

## **Basic Accreditation for Invasive Image-guided Intervention**

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### **ABSTRACT**

**Objective:** To show how performance criterion levels in advanced surgical simulators can be integrated in a modern educational curriculum for high technology training in procedural-based medicine.

**Design:** Non-randomised observational study.

**Setting:** University Hospitals in Sweden.

**Methods:** A biomedical and technological curriculum was established highlighting essential elements in a broad range of specialities where invasive image-guided intervention is frequently practiced. To assess skills, the simulator curriculum chosen for use in the MIST simulator were Core skills 1, level medium and in the KSA simulator was Instrument navigation. A performance criterion level for basic eye-hand-foot coordination was defined in the simulators by using the median total score of a reference group of 31 randomly selected specialists performing invasive image-guided intervention on a regular basis in several specialities.

The basic accreditation level was set as the following: passed theoretical examination covering basic biomedical engineering and medical technology, and accomplished eye-hand-foot coordination up to the performance criterion level in two consecutive tests in both simulators.

**Results:** In the MIST simulator the basic accreditation level was set at a total score of <230 and in the KSA >65. The level of performance in experts was significantly better

than in novices, lacking experience of invasive image-guided intervention. Novices significantly improved their performance after systematic training.

**Conclusion:** The level of performance in two advanced simulators for minimal invasive surgery was explored in a multidisciplinary group of experienced specialists engaged in endoscopy and minimal invasive surgery. Performance at this reference level together with a theoretical and practical curriculum in biomedical engineering and technology now consists of the basic accreditation in invasive image-guided intervention. This is being implemented in the training programme for residents in different specialities engaged in endoscopy and invasive image-guided intervention at the Karolinska University Hospital in Sweden.

(The Journal on Information Technology in Healthcare 2004;3(2):165-173)

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