Appendix.

Evidence Summary Table.

	Study Characteristics			Levels of Evaluation			
	Curriculum	**Setting**	**Design**	**Trainee Reactions**	**Knowledge, Self-Efficacy, or Attitudes**	**Team Behavior, Process, or Emergent State (e.g., teamwork climate or trust)**	**Clinical Processes or Patient Outcomes**
Andreatta 2011[41]	OBEMAN	OB	Descriptive				• 5 types of incongruent hospital policies or procedures governing clinical practice identified
Armour 2011[42]	TS	OR	Time series		• No significant change in teamwork knowledge	• Perceptions of OR teamwork, communication, and overall team skills significantly improved* • Perceptions of PACU teamwork improved and PACU communication declined slightly+	• Significant reduction in surgical morbidity (20.2% vs. 11%*) and mortality (2.7% vs. 1%*) following training • Significant improvement in 4 of 6 SQIP measures* • Room turnover time decreased significantly (43 vs. 35.5 minutes*) • Percentage of on-time first case starts improved (69% to 81%+) • Patient willingness to recommend significantly improved (77% to 89.3%*) • Evidence of some decay over one year post-training follow-up for mortality, morbidity, on

							time starts, and patient satisfaction, while SQIP remained improved
Carney 2011[69]	VA MTT	OR	Pre-Post			• Physicians significantly improved on all 6 teamwork climate items*; nurses significantly improved on 5 of 6 items*; physicians remained significantly more positive regarding teamwork climate compared to nurses post training	
Castner 2012[85]	TS	Multiple work areas in acute care hospitals	NCGPT			• 2 months post-training, 4 of 5 dimensions of teamwork were rated as accepted by 80% or more of respondents • 1 of 5 dimensions of teamwork (leadership) was perceived more positively by training participants compared to non-participants*	
Cooper 2011[53]	Safety Leadership Team-Training	Hospital management groups	Post only	• 82% or more reported training was relevant and of high		• Qualitative comments of participants suggested self-reflection regarding	

				quality		leadership, communication, and other leadership processes in line with scenario objectives	
Deering 2011[39]	TS	Combat support hospital	Pre-post				• Decreased number of adverse events (22.2 vs. 18.2 events[+]) • 83% decrease in medication and transfusion errors (7.1 vs. 1.2*) • 70% decrease in needlestick injury and exposures (4.0 vs. 1.2*) • 65% decrease in rate of incidents coded as having communication as likely mitigating factor post training (5.2 vs. 1.8*) • No significant decrease in rate of incidents coded as having 3 other teamwork competencies as likely mitigating factor
Figueroa 2012[65]	TS	ICU	Time series	• 79% found course useful	• Confidence in both leadership and clinical management skills significantly increased immediately after	• Use of closed-loop communication, huddles/debriefs, mutual respect, and empowerment significantly improved	

					training and were sustained at 3 month post evaluation*	immediately after training and improvements were sustained at 3 month post evaluation*	
Fransen 2012[43]	Multi-disciplinary team training	OB	Cluster RCT			• Trained teams performed significantly better in communication* and decision making* compared to non-trained teams • Trained teams performed slighted better on situational awareness/resource management and role responsibility[+] • No significant differences in patient friendliness	• Trained teams adhered to predefined obstetric procedures more frequently than non-trained teams (83% vs. 46%*)
Frengley 2011[86]	CRM	ICU	NCGPPT	• Rated course as highly relevant to clinical practice	• Participant survey indicated increased confidence in both similar and general emergency events	• Overall observed teamwork, leadership and coordination, and verbalizing situational information significantly improved in post-training simulations* • No significant change in mutual performance	• Regardless of modality that clinical management skills were also taught, all participating teams improved clinical management scores*

						monitoring observed	
Heard 2011[87]	CRM	Endoscopy	Time series	• Perceived training to be useful, enjoyable, applicable, and realistic • Participants rated training as helpful in daily practice 1 month after training			
Kirschbaum 2012[88]	Multi-discriplinary physician team training	OR	Pre-post			• 3 of 7 dimensions of the PRIOR survey, a measure of communication related attitudes and practices, improved significantly*	
Maxson 2011[89]	TS	Surgery	Time series			• Satisfaction with collaborative clinical decision-making processes significantly improved 2 weeks post training and improvements were maintained at 2 month follow-up*	
Mayer 2011[35]	TS	PICU SICU	Longitudinal with non-equivalent control			• All 6 dimensions of observed team performance improved at +1 month*, 3	• Nosocomial infections decreased slightly[+] • Average time for placing patients on

						dimensions remained significantly improved at +6 months, 5 dimensions were significantly improved at +12 month follow-up* • Staff perceptions of teamwork within unit significantly improved in SICU, but did not improve in comparison group* • Overall perceptions of safety and communication openness improved significantly in the PICU, SICU, and comparison group	extracorporeal membrane • oxygenation (ECMO) decreased (23 vs. 14 minutes*) • No significant change in length of rapid response team events
McLaughlin 2011[44]	Intensive Trauma Team Training Course (ITTTC)	Trauma	Post-only	• 77% felt training covered topics relevant to subsequent clinical experiences	• 84% felt confident applying teamwork skills applying teamwork skills during deployment • 69% thought team training was an important or very important part of their training		
Neily 2011[38]	VA MTT	OR	RCC			• Qualitative interviews suggested improvements	• 50% greater reduction in risk-adjusted surgical mortality for MTT

						communication among OR staff and staff awareness of teamwork concepts	group vs. control (RR=1.49)* • Reduction of 0.5 deaths per 1000 procedures associated with every quarter that teamwork intervention was in place* • Qualitative interviews suggested improvements in overall perioperative efficiency, reduced length of procedures, improved first case on-time start times, and equipment use
Patterson 2013 (published online 2012)[66]	Multidisciplinary team training	Pediatric ED	Time-series	• Value of training was rated highly on 5 point scale	• Teamwork knowledge scores significantly increased immediately post intervention and gains were maintained at 8-10month follow-up*	• Safety climate, teamwork climate, and overall SAQ scores increased immediately post intervention and improvements maintained at 8-10 month follow-up* • Observed teamwork behaviors improved significantly and improvements maintained at 8-10 month follow-up* • No significant differences detected in	• Patient safety event rate decreased (2-3 annually pre vs. 1000 days since safety event in 12month post)

						frequency of observed behavioral markers of teamwork over time	
Phipps 2012[70]	CRM	L&D	Pre-post			• 4 of 7 unit-referenced dimensions of safety culture significantly improved*	• Decrease in adverse outcome index (AOI) (0.052 pre vs. 0.043 post) • No significant change in patient satisfaction
Riley 2011[36]	TS	L&D	NCGPPT			• No statistically significant differences in safety culture after Type II error corrections	• Weighted adverse outcome score (WAOS)—an index of perinatal harm—decreased 37% for full intervention group only (1.15 pre vs. 0.72 post*) • Variability in WAOS scores was decreased post-training for full intervention group only
Singer 2011[54]	Safety Leadership Team-Training	Hospital management groups	Qual. Longitudinal			• Qualitative interviews with trainee teams indicated improved leadership activation, inter-departmental transparency & learning, information mobilization, & information solicitation	
Steineman	CRM	Trauma	Prospective			• Significant	• 16% reduction in

n 2011[90]			cohort			improvement in observer rated teamwork during simulated scenarios* and daily clinical practice*	average ED resuscitation time* • 76% increase in completeness of clinical task completion* • No significant changes in mean hospital length of stay, ICU days, or deaths
Stevens 2012[71]	CRM	Cardiac surgery	Pre-post	• 80% or more perceived training to be useful, applicable, and likely to positively change their practice during a critical event		• 1 of 10 safety climate questions significantly improved* and 3 others trended positively at 6 month follow-up	
Stocker 2012[91]	CRM	PICU	Time Series	• 91% perceived the training as effective for training non-technical skills	• Significant increase in confidence to deal with future critical events at both 6month and 12 month follow-up*		
Tapson 2011[80]	CRM	Surgery	Longitudinal		• Significant improvement in 6 of 7 knowledge questions immediately post training*, with significant improvements		• Significantly more post-training than pre-training charts met guideline recommendations and standards of care for timing, inpatient duration, and

					retained for 5 of 7 questions at 30 day follow-up* • Confidence in ability to identify potentially hazardous processes or conditions*, to use CRM principles*, and in ability to identify patients needing VTE prophylaxis* significantly improved immediately post training and maintained at 30 day follow-up		prophylaxis use beyond discharge*
van Schaik 2011[92]	CRM	Pediatric critical care	Cross-sectional (nursing survey) Pre-post (resident survey)	• Themes from qualitative comments from participants indicated that the training experience was perceived as valuable	• 3 of 8 self-efficacy items were significantly higher among participating nurses compared to non-participating nurses* • Resident self-efficacy regarding leadership skills, and skills related to identifying when help is needed and asking for help significantly improved*		
Volk 2011[93]	CRM	OR	Post-only	• 90% or more perceived			

				training as realistic, of high quality, and would have a positive impact on future practice			
Young-Xu 2011[58]	VA MTT	OR	RCC				• 20% greater reduction in risk-adjusted surgical morbidity in the MTT group vs. control (RR = 1.20)*

VA MTT= VA Medical Team Training, TS = TeamSTEPPS, CRM = Crew or Crisis Resource Management, OB = Obstetrics, L&D = Labor and Delivery, OR = Operating Room, PICU= Pediatric intensive care unit, SICU = Surgical intensive care unit, Peds = Pediatrics, NCGPT= Non-equivalent comparison group post-test only, NCGPPT = Non-equivalent comparison groups pre-test/post-test, OBEMAN = Obstetrics, Emergency Medicine, Anesthesiology, and Neonatology Program, SBT = Simulation based training, CBT = Case based learning, RCC= Retrospective controlled cohort study, + Improvement, but not statistically significant; * $p < .05$