**Supplementary Materials – Survey**

1. Please indicate your current level of training:
* HO1
* HO2
* HO3
* HO4
1. Please estimate the total number of weeks you have spent during your residency in the Medical ICU (including both days and nights)
* 0-1 week
* 2-4 weeks
* 5-8 weeks
* >8 weeks
1. When is the last time you rotated through the Medical ICU?
* Before January 2015 (>1 year ago)
* Between January 2015 and April 1st 2015
* After April 1st, 2015
1. Please estimate the total number of central lines that you have performed during your residency (including IJ, subclavian, femoral)
* 0
* 1-4
* 5-8
* 9-15
* >15
1. Please estimate the **total**number of large bore lines (dialysis lines, MAC/Cordis, Sorenson) that you have placed during your residency.
* <2
* 2-5
* 6-10
* 11-20
* >20
1. What percent of the time do you write a procedure note after you successfully place a line?
* 100%
* 75-99%
* 50-74%
* 25-49%
* 0-24%
1. Please indicate which statement best describes the amount of time the nurses are in the room with you when you perform a central line in the MICU (including both day and night MICU)
* 100% of the time
* Most of the time, but the nurse occasionally steps out of the room for other patient care issues.
* About 50% of the time
* Less than half of the time is a nurse in the room with me
* The nurse is rarely, if ever, present in the room with me when I am placing a central line
1. The last time you were in the MICU, did nurses fill out a central line "check list" during or after you performed central lines?
* Yes, 100% of the time
* Yes, most of the time
* Yes, about 50% of the time
* Yes, about 25-50% of the time
* Yes, <25% of the time
* I have never heard of a central line check list being performed
1. How often are you directly supervised by an attending during central line placement?
* 100% of the time
* Most of the time
* About half of the time
* Less than half of the time
* Less than 25% of the time
* Never
1. Do you feel that attending supervision affects your performance when you place a central line?
* Yes, for the better
* Yes, for the worse
* I do not feel that it affects my performance
1. Would you prefer that attendings supervise you more often when placing central lines?
* Yes
* No
* Indifferent
1. After you complete a central line, who do you notify?
* The nurse
* The unit clerk
* Both the nurse and the unit clerk
* I don’t typically notify anyone in particular (or, typically only notify nurse once line is “OK to use”)
1. Please estimate the number of times that you have attempted central line placement at one anatomic site, but failed at that site (even if you were successful at an alternate site)
* <2
* 2-5
* 6-10
* 11-20
* >20
1. How often do you write a procedure note after failed line placement?
* 100% of the time
* 75-99% of the time
* 50-74% of the time
* 25-49% of the time
* 0-24% of the time
* N/A
1. Do you think it is important to document a procedure note after failed line placement?
* Yes
* No
* Indifferent
1. When do you order a Chest X-ray to evaluate central line placement? (which statement describes what you most often do)
* Before I begin the procedure (I order a CXR order that the nurse can activate)
* Immediately after completing the procedure
* Usually within 30 minutes of completing the procedure
* Usually >30 minutes after completing the procedure
1. How often do you order a Chest X-ray after failed line placement (internal jugular or subclavian attempts only)?
* 100% of the time
* 75-99% of the time
* 50-74% of the time
* 25-49% of the time
* 0-24% of the time
* Only if I am concerned there was a complication during the line attempt
* N/A
1. Do you think it is important to order a Chest X-ray after failed subclavian or internal jugular vein line placement?
* Yes
* No
* Indifferent or I don’t know
1. Please rate your confidence interpreting appropriate central line placement based on portable Chest X-ray:
* Very confident
* Somewhat confident
* Neutral
* Not very confident
* Not at all confident
1. Please rate your confidence interpreting whether a central line is placed in an artery or a vein based on portable Chest X-ray:
* Very confident
* Somewhat confident
* Neutral
* Not very confident
* Not at all confident
1. Please rate your confidence interpreting whether there is a pneumothorax after central line attempt:
* Very confident
* Somewhat confident
* Neutral
* Not very confident
* Not at all confident
1. How often do you use pressure transduction as a way to determine if a central line is placed in the artery or vein?
* 100% of the time
* 75-99% of the time
* 50-74% of the time
* 10-49% of the time
* Never
* Only if I see pulsatile blood flow or bright red blood upon line attempt
1. How often do you use ABGs as a way to help determine central line placement?
* 100% of the time
* 75-99% of the time
* 50-74% of the time
* 10-49% of the time
* Never
* Only if I see pulsatile blood flow or bright red blood upon line attempt
1. Please indicate if you have ever experienced any of the mechanical complications (listed below) when attempting central line placement. More than one answer is allowed.
* Pneumothorax
* Hemothorax
* Significant bleeding/hematoma
* Patient death
* Stroke
* Placement of line in the artery
* Misplacement of line in another location (i.e. pleural space)
* Other
1. Please feel free to leave free text comments regarding central line placement in the MICU: