

## The impact of a new structured surgical skill training model for cultivating surgical competency

**Authors:** Chi-Chuan Yeh<sup>1,2</sup>, Hong-Shiee Lai<sup>1,2</sup>, Ming-Tsan Lin<sup>1</sup>, Yung-Chie Lee<sup>1</sup>, Po-Huang Lee<sup>1</sup>  
**Institutions:** <sup>1</sup>Department of Surgery, <sup>2</sup>Department of Medical Education, National Taiwan University Hospital, Taipei, Taiwan  
**Keywords:** surgical skills training, competency-based training, structured training model, Medical Expert

Competency-based surgical training models with hands-on skills training in surgical skills laboratories are the new trend for developing new surgeons. We assessed the impact of the new National Taiwan University Hospital (NTUH) Structured Surgical Skill Training Model (NTUH SSSTM) on the development of young surgeons' competencies.

We set up new workshops combining the NTUH SSSTM with training in basic surgical skills (BSS) and advanced animal experiments for junior residents in MISTC, NTUH in 2008. The BSS training workshops included basic surgical skills, small bowel anastomosis, subcutaneous tumor excision and usage of auto-suture devices. Junior residents performed diagnostic laparoscopy and subtotal gastrectomy on pigs and performed exploratory laparotomy 2 weeks later. We ran 4 workshops between July 2008 and September 2009.

Twenty-six surgical residents (20 male and 6 female) took part in the workshops and their overall satisfaction with the BSS training workshop was  $94.33 \pm 4.98$ . The station for small bowel anastomosis and usage of auto-suture devices provided the greatest benefit. Fifteen residents (9 male and 6 female) performed animal experiments between October 2008 and December 2009. The global rating scores for suturing, knot tying and bowel anastomosis were  $3.33 \pm 0.59$ ,  $3.53 \pm 0.61$  and  $3.27 \pm 0.56$ . They gained competency in performing advanced surgical skills. The mean difference between self-evaluated scores before and after the training increased, except that for "I know and perform bowel anastomosis" ( $-1.20 \pm 1.42$ ). Although junior residents gained great benefits in performing bowel anastomosis from the BSS training workshop, they felt incompetent to do the procedure in the animal model.

When the new NTUH SSSTM was implemented, junior residents gained competency in performing advanced surgical skills.