Basic Skills Qualification
Musculoskeletal Ultrasound – Ultrasound Guided Intravenous Access

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

Resident: _____

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

Faculty: _____

Date: _____

Basics of Intravenous Cannulation

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

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

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

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

References:

New England Journal of Medicine
Ultrasound guided peripheral IV placement

Siegfried Emme
Ultrasound guided peripheral IV access by Siegfried Emme

Crit-IQ
Infernal Jugular Vein Insertion