Supplemental digital content for Ma WY, Brindle ME, Ronksley PE, Lorenzetti DL, Sauve RS, and Ghali WA. Use of Simulation-Based Education to Improve Outcomes of Central Venous Catheterization: A Systematic Review and Meta-Analysis. Acad Med. 2011;86 (9).

Supplemental Digital Form 1
Reviewer initials Date of data abstraction Study ID # Last name
IRB Approval Y N Not described
Population studied (check all that apply): Medical student PGY-1 PGY-2 PGY-3 Fellow Attending/consulting physician Nurses Physician Assistants Other Not described
Specialty of Learners (check all that apply): Critical Care Internal Medicine Surgery Emergency Not mentioned Other
Baseline Experience of Trainees: Not mentioned
Instructor level of training (check all that apply): Medical student PGY-1 PGY-2 PGY-3 Fellow Attending/consulting physician Nurses Physician Assistants Other Not described Specialty of Instructors (check all that apply): Critical Care Internal Medicine Surgery Emergency Not mentioned Other
Design of Study ☐ Case Control ☐ Single group time series) ☐ Cohort mentioned) ☐ Trials Trials (check one of the following: ☐ Prospective ☐ Retrospective ☐ not mentioned) ☐ randomized),
Setting: Hospital Educational facility Not described Other Country/countries:

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☐ partial task trainers ☐ standard ☐ high fidelity mannequins ☐ virtual r Other: ☐	dized patients
Description of educational program Class/group size not described Instructor:learner ratio/ Not described Learner:simulator ratio/ Not described Didactic Portion _ Y N Not described Content of didactic portion:	ribed
Format of didactic portion:	
Mentioned Demonstration of technique:	Y Not described Duration:
Mentioned Practice time :	✓ Not described Duration:
Mentioned Feedback:	N Not described Duration:
Mentioned Taught Ultrasound:	N Not described Duration:
Mentioned Curriculum Integration: Is there a range in Difficulty Level? If Yes, please describe:	 ✓ ☐ N ☐ Implied ☐ Not described ✓ ☐ N ☐ Not described
Are there multiple learning strategies? If Yes, please describe:	✓ □ N □ Not described
Sites taught: IJ SC Fem Not mending Stess tested: IJ SC Fem Not mending Stess tested: Y Not mending Not mending Strain Strain Not mending Strain N	ntioned Right Left
Number of subjects Total invited to stud	dy Total
participated In intervention arm	In control arm
	Yes No Yes No

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Over how long Same time line for control group? Yes No If not, please describe timeline Follow-up duration			
Outco	me Domains Assessed: User Satisfaction Acquisition Scale used & Results: Retention (if so, how long)		
	Confidence Acquisition Scale used & Results:		
	Knowledge Acquisition Retention (if so, how long) Scale used & Results: Scale validated? Y N		
	Performance Measures On live patients On Simulators Both Other Number of Evaluators: Evaluators blinded Y N Time: Errors: Success rates: Other:		
	Scale(s) used (please list all):		

Scale(s) validated?
Acquisition Retention (if so, how long) Transfer (if so, how is transfer tested?)
Results:
Clinical Measures – how long are outcomes followed? Infection Pneumothorax Hemothorax Arterial puncture Bleeding Clot Other
 Patients intubated Y N Not described Type of patients
How are outcomes captured?
Who captured outcomes?

MERSQI Reed DA. JAMA 298(9):1002-9; 2007

Study Design	
Siı	ngle group cross-sectional or single group posttest only
Sin	ngle group pretest and posttest
☐ No	onrandomized, 2 group
Ra	indomized controlled trial
Sampling	
	er of institutions studied
	$\prod 1$
	$\overline{\square}_2$
	\square >2
Respo	onse rate, %
z tespo	Not applicable
	< 50 or not reported
	50-74
	□ ≥75
Type of data	
·	sessment by study participant
	ojective measurement
	Jeenve measurement
Validity of ev	raluation instrument
	al structure
	Not applicable
	Not reported
	Reported
Conte	
	Not applicable
	Not reported
	Reported
Relati	onship to other variables
1101411	Not applicable
	Not reported
	Reported
Data Analysis	
•	opriateness of analysis
1.1	Data analysis inappropriate for study design or type of data
	Data analysis appropriate for study design and type of data
Comp	lexity of analysis
Comp	Descriptive analysis only
	Beyond descriptive analysis
Outcomes	Satisfaction, attitudes, perceptions, opinions, general facts
Catconics	Knowledge, skills
	Behaviors
	Patient/health care outcome
	I anony nearth care outcome