Name: Training Guidelines For Sideporting/Notching

Purpose: The purpose of this document is to help trainers and trainees in various departments understand the principles and rationale of sideporting. It has been put together by drawing on the expertise of employees plant wide.

Scope: Certain products have specific instructions which differ from the general sideporting procedure.

I. SETUP (BEFORE)

- A. Holepunch is the correct size, clean and sharp.
- 1. Wrong size is a reject and may affect product use or safety.
- 2. Dirt or foreign matter on the walls or circumference of the sideport is unacceptable.
- 3. A dull punch will not allow for a crisp, clean cut; it will result in a ragged, hairy or jagged hole. Overcompensating for a dull punch with more force may result in damaged tubing or rough holes.

II. NECESSARY TOOLS ARE BEING USED:

- A. Sideport block/plate/jig
 - 1. A sideport block helps hold the tubing to prevent it from moving as you sideport, which may result in an incorrect hole placement.
- B. Support tubing, beading or wire
 - 1. Support tubing (beading or wire) prevents the tubing from collapsing when you are sideporting. It will help prevent you from punching through the back wall.
- C. Lubricant (medical fluid, alcohol, pam)
 - 1. Approved lubricants can help reduce friction and allow punch to cut through tubing.

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- D. Pinvise/punch with checker wire
 - 1. A pinvise holds a punch and allows a user to hold punch (in vise) like a pen for easier punching. A pinvise or punch with checker wire can help push plug out of punch.

Note: Tools are optional depending on hole size and type of tubing. For example, softer tubing often requires support tubing more than rigid tubing.

III. TECHNIQUE (DURING)

- A. Before punching, check specification for spacing requirements.
 - 1. If holes are incorrectly spaced, patient use or safety might be compromised. Order will be rejected.
- B. Place sideports in middle of shaft, with punch going straight into tubing.
 - Sideporting off-center, or with punch coming in at an angle won't allow for a clean cut. You might punch through back wall, or have hole attached or ragged on one side.
- C. Angled sideporting
 - 1. Punch needs to be placed at an angle with even twisting motion, assuring that it doesn't hit the back wall.
- D. After making contact with tubing, use twisting motion with round hole punches to help cut tubing.
 - 1. Twisting(round) motions help the punch cut through the initial layer of tubing.

Note: Lightly heating punch or using a lubricant can also help cut through the initial tubing layer.

- E. Apply correct amount of downward force or pressure.
 - 1. This is critical to good sideporting. Can't be too much(or you will punch through back wall of tubing or tear tubing) can't be too little (or you will only partially punch through tubing, resulting in ragged hole, funneling or no hole). You want to feel the punch go through wall of tubing, but not through support tubing(if used) or back wall. You will develop the "feel" for this over time. Be conscious of it. Also, compare the wall thickness of tubing to tapered area on punch. Watch to ensure you insert taper only.

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- F. Ensure clean removal of sideport "plug"
 - 1. After you know you have punched through wall, you must make sure that you have cleanly removed the plug. A plug left within a product could compromise product safety and effectiveness.

IV. CHECKING YOUR WORK (AFTER)

- A. All sideports are cleanly cut.
 - 1. Sideports need to be clean and proper shape(round). Cannot be jagged, ragged, rough, "hairy", double punched, or have excessive "clutter" ("clutter is tubing that in some way covers the hole, whether it is a hair of tubing, peninsula of tubing, etc). Sometimes clutter can be removed by using tweezers or by heating a checker wire and melting tubing back against hole wall. Check with your trainer or leader.
- B. Sideports are correctly spaced.
 - 1. Refer to pertinent drawings for correct dimensions.
- C. Support tubing, when removed, is not punched through.
 - 1. Support tubing should be removed easily, and should not be punched through. If punched through, carefully check to make sure no piece of support tubing is left in I.D. of shaft, and that you did not punch through back wall.
- D. Back side of wall is not punched.
 - 1. Make sure there is no hole on the back side; this could compromise product safety or effectiveness.
- E. Sideports are in center of shaft.
 - Otherwise, shaft might be weakened or use of holes not as intended.
- F. Sideports do not collapse or lose their shape when in a curve.
 - 1. Sideports have to be fully open to work properly.
- G. Tubing is not weakened by sideports
 - If sideports are too close together, the tubing can be weakened and fold in on itself. Tubing must maintain column strength after sideporting.

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٧. **NOTCH PORTING**

A. Appropriate equipment.

1. Correct jig sizes allow for adequate notch in material. Sharp blades are necessary for clean notch port. Dull razor blade will result in jagged notch requiring buffing. Notch jigs may be braced against side of desk or a jig stand may be used to keep jig in place while notching.

B. Technique

1. Before notching check specifications for spacing requirements. If notches are incorrectly spaced your order may be rejected or products use and patients safety may be compromised. Notching is a continuous scooping motion starting on the top of the notch ending at the top. Not using a continuous motion when notching will result in a jagged notch which will require buffing.

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