GULF COAST STATE COLLEGE
SINCE 1957
Surgical Services

Since the beginning of the 19th century, the legacy of William Halsted "see one, do one, teach one" was considered the rule of surgical training. Halsted coined these famous words as chief surgeon of Johns Hopkins Hospital at Yale University in 1904. Halsted implemented important basic principles that influenced surgical training for years to come, as a pioneer surgical "program director" [4].

Even though improvements in training were made, the paradigm shift from the Halstedian model towards a modern surgical training curriculum took place at the end of the 20th century due to several contributing factors [5, 7]:

- *Knowledge of sleep deprivation and its effects on human performance led to regulations in maximum weekly working hours in the United states (80 hours) and Europe (48 hours) [8]*
- *Knowledge of adult learning and how professionals in other high-performance and high-reliability organizations work and train [5, 9]*
- *The introduction of minimal invasive surgery (MIS) resulted in new challenges towards procedural and patient-related complications with implications for training [7, 10]*
- *Public awareness of medical scandals being reported world-wide, i.e. The Bristol Case1 [5, 11].*
- *The Institute of Medicine Report (IOM) in 1999, " To Err is Human; Building a Safer Health system", which claimed that between 44 000 – 98 000 peopled died in American hospitals each year due to medical errors [12].*
- *Increased understanding of the impact of non-technical skills on surgical outcome [13] (Hagelsteen, Kristine (2018). Surgical Education Assessment. LUND University.)*

The advantages of virtual reality simulators are well-established: simulation training gives a positive effect on the learning curve and improvement of basic psychomotor skills in the operating room[1]. Virtual reality simulation has shown to deliver a fast and foremost a patient-safe path to technical competence in the operating room.

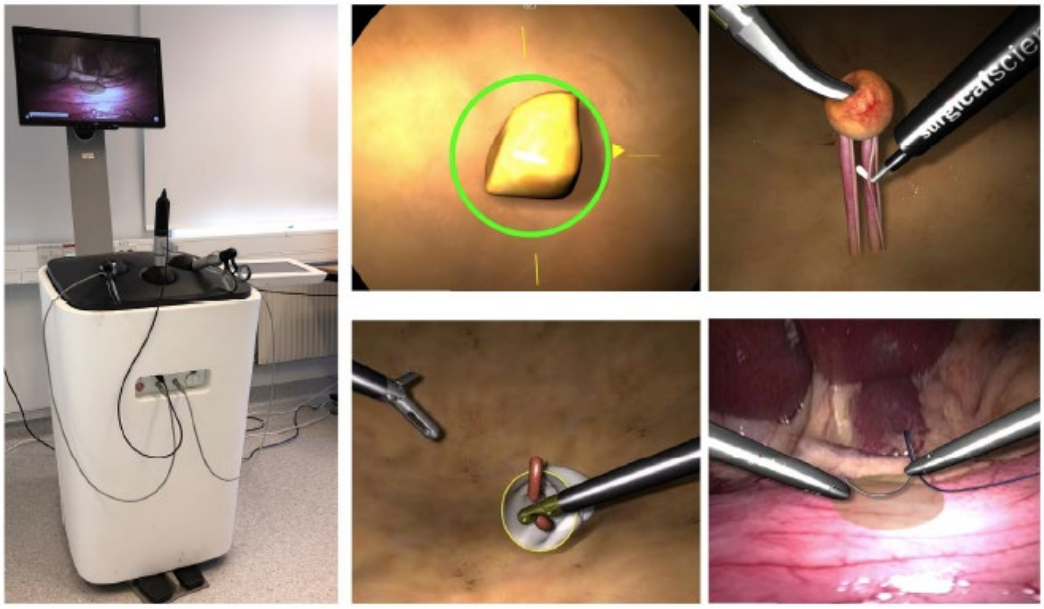

Figure 5. Lapsim® Haptic System. Screenshots from the Basic Skills training program; upper middle – camera navigation, upper right – fine dissection, lower middle – grasping, lower right – suturing. Photo by KH 2018

Structured VR simulation training wins on being proficiency-based – by presenting trainees to exercises where pass levels are based on expert results, individual variations in training time and repetitions do not matter: In contrast to time/volume based training, proficiency based training allows for self-paced practice and goal-directed learning, giving a consistency of the final results because all examinees are expected to reach the same performance standard.

We gained one for our Surgical First Assistant program and utilize the LAPSIM ST specifically modeled for the Surgical Assistant Community to improve and develop skills related to minimally Invasive surgery.

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10/21/2019