Enhanced training programme for nurses to improve effectiveness during resuscitation



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### **Background**

Ward 68 is an isolation ward in SGH for patients requiring isolation precaution and room. It consists of 12 High Dependency (HD) beds and 39 general ward (GW) beds. The ratio of nurses to patients across both HD and GW in Ward 68 are 1:4. HD nurses are more familiar and competent in resuscitation compared to GW nurses. Hence, HD nurses are often required to assist GW nurses at critical situations to ensure early and smooth resuscitations. Interviews were conducted with GW nurses and most of them verbalised that they were unsure of their roles during resuscitation and lacked confidence in handling resuscitation effectively.

#### First Debrief

After the simulated resuscitation (Fig. 5) a debriefing was conducted with all the participants. From the skills assessment checklist (Fig.4), we were able determine areas where to participants were unsure. Participants were asked to reflect and identify their strengths and weaknesses. After the reflection by participants, we discussed that the areas were performed well and for areas improvement. The participants were clarify any encouraged doubts to debrief. Focused during the first through learning was achieved exploration of areas to improve.





## **Mission Statement**

To increase knowledge and skills of resuscitation in Ward 68 GW nurses to 80% within 10 months.

# <u>Analysis</u>

The causes for poor performance of ward nurses were identified using the Cause & Effect Diagram

(Fig. 1). The final root causes identified using multi-voting and Pareto Chart were:

- 1. Lack of Knowledge
- 2. Insufficient hands-on opportunity
- 3. No experience in resuscitation

In view of the 3 main root causes of poor resuscitation among the GW nurses, the team decided to set up a simulation resuscitation training (SRT) for GW nurses that is similar to a real resuscitation situation. 8 case scenarios were created based from past resuscitation events and printed as cards. The training is not conducted in a real resuscitation as it is not a predictable event and puts patient's safety at risk. In SRT, participants can be assessed on their skills and allowed to make mistakes as resuscitation will be conducted on a dummy. GW nurses were required to participate





Fig. 5 Picture showing 3 GW nurses performing resuscitation simulation

The purpose of debriefing is to encourage self-learning through reflection and clarify any steps that they are unsure of. On top of that, it is to stimulate critical thinking and instill knowledge on resuscitation.

#### Second Simulation

The 3 participants were required to simulate resuscitation for the same scenario. They were reassessed again using the skills assessment checklist (Fig. 4).

#### Second Debrief

100%

90%

Similar to the first debrief, learning points were highlighted and doubts were addressed. Also, it was discussed if objectives identified in the first debrief were met. Participants were requested to use the same questionnaire (Fig. 3) to rate their knowledge/skills in resuscitation after the SRT and to evaluate the training programme. This debrief summarised the overall experience and ended the resuscitation training on a positive note.



Paired t-test was done and the pvalue of 0.003 is less than 0.05. Hence, the results are statistically significant indicating that there is sufficient evidence to suggest that the intervention has increased nurses' knowledge and skills at the 5% significance level. (Fig. 6).

in SRT when chosen. Only 3 nurses were selected for each SRT to provide more hands-on opportunity and to ensure that safety and needs of other patients will not be compromised.

SRT incorporates Roger's Experiential Learning Theory as it focuses on practical skills and objectives of the learners (Gaberson & Oermann, 2010). Learners are required to be actively involved in their learning and nurse educators will provide a training ground for the learners to practice (Marilyn, 2014). SRT also involves adult learning as GW nurses can acknowledge mistakes made during the simulation and learn the proper steps during discussions. It encourages GW nurses to adopt an eager learning attitude and to be critical thinkers, thus improving their knowledge.

Prior to introducing our training programme, our team did data collection to validate that there are issues with resuscitation among GW nurses. Based on the data collected using the skills assessment checklist (Fig. 2), it showed that only an average of 45.8% of the items were done correctly for 8 simulated case scenarios.

### Interventions: Simulation Resuscitation Training Programme

The SRT programme was conducted over a period of 3 months from October to December 2016 for the GW staff nurses and enrolled nurses.

#### First Simulation

3 participants were briefed of the instructions prior to performing the simulation. After the briefing, participants filled up a questionnaire (Fig. 3) prior to the simulation to share their years of service, past resuscitation experience and confidence level.

The participants were required to use the items in the emergency trolley and perform their roles as per an actual resuscitation. One participant will randomly pick 1 out of 8 scenarios for the simulation. The participants were given time to read and prepare for the scenario. The first simulation was carried out with 15 minutes given to the team. One observer assessed the participants according to the skills assessment checklist (Fig. 4) to evaluate the competency of GW nurses in resuscitation. A project team member simulated the doctor's role in resuscitation.



Fig. 6 Comparison of performances between the first simulation and second simulation for 4 training sessions.



Nurses consistently scored more than 80% for the second simulation, which met the aim of the project.

Results of questionnaire showed that before the SRT programme, only 4 out of 15 GW nurses (27%) rated their knowledge/skills of as meeting or resuscitation exceeding expectations (Fig. 7). After the SRT programme, 12 out of 15 GW nurses (80%) rated their knowledge/skills as meeting or exceeding expectations (Fig. 7). The improvement in self-rating of knowledge/skills also indicated that the nurse are more confident of performing resuscitation after the programme.

OI Project Survey	OI Project Survey	<u> Skills Assessment Checklist</u>	(syringes, needles, käneydish & NS	Any other comments or observations:
()		Date:	ampoules)	
	7) Were there defined roles for each individual in the resuscitation(s) that you	Ward/Department:	Pre-dilute drugs to ensure sufficient	<u> </u>
	participated in?		drups for administration later	
nstructions	a) Yes	Resuscitation Time Start:		
We are conducting a QI project on nurses' involvement during resuscitation.	6) NG	Resuscitation Time End:	Handover drugs to doctor to verify	
We would appreciate your help in filling up the survey form to your hest	8) Do you think it's important for all individuals participating in resuscitation to have		before administration	
knowledge	identified roles?		3. Nurse 3 to Attaches the ECG cable, BP cut,	
Richard fill in the blanks or similar the most suitable option where persenant	a) If 'Yes', why?		complete the SpUZ probe to patient and take over	
Please minim the blanks or circle the most suitable option where necessary.			fallouiner meantereala	
			lolowing. Peculier lole	
1) Designation		F" FB	Inserts intravenous (IV) cannula	
a) Nurse Manager / Senior Nurse Manager	b) If No', why?		(kidney dish, cannula, N'Sampoule,	
<ul> <li>c) Staff Nursa / Sanior Staff Nursa</li> </ul>			syringe, alcoholswabs, teggdern,	
<ul> <li>d) Enrolled Nurse / Senior Enrolled Nurse / Principal Enrolled Nurse</li> </ul>		SIN Hems Propess Yes No NA Remarks	needleless connector & 3-way	
,	9) Did you face difficulties when performing post-resuscitation documentation?			
<ol><li>Years of experience in nursing:</li></ol>	a) Yes	1. Wuse 1/2/3 Pictivaleooebue wien patein.	connector)	
a) Less than 1 year	b) No	completed the tound unresponsive	Sets up sucton apparatus (canster,	
b) 1 to 5 years		following and to Trurse 1 commences Cardio-	suction tubing & suction liner)	
c) 6 to 10 years	<ol> <li>If 'Yes' for question 9, please elaborate on the difficulties faced:</li> </ol>	inform: pulmonary resuscitation (CPH)	(Gan be done by Prenares intubation set /E 11.	
d) 11 to 15 years		Nurse 2/3 pushes E-trolley into the	Huma 2 and the state of the same	
<ul> <li>e) More than 15 years</li> </ul>		room	navse zy innouder, udikani, sik tape, gade,	
3) Are you trained in Life Support Course for Nurses (LSCN)?		Nurse 7/3 cals the remandeam	10ml syringe, laryngeal scope &	
a) Yes		desize 2 editor (editor)	laryngeal blade)	
b) No	11) Time taken for post-resuscitation documentation:		Handover infubation set to doctor and	
	a) Less than 10 minutes	2 nurses (Nurse 2 & 3) push the bed	sector a statistica (desume)	
4) How many resuscitations have you participated in?	b) 10 - 15 minutes	outward and remove the head board	assists in includion (in requirely)	
a) Less than 5	<li>c) 18 – 30 minutes</li>	2. Nurse 210 Prepares oral anivary and laderal	Takes over Nurse 1 for CHR (Nurse 1	
b) 5 - 10	<li>d) 31 – 45 minutes</li>	complete the resuscitator with mask	becomes recorder thereafter)	
<ul> <li>c) More than 10</li> <li>d) None (closed on directly to Question 2)</li> </ul>	<ul> <li>e) More than 45 minutes</li> </ul>	following: Inserts oral anvaywith maskinto	(Can be done by Prepares for detbrillation (if required)	
<li>d) None (please go directly to Question 8)</li>		catent mouth tomantan anway	Nurse 1)	
5) How would you rate your confidence level when participating in resuscitation?	12) What information do you require for post-resuscitation documentation?		Prepares garga a unigen tain.	
a) Very confident		Comercia annay ruong to wan pares	Prepares monifor equipment and	
b) Confident		Turns on oxygen to ToUmin and	required requisites before transfering	
d) Unconfident		starts hyperventialing patent	patient to ICU	
e) Very unconfident		Maintains arway continuously	Unrumantations Statt Nurse (21th document	
6). Average duration of regularitations you have participated in:		Binef update to the doctor about the		
<ul> <li>a) 10 – 20 minutes</li> </ul>		sifuation (can be done by N1N/2N3)	resuscitation process in progress	
a) 21 – 40 minutes	The set Mary for Mary Products and	Handover the airway role to dodor	notes beforelafter transfer to ICU	
b) 41 - 60 minutes	Thank You for Your Participation.	(when doctor armyes)	Staff Nurse I/C handover to I/CU Staff	—
c) Not sure			Nurse I/C	
		Prepares drug to auministration		
ria 3 (Juestionnaire i	Fin 4 Skills as	Fig 4 Skills assessment checklist comprises the		
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participanta' background and experience in			r	
particidants dackaround and experience in		protocoled steps for resuscitation as per SGH's		
		protocoled steps for resuscitation as per Soltis		
nacuccitation				
I'ESUSCITUTION		policy and procedure		

## **Sustainability Plans**

This training programme will be conducted for all wards every fortnightly or monthly so that nurses can retain their knowledge and skills in resuscitation. A minimum of 3 to maximum of 6 participants will be required for each session. The duration of each session will take approximately 2 hours. We plan to train identified trainers from each ward. Subsequently, this pool of identified trainers will conduct the fortnightly or monthly training programme for their wards. Regular meetings will be held with the trainers to evaluate the progress of GW nurses in performing resuscitation.

### **Conclusion**

Results showed that the enhanced training programme involving hands-on simulation increased the knowledge and skills of the nurses in resuscitation. With this education programme in place, nurses who are inexperienced or have little experience will be able to perform better in resuscitation, leading to better outcomes for patients.