I PURPOSE

The purpose of the preparation of surgery trays is to have instruments ready in the PNICU for sterile surgery.

II SCOPE

The procedures outlines how to set up the trays for survival (sterile) and non-survival (non-sterile) surgery.

III RESPONSIBILITIES

It is the responsibility of Metabolic Assessment Laboratory personnel to follow this procedure. It is the responsibility of supervisory personnel to ensure compliance with this procedure and to train employees and students responsible for performing this procedure. Students will report accidents to the principal investigators immediately.

IV REFERENCES

N/A

V REAGENTS AND MATERIALS

V.A. The listed surgery items are examples of materials that can be placed on the Sterile Surgery Tray; however, items will vary with each protocol.

V.A.1. 3, 1cc syringes of 0.4 ml lidocaine (lidocaine HCL, USP, 2%).

V.A.2. 3, 1cc syringes of 250mg cefazolin sodium.

V.A.3. 2 packages of 3-0 Ethicon Suture.

V.A.4. 2 packages of 4-0 Dexon "S" Suture.

V.A.5. 1, 18 gauge needle.

V.A.6. 1 surgery pack.

V.A.7. 1, 1cc of sterile dilute heparin (1mL).

V.A.8. 1 yellow 16 gauge luer stub adapter.

V.A.9. 2 purple 20 gauge luer stub adapters.

V.A.10. 3 locking luer male adapter plugs.

V.A.11. 1, 3cc syringe for Flunixin.

V.A.12. 1 bladder catheter.

V.A.13. 1 gastric catheter.

V.A.14. 1 venous catheter.

V.A.15. 1 white tape.

V.A.16. 1 yellow tape.
VI EQUIPMENT

N/A

VII SAFETY PRECAUTIONS

VII.A. Members of the MAL have been trained extensively in the procedures described in this SOP.

VII.B. Members of the MAL have completed animal contact training in order to work in the PNICU.

VIII DEFINITIONS

VIII.A. Standard Operating Procedure (SOP) – Standard Operating Procedure is a document that provides instructions for completing a specific task in the lab.

VIII.B. Metabolic Assessment Laboratory (MAL) – The Metabolic Assessment Laboratory is the laboratory that will use this SOP.

VIII.C. Piglet Neonatal Intensive Care Unit (PNICU) – The PNICU is a unit where the piglet is monitored by 24 hour care and routine check-up parameters using PNICU SOPs conducted by the MAL.

VIII.D. Clean Person—The Clean Person is designated to open and touch non-sterile items to maintain the integrity of the sterile person and surgeon.

VIII.E. Sterile Person—The Sterile Person is designated to handle all sterile instruments and materials that will be used inside the piglet. The Sterile Person also passes instruments to the surgeon.

IX PROCEDURE

IX.A. Procedure for scrubbing up and putting on PPE prior to entering surgery room

IX.A.1. Prior to hand washing, put on hair net, scrubs, masks, and shoe covers. SOP #
IX.A. CP048.00 for detailed instructions on donning of PPE.
IX.A.2. Follow proper hand washing procedure.
IX.A.3. Wash up to the elbows using soap; scrub fingernails and hands with hand brush.

IX.B. Procedure for putting on sterile gowns and gloves in surgery room
IX.B.1. Designate at least one person as clean person and one as sterile person.
IX.B.2. Helpers prepare a clean workspace by cleaning the operating table, white moving cart, and stainless steel cart with 70% ethanol.
IX.B.3. Helpers assist clean and sterile person into gloves. Refer to SOP# CP057.00 for donning gloves.

IX.C. Preparation of the surgery trays
IX.C.1. Unwrap tray using sterile technique as outlined below.
IX.C.2. Clean person partially removes the first, non-sterile paper layer in a way that the second, sterile paper layer is exposed and available for the sterile person to grab.
IX.C.3. Sterile person grabs the sterile, wrapped tray and unwraps the second layer. Then, sterile person places the tray on the end of the operating table to the left of the piglet V-tray.
IX.C.4. Unwrap towels using sterile technique.
IX.C.5. The sterile person will place one large towel over the surgery tray.
IX.C.6. Create another sterile workspace by laying a large towel on the white moving cart. This area will be used as the “sterile towel workspace” for sterile instruments.

IX.D. Placing instruments on the surgical trays
IX.D.1. The listed surgery items are examples of materials that can be placed on the Sterile Surgery Tray; however, items will vary with each protocol.
IX.D.2. All materials for surgery need to be kept sterile at all times.
IX.D.3. Unwrap instruments using sterile technique as outlined below, and place them on the surgery tray according to the Survival Surgery Instrument Layout pictorial direction.
IX.D.4. Clean person opens the individually wrapped instruments and dumps the sterile instruments onto the sterile towel workspace.
IX.D.5. Sterile person picks up instrument and places instruments onto the tray according to instrument layout.
IX.D.6. Clean person obtains one scalpel blade (size 10) and carefully peels packaging away from blade and drops the blade onto the sterile towel.
IX.D.7. Sterile person takes scalpel blade and attaches it to the scalpel handle on the instrument tray.
IX.D.8. The sterile person places four small sterile towels over the tray to cover the instruments until surgery. These small towels should be opened in a sterile fashion.
IX.D.9. Place one large towel over the small towels so that the sides of the tray and all items underneath are covered.
IX.D.10. Clean person moves instrument tray to the stainless steel cart next to balance.
IX.D.11. Be sure not to touch the sterile metal part of the tray. Instead, pick it up on the sides of the tray with the towel folded over the sides of the tray, and move it to the
ethanol wiped stainless steel cart adjacent to the medicine cabinet.

IX.E. Catheter, suture, and medicine tray preparation
    IX.E.2. Unwrap catheters, sutures and fill syringes using sterile technique, and place them on the surgery tray according to the Survival surgery instrument layout PowerPoint.
    IX.E.3. Assemble catheters and place on tray as indicated by the Survival surgery instrument layout. Refer to SOP # CP041.00 for directions on assembling catheters.

IX.F. Prepare medication syringes. Refer to SOP # CP047.00.
    IX.F.1. Each syringe should be prepared using sterile technique.
    IX.F.2. Fill 3, 1cc syringes with 0.4 ml lidocaine (lidocaine HCL, USP, 2%).
    IX.F.3. Fill 3, 1cc syringes with 250mg cefazolin sodium.
    IX.F.4. Fill 1, 3cc syringe with Flunixin (must use piglet weight collected during admissions to determine volume in syringe: 0.5 ml of Flunixin (2mg/mL concentration)/kg of piglet)
    IX.F.5. Flunixin may be filled during the admission procedure after calculating the volume with the weight.
    IX.F.6. Omit 3cc syringe for Flunixin from initial tray setup. Prepare syringe, (open) during the piglet admission procedure.
    IX.F.7. Fill 1, 1cc syringe with dilute heparin.
    IX.F.8. Clean person obtains 18G needle, 2 packages of 4-0 Dexon sutures and 2 packages of 4.0 running nylon sutures from medicine cabinet and drops sterile contents onto sterile towel by unwrapping exterior packaging without touching the contents.
    IX.F.9. Clean person unwraps 12 cm, black-braided silk sutures, 1 package of gauze, 1 package of cotton swabs, venous clamps, and catheter inducers using sterile technique as above by dropping contents of brown bags onto sterile towel.
    IX.F.10. Sterile person arranges the materials listed in steps IX.F.8. and IX.F.9. on the medicine tray.
    IX.F.11. Sterile person places 4 small towels on top of the medication tray.
    IX.F.12. Sterile person places 1 large towel over the tray to cover the instruments until surgery as previously done with first instrument tray.
    IX.F.13. Clean person moves the medication tray to the stainless steel cart by the balance by picking it up on the sides of the tray with the towel folded over the sides of the tray.
    IX.F.14. 2 bioclusive tape packages are placed on the side of the stainless steel cart housing the scale.

IX.G. Repeat process for trays to be used with additional piglets.
X ATTACHMENTS

X.A. For a list of materials and their locations, refer to SOP# CG098.00.
X.B. Survival Surgery Instrument Tray Layout
X.C. Survival Surgery Medication Tray Layout

- Silk Sutures
- 2 Venous Clamps
- 2 Catheter Inducers
- 2 packages of 3.0 running nylon
- 1 package Gauze (4x4 and 2x2)
- 1 package Cotton Swabs
- 18 Gauge needle for Venous Catheter
- 2 packages of 4-0 Dexon Sutures
- 6-1cc syringes with 25G needles (3 Lidocaine + 3 Cefazolin)
- 3-3cc syringe with 22G needle for urine
- 1-3cc syringe with 22G needle for Flunixin**
- 3-1cc syringe with 25G needle for blood:
  - 1 for waste
  - 1 rinsed with heparin for blood draw
  - 1 filled with heparinized saline
X.D. Non-Survival Surgery Tray Layout

X.C.1. The non-survival tray does not have to be prepared using sterile technique.

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity/Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Large Straight Hemostat</td>
<td>9 cm</td>
</tr>
<tr>
<td>1 Large Curved Hemostat</td>
<td>14 cm</td>
</tr>
<tr>
<td>3 Medium Straight Hemostats</td>
<td>14 cm</td>
</tr>
<tr>
<td>3 Medium Curved Hemostats</td>
<td>12-14 cm</td>
</tr>
<tr>
<td>2 Small Curved Hemostats</td>
<td>12.5 cm</td>
</tr>
<tr>
<td>2 Small scissors</td>
<td>13-11 cm</td>
</tr>
<tr>
<td>Large Scissors</td>
<td>17 cm</td>
</tr>
<tr>
<td>4 Strips of White Tape</td>
<td></td>
</tr>
<tr>
<td>4 Restraints</td>
<td></td>
</tr>
<tr>
<td>Scalpel</td>
<td>(16 cm)</td>
</tr>
<tr>
<td>2 Large Toothed Forceps</td>
<td>12 cm</td>
</tr>
<tr>
<td>1 Medium Toothed Forceps</td>
<td>(10 cm)</td>
</tr>
<tr>
<td>1 Medium Straight Forceps</td>
<td>(8.75 cm)</td>
</tr>
<tr>
<td>Vacutainer with 20G</td>
<td></td>
</tr>
<tr>
<td>for Central blood collection</td>
<td></td>
</tr>
<tr>
<td>Vacutainer with 22G</td>
<td></td>
</tr>
<tr>
<td>for Portal</td>
<td></td>
</tr>
<tr>
<td>Blood tubes</td>
<td></td>
</tr>
<tr>
<td>Urine vials</td>
<td></td>
</tr>
<tr>
<td>Saline vials</td>
<td></td>
</tr>
<tr>
<td>Urine syringe: 22-gauge</td>
<td></td>
</tr>
<tr>
<td>Needle and 5-cc syringe</td>
<td></td>
</tr>
<tr>
<td>Brain kit:</td>
<td></td>
</tr>
<tr>
<td>Large spatula (23 cm)</td>
<td></td>
</tr>
<tr>
<td>Small, curved and toothed</td>
<td></td>
</tr>
<tr>
<td>Forceps (7 cm)</td>
<td></td>
</tr>
<tr>
<td>Large, fine, straight</td>
<td></td>
</tr>
<tr>
<td>Forceps (11 cm)</td>
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</tr>
<tr>
<td>Portal blood tubes</td>
<td></td>
</tr>
<tr>
<td>Blood tubes</td>
<td></td>
</tr>
</tbody>
</table>

On floor by wall under operating table: Bone snippers, cutting boards, bin with brain information.