

**NTWC CRM**  
Crew Resource Management Committee

# **Pioneer Implementation of Simulation-Based Crew Resource Management in Hong Kong Public Hospitals**

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# Background of Crew Resource Management (CRM)

1979

1994

2001

2009

The concept of CRM originated from the National Aeronautics and Space Administration air safety workshop.

CRM was first applied in healthcare in the operating room of the University Hospital in Basel, Switzerland.

The Institute of Medicine (IOM) recommended that the CRM training should be used to improve patient safety.

CRM was first introduced in Hong Kong healthcare setting.





# New Territories West Cluster Simulation-Based CRM Journey

# NTWC Simulation-Based CRM Journey

4Q 2012

**NTWC CRM Committee** with representatives from various departments was established.





# NTWC Simulation-Based CRM Journey

1Q 2013

**Kick-off ceremony** on CRM Training Program was held.

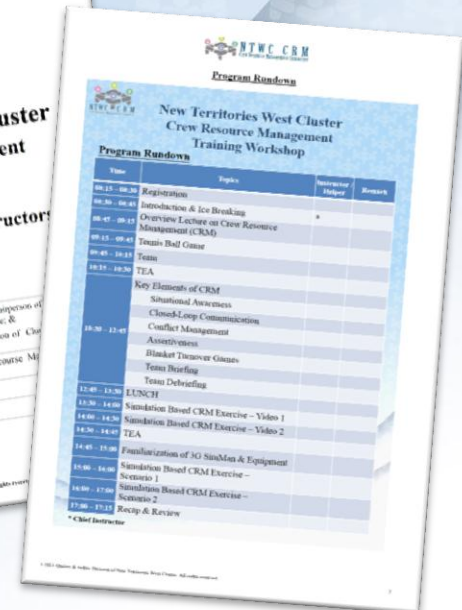
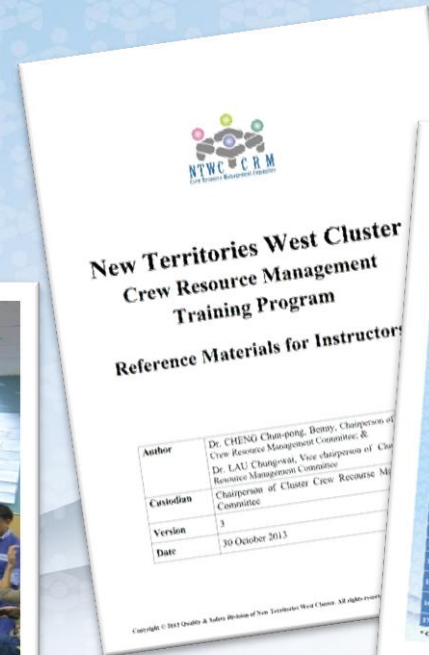


# NTWC Simulation-Based CRM Journey

## 2Q 2013

A group of healthcare professionals were equipped to become **Simulation-based CRM instructors.**

A **Simulation-based CRM curriculum** was formulated.

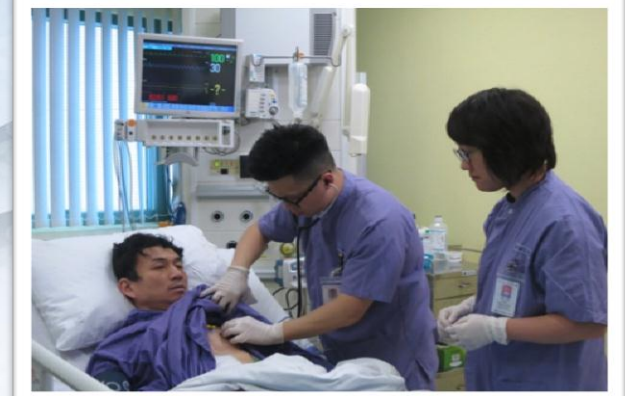
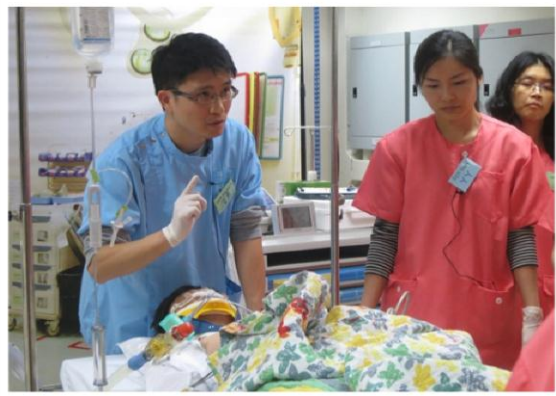




# NTWC Simulation-Based CRM Journey

3Q 2013 – 1Q 2014

13 Simulation-based CRM workshops with nearly 200 participants were held.



# Study on Simulation-Based CRM Training



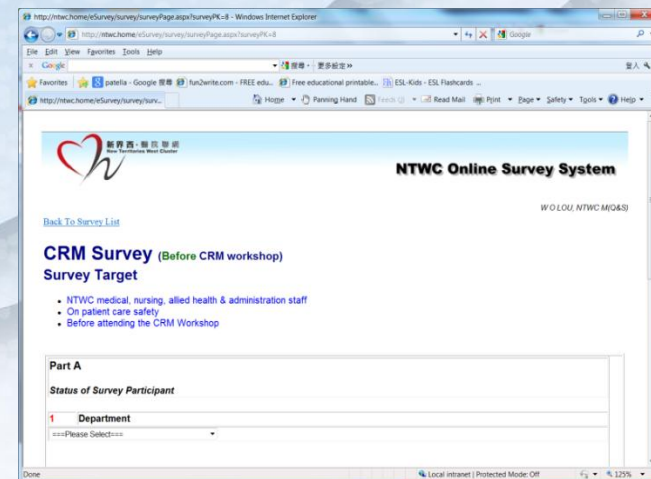
# Study on Simulation-Based CRM Training

## Objective

- To investigate the impact of locally adopted Simulation-based training on **improving teamwork** and **communication skills** for frontline healthcare professionals.

## Methodology

- A **12-item standardized questionnaire** was used to assess participants' satisfaction with the course.
- A **32-item standardized questionnaire** was administered before and after the workshop to assess the changes in participants' perception of
  - Their current work situation;
  - CRM knowledge &
  - Competency

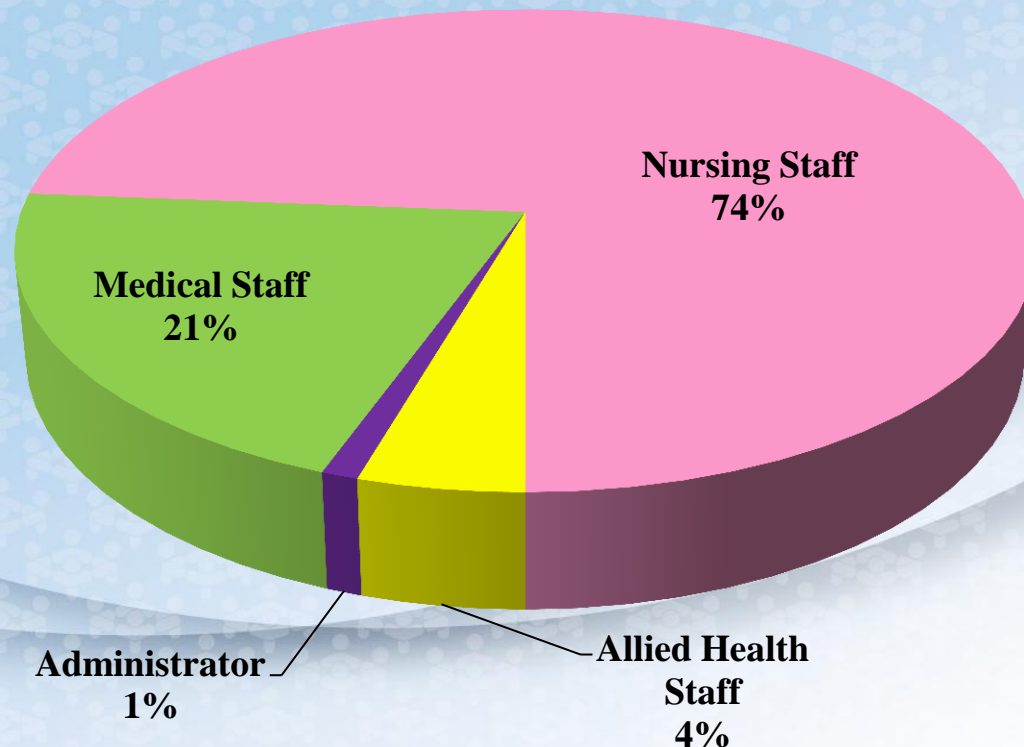


# Study on Simulation-Based CRM Training

## Demographics

- From May 2013 to FEB 2014, **198** professional staff joined the Simulation-based CRM workshops.

Categories of Participants





# Study on Simulation-Based CRM Training

## Completion Rate of Pre & Post Questionnaires

- 168 / 198 (**85%**) completed pre and post questionnaires were collected at **16.6 days** on average after attending the workshop.

Categories of Staff	No of Participants	No of Pre & Post Questionnaires were collected	Completion Rate (%)
Medical Staff	41	38	<b>93</b>
Nursing Staff	146	119	<b>82</b>
Allied Health Staff	9	9	<b>100</b>
Administrator	2	2	<b>100</b>
Total	198	168	<b>85</b>

# Study on Simulation-Based CRM Training

## Participants' Satisfaction Rate with the Course

Items	Satisfaction Rate (%)
Scenarios are <b>realistic</b>	99
Scenarios are able to <b>facilitate decision making</b>	98
<b>Debriefing</b> session is useful	98
<b>Simulation is more powerful</b> than lecture-based training for this program	97





# Study on Simulation-Based CRM Training

## Competent Level

- Participants felt **more competent** to be a team leader and a team member after joining the workshop.

Items	Pre-workshop Score		Post-workshop Score		P- value <sup>†</sup>
	Mean	SD	Mean	SD	
Competence as a Clinical Team <b>Leader</b>	5.94	1.76	7.67	1.11	<0.001
Competence as a Clinical Team <b>Member</b>	6.68	1.87	8.08	1.04	<0.001

# Study on Simulation-Based CRM Training

## CRM Knowledge

- Overall, increment in CRM knowledge was statistically significant ( $p < 0.001$ ).

	Pre-workshop Score	Post-workshop Score	
Items	Correct %		<i>P</i> -value <sup>†</sup>
In <b>Team Briefings</b> , which combination best describes its major functions?	21.4	63.1	<0.001
In <b>Team Debriefings</b> , which is the most correct option?	79.2	80.4	0.860
Which of the following is least related to <b>Situational Awareness</b> ?	46.4	65.5	<0.001



# Study on Simulation-Based CRM Training

## Attitude towards CRM Concept

- Participants' attitude towards the key elements of CRM was statistically improved.

Items	Pre-workshop Score		Post-workshop Score		P- value <sup>†</sup>
	Mean	SD	Mean	SD	
<b>Team work</b> is usually less productive than the same number of staff working alone	3.71	1.81	3.37	1.88	0.005
Hospital management provides a work climate that <b>promotes patient safety</b>	6.70	1.79	7.23	1.58	0.001
Your Unit encourages you to <b>speak up</b> to other staff about work-related problems	6.86	1.75	7.25	1.66	0.003

# Video

from Patient Safety

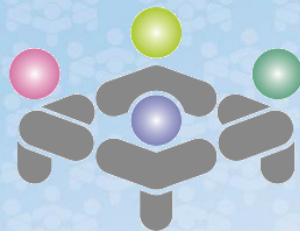
to High Reliability



# Acknowledgement

- |                                   |                               |
|-----------------------------------|-------------------------------|
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# Thank You



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