

# ISQua's 28<sup>th</sup> International Conference



HONG KONG, CHINA - CITY OF LIFE



**Patient Safety:  
Sustaining the Global  
Momentum**

*using e-health, health  
technology, education,  
research and policy*

**14<sup>th</sup> - 17<sup>th</sup>  
September 2011**  
Hong Kong Convention  
and Exhibition Centre

## Abstract

### Objective:

To evaluate the effectiveness of Crew Resource Management (CRM) training in enhancing patient safety culture among healthcare professionals of PYNEH.

### Method:

CRM in aviation is being applied to healthcare to eliminate or mitigate preventable human error and improve patient safety. PYNEH is a 1600-bed general acute public hospital in Hong Kong serving 0.8 million population, piloted CRM training for HA in 2009-2011.

We collaborated with the Hong Kong Government Flying Service and United States CRM consultants to train and certify trainers, conducted interactive workshops on human factors and promoted essential elements contributing to patient safety including teamwork, communication, assertiveness, situational awareness, decision making, team briefing and debriefing. Scenarios and videos were designed and made by in-house CRM trainers to ensure adaptation to the local setting. A total of 1,400 doctors and nurses were targeted for training in the form of 8-hour workshops within two years.

### Evaluation:

(1) Briefing and debriefing of training among CRM trainers and participant feedback (scoring on a 5-point scale) after every class; (2) Identical pre- and post-training surveys (before training and on in Jan 2011), composed of 12 constructs to provide insights on the dimensions of safety culture as delineated by the Agency for Healthcare Research and Quality (AHRQ); (3) Post-training focus group interviews. To further embed CRM concepts in daily practice, departmental CRM ambassadors were appointed in 2011 to continue engagement programs on iSBAR and Assertion and a CRM Campaign was held in December 2010.

### Results:

From October 2009 to January 2011, 38 in-house CRM trainers were certified by external consultant. In total 7 scenarios and 3 videos were created. Training was conducted for 1,200 doctors and nurses of PYNEH, equivalent to 52% of all clinical staff.

In total, 992 and 375 staff completed pre-training and post-training survey respectively. Improvement was shown in 11 of the 12 dimensions post-training: Overall perceptions of safety, frequency of events reported, Supervisor/manager expectations & actions promoting patient safety, Organisational learning-continuous improvement, Teamwork within units, Communication openness, Feedback & communication about error, Non-punitive response to error, Hospital management support for patient safety, Teamwork across hospital units and Hospital handover & transitions. In comparison to the AHRQ benchmark survey, staff feel that the hospital is actively working to improve patient safety.

Feedback showed that participants were satisfied with CRM training program and agreed with the training objectives (average score 4.17, 1,264 respondents) and that CRM skills had positive impact on patient safety culture (average score 4.08). CRM focus group interviews conducted in December 2010-January 2011 for 76 randomly selected participants showed that they agreed with the training objectives. Almost all would recommend CRM training to their teammates. Some indicated they had practicing CRM tools at work but junior staff were more hesitant. Briefing & Debriefing were regularly practiced in operations, Interventional Radiology procedures and Specialist Clinics. Obstacles encountered included: (1) some doctors did not readily accept assertion from nursing staff; and (2) heavy workload and manpower shortage. Support from clinical leaders was considered essential to the successful rolling out of CRM in practice.

### Conclusions:

Our pilot training initiative showed that CRM training had been able to enhance the patient safety culture among clinical staff, who were enthusiastic in accepting CRM concepts as a structured way of communication towards mitigating preventable human errors. The more senior staff had even progressed from the awareness level to the implementation stage by utilizing CRM tools in daily practice. We believe that behavioural and cultural changes are gradually taking place in the organisation and PYNEH has pledged to continue further specialty- and team-based CRM training to consolidate our learning and promote CRM practice at work.