It is therefore necessary to develop reliable quantitative metrics to establish standards for the attainment and maintenance of competence. This work identifies such a metric for simulated central line procedures" Ameri et al (2018).

Abstract:

Complications in ultrasound-guided central line insertions are associated with the expertise level of the operator. However, a lack of standards for teaching, training and evaluation of ultrasound guidance results in various levels of competency during training. To address such shortcomings, there has been a paradigm shift in medical education toward competency-based training, promoting the use of simulators and quantitative skills assessment. It is therefore necessary to develop reliable quantitative metrics to establish standards for the attainment and maintenance of competence. This work identifies such a metric for simulated central line procedures. The distance between the needle tip and ultrasound image plane was quantified as a metric of efficacy in ultrasound guidance implementation. In a simulated procedure, performed by experienced physicians, this distance was significantly greater in unsuccessful procedures ($p = 0.04$). The use of this metric has the potential to enhance the teaching, training and skills assessment of ultrasound-guided central line insertions.

Reference:

Ameri, G., Bainbridge, D., Peters, T.M. and Chen, E.C.S. (2018) Quantitative Analysis of Needle Navigation under Ultrasound Guidance in a Simulated Central Venous Line Procedure. Ultrasound in Medicine & Biology. May 29th. .

doi: 10.1016/j.ultrasmedbio.2018.05.004.