigation	Medications: • Antibiotics (depending on the surgeon's preference, eg, beads, powder, intravenous)
Implants:	Grafts:

Commented [PSSMCUMC(42]: Is there a meaning for OSI.acronym?

Deleted: F

Formatted: Highlight

Deleted:

Deleted: Betadine Paint

Deleted: to

Formatted: Font: Palatino Linotype, 10 pt

Deleted: Chloraprep

Formatted: Font: Palatino Linotype, 10 pt

Deleted:

Deleted: May need

Deleted: –

Deleted:

Deleted: –

Deleted: IV

• None (Steinmann pins are removable)	• None
Suture Absorbable: • None	Non-Absorbable: • None
Dressing: • Antimicrobial occlusive dressing strips • Fluff • Gauze bandage roll (usually 4.5″) with antiseptic • Self-adherent compression wrap (usually 4″ or 6″) • Cotton undercast padding (2″ or 4″)	Drains/Tubes • Closed suction surgical drain
Procedure Specific Considerations: Set up and Preparation • Contact radiology to confirm availability for the procedure (if available at your role). • Suction, electrocautery, and drill are best placed at the head or opposite side of the bed from injury for easy x-ray access. • Only monopolar (regular) cautery will be needed for adequate hemostasis control. • If a washout is possible, place sheets or absorbable material or surgical suction mats around the bed to minimize employee fall risk. • Many patients will have concomitant vascular injuries. Ensure the operative plan is verbalized to the entire team about which step will be performed first (eg, vascular repair or fracture	

Deleted:
Deleted: Xeroform
Deleted: May use
Deleted: JP
Deleted: or Hemovac
Deleted: Kerlix
Deleted: Coban
Deleted: or ACE wrap (4″ or 6″)
Deleted: Webril
Deleted: U
Deleted: ,
Deleted: &
Deleted: X
Deleted: /
Deleted: Eco
Deleted: ;

stabilization with the external fixation). *There are pros and cons to both methods that extend beyond the purview of this publication.*

TeamSTEPPS®

- Verify laterality of incision site

Patient Arrival

- The fracture should be immobilized as much as possible. A total of two members are needed for the patient prep. Have a team member specifically designated to hold and move the extremity.
- Keep patient warm.

Start of Procedure

- Verify laterality with the surgeon prior to incision.

During Surgery

- If there is prolonged bleeding or irrigation, ensure additional absorbable sheets are available.

End of Surgery Preparation

- Notify receiving unit of patient status, special considerations, and lines or drains.

After Extubation

- Make sure one person is dedicated to stabilizing the injured extremity.
- Assist anesthesia with transport.

Sterile Supplies:	Primary Sterile Instrument Set:
• Drapes: half sheet, u-drapes (x2), large drape (optional), c-arm drape	• Large drill and battery • Major orthopedic set

Deleted: fix
Deleted:
Deleted: /
Formatted: Font: Italic
Deleted: TeamSTEPPS
Formatted: Superscript
Deleted: –
Deleted:
Deleted: ing
Deleted: ing
Deleted: /
Deleted: ¶
Deleted: /Sets
Deleted: ¶

• Drains: none • Dressing: self-adherent compression wrap (4" or 6"), fluff, gauze bandage roll with antiseptic (4.5"), or cotton undercast padding (2" or 4") • Hemostasis: monopolar cautery • Misc: suction, #11 blade, cystoscopy tubing, antimicrobial occlusive dressing strips	If no power: • Jacobs chuck • Hand drill Secondary or Special Sterile Set: • Hand and foot or minor orthopedic set (if major orthopedic set not used)
Further Considerations: • If the patient is a United States service member (USSM), the priority is to stabilize the fracture and transport patient to a higher echelon of care. • If the patient is a local national, the priority is to eventually repair the fracture, as an external fixation application is generally not appropriate for disposition to local national facilities, but has been the definitive treatment for a number of patients in the past.	

FASCIOTOMY

Diagnosis: Compartment syndrome	Planned Surgical Procedure: Fasciotomy
Anatomy/Physiology/Pathophysiology:	

Deleted: Ace
Deleted: , Coban (4")
Deleted: C
Deleted: Kerlix
Deleted: Webril
Deleted: /Sets
Deleted: Xeroform
Deleted: S
Deleted: M
Deleted: a
Deleted: ¶
¶
¶
¶
¶
Deleted: S
Deleted:

Acute compartment syndrome (CS) is an emergency indication for fasciotomy, where the fascia is surgically split to allow the muscle to expand and decompress.[44] CS occurs when pressure inside the fascia exceeds diastolic pressure and the muscles, vessels, nerves, and other tissues become avascular.[31] The intracompartmental pressure compromises blood flow to the involved muscles and nerves, eventually resulting in tissue death. CS is most common following tibial fractures and crush injuries, but can also be caused by exertion associated with exercise.[44] Loss of limb, infection, and rhabdomyolysis (with subsequent acute kidney injury) are major complications. Positive assessment of CS is identified on the basis of mechanism of injury, severe extremity pain that is out of proportion to what would otherwise be expected, swelling, and tight, shiny skin.[45] Normal compartment pressure is less than 20 mmHg. Compartment syndrome can be assumed if compartment pressures are within 30 mmHg of diastolic according to needle manometer, wick catheter, slit catheter, or solid-state transducer intracompartmental catheter. Late findings are paresthesia, pallor, and absence of pulse, which may be a sign that irreversible damage has already occurred.[46] Pain is increased with passive stretch of the muscle group.[31] Emergency surgical intervention is the definitive treatment of CS.

Indications:

Decompress compartment pressures, prevent acute renal injury, prevent infection, and prevent functional loss of limb.

Concept of the Operation:

The surgeon will make longitudinal skin incisions over the fascial tissues that form the affected compartment; subsequent incisions will extend the entire length of all affected compartments. The most common reason for failure of traumatic CS is an incomplete release of compartments.

Commented [JC43]: 44. Armstrong, A.D., & Hubbard M.C. (Eds.). (2015). *Essentials of Musculoskeletal Care* (5th ed.). American Academy of Orthopaedic Surgeons.

Deleted:

Formatted: Highlight

Commented [JC44]: 31. Farr W, et al. *Special Operations Forces Medical Handbook*. New York, NY: Skyhorse Publishing; 2008.

Deleted:

Formatted: Highlight

Commented [JC45]: 44. Armstrong, A.D., & Hubbard M.C. (Eds.). (2015). *Essentials of Musculoskeletal Care* (5th ed.). American Academy of Orthopaedic Surgeons.

Deleted:

Formatted: Highlight

Deleted:

Deleted: by

Deleted: based on

Deleted: ,

Commented [JC46]: 45. Peitzman, A.B., Rhodes M., Schwab C.W., Yealy D.M., & Fabian T.C. (2013). *The Trauma Manual: Trauma and acute care surgery* (4th ed.). Lippincott Williams & Wilkins.

Deleted: ,

Deleted: ,

Formatted: Highlight

Deleted:

Formatted: Highlight

Deleted:

Deleted: (STIC)

Deleted: pulselessness

Commented [JC47]: 46. Rispoli, D.M. (2009). *Tarascon Pocket Orthopaedica* (3rd ed.). Tarascon.

Formatted: Highlight

Formatted: Highlight

Formatted: Highlight

Commented [JC48]: 31. Farr W, et al. *Special Operations Forces Medical Handbook*. New York, NY: Skyhorse Publishing; 2008.

Deleted: S

Deleted: M

Steps of the Procedure:

1. Transfer patient to OR table and assist anesthesia.
2. Place Foley catheter, if not already in place, per surgeon's direction.
3. Patient position depends on affected site(s)—typically supine or prone. Pad all pressure points.
4. Longitudinal incisions are made using a #10 blade along the skin. Scissors and blunt finger dissection are used to open fascial tissues that form the affected compartments along the entire length of the space, from origin to insertion of the compartment.
5. The fascia is retracted using a self-retaining instrument and additional incisions are made until decompression of the affected compartments is achieved.
6. Any hematoma is evacuated and the compartment is then irrigated to ensure no clots are left.
7. The wound is left open to heal by delayed primary closure or closed at a later time. Ensure any packing used for dressing is not part of the surgical sponge count.
8. A negative pressure wound VAC may be placed to help monitor output.

Patient Position: Supine with arms out

Positioning Considerations:

- Arms should be perpendicular (90° or less) to the body in to maximize sterile field space

Skin Preparation: depends if wound is open or closed

- Open: Povidone-iodine paint (faster and preferred method)

Deleted:

Deleted: ,

Deleted: either

Deleted: will be

Deleted: will be

Deleted:

Formatted: Highlight

Deleted:

Deleted:

Deleted: degrees

Deleted: order

Deleted:

Deleted: Betadine

Deleted:

Deleted: P

- Closed: Chlorhexidine gluconate—allow for three minutes of drying time before draping

Skin Preparation Considerations:

- Clip hair at the surgical site, outside of the OR if possible.
- Place absorbent pad under affected extremity to prevent pooling of excess skin prep (reduces risk for fire and prevents skin breakdown).
- Place 1015 (semi-circular) drape high on the affected limb near the perineum for lower extremities and armpit for upper extremities prior to prepping.

Incision: • Body area dependent, usually upper or lower extremities	Specimen (include method of fixation) : • Wounds may be cultured, if available at site
Fluids: • 0.9% sodium chloride irrigation	Medications: • Local anesthetic per surgeon preference
Implants: • N/A	Grafts: • N/A
Suture Absorbable: • N/A	Non-Absorbable: • Possibly nylon (2-0/3-0)
Dressing: • Wound VAC or wet to dry	Drains/Tubes • 16 Fr Foley catheter

Deleted: Chloraprep
Deleted: ,
Deleted: to
Deleted: .
Deleted:
Deleted: S
Deleted:
Deleted:
Formatted: Highlight

Procedure Specific Considerations:

Set up and Preparation

- Set up OR table, lock bed, make roller board ready, position OR lights pointed down and within reach.
- Equipment:
  - Electrosurgical device
  - Suction
  - Wound VAC with canister (plugged in)
- Open sterile supplies and set-up skin prep.
- Perform surgical supply count.

TeamSTEPPS®

- Verify patient information and laterality of incision site(s).

Patient Interview

- Verify patient (full name and date of birth), consent, injury laterality, allergies, nothing by mouth status, pre-existing implants, and presence of metal (eg. jewelry, implants).

Patient Arrival

- Connect pre-existing drains, devices, etc.
- Transfer patient to OR table and secure with safety strap.
- Apply electrosurgical pad.
- Place Foley catheter (if not already done).
- Prep skin.
- Assist anesthesia as needed.

Deleted: U

Deleted: Bovie

Formatted: Bulleted + Level: 2 + Aligned at: 0.75" + Indent at: 1"

Deleted: TeamSTEPPS

Formatted: Highlight

Deleted: NPO

Deleted: etc.

Deleted: Bovie

Start of Procedure

- Perform TIME OUT with surgical team after the patient is prepped and draped to identify patient, procedure, and laterality, at a minimum.

During Surgery

- Ensure supplies are available and ready.
- Confirm patient disposition, have bed ready, call report.

End of Surgery Preparation

- Secure all drains, lines, etc.
- Transfer patient from OR table.

After Extubation

- Ensure that splinting is in a functional position.
- Confirm that wound VAC is operational, turned on, and at ordered settings (if used).

Sterile Supplies:	Primary Sterile Instrument Sets:
• Drapes: extremity or split drapes • Drains: wound VAC • Dressing: antimicrobial occlusive dressing, gauze packing, splint, or immobilizer • Hemostasis: sterile compressed sponge • Misc: wet prep tray	• Minor orthopedic surgical set (scalpel, blades, tissue forceps, retractors, scissors) • Electrosurgical tip for skin edge hemostasis Secondary or Special Sterile Sets: • None

Deleted: timeout

Formatted: Highlight

Deleted: –

Deleted: Set/

Deleted: Xeroform

Deleted: Bovie

Deleted: /

Deleted: Set/

Deleted: Gelfoam (potentially)

Further Considerations:

- Initiation of the procedure should be given priority once the determination has been made to perform a fasciotomy. Delayed care can result in tissue necrosis, loss of limb, infection, and kidney failure.

IRRIGATION AND DEBRIDEMENT

Diagnosis:	Planned Surgical Procedure:
Open wounds, wound infection, abscess, or necrotic tissue	Irrigation and debridement

Anatomy, Physiology, Pathophysiology:

Every battlefield wound is considered contaminated and highly susceptible to infection. Timely treatment via early irrigation and debridement and antibiotic therapy are the best methods to minimize subsequent infection. These wounds may contain microbial laden projectile fragments, dirt, and clothing, and must be removed to allow the wound bed to heal.[1] Optimally, irrigation and debridement should be performed within six hours of the injury and every 24 hours thereafter until the wound has healthy, clean tissue.[1]

Abscesses often appear as tender masses that are movable and compressable.[47] Incision and drainage is the recommended treatment. Antibiotics are typically ineffective due to the avascular wall around most abscesses.[47] Abscesses must remain open to prevent premature closure and reformation.[1]

Deleted:

Deleted: ¶ ... [81]

Deleted: D

Deleted: /

Deleted: /

Deleted:

Deleted: is

Commented [JC49]: 1.Cubano, M.A, & Butler, F.K ... [82]

Deleted: in order

Formatted: Highlight

Formatted: Highlight

Deleted: done

Deleted: ,

Commented [JC50]: 1. Cubano, M.A, & Butler, F.K ... [83]

Formatted: Highlight

Formatted: Highlight

Formatted: Highlight

Deleted: ;

Deleted: a

Commented [JC51]: 47. Tintinalli, J.E., Stapczynks ... [84]

Commented [JC52]: 1. Cubano, M.A, & Butler, F.K ... [85]

Deleted: in order

Deleted:

Formatted: Highlight

Formatted: Highlight

Formatted: Highlight

Cultures may be indicated. Consider the presence of wound condition (eg, frank pus, redness, warmth, swelling, tenderness), epidermal necrosis, fever, unexplained tachycardia, or hypotension.[1]

Indications:

Irrigate and debride the necrotic tissue to allow for the growth of a healthy wound bed.

Concept of the Operation:

The surgeon will explore the wound, remove necrotic tissue, remove any foreign material, and irrigate the wound with the best available fluid for irrigation. Closed abscesses will be incised and treated similarly.[1] Following irrigation and debridement, wounds may be left open to heal by secondary intention.

Steps of the Procedure:

1. Transfer patient to OR table and then assist with anesthesia (once patient arrives to OR).
2. Patient position is wound area dependent. Pad all bony prominences.
3. Consider tourniquet application for limb wounds to help control bleeding.
4. The incision may be made along the long axis of the extremity. To optimize skin closure, incisions are often made perpendicularly to the extremity axis.[4,8] Larger abscesses may require an elliptical incision. Surgical incisions are most frequently made with a #10 blade.
5. Necrotic and devascularized tissue is removed with Metzenbaum or Mayo scissors. Mangled extremities may require amputation (*see Amputation appendix*).

Deleted: ;

Deleted: c

Deleted: i.e.

Commented [JC53]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Deleted:

Commented [JC54]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Deleted: via

Formatted: Highlight

Deleted:

Deleted: P

Deleted: ;

Deleted: p

Deleted: in order

Deleted: I

Formatted: Highlight

Deleted: ,

Deleted: ,

Deleted: m

Formatted: Font: Italic

6. The wound is explored with grasping forceps, such as Adson, Bonney (rat tooth), or DeBakey.
7. Bleeding is controlled with clamping and suture ligation (ie, silk ties: 0, 2-0, 3-0, or 4-0—depending on structure size), and electrocautery.[48] If available, hemostatic agents and dressings could be considered for use.
8. Foreign bodies penetrating into vital structures should be left in place until the patient can reach appropriate surgical capability.[48]
9. Aggressive irrigation with pressure (>15 psi) should be avoided as it is damaging to the tissues and associated with plunging bacteria deeper into the tissues.[1,48]
10. Low-pressure irrigation with a bulb syringe can be used on clean wounds. Large volume, low-pressure irrigation can be performed with cystoscopy tubing for dirty or contaminated wounds.

    A dilute sodium hypochlorite and boric acid solution may be used to irrigate very large, dirty, or injected wounds to treat wound infections and prevent fungal infections. The half-strength above solution kills microorganisms without damaging the patient's tissues. *See recipe in "Irrigation" block below.*
11. Larger draining wounds may require a gravity drain or bulb suction.
12. Dressing, dependent on wound size and resources:
    - For large wounds, negative pressure wound therapy (NPWT) works best to promote wound healing. Field-expedient devices can be improvised from items such as blue surgical towels, gauze bandage roll with antiseptic, large antimicrobial isolation drapes, or chest tubes hooked up to a suction device.[48]

Deleted: W
Deleted: R
Deleted: T
Commented [JC55]: 48. Rapp, J., Plackett, T., Crane, J., et al. (2017, July 24). *Acute Traumatic Wound Managemen* ... [86]
Deleted: ,
Deleted: .
Deleted: .
Deleted: ;
Commented [JC56]: 48. Rapp, J., Plackett, T., Cran ... [87]
Deleted: /or
Deleted: ,
Deleted: i
Formatted: Highlight
Commented [JC57]: 48. Rapp, J., Plackett, T., Crane ... [88]
Formatted: Highlight
Deleted: (
Deleted:
Commented [JC58]: 1. Cubano, M.A, & Butler, F.K ... [89]
Formatted: Highlight
Deleted:
Deleted:
Deleted: utilized
Deleted: Dakin's Solution
Deleted: (0.025%)
Deleted: H
Deleted: Dakin's
Deleted: *R*
Formatted: Font: Italic
Deleted: N
Formatted: Font: Palatino Linotype, 10 pt
Formatted ... [90]
Deleted: such
Deleted: ,
Deleted: kerlix
Deleted: ioban
Formatted: Font: Palatino Linotype, 10 pt
Deleted: and
Formatted: Font: Palatino Linotype, 10 pt
Formatted: Font: Palatino Linotype, 10 pt, Highlight
Formatted: Font: Palatino Linotype, 10 pt

- Alternatively for large wounds, wet-to-dry dressing that is loosely packed and covered with absorbent gauze and abdominal (ABD) dressing may be used. If wounds drain heavily, consider dry-to-wet instead.[48]
- For small wounds, consider non-adherent dressing covered with absorbent gauze that is changed daily.[48]
- Alternatively for small lacerations, these wounds may be closed if the wound is clean with minimal tissue destruction in that area, and if the injury occurred <12 hours before. These small lacerations may be closed with skin glue.

Patient Position:

- Wound area dependent

Positioning Considerations:

- Pre-position OR table, arm rests, foam padding, and slide boards.

Skin Preparation:

- For open wounds, use povidone-iodine paint only.

Skin Preparation Considerations:

- Place an absorbent pad under the affected area to prevent pooling of excess skin prep, which reduces the risk for skin breakdown.

Incision:	Specimen (include method of fixation) :

Deleted: Alternative

Deleted: ,

Deleted:

Deleted: ;

Deleted: i

Formatted: Font: Palatino Linotype, 10 pt

Formatted: Font: Palatino Linotype, 10 pt

Commented [JC59]: 48. Rapp, J., Plackett, T., Crane, J., et al. (2017, July 24). *Acute Traumatic Wound Management in the Prolonged Field Care Setting (CPG ID: 62).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Wound_Management_PFC_24_Jul_2017_ID62.pdf
Also War Surgery

Formatted: Font: Palatino Linotype, 10 pt, Highlight

Formatted: Font: Palatino Linotype, 10 pt

Deleted: ,

Formatted: Font: Palatino Linotype, 10 pt

Formatted: Font: Palatino Linotype, 10 pt

Commented [JC60]: 48. Rapp, J., Plackett, T., Crane, J., et al. (2017, July 24). *Acute Traumatic Wound Management in the Prolonged Field Care Setting (CPG ID: 62).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Wound_Management_PFC_24_Jul_2017_ID62.pdf
Also War Surgery

Deleted: and

Formatted: Font: Palatino Linotype, 10 pt, Highlight

Formatted: Font: Palatino Linotype, 10 pt

Deleted: ,

Deleted: ,

Formatted: Font: Palatino Linotype, 10 pt

Deleted:

Deleted:

Deleted: .

Deleted:

Deleted:

Deleted: Betadine

Deleted: P

Deleted:

Deleted: (

Deleted:)

• Body area dependent	• Cultures, if indicated by surgeon and laboratory support is available at the location
Fluids: • 0.9% sodium chloride irrigation, 3L bag connected to cystoscopy tubing and 1L on the sterile field • **Sodium hypochlorite and boric acid solution recipe:** 1L water (sterile or boiled), 5mL household bleach (5.25% hypochlorite solution, unscented), sodium bicarbonate (if available, in one of these forms: ½ tsp baking soda or 4 ampules [200mL] 8.5% sodium bicarbonate injection). Once mixed, this solution can be stored. The half-strength solution should be diluted in 1:10 with water for wound irrigation solution.[48]	Medications: • Local anesthetic per surgeon preference (ie lidocaine 1% with epinephrine 1:100,000) • Broad spectrum antibiotic
Implants: • N/A	Grafts: • N/A
Suture Absorbable:	Non-Absorbable:

Deleted:

Deleted: .

Deleted: .

Deleted: L

Deleted: w/

Formatted: Font: Bold

Formatted: Bulleted + Level: 1 + Aligned at: 0.25" + Indent at: 0.5"

Deleted: Dakin's Solution

Deleted: ¶
R

Formatted: Font: Bold, Italic

Formatted: Font: Palatino Linotype, 10 pt

Deleted: (

Deleted:)

Commented [JC61]: 48. Rapp, J., Plackett, T., Crane, J., et al. (2017, July 24). *Acute Traumatic Wound Management in the Prolonged Field Care Setting (CPG ID: 62).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Wound_Management_PFC_24_Jul_2017_ID62.pdf
Also War Surgery

Formatted: Font: Palatino Linotype, 10 pt, Highlight

Formatted: Highlight

Formatted: Font: Palatino Linotype, 10 pt

• 3-0 synthetic absorbable braided suture on SH • 4-0 synthetic monofilament suture for small laceration closure	• 0/2-0/3-0/4-0 silk ties for ligation
Dressing: • Large open wound: NPWT—gauze, sticky dressing covering, suction tubing • Wet-to-dry or dry-to-wet: gauze • Small lacerations: skin glue	Drains/Tubes: • Use for heavily draining wounds • Possible field expedient NPWT: have suction tubing and suction canister available
Procedure Specific Considerations: Set up and Preparation • Set up OR table, lock bed, make roller board ready, position OR lights pointed down and within reach. • Equipment: electrosurgical instrument, suction, cystoscopy tubing with 3L 0.9% sodium chloride bags. • Open sterile supplies and set up indicated skin prep. • Perform the surgical count. TeamSTEPPS® • Verify patient information and laterality of incision sites. Patient Interview • Standard practice Patient Arrival	

Deleted: S
Deleted: S
Formatted: Indent: Left: 0.5", No bullets or numbering
Deleted: S
Deleted:
Deleted: –
Deleted: F
Deleted: ,
Deleted: /
Deleted: D
Formatted: Highlight
Deleted: U
Deleted: bovie
Deleted: liters
Deleted: TeamSTEPPS
Formatted: Superscript
Deleted: S

- Connect pre-existing tubes, lines, drains, devices, etc.
- Transfer patient to OR table and secure with safety strap.
- Apply electrosurgical pad.
- Assist with anesthesia as needed.
- Confirm positioning with surgeon.
- Prep skin and apply drape(s).

Start of Procedure

- Perform TIME OUT with surgical team to confirm patient, procedure, and laterality, at a minimum.

During Surgery

- Ensure closing supplies are ready.
- Confirm patient disposition, have a bed ready, and call report.

End of Surgery Preparation

- Secure all tubes, lines, drains, lines, etc.
- Transfer patient from OR table.

After Extubation

- Confirm disposition of any cultures.

Sterile Supplies:	Primary Sterile Instrument Set/Sets:
• Drapes: body area dependent • Drains: gravity drain (have available, but unopened) • Dressing: dependent on size of wound	• Minor instrument set Secondary or Special Sterile Set/Sets:

Deleted: Bovie

Deleted: timeout

• Hemostasis: dressings and agents if available, electrocautery, 0/2-0/3-0/4-0 silk ties • Misc: 8 Fr Frazier suction tip, Yankauer suction tip, Poole suction tip, cystoscopy tubing, 3L bag sodium chloride irrigation	• None

Further Considerations

- To minimize exposure to bloodborne pathogens, healthcare providers should wear eye protection in addition to gloves and masks.
- Irrigation procedures may require multiple glove and gown changes for the surgical team due to contamination. Consider and plan for the eventuality ahead of the start of the procedure.
- Irrigation procedures often create significant slip hazard on hard floors with fluids on the floor. Have a plan for using blankets or towels to absorb fluids on the floor that can cause hazards to the team.
- Anticipate the patient will need "wash-outs" (irrigation and debridement) every 24 hours, or as often as the surgeon deems necessary.
- Observe for signs and symptoms of compartment syndrome in injured extremities,[48] as these patients may require fasciotomy (*see Fasciotomy appendix*).
- Abdominal wounds may require laparotomy (*see Laparotomy appendix*).
- If a chest wound is present, have chest tube and closed drainage system available.

Deleted: y

Deleted: p

Deleted: NaCl

Formatted: Highlight

Formatted: Font: Italic

Formatted: Font: Italic, Highlight

Formatted: Font: Italic

Formatted: Font: Italic

Commented [JC62]: 48. Rapp, J., Plackett, T., Crane, J., et al. (2017, July 24). *Acute Traumatic Wound Management in the Prolonged Field Care Setting (CPG ID: 62).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Wound_Management_PFC_24_Jul_2017_ID62.pdf
Also War Surgery

LAPAROTOMY

Diagnosis:	Planned Surgical Procedure:
Penetrating, blunt trauma to the abdomen (ie, gunshot wound, improvised explosive device, blast, etc.)	Laparotomy

Anatomy/Physiology/Pathophysiology:

The abdomen is an area within the body that contains a high concentration of vital organs and blood vessels. Both penetrating and blunt trauma may damage these structures and require immediate surgical stabilization.

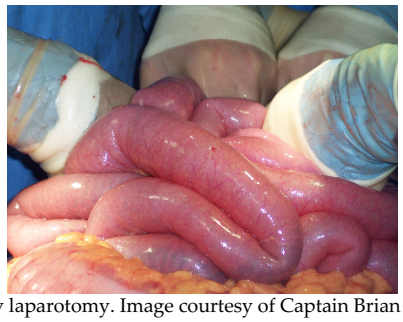


Figure 5-5. Exploratory laparotomy. Image courtesy of Captain Brian King, Medical Coprs, US Army.

Indications:

Penetrating or blunt injuries to the abdomen, flank, or pelvis

Concept of the Operation:

Gain immediate control of any abdominal vascular disruptions, repair any immediate life threatening injuries, stop spillage and ongoing contamination from hollow organs.

Deleted: /
Deleted: B
Deleted: .
Deleted: .
Deleted: GSW
Deleted: IED
Deleted: B
Deleted:
Deleted: .
Deleted:

Steps of the Procedure:

1. Patient arrives in the OR.
2. Transfer patient to the OR table and ensure essential lines (intravenous, arterial, and central lines) are placed.
3. Place Foley catheter, as needed.
4. Position patient with arms out at less than 90 degree angle, padded and secured to the arm boards, with palms facing up.
5. The patients should be naked and the Foley catheter should be placed under the thigh so as not to interfere with the sterile field.
6. Clip abdominal hair prior to a trauma prep.
7. The surgeon will make a midline incision from xiphoid to pubis, with semi-circle going around the umbilicus (unless immediate exploration of penetrating injury site is preferred) with either a #10 blade or electrocautery.
8. After obtaining access to viscera, begin evacuating free fluid using Yankauer and Poole suction, as well as laparotomy sponges.
9. Laparotomy (lap) sponges will be used to pack all four quadrants of the abdomen to achieve temporary hemostasis and clear the surgical field of free fluid. Have a large number of lap sponges open and a significant supply immediately available in the room.
10. The surgeon will identify sources of injury and begin damage control surgery in order of severity (may include splenectomy, bowel resection, vascular repair or bypass, etc.).[49]
11. Wash out abdominal cavity with WARM normal saline and remove using Poole suction.
12. Depending on surgeon preference, the peritoneum may be closed or temporarily left open. Closure is performed using a slow absorbable suture to the fascia (the most common suture

Deleted:

Deleted: degree

Deleted: and

Deleted: /

Deleted: per

Deleted: 4

Deleted: S

Deleted: ies

Deleted: s

Commented [JC63]: 49. Feliciano, D.V. (2017). Abdominal Trauma Revisited. *American Surgeon*, *83*(11),1193-1202.

Deleted: /

Formatted: Highlight

used to close ABD fascia is polydioxanone, PDS). If the peritoneum is left open, a negative pressure wound VAC will be placed.[49] **In almost all cases, the Role 2 team will leave the abdomen open ahead of planned re-exploration surgery at the Role 3 facility.**

13. There are some instances in which the damage control surgery must stop abruptly due to deteriorating vital signs. If this occurs, laparotomy sponges will be packed into the damaged areas and a temporary occlusive dressing (a large antimicrobial isolation drape) will be placed over the abdomen while the patient is taken to the ICU or a higher level care facility for resuscitation.[49]

Patient Position:

- Supine with arms out

Positioning Considerations:

- Arms should be perpendicular (90 degrees or less) to the body to maximize sterile field space

Skin Preparation:

- The anterior chest and abdomen are prepped with povidone-iodine, from suprasternal notch to knees and bedside to bedside. Ensure inclusion of bilateral inguina so that vascular injuries have an opportunity to be repaired by harvest of native saphenous vein.

Skin Preparation Considerations:

- Prep according to surgeon's request.
- May include pouring povidone-iodine directly onto the patient's injury.

Deleted: a
Deleted: bd
Deleted: '
Deleted: '
Commented [JC64]: 49. Feliciano, D.V. (2017). Abdominal Trauma Revisited. *American Surgeon*, *83*(11),1193-1202.
Commented [PSSMCUMC(65]:
Deleted: F
Formatted: Highlight
Deleted: Ioban
Commented [JC66]: 49. Feliciano, D.V. (2017). Abdominal Trauma Revisited. *American Surgeon*, *83*(11),1193-1202.
Formatted: Highlight
Deleted:
Formatted: Font: Palatino Linotype, 10 pt
Formatted: List Paragraph, Bulleted + Level: 1 + Aligned at: 0.25" + Indent at: 0.5"
Deleted:
Deleted: degrees
Deleted: in order
Formatted: Font: Palatino Linotype, 10 pt
Formatted: Bulleted + Level: 1 + Aligned at: 0.25" + Indent at: 0.5"
Deleted:
Deleted: A
Deleted: Betadine
Deleted: Paint
Formatted: Font: Palatino Linotype, 10 pt
Formatted: List Paragraph, Bulleted + Level: 1 + Aligned at: 0.25" + Indent at: 0.5"
Deleted: ;
Deleted:
Deleted: Betadine
Deleted: Paint
Deleted: /

Pour and go—focus on coverage of the site, as the surgeon will want to incise immediately after gloved.	
Incision: • Midline from xiphoid to level above or at pubis	Specimen (include method of fixation) : • May include: spleen, bowel, stomach, gallbladder, appendix, liver, pancreas, or kidney
Fluids: • 0.9% normal saline 1L x 3-6	Medications: • Nonwoven gauze with kaolin • Tranexamic acid • Blood • Appropriate wound antibiotics • Hemostatic oxidized regenerated cellulose • Hemostatic compressed sponges • Heparin to flush vascular repairs
Implants: • N/A	Grafts: • N/A • Possible vascular repair
Suture Absorbable: • Synthetic absorbable braided suture on 0, 2-0, 3-0 18 in. (45.7 cm) ties	Non-Absorbable: • Silk 0, 2-0, 3-0 18 in. (45.7 cm) ties • Silk 3-0 SH CR 18 in. (45.7 cm)

Deleted: "…our and go—" – …ocus on coverage of the site, as the surgeons…will want to incisecut ... [91]

Deleted: X

Deleted: ... [92]

Deleted:

Deleted: N…rmal sS ... [93]

Deleted: Combat gauze

Deleted: TXA

Deleted: ABX

Deleted: Surgicel

Deleted: Gelfoam

Deleted: "

Deleted: "

Deleted: "

Formatted: Highlight

• Synthetic absorbable braided suture on 3-0 SH CR 18 in. (45.7 cm) • Synthetic non-absorbable monofilament suture on 1 TP-1 96 inch (243.8 cm)	• Synthetic slow-absorbable PDS suture on CT-1 30 in. (76.2 cm)
Dressing: • Occlusive (wound VAC or large antimicrobial isolation drape) • 4x8 in. (10x20 cm), ABD pad, soft cloth surgical tape	Drains/Tubes • Negative pressure wound VAC • 19 Fr silicone suction drain or other large drain
Procedure Specific Considerations: • Set up and preparation. Do not compromise the timeliness of care to complete a supply count. The sharps count is the most important, as they are the only items that CANNOT be left in a patient. • Patient arrival. Patients usually arrive in the OR needing urgent, time-sensitive care. • Start of procedure. It is important to get electrocautery, suction, and laparotomy sponges open and connected as soon as possible. • During Surgery. Assist anesthesia with blood administration and assist technician with supply needs. • End of surgery preparation. Contact the receiving unit to provide an update on the patient's condition and inform unit on what was accomplished intraoperatively. If the abdomen is closed and a count could not be performed, a post-operative x-ray of the abdomen should be performed to ensure no foreign surgical objects were retained.	

Deleted: polydioxanone (
Deleted:)
Deleted:
Deleted: ″
Deleted: ″
Deleted: e
Deleted: ″
Deleted:
Deleted: Ioban
Deleted: Blake
Deleted: P
Deleted: Medipore tape
Deleted: –
Deleted:
Deleted: S
Deleted: –
Deleted: –
Deleted: I
Deleted: –
Deleted: –
Deleted: closing
Deleted: x-ray
Formatted: Highlight
Formatted: Indent: Left: 0.5", No bullets or numbering
Deleted: in order

- After extubation. There will be a high probability the patient will be transferred to the next level of care still intubated.

Sterile Supplies:

- Drapes: laparotomy drape
- Drains: wound VAC or 19 Fr silicone suction drain
- Dressing: wound VAC or 4x8 in. (10x20 cm) and ABD Pad
- Hemostasis: Nonwoven gauze with kaolin
- Misc: GIA stapler. Blue, green, or white loads may be required, depending on tissue needs

Primary Sterile Instrument Set/Sets:

- Major basic surgical instrument set
- Electrocautery instrument

Secondary or Special Sterile Set/Sets:

- Self-retaining retractor

Further Considerations

- The priority should be to complete surgery as safely and quickly as possible to stabilize the patient for further resuscitation.
- In general, planners should consider the need for six hours (from start to finish and recovery) of time for exploratory laparotomy. If your team does not have a safe six hour window (due to security concerns, etc.) consider deferring damage control surgery and optimize damage control resuscitation for the patient.

Deleted: n –
Deleted: H
Deleted:
Deleted: of
Deleted: going
Deleted: B
Deleted: ery
Deleted: Bovie /
Deleted: e
Deleted:
Deleted: Blake
Deleted: (i.e. Bookwalter or Balfour)
Deleted: Combat gauze
Deleted: with B
Deleted: needed
Deleted: P
Deleted: in order
Deleted: s
Deleted: 6
Deleted: 6
Deleted: ,
Deleted: ,
Deleted: DCS
Deleted: DCR

OPEN REDUCTION AND INTERNAL FIXATION (ORIF) APPLICATION

<table>
<tr><td>Diagnosis:

Severe fracture of upper and lower extremities</td><td>Planned Surgical Procedure:

Open reduction

Internal fixation

Incision and drainage

Bone graft (if extensive comminution)</td></tr>
<tr><td colspan="2">Anatomy, Physiology, Pathophysiology:

Generally, open reduction and internal fixation (ORIF) is not recommended in austere trauma settings as it is highly indicative of soft tissue complications and delayed healing. As a result, ORIF should be performed in Role 3 or Role 4 facilities.

ORIF is indicated in cases of open or complex fractures without suspected damage to the surrounding soft tissue.[18] In most fractured limb cases, the surgeon will try a more conservative approach prior to resorting to ORIF, such as closed reduction, external fixation, splinting, casts, etc.[50] ORIF is achieved using an assortment of devices, including intramedullary nails, rods, plates, and bone screws to realign and secure bone fragments.[50]</td></tr>
<tr><td colspan="2">Indications:

Realignment and definitive fixation of a fractured limb, usually following external fixation

Concept of the Operation:</td></tr>
</table>

Deleted: ¶

Deleted: ¶

Deleted: &

Deleted: /

Deleted: /

Deleted:

Deleted: since

Deleted: can only

Deleted: and/

Formatted: Highlight

Formatted: Highlight

Commented [JC67]: 50. Kadakia, R.J., Vu, C.C., Bariteau, J.T., Rege, R., & Schenker, M.L. (2017). External Fixation versus Primary Open Reduction and Internal Fixation (ORIF) of Intra-articular Calcaneus Fractures. *Foot & Ankle Orthopaedics, 2*. https://doi.org/10.1177/2473011417S000226

Formatted: Highlight

Deleted:

ORIF is a two-part surgery: 1. open reduction will reduce, or reposition, fractured bone to its proper alignment; 2. internal fixation is the method of physically reconnecting the bones using screws, plates, wires, or nails. Supplemental bone grafting may be necessary if comminution of fractures is extensive.[51]

Steps of the Procedure:

1. Contact the radiology department to ensure availability prior to patient arrival in the OR.
2. Once patient arrives in the OR and is moved to the OR table, anesthesia will place lines they deem essential, including extra intravenous lines, arterial lines, or central lines.
3. Place Foley catheter, if needed.
4. The patient is positioned with the operative lower extremity in a neutral position utilizing rolls under the buttocks or shoulder. If gel rolls are not available, improvise by making a roll out of folded sheets. For the upper extremity, place the extremity on a hand table in neutral position.
5. Exsanguinate the operative extremity using an Esmarch bandage and a well-padded proximal tourniquet inflated to 250 mmHg for an upper extremity or 300 mmHg for a lower extremity.
6. Clip or shave patient's hair, if necessary, and then conduct the skin prep.
7. Perform a TIME OUT.
8. The surgeon should create a superficial incision along the bone fracture and extending about 0.5 inches (2.5 cm) past it.
9. After dissection of the neurovascular bundle and underlying muscle anatomy, the surgeon will visualize the fracture and confirm it with fluoroscopy.
10. The fracture is reduced and the bone is provisionally held in place with Kirschner wires (K-wires) or bone clamps.
11. Once definitive fixation is achieved, the wound is irrigated.
12. A final x-ray is taken to confirm proper anatomical reduction of the bone.

Commented [JC68]: 51. Rieger, J. (2011). ORIF: PIP Fracture and Dislocation of the Fingers. *The Surgical Technologist*. Retrieved August 10, 2018 from http://www.ast.org/articles/2011/2011-01-325.pdf

Formatted: Highlight

Deleted:

Deleted: d

Deleted: and/

Deleted: ;

Deleted: i

Deleted:

Deleted: e

Deleted: k

Deleted: and

Deleted:

Deleted:

Deleted:

Deleted: "

Deleted: F

Deleted: X-ray

Patient Position: supine (affected extremity position dependent)

- Upper extremity: bilateral arms extended with the injured arm on the hand table and legs secured.
- Lower extremity: bilateral arms extended; have rolls and pillows available for hip bump on the operative side. Have operative leg rests on table while unaffected leg padded and secured with silk tape.

Positioning Considerations:

- The patient should be positioned in a manner that will leave the operative extremity exposed and the rest of the body secured.
- Patient is usually positioned on OSI flattop table (radiolucent).

Skin Preparation: dependent on injury

- Open wound: Povidone-iodine on entire extremity, starting at wound bed first and working outwards.
- Closed: Chlorhexidine gluconate entire extremity, starting at anticipated incision site and working outwards.

Skin Preparation Considerations:

- May need to conduct a two-person prep—one to hold the extremity and the other to prep.
- Allow sufficient time for prep solution to dry.

Incision:	Specimen (include method of fixation) :
• Anterolateral	• Anaerobic and aerobic swabs from the wound site, per surgeon
Fluids:	Medications:

Deleted:
Deleted: ,
Deleted: ,
Deleted: O
Deleted:
Deleted: Betadine
Deleted: Paint
Deleted: Chloraprep
Deleted:
Deleted:

• 3 L 0.9% Sodium chloride for irrigation	• Antibiotics (depending on surgeon preference—beads, powder, IV)
Implants: • K-wires, screws, plates, intramedullary nails and rods	Grafts: • Autograft • Allograft (bone chips)
Suture Absorbable: • Synthetic absorbable braided suture on 0 CT-1, CR-8, undyed • Synthetic absorbable braided suture on 2-0, CT-1 or CT-2, undyed controlled release • Synthetic non-absorbable monofilament suture on 0, CT-1, or CT-2 • Synthetic non-absorbable monofilament suture on 2-0, CT-1 or CT-2	Non-Absorbable: • Synthetic absorbable monofilament suture on 2-0 SH • Synthetic absorbable monofilament suture on 3-0 PS-2 • Monofilament nylon suture 3-0 FSL • Skin stapler
Dressing: • Antimicrobial occlusive dressing strips • Fluffs • Cotton undercast padding, 2 in, or 4 in. (5 cm or 10 cm)	Drains/Tubes • May use 7–19 Fr flat drain with bulb suction • Drain is not used if splint is placed

Deleted: C

Deleted:

Commented [PSSMCUMC(69]: Ok?

Deleted: Ethilon

Deleted:

Formatted: Highlight

Deleted:

Deleted: Xeroform

Deleted:

Deleted:

Deleted: Webril

Deleted: (

Deleted: ”

Deleted: ”

• Self-adherent compression wrap, 4 in. or 6 in. (10 cm or 15 cm) *or* • 4x10 in. (10x25 cm) plaster splint with bulky bandage	

Procedure Specific Considerations:

Set up and Preparation

- Contact radiology to confirm availability for the procedure.
- Suction, electrocautery, and drill are best placed at the head of the bed for easy x-ray access.
- Only monopolar (regular) cautery is needed for adequate hemostatic control.
- Place sheets, absorbable material, or surgical suction mats around the bed to minimize fall risks.

TeamSTEPPS®

- Verify laterality of incision site.

Patient Interview

- Physical injuries that are visible may not match internal injury due to coup or contrecoup injuries.

Patient Arrival

- Have an additional team member dedicated to assist with holding and moving the injured extremity. The fracture should be immobilized as much as possible.
- Two team members will be needed for patient prep.

Deleted: ACE
Deleted: Bandage
Deleted: (
Deleted: ”
Deleted: ”)
Deleted: ”
Deleted: ”
Formatted: Highlight
Deleted: U
Deleted: X-ray
Deleted: /
Deleted: Eco
Deleted: TeamSTEPPS
Deleted:
Commented [PSSMCUMC(70]: Ok?
Deleted: /
Deleted: a
Formatted: Highlight
Formatted: Highlight
Deleted: ing
Deleted: ;
Deleted: t

Start of Procedure

- Conduct surgical TIME OUT.

During Surgery

- If there is prolonged bleeding and excessive usage of irrigation, ensure additional absorbable sheets are placed around the bed.

End of Surgery Preparation

- Notify gaining unit of patient status, special considerations, and lines or drains.

After Extubation

- When transferring the patient to gurney from OR table, ensure one person is dedicated to stabilizing the affected extremity.
- Assist anesthesia with transport.

Sterile Supplies:	Primary Sterile Instrument Set/Sets:
• Drapes: half sheet, U-drape x2, clear sticky U-drape, extremity drape, C-arm drape • Drains: 7-19 Fr flat drain with grenade • Dressing: self-adherent compression wrap, 4 in, or 6 in, (10 cm or 15 cm); cotton undercast padding, 2 in, or 4 in. (5 cm or 10 cm); antimicrobial occlusive dressing strips or plaster splint (10	• Small fragment set • Large fragment set • Large bone saw and drill system • Major orthopedic set • Orthopedic retractor set If no power: • Jacobs chuck

Deleted:

Deleted: /

Formatted: Highlight

Deleted: D

Deleted: Steri-

Deleted: Drape 1015 (

Deleted: C

Deleted:)

Deleted: -

Deleted: Ace

Deleted: (

Deleted: ”

Deleted: ”

Deleted:)

Deleted: ,

Deleted: Webril

Deleted: (

Deleted: ”

Deleted: ”

Deleted: ,

Deleted: Xeroform

sheets thick, sizes available: 4x15 in. (10x38 cm), 5x30 in. (12x76 cm), and 4 in. (10 cm) rolls • Hemostasis: monopolar cautery • Misc: suction, #15 blade, cystoscopy tubing	• Hand drill Secondary or Special Sterile Set/Sets: • Hand and foot set or minor orthopedic set (if major orthopedic set not used)
Further Considerations • If a patient is USSM, the priority is to stabilize the fracture and transport patient to a higher echelon of care; ORIF is usually not performed. • If a patient is a local national, priority is to repair the fracture	

Deleted: ”
Deleted:
Deleted: ”
Deleted: ”
Deleted:
Deleted: ”
Deleted: ”
Deleted:)
Deleted: M
Deleted: M

RESUSCITATIVE ENDOVASCULAR BALLOON OCCLUSION OF THE AORTA (REBOA)

Diagnosis:	Planned Surgical Procedure:
Hemorrhagic shock, exsanguination from abdominal, pelvic, or junctional lower extremity bleeding	REBOA insertion

Anatomy/Physiology/Pathophysiology:

Non-compressible Torso Hemorrhage (NCTH) cannot be comtrolled by direct pressure or extremity tourniquets, thus requiring resuscitative aortic occlusion (aortic cross clamp via sternotomy or thoracotomy) or REBOA (femoral artery approach) in order to increase cardiac afterload, and maintain coronary and cerebral perfusion pressure. REBOA is a temporary alternate approach to the aortic cross clamps for NCTH occurring below the diaphragm and no open thoracic intervention is otherwise indicated.[52] In limited patient hold and austere environments, REBOA allows for stabilization of hemorrhaging patients where immediate surgical intervention is not possible due to MASCAL or OR is already occupied.[53]

The Aortic Zones delineate the placement of the REBOA balloon:

Deleted:

Commented [JC71]: 52. Glaser, J., Stigall, K., Cannon, J., et al. (2017, July 6). *Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) for Hemorrhagic Shock (CPG ID: 38)*. Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Resuscitative_Endovascular_Balloon_Occlusion_of_the_Aorta_(REBOA)_for_Hemorrhagic_Shock_31_Mar_2020_ID38.pdf

Commented [JC72]: 53. Rees, P., Waller, B., Buckley, A.M., et al. REBOA at Role 2 Afloat: resuscitative endovascular balloon occlusion of the aorta as a ridge to damage control surgery in the military maritime setting. *BMJ Military Health*.2018;164:72-76.

Zone 1: from the left subclavian artery to the celiac trunk. Deploying the balloon in this zone is analogous to resuscitative thoracotomy with aortic cross clamp. Deploying the balloon in this zone for > 90 min causes visceral ischemia and may result in liver and renal dysfunction.[54] These patients need rapid evacuation to the next surgical role of care.[54]

Zone 2: from the celiac trunk to the lowest renal artery. This zone is contraindicated for REBOA.

Zone 3: from the lowest renal artery to the aortic bifurcation. Deploying the balloon in this zone provides occlusion to control pelvic or junctional hemorrhage without causing visceral ischemia.[54]

Indications:

Positive abdominal focused assessment with sonography for trauma (FAST) exams, pelvic fracture, massive proximal lower extremity trauma with signs of impending cardiovascular collapse, OR suite unavailable. REBOA is not indicated for exsanguinating chest hemorrhages as it may increase thoracic bleeding and needs a thoracotomy or sternotomy instead.[52]

Concept of the Operation:

Access the femoral artery and position the sheath, position the balloon, inflate the balloon, control bleeding, deflate the balloon, remove the sheath.

Steps of the Procedure:

Access the femoral artery

1. Identify the common femoral artery pulsation, with the Ultrasound unit confirmation

2. Enter the artery at a 45-degree angle with either a 5fr micropuncture kit or 18ga femoral arterial line kit, while visualizing the needle passing into the common femoral artery

3. Pass a 0.035 guide wire into the artery, remove the needle

Commented [JC73]: 54. Smith SA, Hilsden R, Beckett A, et al. The future of resuscitative endovascular balloon occlusion in combat operations. *BMJ Military Health.* 2017;163:296-300.

Commented [JC74]: 54. Smith SA, Hilsden R, Beckett A, et al. The future of resuscitative endovascular balloon occlusion in combat operations. *BMJ Military Health.* 2017;163:296-300.

Commented [JC75]: 54. Smith SA, Hilsden R, Beckett A, et al. The future of resuscitative endovascular balloon occlusion in combat operations. *BMJ Military Health.* 2017;163:296-300.

Commented [JC76]: 52. Glaser, J., Stigall, K., Cannon, J., et al. (2017, July 6). *Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) for Hemorrhagic Shock (CPG ID: 38).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Resuscitative_Endovascular_Balloon_Occlusion_of_the_Aorta_(REBOA)_for_Hemorrhagic_Shock_31_Mar_2020_ID38.pdf

Deleted:

Deleted:

4. Place a small incision at the interface of the wire and skin with a #11 or #15 blade on a #3 knife handle

Position the sheath

5. Pass a 7fr working sheath with internal dilator over the guide wire

6. Remove the dilator and wire, ensure stopcock in "off" position to reduce bleeding

7. If using pressure monitoring capabilities, attach the pressure sensor and tubing to catheter's arterial stopcock and flush with saline

7. Continuous care must be taken to prevent inadvertent emboli (i.e. air, thrombus, etc.) from entering the a-line, ensure all lines are flushed with saline, switched in the "off" position when not in use, and any wires, sheaths, etc., are gentled wiped clean with a saline dampened ray-tec

Prepare the balloon

8. Attach 30cc syringe to ER-REBOA balloon port, fill with 24cc of 1/3 contrast 2/3 saline, or all saline if contrast is not available

9. Apply negative pressure to the ballon in order to remove any air, then lock it in place with the plunger at the 30cc mark on the syringe

Position the balloon

10. Depending on the Zone occlusion, catheters inserted 46cm for Zone I, 28cm for Zone III

11. If patient is stable, plain x-ray or US can confirm correct positioning, in cases of arrest position confirmation can be done later when the patient is stable

Deleted: x-ray

Inflate the balloon

12. Balloon inflated until blood pressure is augmented and contralateral femoral pulse is stopped, lock the stopcock in order to maintain inflation and occlusion; do not overflate the balloon, it can rupture or damage the aorta

13. If no imaging available, definitive confirmation of balloon positioning by direct hands-on via laparotomy

Securing the inflated balloon and sheath

14. Hold the catheter in place in order to prevent migration, attach a central line attachment device to catheter or secure sheath with silk suture

Operative/Procedural control of bleeding

15. Hemorrhage control must occur quickly in order to keep the total aortic occlusion time less than 30 minutes

16. Clamp any injured vessels, utilize laparotomy sponges to pack the abdominal quadrants, and obtain proximal and distal control of injured blood vessels.

Deflate the balloon

17. Deflate the balloon once hemorrhage control obtained by turning the three-way stopcock and withdrawing saline slowly, while an assistant holds the catheter and sheath in place

18. Further resuscitation may be necessary while deflating the balloon, due to hypotension

Removal of the Balloon and Sheath

19. Once definitive hemorrhage control obtained, remove REBOA sheath and hold 30 minutes of direct pressure over the access site.[52]

Patient Position: supine

Head resting on supportive device, such as folded up uniform or IV bag. Bilateral arms extended and abducted < 90 degrees, palms facing up, secured to arm rest. If time allows, tuck arms at sides

Positioning & Setup Considerations:

Commented [JC77]: 52. Glaser, J., Stigall, K., Cannon, J., et al. (2017, July 6). *Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) for Hemorrhagic Shock (CPG ID: 38)*. Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Resuscitative_Endovascular_Balloon_Occlusion_of_the_Aorta_(REBOA)_for_Hemorrhagic_Shock_31_Mar_2020_ID38.pdf

Deleted:

Pre-position OR table, arm rests, slide board	
Skin Preparation: chin to knees – may also include bilateral legs to toes (circumferential) Anterior chest and abdomen prepped with Povidone-iodine Paint, from chin to knees; bedside to bedside Skin Preparation Considerations: • Prep according to surgeon's request • May include pouring Povidone-iodine Paint directly on the patient/injury "Pour and go" – focus on the coverage of the site, as the surgeons will want to cut immediately after gloving	
Incision: • Percutaneous or open cut down to common femoral artery	Specimen (include method of fixation) : • *N/A*
Fluids: • 1 liter 0.9% sodium chloride, for irrigation	Medications: • Intravenous contrast (optional), mix 8mL in 16mL injectable saline for balloon
Implants: • None typical in this environment	Grafts: • None typically

Deleted:

Deleted: Betadine

Deleted:

Deleted: Betadine

Deleted:

Suture Absorbable:	Non-Absorbable: • Suture • Silk ties
Dressing: • Central line securing device	Drains/Tubes •
Procedure Specific Considerations: • Set Up and Preparation – Set up according to Universal Guideline, prioritize counting sharps over the rest of countable items, set-up REBOA catheter • Patient Arrival – Patients usually arrive in the OR needing emergency management, or this procedure is completed in the EMT section • Start of Procedure – Connect bovie, suction, Ultrasound probe, sterile Doppler • During Surgery – Assist anesthesia with blood administration • End of Surgery Preparation – Contact receiving unit; patient will likely transfer still intubated	
Sterile Supplies: • Drapes: split sheet x2, ¾ sheet, bar drape x1 • Drains: n/a • Dressings: central line securing device	Primary Sterile Instrument Set/Sets: Vascular set, self retaining retractors (i.e. weitlaners) Secondary or Special Sterile Set/Sets:

Deleted:

• Misc: #11 or #15 blade, 5fr micropuncture set or 18ga arterial line set, 7fr arterial sheath, ER REBOA catheter, 3-way stopcock, 30ml Luer lock syringe, 10ml pre filled saline syringe x3, standard A-line set up, Ultrasound probe cover	

Further Considerations

- While the REBOA sheath is in place and for up to 24 hours after removal, monitor for any access site complications by conducting bilateral lower extremity neurovascular checks each hour.
- If the patient is getting transferred to a host nation hospital or anticipating a greater than 4 hour transport to another facility, consider removing the sheath.

STERNOTOMY

Diagnosis:	Planned Surgical Procedure:
Penetrating/Blunt trauma to chest (i.e. GSW, IED Blast, etc.)	Sternotomy for repair of cardiac tissue/great vessel/trachea injury
Anatomy/Physiology/Pathophysiology:	

Deleted:

The chest is an area within the body containing vital organs and blood vessels. Both penetrating and blunt trauma may damage these structures and require immediate surgical intervention. The primary areas of concern are the heart, lungs, great vessels (aorta, superior vena cava, inferior vena cava), trachea, esophagus, and diaphragm.

Presenting features: asymptomatic, cardiac tamponade, hemothorax, tension physiology

Indications:

Suspected cardiac/great vessel/distal trachea/mediastinal injury in an unstable patient, positive pericardiocenesis and/or subxiphoid pericardial window.[1]

Concept of the Operation:

Incise midline chest to expose the mediastinum and heart. Determine injury site and perform repair. Place 1 or 2 drains in the mediastinum in preparation for closure. Sternum closed with sternal wires.

Steps of the Procedure:

1. Midline incision from sternal notch to just below xiphoid with #10 blade loaded on #3 knife handle
2. Plane developed several centimeters superior and inferior to sternum with blunt and sharp dissection
3. Sternum divided with a sternal saw, Lebschke knife, or trauma shears
4. ESU used to control sternal bone bleeding, supplemented by Bone Wax
5. Chest separated with chest retractor
6. Pericardium divided superiorly

Deleted:

Deleted:

Commented [JC78]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

7. **Vascular related –** holes in vessels digitally occluded, may use Fogarty clamps, Foley catheters, or sponge sticks; clamping may be necessary to restore cardiac function; possible use of grafts if primary closure not feasible[1]
8. **Heart related** – isolated punctures can be occluded by finger pressure; 2-0 Synthetic non-absorbable monofilament polypropylene suture on (tapered & pledgeted) for definitive repair[1]
9. **Lung related –** control simple bleeding with absorbable suture on tapered needle or TA-90 staple for bleeding lung tears[1]
10. **Tracheobronchial tree related –** repair with absorbable suture[1]
11. **Esophagus related** – repair with single layer of 3-0 absorbable suture[1]
12. **Diaphragm related** – small lacerations (< 2 cm) reapproximated with interrupted nonabsorable 0 or 2-0 suture; > 2 cm reinforce with running suture[1]
13. Following repair, place 1 or 2 mediastinal drainage tubes
14. Damage control may require a temporary occlusive dressing over incision, otherwise, sternum closed with sternal wires; tissue layers closed with absorbable suture/staples[1]

Patient Position: supine

Head resting on supportive device, such as folded up uniform or IV bag. Bilateral arms extended and abducted < 90 degrees, palms facing up, secured to arm rest. If time allows, tuck arms at sides

Positioning & Setup Considerations:

- Pre-position OR table, arm rests, slide board

Skin Preparation: chin to knees – may also include bilateral legs to toes (circumferential)

Commented [JC79]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Commented [JC80]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Commented [JC81]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Commented [JC82]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Commented [JC83]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Commented [JC84]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Commented [JC85]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Deleted:

Deleted:

Anterior chest and abdomen prepped with Povidone-iodine Paint, from chin notch to knees; bedside to bedside

Skin Preparation Considerations:

- Prep according to surgeon's request
- May include pouring Povidone-iodine Paint directly on the patient/injury
- "Pour and go" – focus on the coverage of the site, as the surgeons will want to cut immediately after gloving

Incision: • Midline chest, center of sternum	Specimen (include method of fixation) : • None typically
Fluids: • 1 liter 0.9% sodium chloride, for irrigation	Medications: • Heparinized saline (5,000u Heparin in 500mL injectable 0.9% sodium chloride) • Vein solution (5,000u Heparin & 60mg Papaverine in 500mL injectable 0.9% sodium chloride • Vessel injury –additional Papaverine may be necessary
Implants: • None typical in this environment	Grafts: • For vascular repair, if primary repair not feasible

Deleted: Betadine

Deleted:

Deleted: Betadine

Deleted:

Suture Absorbable: • 0/2-0 synthetic absorbable suture on CT or CTX (fascial closure) • 3-0/4-0 Synthetic absorbable monofilament suture on (skin closure)	Non-Absorbable: • 4-0/5-0/6-0 Synthetic non-absorbable monofilament polypropylene suture on C1 (vessel repair) • 2-0 Synthetic non-absorbable monofilament polypropylene suture on • Sternal wires • #5 Polyester suture (if sternal wires unavailable)
Dressing: • Bacitracin ointment, gauze, tape	Drains/Tubes • 1 or 2 mediastinal tubes (i.e. 19 Fr Blake drains) connected to Pleur Evac system
Procedure Specific Considerations: • Set Up and Preparation – Set up according to Universal Guideline, prioritize counting sharps over the rest of countable items • Patient Arrival – Patients usually arrive in the OR needing emergency management • Start of Procedure – Connect bovie, suction, and saw (if nitrogen powered) • During Surgery – Assist anesthesia with blood administration • End of Surgery Preparation – Contact receiving unit; patient will likely transfer still intubated	
Sterile Supplies:	Primary Sterile Instrument Set/Sets:

Deleted:

• Drapes: split sheet x2, ¾ sheet, bar drape x1 • Drains: 15/19/24 Fr Blake drains (x1), Pleur Evac system • Dressing: gauze, tape • Hemostasis: Bovie x2, Surgicel, Surgical Snow, Floseal, "Bone Paste" (20,000u Hemostatic agent with 1g Vancomycin Powder and 2 Gelfoam Powder packs mixed in medication cup), Hemostatic agent, if available • Misc: bulldog clamps, Fogarty clamps, Foley catheters, pledgets, TA-90 staples, bone wax, suction x2, vessel loops (blue/red/yellow x2 each)	• Chest instrument set – must include aortic clamp • Self-retaining retractor (Cooley) • Sternal saw (if no power: Lebschke Knife) Secondary or Special Sterile Set/Sets: • Vascular instrument set
Further Considerations • Post-operative care is best managed in an intensive care unit, preferably one with cardiac knowledge • Increasing output on chest and mediastinal drainage is indicative of emergent return to OR	

Deleted: Thrombin

Deleted: Thrombin

THORACOTOMY

Diagnosis:	Planned Surgical Procedure:
Penetrating/Blunt trauma to chest (i.e. GSW, IED Blast, etc.)	Thoracotomy/lung wedge resection/hemostasis of ruptured great vessels of the heart and or lungs.

Anatomy/Physiology/Pathophysiology:

The chest wall contains the thoracic cavity and lungs. A serous membrane called the visceral pleura covers the lungs and the parietal pleura lines the thoracic cavity.[55] The space between the two membranes is called the pleural space.[55] This space is lubricated with a thin layer of fluid, in order to allow the two layers to slide over each other.[55] This space is also negative or sub atmospheric pressure (-4 to -10 mmHg).[55]

The primary areas of concern are the lungs, heart, great vessels, and diaphragm.

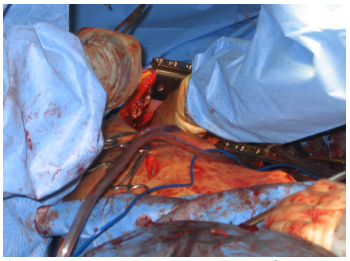


Figure5-6. Thoracotomy. Image courtesy of Captain Brian King.

Commented [JC86]: 55. McCance, K.L., & Huether, S.E. (2005). *Pathophysiology: The Biologic Basis for Disease in Adults and Children* (5th ed.). Elsevier Health Sciences.

Commented [JC87]: 55. McCance, K.L., & Huether, S.E. (2005). *Pathophysiology: The Biologic Basis for Disease in Adults and Children* (5th ed.). Elsevier Health Sciences.

Commented [JC88]: 55. McCance, K.L., & Huether, S.E. (2005). *Pathophysiology: The Biologic Basis for Disease in Adults and Children* (5th ed.). Elsevier Health Sciences.

Commented [JC89]: 55. McCance, K.L., & Huether, S.E. (2005). *Pathophysiology: The Biologic Basis for Disease in Adults and Children* (5th ed.). Elsevier Health Sciences.

Indications: Blunt or penetrating chest trauma, traumatic arrest, reduction or absence of breath sounds, cyanosis, dull percussion to involved side, blood in the chest cavity (that does not respond to chest tube management).

Concept of the Operation:

The objectives of a thoracotomy are to (1) relieve tension physiology in the chest (evacuate pneumothorax, if not already accomplished by needle decompression); (2) open the pericardium to relieve pericardial tamponade; (3) apply clamp to the descending thoracic aorta to restore central perfusion to the brain and heart; (4) provide direct cardiac compression to circulate blood; and (5) control visible hemorrhage.[8] (6) perform lung injury temporization as needed with interventions such as a hilar twist.

Steps of the Procedure:

1. Patient is placed supine. In the elective setting the lateral decubitus and flexed position may be used. Trauma patients should almost always be supine for the expected follow on abdominal exploration. Many surgeons have talked about 'boxing themselves into a corner' by placing a trauma patient in a lateral decubitus position on the table and then having to work in the abdomen.
2. Skin is prepped from axilla to hips, bedside to bedside typically using a povidone-iodine solution or similar product. Avoid the use of alcohol based preps during emergency surgeries due to flammability risk. During emergent procedures, pour solution over intended surgical site and scrub quickly with prep sponges or sterile fluffs.

Deleted:

Commented [JC90]: 8. Lenhart, M.K., Savitsky, E., & Eastridge, B. (Eds.). (2012). *Combat Casualty Care: Lessons Learned from OEF and OIF* [eBook]. Office of the Surgeon General, Department of the Army, United States of America. https://www.cs.amedd.army.mil/borden/portlet.aspx?id=a0798abf-8cf0-4af2-9043-86ecd9935057

Deleted:

Deleted: betadine

Deleted:

Deleted:

3. The skin is incised between appropriate ribs, generally at the 4th and 5th intercostal space. For men, this is considered the nipple line. For women, this is considered the infra-mammary fold.
4. Hemostasis is obtained using electrocautery and/or 2-0 silk ties and hemostatic clips.
5. Muscle layers are divided and the surgeon enters the thoracic cavity through the pleura.
6. At this point the cavity can be visual inspected and visible hemorrhage can be controlled, with the top priority to stop bleeding and restoring central perfusion.[1]
7. The pericardium is inspected. If there is suspected tamponade, it is opened first. Sharp resection of the inferior pulmonary ligament on the left may be necessary to obtain visualization.
8. Pulmonary bleeding can be initially controlled by twisting the lung on its axis.
9. A large vascular clamp may be placed on the descending thoracic aorta to allow central perfusion.
10. Further steps will be dependent on the injuries identified, but can include lung resection, cardiac repair, major vascular repair and repair of tracheal injuries.
11. It may be necessary to divide the sternum and add a right sided thoracotomy for access to right chest injuries and for better operative exposure. This is known as a 'clamshell' thoracotomy and will require a lebschke knife or trauma shears to transect the sternum
12. Hemorrhage control can be obtained via clamping or compressing affected vessels, then using large linear staplers, 0 and 2-0 silk ties, electrocautery, and/or hemostatic clips. Sponge sticks can be helpful in providing temporizing occlusion of vessels.
13. Pericardium may also be entered at this point to relieve cardiac tamponade. Ensure pledgets or saved pericardium tissue is available when repairing myocardium injuries.

Deleted:

Deleted:

Commented [JC91]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Deleted:

Deleted:

14. Myocardial injuries will need to be closed to prevent ongoing bleeding directly from the heart. Injuries may be sutured with pledgets or pericardial tissue. In emergencies, a skin stapler may be used to approximate small penetrating heart injuries
15. Before closing, chest tube(s) will be inserted and connected to appropriate chest drainage system (typically a 32fr or 28fr chest tube will be sufficient for average adult).
16. Ribs reapproximated using rib approximators and heavy suture. Some surgeons who plan to re-enter the chest at a later time will not bother to approximate the ribs and only close the skin.
17. Tissue is closed using 0, 2-0, 3-0 synthetic absorbable braided suture on large CT or CTX needles.
18. Skin is closed with staples or 3-0 or 4-0 synthetic absorbable monofilament suture.

Patient Position: usually supine, but dependent on injury location(s)

Support patient's head (may use a folded uniform or IV bag if necessary). Bilateral arms should be extended and abducted < 90 degrees and secured to arm rest with palms facing up.

Positioning & Setup Considerations:

- Pre-position OR table, arm rests, slide board
- If elective, lateral decubitus in flexed position may be used. This situation will rarely be the case and should be considered an exception to the rule.

Skin Preparation: Axilla to hips, bedside to bedside. For trauma patients, follow the rule of 'neck to toes and bedside to bedside'.

Skin Preparation Considerations:

Deleted:

Deleted:

Deleted:

Deleted:

- Prep according to surgeon preference
- Typically Povidone-iodine Paint only
- Emergency situations may use a pour and go method. In this situation Povidone-iodine Paint is poured directly onto patient injuries, covering intended operative site
- AVOID use of Chlorhexidine gluconate during emergency situations due to fire risks

Incision: • Right or left intercostal incision • For Emergency Resuscitative Thoracotomy (ERT)– incision made in left inframammary fold starting at the lateral border of the sternum extending to the midaxillary line[1] • Clamshell thoracotomy would be extended bilaterally at the same point and through the sternum	Specimen (include method of fixation) : • Fragmented lung or other damaged tissue for examination
Fluids: • Normal saline - preferably with 50,000 units Bacitracin)	Medications: • Bacitracin 500 units ointment • Bacitracin 50,000 units irrigation • Hemostatic agent 20,000 units (on hand)
Implants: • None	Grafts: • None • Possible vascular shunts, if needed

Deleted: Betadine

Deleted:

Deleted: Betadine

Deleted: Chloraprep

Deleted:

Deleted: Thrombin

Suture Absorbable: • Synthetic absorbable braided suture on 0 CTX • Synthetic absorbable braided suture on 1 CTX • Synthetic absorbable braided suture on 2-0 CT • Synthetic absorbable monofilament suture on 3-0	Non-Absorbable: • Silk ties 0, 2-0, 3-0 • Synthetic non-absorbable monofilament polypropylene suture on 2-0, 3-0, 4-0, 5-0 double armed with pledgets • Synthetic non-absorbable monofilament suture on 0 • Sternal wires
Dressing: • Drain sponges/cut 4x4s, ABD pad, 4x8, petroleum gauze, Bacitracin ointment, staples, foam tape	Drains/Tubes • Chest tube size 28-32, straight and curved. • Large bore JP drains.
Procedure Specific Considerations: • Set Up and Preparation – Regular OR table, Bovie set at 30/30, suction, SCD to foot of bed; step stools and headlights, available; appropriate suction for chest drainage system ready; perform surgical count if time permits, count sharps at a minimum. • TeamSTEPPS® – Verify laterality and patient at a minimum • Patient Interview – Standard practice • Patient Arrival - Keep patient warm as possible • Start of Procedure – Attach existing chest drainage system to suction, apply grounding pad, plug in Bovie pencil and Bovie pad, SCDs, and suction	

Deleted:

Deleted: TeamSTEPPS

- During Surgery – Pay attention to surgical findings as this will effect next steps in surgery and supplies needed (lung vs. pericardiac vs. great vessel injuries)
- Assist anesthesia with blood administration as necessary
- End of Surgery Preparation - Notify gaining unit of patient status, lines, drains, tubes, and ventilator settings, if applicable.
- After Extubation – Extubation will be on an individual basis. Most patients remain intubated at transfer, gaining ICU will require advance notification for ventilator setup and availability.
- Assist Anesthesia with transport.

Sterile Supplies: • Drapes: towels, laparotomy sheet or 4 bar drapes, Large antimicrobial isolation drape • Drains: chest tubes, possible large JPs • Dressing: drain sponges or cut 4x4's, petroleum gauze, 4x8, foam tape or large Tegaderms • Surgical stapler may be utilized for lung resection (either wedge or tractotomy) • Hemostasis: Bovie, surgical gel foam, Avitene, clip appliers of multiple sizes, silk ties (0, 2-0, 3-0)	Primary Sterile Instrument Set/Sets: • Thoracotomy instrument set • Long instrument set • Rib resection set Secondary or Special Sterile Set/Sets: • Sternal saw • Lebschke knife with mallet (if no power)

Deleted:

Deleted:

Deleted:

Deleted: Ioban

Misc: basic surgical pack, linear stapler with reload sizes 30, 60, 75, Foley, pledgets	

Further Considerations

- The typical patient receiving an emergent resuscitative thoracotomy (ERT) in a combat environment is generally classified under a polytrauma umbrella. Civilian literature cites a survival rate from ERT at approximate 1-3%. Combat literature lacks sufficient power to draw conclusions, but the team should be aware of the expected poor outcome. It is imperative that open communication between the surgical team(s) is established. Extenuating injuries can dictate position and specific patient requirements. Obtain as much information possible from surgeon as multiple teams may be involved during operation.

Deleted:

Deleted:

Deleted:

Deleted:

Deleted:

VASCULAR SHUNT AND REPAIR

Diagnosis:	Planned Surgical Procedure:
Vascular trauma from GSW, IED blast, traumatic partial amputation, etc. Blunt/penetrating trauma	Temporary vascular shunt placement Vascular repair

Anatomy/Physiology/Pathophysiology:

Arteries differ from veins in function and structure. Structurally, arteries have a thicker muscle layer and more elastic fibers than veins, and therefore have thicker walls. The properties of elasticity and distensibility allow vessels to compensate for changes in blood pressure and volume. Due to the thicker muscle layer, severed arteries are capable of contracting and constricting enough to stop bleeding; though often only for a short period of time. Veins however, are more fragile and difficult to control than arteries.[25]

Indications:

Compromised vasculature, open extremity fractures with extensive soft tissue damage and vascular injury.[25]

Concept of the Operation:

Temporary intravascular shunts are placed to rapidly restore distal limb perfusion when immediate vascular reconstruction is not possible. The use of intravascular shunting has been specifically applied within the military setting as a method to stabilize and temporize peripheral vascular injuries when resources and time are limited.[1] This intervention maximizes the opportunity for perfused extremities that can heal or be reconstructed and optimize the service member's quality of life. The general rule is

Deleted:

Commented [JC92]: 25. Phillips, N. (2017). *Berry & Kohn's Operating Room Technique* (13th ed.). Elsevier Health Sciences.

Deleted:

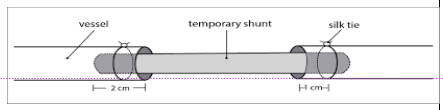
Commented [JC93]: 25. Phillips, N. (2017). *Berry & Kohn's Operating Room Technique* (13th ed.). Elsevier Health Sciences.

Commented [JC94]: 1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

that injured arteries are repaired and veins can be ligated. However, there are multiple exceptions to the rule with veins; attempt to repair venous return in extremities that also had a concomitant arterial injury.

Steps of the Procedure:

1. Patient arrives to OR
2. Move the patient to the OR table and Anesthesia providers will place all essential lines (i.e. Additional IV lines, arterial lines, central line)
3. Place Foley catheter, if requested by surgeon
4. Place the patient's arms according to location of injury
5. Clip hair as necessary at the surgical site, then conduct the skin prep as outlined below
6. Surgeon makes initial incision with either a #10 blade or Bovie pencil.
7. Severed artery identified with proximal and distal control established with vascular clamps and/or vessel loops. Vessel loops are preferred to prevent additional damage to vessels.
8. Remove clot from both ends using a fogarty catheter (possibly followed by a heparin flush)
9. Surgeon identifies appropriate size shunt
10. Vessel flushed with heparinized saline
11. Shunt secured with 0/2-0 silk tie and/or shunt clamps if applicable[25]



12. Release both vascular clamps to ensure there is no leak and blood flows freely. Back bleeding can help dislodge clots.
13. Utilize Doppler to check distal pulse, if available.
14. Apply Wound VAC and/or packing and dress according to the surgeon's preference. Since this is a temporary repair, the surgeon is less likely to perform tissue coverage.

Deleted:

Commented [JC95]: 25. Phillips, N. (2017). *Berry & Kohn's Operating Room Technique* (13th ed.). Elsevier Health Sciences.

15. In the event the artery is partially injured and not completely severed, then it may be amenable to repair utilizing a 4-0/5-0/6-0 Synthetic non-absorbable monofilament polypropylene suture on suture (size dependent on artery and surgeon preference). All steps prior to the repair are the same as the steps prior to inserting a shunt. However, in this situation the surgeon may consider definitively closing the wound[25]

16. After the repair, the surgeon may perform an on table angiogram to verify and document an adequate repair. For this procedure, a C-arm and contrast dye is required. Most Role 2 facilities will not be able to perform a formal angiogram, but improvised techniques may be available.

Patient Position:

Supine – however, depending on location of injury, the patient may require repositioning during surgery in order to accomplish required surgical interventions. Ensure proper padding is provided for the headrest. Bilateral arms extended and abducted < 90 degrees, palms facing up, secured to arm rest[25]

Positioning Considerations:

- Preposition OR table, arm rests, foam padding, slide boards, and positioning aids such as bean bags if needed

Skin Preparation:

- Injury site dependent; otherwise prep from clavicle down to the knees with povidone-iodine

Skin Preparation Considerations:

- Iodine allergies; consider alternatives such as chlorhexidine gluconate
- If time allows, remove hair from surgical site

Commented [JC96]: 25. Phillips, N. (2017). *Berry & Kohn's Operating Room Technique* (13th ed.). Elsevier Health Sciences.

Deleted:

Commented [JC97]: 25. Phillips, N. (2017). *Berry & Kohn's Operating Room Technique* (13th ed.). Elsevier Health Sciences.

Deleted:

Deleted:

Deleted: betadine

Deleted:

<table>
<tr><td colspan="2">

- Place absorbable padding around prep area
- Consult the surgeon for specific prep instructions

</td></tr>
<tr><td>

Incision:

- Dependent on location of injury; often the injury already exposes the affected area

</td><td>

Specimen (include method of fixation) :

- Bullet or shrapnel

</td></tr>
<tr><td>

Fluids:

- 0.9% sodium chloride for irrigation purposes
- Heparinized saline (warm if available)

</td><td>

Medications:

- Heparin
- Protamine (slow infusion)

</td></tr>
<tr><td>

Implants:

- Shunt may be left in place

</td><td>

Grafts:

- Argyle/Javid/Sundt vascular shunts
- Gore-Tex vascular graft
- Saphenous vein graft (vascular reconstruction)

</td></tr>
<tr><td>

Suture Absorbable:

- Synthetic absorbable braided suture on – (2-0, 3-0, 4-0)

</td><td>

Non-Absorbable:

- Synthetic non-absorbable monofilament polypropylene suture on (4-0,5-0,6-0, 7-0 if vein)
- Silk ties (0, 2-0, 3-0)
- Silk sutures (0, 2-0, 3-0)
- Ligaclips

</td></tr>
<tr><td>

Dressing:

</td><td>

Drains/Tubes

</td></tr>
</table>

Deleted:

Deleted:

• Wound VAC (Potential) • Fluffs • Kerlix • ACE Bandage	• 16 Fr Foley catheter

Procedure Specific Considerations:

Set Up and Preparation – set up according to Universal Guideline, prioritize counting sharps over the rest of countable items

Patient Arrival – patients usually arrive in the OR needing emergency management, see Universal Guideline

Start of Procedure – start per Universal Guideline

During Surgery – per Universal Guideline, with emphasis placed on control blood loss via thrombogenics (hemostatic agent and gelfoam, fibrillar, etc.)

Deleted: thrombin

End of Surgery Preparation – per Universal Guideline, also connect drains (i.e. J.P. drains) and Wound VAC as applicable

After Extubation

- Ensure Wound VAC (if used) is operational
- Re assess all dressings to ensure no disturbance after patient transfer

- Utilize a Doppler to check distal pulse to ensure the shunt/repair is not disturbed
- Note ischemia time
- Note tourniquet time

Sterile Supplies:	Primary Sterile Instrument Set/Sets:
• Drapes: Dependent on site of injury (Basic back, extremity drape, large drapes) • Drains: Potential JP drain • Dressing: Fluffs, Kerlix, ACE Bandage or Wound VAC • Hemostasis: Cautery/Heparinized saline • Misc: Vessel loops	• Major Basic Set • Vascular Set

Further Considerations

- Time consideration on shunt placement; recommend no longer than 6 hours until definitive repair.
- Wear proper PPE
- Ensure shunts are part of the supply listing
- Ensure proper vascular clamps are in the vascular set

Blank Surgical Guide – Ready to Use

Diagnosis:	Planned Surgical Procedure:
Anatomy/Physiology/Pathophysiology:	
Indications: Concept of the Operation:	
Steps of the Procedure:	

Deleted:

Deleted:

Patient Position: Positioning Considerations:	
Skin Preparation: Skin Preparation Considerations:	
Incision:	Specimen (include method of fixation) :
Fluids:	Medications:

Deleted:

Deleted:

Deleted:

Deleted:

Implants:	Grafts:
Suture Absorbable:	Non-Absorbable:
Dressing:	Drains/Tubes
Procedure Specific Considerations: Set Up and Preparation TeamSTEPPS® Patient Interview Patient Arrival	

Deleted:

Deleted: TeamSTEPPS

<table>
<tr><td colspan="2">Start of Procedure

During Surgery

End of Surgery Preparation

After Extubation</td></tr>
<tr><td>Sterile Supplies:</td><td>Primary Sterile Instrument Set/Sets:

Secondary or Special Sterile Set/Sets:</td></tr>
<tr><td colspan="2">Further Considerations</td></tr>
</table>

SUMMARY

This chapter covered the specific perioperative surgical guides for the most likely surgical cases encountered in Role 2 and Role 3 environments. These guides can be utilized as checklists, references, and training tools for surgical teams. Teams should check their own capabilities for the procedures discussed, including instrumentation and disposable supplies, and how their surgical standard operating procedures may change based on their current environment. For austere teams, consider how to do the most good while minimizing your tactical footprint and outload. Surgical teams may also use the blank form in order to develop their own plans and anticipate surgical needs before the need arises.

Page 2: [1] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [2] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Heading 1, Line spacing: single

Page 2: [3] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [4] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [5] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [6] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [7] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [8] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [9] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [10] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [11] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [12] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [13] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [14] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [15] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [16] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [17] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [18] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [19] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [20] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [21] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [22] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [23] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [24] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [25] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [26] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [27] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [28] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold, Font color: Auto

Page 2: [29] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Palatino Linotype, 10 pt, Not Bold

Page 2: [30] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Not Bold

Page 2: [31] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:39:00 AM**

Font: Not Bold, Italic

Page 3: [32] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/1/22 10:39:00 AM**

Page 3: [33] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/16/22 1:05:00 PM**

Page 4: [34] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/1/22 10:53:00 AM**

Page 4: [34] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/1/22 10:53:00 AM**

Page 4: [35] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/1/22 10:54:00 AM**

Page 4: [35] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/1/22 10:54:00 AM**

Page 4: [36] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/13/22 10:01:00 AM

Page 4: [36] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/13/22 10:01:00 AM

Page 4: [36] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/13/22 10:01:00 AM

Page 4: [37] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:44:00 AM

Page 4: [37] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:44:00 AM

Page 4: [37] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:44:00 AM

Page 4: [38] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:47:00 AM

Page 4: [38] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:47:00 AM

Page 4: [38] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:47:00 AM

Page 4: [38] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:47:00 AM

Page 4: [39] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:48:00 AM

Page 4: [39] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:48:00 AM

Page 4: [39] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:48:00 AM

Page 4: [40] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:50:00 AM

Page 4: [40] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:50:00 AM

Page 4: [41] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:52:00 AM

Page 4: [41] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:52:00 AM

Page 4: [41] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:52:00 AM

Page 4: [41] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:52:00 AM

Page 4: [41] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:52:00 AM

Page 4: [42] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:52:00 AM

Page 4: [42] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:52:00 AM

Page 4: [42] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:52:00 AM

Page 4: [43] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:52:00 AM

Page 4: [43] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:52:00 AM

Page 4: [43] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 10:52:00 AM

Page 4: [44] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:10:00 AM

Page 4: [44] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:10:00 AM

Page 4: [44] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:10:00 AM

Page 4: [44] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:10:00 AM

Page 4: [45] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:10:00 AM

Page 4: [45] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:10:00 AM

Page 4: [46] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/13/22 10:00:00 AM

Page 4: [46] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/13/22 10:00:00 AM

Page 4: [47] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:15:00 AM

Page 4: [47] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:15:00 AM

Page 4: [47] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:15:00 AM

Page 4: [47] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:15:00 AM

Page 5: [48] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:16:00 AM

Page 5: [48] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:16:00 AM

Page 5: [49] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:20:00 AM

Page 5: [49] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:20:00 AM

Page 5: [50] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:29:00 AM

Page 5: [50] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:29:00 AM

Page 5: [51] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/5/22 8:30:00 AM

Page 5: [51] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/5/22 8:30:00 AM

Page 5: [51] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/5/22 8:30:00 AM

Page 5: [52] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:30:00 AM

Page 5: [52] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:30:00 AM

Page 5: [53] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/13/22 9:58:00 AM

Page 5: [53] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/13/22 9:58:00 AM

Page 5: [54] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:33:00 AM

Page 5: [54] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:33:00 AM

Page 5: [55] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:41:00 AM

Page 5: [55] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:41:00 AM

Page 5: [55] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:41:00 AM

Page 5: [55] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:41:00 AM

Page 5: [56] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:42:00 AM

Page 5: [56] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:42:00 AM

Page 5: [56] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:42:00 AM

Page 5: [56] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:42:00 AM

Page 5: [56] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:42:00 AM

Page 5: [56] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:42:00 AM

Page 5: [57] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:43:00 AM

Page 5: [57] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:43:00 AM

Page 5: [57] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:43:00 AM

Page 5: [58] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/13/22 9:56:00 AM

Page 5: [58] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/13/22 9:56:00 AM

Page 5: [59] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:50:00 AM

Page 5: [59] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:50:00 AM

Page 5: [60] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:50:00 AM

Page 5: [60] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:50:00 AM

Page 6: [61] Commented [MAB9] MERKLE, ALEXANDER BUDLONG 1/3/21 2:25:00 PM

16. Gordon, W., Balsamo, L., Talbot, M., Osier, C, Johnson, A., Shero, J., Potter, B., Stockinger, Z. (2016, July 01). *Amputation: evaluation and treatment (CPG ID: 07).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Amputation_Evaluation_and_Treatment_01_Jul_2016_ID07.pdf

Page 7: [62] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:58:00 AM

Page 7: [62] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:58:00 AM

Page 7: [62] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/1/22 11:58:00 AM

Page 7: [62] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/1/22 11:58:00 AM**

Page 7: [63] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Highlight

Page 7: [63] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Highlight

Page 7: [64] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:07:00 PM**

Page 7: [64] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:07:00 PM**

Page 7: [64] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:07:00 PM**

Page 7: [64] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:07:00 PM**

Page 7: [64] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:07:00 PM**

Page 7: [64] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:07:00 PM**

Page 7: [64] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:07:00 PM**

Page 7: [65] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 10:53:00 AM**

Page 7: [65] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 10:53:00 AM**

Page 7: [65] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 10:53:00 AM**

Page 7: [65] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/5/22 10:53:00 AM

Page 7: [65] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/5/22 10:53:00 AM

Page 7: [65] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/5/22 10:53:00 AM

Page 7: [66] Commented [JC13] Julia Catanese 9/11/21 1:01:00 PM

16. Gordon, W., Balsamo, L., Talbot, M., Osier, C, Johnson, A., Shero, J., Potter, B., Stockinger, Z. (2016, July 01). *Amputation: evaluation and treatment (CPG ID: 07).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Amputation_Evaluation_and_Treatment_01_Jul_2016_ID07.pdf

Page 7: [67] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 7: [67] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 7: [67] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 7: [67] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 7: [67] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 7: [67] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 7: [67] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 7: [67] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 7: [67] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [68] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [68] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [68] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [68] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [68] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [68] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [68] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [69] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [69] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [69] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [69] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [69] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 7: [70] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:13:00 PM**

Page 7: [70] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:13:00 PM**

Page 7: [70] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:13:00 PM**

Page 7: [70] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:13:00 PM**

Page 7: [70] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:13:00 PM**

Page 7: [70] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:13:00 PM**

Page 7: [70] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:13:00 PM**

Page 7: [70] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:13:00 PM**

Page 7: [70] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:13:00 PM**

Page 7: [70] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:13:00 PM**

Page 8: [71] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 8: [71] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 8: [71] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 8: [71] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 8: [72] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:28:00 PM**

Font: Italic, Highlight

Page 8: [72] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:28:00 PM**

Font: Italic, Highlight

Page 8: [73] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:28:00 PM**

Highlight

Page 8: [73] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:28:00 PM**

Highlight

Page 8: [73] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:28:00 PM**

Highlight

Page 8: [73] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/5/22 1:28:00 PM**

Highlight

Page 8: [74] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/11/22 10:29:00 AM**

Page 8: [74] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/11/22 10:29:00 AM**

Page 8: [74] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/11/22 10:29:00 AM**

Page 8: [75] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/30/22 11:59:00 AM**

Highlight

Page 8: [75] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/30/22 11:59:00 AM**

Highlight

Page 8: [76] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/11/22 10:31:00 AM**

-

Page 8: [76] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/11/22 10:31:00 AM**

-

Page 8: [77] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/11/22 10:31:00 AM**

Page 8: [77] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/11/22 10:31:00 AM**

Page 8: [78] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/30/22 11:59:00 AM**

Highlight

Page 8: [78] Formatted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/30/22 11:59:00 AM**

Highlight

Page 8: [79] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/11/22 10:35:00 AM**

Page 8: [79] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/11/22 10:35:00 AM**

Page 27: [80] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/13/22 12:48:00 PM**

Page 40: [81] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **4/15/22 12:51:00 PM**

Page 40: [82] Commented [JC49] **Julia Catanese** **3/31/19 2:40:00 PM**

1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Page 40: [83] Commented [JC50] **Julia Catanese** **3/31/19 2:46:00 PM**

1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Page 40: [84] Commented [JC51] **Julia Catanese** **2/11/19 1:04:00 PM**

47. Tintinalli, J.E., Stapczynksi, J.S., Ma O.J., Cline, D.M., Cydulka, R.K., & Meckler, G.D. (Eds.). (2010). *Emergency Medicine: A Comprehensive Study Guide* (7*th* ed.). McGraw-Hill.

Page 40: [85] Commented [JC52] **Julia Catanese** **3/31/19 2:47:00 PM**

1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

Page 42: [86] Commented [JC55] **Julia Catanese** **3/31/19 3:26:00 PM**

48. Rapp, J., Plackett, T., Crane, J., et al. (2017, July 24). *Acute Traumatic Wound Management in the Prolonged Field Care Setting (CPG ID: 62).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Wound_Management_PFC_24_Jul_2017_ID62.pdf

Page 42: [87] Commented [JC56] Julia Catanese 3/31/19 3:20:00 PM

48. Rapp, J., Plackett, T., Crane, J., et al. (2017, July 24). *Acute Traumatic Wound Management in the Prolonged Field Care Setting (CPG ID: 62).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Wound_Management_PFC_24_Jul_2017_ID62.pdf

Page 42: [88] Commented [JC57] Julia Catanese 3/31/19 3:00:00 PM

48. Rapp, J., Plackett, T., Crane, J., et al. (2017, July 24). *Acute Traumatic Wound Management in the Prolonged Field Care Setting (CPG ID: 62).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Wound_Management_PFC_24_Jul_2017_ID62.pdf

Page 42: [89] Commented [JC58] Julia Catanese 3/31/19 3:03:00 PM

1. Cubano, M.A, & Butler, F.K. (Eds.). (2018). *Emergency War Surgery*. Borden Institute, US Army Medical Department Center and School, Health Readiness Center of Excellence, Office of The Surgeon General, United States Army.

48. Rapp, J., Plackett, T., Crane, J., et al. (2017, July 24). *Acute Traumatic Wound Management in the Prolonged Field Care Setting (CPG ID: 62).* Joint Trauma System Clinical Practice Guideline. https://jts.amedd.army.mil/assets/docs/cpgs/Wound_Management_PFC_24_Jul_2017_ID62.pdf
Also War Surgery

Page 42: [90] Formatted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/15/22 1:20:00 PM

Bulleted + Level: 1 + Aligned at: 1.25" + Indent at: 1.5"

Page 51: [91] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/19/22 12:25:00 PM

Page 51: [91] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/19/22 12:25:00 PM

Page 51: [91] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/19/22 12:25:00 PM

Page 51: [91] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/19/22 12:25:00 PM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

•

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted **Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA)** **3/28/22 9:37:00 AM**

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

-

Page 51: [92] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 3/28/22 9:37:00 AM

Page 51: [93] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/25/22 1:12:00 PM

Page 51: [93] Deleted Pelczar, Stephanie S Ms CIV USARMY MEDICAL COE (USA) 4/25/22 1:12:00 PM