00286 IMPACT OF SIMULATION TRAINING ON BRONCHOSCOPY COMPETENCE IN SINGAPORE

Top Author: **Adrian Kee**

Department of Medicine, National University Hospital

Singapore

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<U>Background</U>
Over time, bronchoscopic training programs have evolved from the conventional apprenticeship model to a simulation-based model. This study aims to assess the impact of simulation training on proficiency of trainee bronchoscopists in Singapore. We hypothesize that short intensive structured training with the simulator leads to better procedural performance.
<U>Methods</U>
Three trainees each were randomly selected from two hospitals with nationally-accredited respiratory medicine training programs. The trainees in hospital A were assigned to the control group where they practiced the apprenticeship model of hands-on bronchoscopy training on patients. The trainees in hospital B were assigned to the intervention group where they underwent a structured web-based Essential Bronchoscopy^c curriculum, simulation training one hour per week over 8 weeks and hands-on bronchoscopy training on patients. After 8 weeks, each trainee performed and video-taped 2 bronchoscopies. Each video was graded by a pair of blinded experts using the validated BSTAT assessment form. The maximum achievable BSTAT score was 46 instead of 100 as components such as posturing, entry-on-demand, nomenclature and specific tasks were not assessed.
<U>Results</U>
There was excellent inter-rater agreement within each expert pair. The kappa value for Pair X was 0.962 (p<0.01) and the kappa value for Pair Y was 0.948 (p<0.01). Hospital A's trainees had a median of 104.00 (± 16.29) weeks of prior bronchoscopy practice and Hospital B's trainees had 104.00 (± 46.19). (p=0.70). Hospital A's trainees performed a median of 120 (±25.79) bronchoscopies while hospital B's trainees performed a median of 61 (± 33.83) (p=0.05). Despite performing significantly fewer bronchoscopies, trainees who underwent simulation training were able to obtain higher BSTAT scores 41 (±8.98) vs 38 (±4.36) (p=0.699). This was not statistically significant and was due to the small sample size. Trainees in hospital B spent longer duration per procedure but this was not statistically significant. They spent more time performing thorough airway anaesthesia as shown by the significantly higher number of airway anaesthesia manoeurves performed (10 ± 0.52 vs 2.50 ± 1.55, p=0.002). Trainees in hospital B unanimously agree that simulation training helped to improve their skills.
<U>Conclusion</U>
This is a novel study where trainee bronchoscopists in two hospitals were assessed based on two different bronchoscopic training models. There is a strong signal suggesting bronchoscopic simulation allows trainee bronchoscopists to become proficient earlier. We believe that this will reduce the burden of procedure-related training on patients.

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Table 1. Demographics and results

		Hospital A	Hospital B	p value
Seniority (years)				
	Trainee 1	2	2	
	Trainee 2	2	2	
	Trainee 3	3	1	
Bronchoscopy practice (weeks)				
	Trainee 1	100	104	
	Trainee 2	104	104	
	Trainee 3	130	24	
	Median Bronchoscopy practice (+/-SD)	104.00 (+/-16.29)	104.00 (+/-46.19)	0.70[1]
Number of bronchoscopies performed				
	Trainee 1	84	68	
	Trainee 2	120	74	
	Trainee 3	134	10	
	Median Number of bronchoscopies performed (+/-SD)	120 (+/-25.79)	68 (+/-35.35)	0.05[2]
Duration of airway examination (min)				
	Median duration of each airway examination (+/-SD)	3.51 (+/-4.40)	6.03 (+/-1.62)	0.065[1]
BSTAT score				
	Median BSTAT score (+/-SD)	38 (+/-4.36)	41.00 (+/-8.98)	0.699[1]
Airway Anaesthesia				
	Number of anaesthesia manoeurves	2.50 (+/-1.55)	10 (+/-0.52)	0.002[1]

[1] Mann-Whitney U Test
[2] Kruskal-Wallis Test