Title: Establishing a surgical skills simulation curriculum for undergraduate medical students

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What problem was addressed: Literature review shows that the world has compensated for the increase in the number of trainees and less surgical exposure per trainee with simulation and skills lab teaching. Simulation is an instructional strategy used to teach technical skills, procedures, and operations, by presenting learners with situations that resemble reality. The department of surgery at the school of medicine, Addis Ababa University established a skills lab in 2006 and simulation based teaching has been practiced. However, the simulation sessions were not well structured; there was no formal curriculum and assessment was not done in a standardized manner.

What was tried: The main objective of the project is to develop a surgical simulations curriculum regarding selected set of surgical skills for undergraduate medical students of Addis Ababa University, to build faculty capacity with curriculum development and simulation based teaching, and to look at trends of decay and retention of surgical skills performance among medical students while implementing new curriculum.

The project proposal was submitted to department and was approved. A team consisting of the FAIMER fellow, two surgeons, one skills lab manager (nurse), and an MPH colleague was formed. Instrument identification, suturing (simple, mattress, and sub-cuticular), knot tying (instrument and hand), intestinal perforation repair, and intestinal anastomosis were identified as important set of skills and two curricula were developed. After a curriculum design and simulation training were prepared for the faculty, both curricula were pilot tested and some changes made. The curriculum was fully implemented in March and the first cohorts of 22 students were trained. Following implementation of the new curriculum, we prepared a tool to assess students' surgical skills. Assessments were done at one month, three months, and six months of training. Instrument identification is measured out of 30 points; knot tying and suturing each out of 15 points.

What lessons were learned: The curriculum addresses the basic surgical skills which are in line with the overall undergraduate curriculum. The process also increased the faculty capacity with regard to curriculum development and simulation based teaching. The baseline mean scores of surgical skills performance are 3.8 (SD= 0.77), 3.3 (SD= 0.37), and 2.4 (SD= 0.4) for instrument identification, knot tying, and suturing, respectively. At the end of training, mean scores are 26.6 (SD= 0.64), 11.2 (SD= 0.46), and 11.1 (SD= 0.4) for instrument identification, knot tying, and suturing, respectively.

The project is still going on and base line result (before training), after one week, one month, and after three months is already collected. The six month and one year data are due in November and

May 2016. The department has also identified more sets of skills and three additional curricula are almost complete.

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