**Appendix. Characteristics of Included Studies**

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| **Study** | **Outcome Measures** | **Location of simulation** | **Modeled Patient** | **Program length** | **Simulation Scenario** | **Participants** | **TeamSTEPPS® content** | **Debriefing** | **Results** |
| Brock et al. | Administered pre and post training:1. TeamSTEPPS**®** Teamwork Attitudes Questionnaire (TTAQ) 2. Attitudes, Motivation, Utility and Self-Efficacy (AMUSE). Administered post training only:3. An instrument designed to report the perceived frequency students had to practice communication skills.4. An instrument which asked respondents to rate their understanding of key concepts before and after training | Simulation Center | Animated mannequin and standardized patient | 4 hours | 3 adult acute cases * Asthma exacerbation
* Congestive heart failure
* Supraventricular tachycardia

3 pediatric cases * Severe asthma
* Acute seizure
* Acute sepsis

3 obstetric cases * Precipitous vaginal delivery
* Mild postpartum hemorrhage with and without complication

Each lasted 1-hour. Students actively participated, or observed, based on the number of participations. | 149 students completed both the pre training and post training outcome instruments (4th year medical-73, 3rd year nursing-46, 2nd year pharmacy-23, 2nd year PA-7). | The framework for the didactic portion of the educational training content was TeamSTEPPS**®**. | Facilitator lead debriefing afterwards. | AMUSE achieved acceptable internal consistency for each subscale and the aggregate total (α=0.90). Positive significant changes post training for the AMUSE total score and each subscale. TTAQ exhibited acceptable overall internal consistency (α=0.93). Significant positive increases were noted for overall TTAQ score (p<0.0001). Across disciplines, pharmacy students had lower motivation scores than medical or nursing students (p=0.010) and medical students reported higher post levels of self-efficacy than nursing or pharmacy students (p=0.005). |
| Capella et al. | 1. Trauma Team Performance Observation Tool (TPOT)2. Clinical data from trauma registry (mortality, complications, injury severity score (ISS), hospital/intensive care unit length of stay, time from arrival to focused assessment sonography in trauma examination, computed tomography (CT) scanner, endotracheal intubation, operating room, and total time in emergency room). | Simulation center | Animated mannequin  | 4 hours | A 2-hour simulation included 3 different scenarios. Details on the cases were not provided, but they were designed to be simple and allow for practice of didactic learning principles.  | Nurses (n=16), residents (n=28), faculty surgeons (n=6) in a level-1trauma center. | A 2 hour didactic session included TeamSTEPPS**®** essentials focusing on the five tools chosen for this study; briefing, STEP, CUS, call outs and check backs. | Simulations were recorded and then reviewed immediately afterwards. Feedback was provided by a team of educators.  | Team performance improved significantly across all domains of TeamSTEPPS**®** (leadership, situation monitoring, mutual support and communication). Significant decrease in time to CT (p=0.005), time to intubation (p=0.049), and time to operating room (p=0.021) post training. No other significant differences found between groups.  |
| Clark et al. | 1. 20 statements from the TeamSTEPPS**®** Teamwork Attitudes Questionnaire (TTAQ) and TeamSTEPPS**®** Teamwork Perceptions Questionnaire (TTPQ) were revised and included. 2. 12 statements on the experience of the participant towards IPE, simulation, knowledge of other disciplines, and how many professions are needed to work collaboratively in a healthcare setting, and what they hoped to (pre) or did (post) gain from the experience. | Not stated | Not stated | Semester long course | Students from multiple healthcare programs were divided into groups throughout the entirety of the semester long IPE elective course. 5 simulations occurred during the semester that used high, medium and low fidelity technology.  | 45 students pre intervention and 37 completed post intervention materials. Included pharmacy, nursing, social work, and respiratory therapy students. | TeamSTEPPS**®** provided the conceptual underpinning for all aspects of this study. | Debriefings occurred during the course, but specifics were not provided.  | There was a significant increase pre/post intervention in perceived understanding of scope of practice of other disciplines. In addition, students gained an appreciation for the complexity of interprofessional collaborative practice. An increase in simulation experience was noted post intervention as was an increase in the perceived number of professionals needed to form a collaborative healthcare team. |
| Figueroa et al. | Occurred before the course, immediately after, and 3 months after. Rated themselves and the team as a whole.1. Subjects perception of their confidence and skills.2. Communication and collaboration as a multidisciplinary team (TeamSTEPPS**®** involvement).  | Simulation center | Animated mannequin | 9 hours | 6 cases were developed from emergencies in the previous year. (Accidental extubation of a postoperative Norwood, postoperative hemorrhagic stroke, postoperative Fontan with low cardiac output, a thrombosed modified Blalock-Taussing shunt, postoperative tetralogy of Fallot needing ECMO, and a postoperative Epstein’s anomaly patient presenting in supraventricular tachycardia).  | 37 participants (23 nurses, 5 cardiology/critical care trainees, 5 respiratory therapists, 4 noncategorized) from the Pediatric Intensive Care Unit (PICU). | 3 30-minute lectures reviewed TeamSTEPPS**®** principles. In addition, the simulations were designed to address the specific principles of TeamSTEPPS**®**. | After each simulation structured debriefing occurred in 3 parts; reaction to the simulation, discussion of issues encountered, and a summary. | Confidence and skills in team leader, airway management, cardio/defibrill increased significantly immediately post training and 3 months later. An increase in use of TeamSTEPPS**®** occurred immediately after training and 3 months post-training. |
| Hobgood et al. | 1. 36-item CHIRP-Teamwork Attitudes instrument2. 12-item Teamwork Knowledge test3. 10-item standardized patient (SP) evaluation (case specific) completed by the SP4. 20-item modification of the Mayo High Performance Teamwork Scale (MHPTS) completed by an independent person based on their review of video recorded scenarios.  | Not stated | All subjects participated in a SP exercise, 80/438 participated in an exercise with an animated mannequin as well.  | A full day | 160/438 subjects participated in a simulation. 80 subjects used a high-fidelity animated mannequin and 80 subjects participated in a low-fidelity role play simulation. For all simulations, students were divided into groups of 4 and used the same two scenarios.  | 203 senior nursing students and 235 4th year medical students. All participants came from two universities.  | A 90 minute didactic lesson focused on 3 components of TeamSTEPPS**®**; Situational Awareness, Shared Mental Model and Leadership. The subjects were also trained in Briefs, Call-Outs, Check-back and De-briefs, SBAR and CUS.  | Debriefing of the high-fidelity simulation was provided using a video-recording and facilitated by a faculty member. The content focused on the concepts discussed in the didactic portion. Subjects assigned to the low-fidelity role play simulation were debriefed similarly, but without the use of a video-recording.  | Subjects attitudes towards teamwork improved following the intervention (p=.0.001) in all four cohorts and was not a significant different based on cohort. Knowledge scores significantly improved following the training, but significant differences in knowledge were not found between groups. The SP evaluation of teamwork was found to be reliable between SPs. There was no significant difference between groups on the SP rating of teamwork. The High Performance Teamwork scale also demonstrated excellent inter-rater reliabilities (ICC0.83-1). No significant differences were found between groups on this measure.  |
| Klipfel et al. | 1. 16-item Mayo high performance teamwork scale assesses valuable critical behaviors in managing crisis situations.2. 10-item reaction to the training questions developed to evaluate the perceptions regarding the development of skills in managing emergent patient situations- only given post intervention. | In-situ | Animated mannequin | Not stated | 1 deteriorating patient case (a patient with evolving urosepsis) and 1 emergent experience (unresponsive patient in cardiopulmonary arrest).Began with orientation to the room and simulation tools continued as 2 RNs conducted a change of shift bedside report. | Based on real-world availability. 23 subjects (18 RN and 5 urology residents).  | A brief didactic session discussed TeamSTEPPS**®** principles and TeamSTEPPS**®** was used to guide the development of the simulations. | Debriefing occurred following the simulation and included review of a video of the simulation as strategies from the didactic portion were discussed.  | Mean scores of Mayo increased by ≥0.7 for items 5, 9, 12, 15. Mean scores increased (<0.7) for all but three items (8,10,11). Participants had favorable outcomes towards the simulation experience. |
| Liaw et al. | 1. 5-item Confidence scale (C-scale)2. 8-item perception of the interprofessional education program and demographics 3. 17-item satisfaction with simulation experience (SSES)-only assessed post experience | Not stated | Standardized patient | 3 hours | An orientation to the simulation environment was completed first. Included a patient with a sepsis condition and a continuation when the patient began deteriorating due to septic shock.  | 125 medical (n=33) and nursing (n=92) students completed all outcome assessments. | Communication strategies taught were adapted from TeamSTEPPS**®**. | Lead by nursing and medicine facilitators after the hands-on experience to allow for reflection.  | Confidence and perception scores improved significantly post training. There were no significant differences found in confidence and perception between medical and nursing students. Overall, all students reported being satisfied with the learning experience. |
| Riley et al. | 1. Perinatal morbidity and mortality2. 10-item Weighted Adverse Outcome Score (WAOS). Represents the average adverse event score per delivery.3. 38-item Safety attitude questionnaire (SAQ) was used to measure subjective impressions of the Culture of Safety (COS). | In situ | Not stated | 3 hours | 11 simulations were developed from incidents previously experienced. Each simulation included briefing, in-situ simulation, debriefing, rapid-cycle follow through, and repetition. The simulations lasted approximately 30-45 minutes with  | 3 small community hospitals (50-66 beds). All labor/delivery staff at included hospitals could participate. All women admitted between 2005-2008 were included. | The didactic training was based on the TeamSTEPPS**®** curriculum. Focused specifically on situational awareness, **S**ituation-**B**ackground-**A**ssessment-**R**ecommendation, closed-loop communication, and shared mental model. | A 2-hour debriefing session occurred immediately after the simulation. | Significant (37%) improvement in perinatal morbidity for the didactic and simulation hospital only. No significant changes for any hospital in culture of safety measures. |
| Robertson et al. | 1. 12-item teamwork knowledge test2. 14-item Collaborative Healthcare Interdisciplinary Relationship Planning (CHIRP) scale3. 24-item Team Skills Checklist Video rating (used while watching video vignettes only4. 15-item Medical Team Training Program Evaluation tool to assess training satisfaction. Only completed post-training. | Not stated | Not stated | 4 hours | Simulations included resuscitating a trauma patient and treatment of a myocardial infarction and were designed to incorporate TeamSTEPPS**®** principles. Students self selected their role and received a written description of their role and task prior to beginning.  | 3rd year Medical students (n=104) and 1st year nursing students (n=88) completed all outcome measures. | TeamSTEPPS**®** was foundational in developing the workshop. In particular, the opening lecture incorporated the skills and tools found in the TeamSTEPPS**®** curriculum.  | Debriefing occurred after the simulations and was lead by the nurse and physician facilitators who received debriefing tools. | Significant improvement in knowledge of team skills for both disciplines (p<0.001) was observed following the intervention. Significant improvement in attitudes towards teamwork for nursing students only (p=0.004). Overall, participants were satisfied with the training as evident by satisfaction scores ranging from 80-97%. Simulation was rated the highest of the teaching strategies used. |
| Scotten et al. | 1. TeamSTEPPS**®** Teamwork Attitude Questionnaire (TTAQ)2. TeamSTEPPS**®** Teamwork Perceptions Questionnaire (T-TPQ)3. Interprofessional Team Performance Scale (ITPS).4. Assessment of Interprofessional Team Collaboration Scale (AITCS)5. 13-item Engagement with Health Care Provider Scale (EHCPS). Completed by the patients. | In situ | Not stated | Not stated | Simulations were impromptu and participants selected the scenario. Each simulation lasted less than 15 minutes and was designed to allow for practice of skills without work interruption. | 65 facilities participated in the program, but only 8 facilities completed all pre/post-training measures. | Based off a survey of the pediatric unit, 3 TeamSTEPP**®** tools were determined to be the focus of this study; **I**ntroduction **S**ituation **B**ackground **A**ssessment **R**ecommendation, Brief and **C**oncerned **U**ncomfortable **S**afety Issue. | Performed immediately after simulation.  | Significant improvements (p<0.05) in post training scores were noted on the TTAQ subscales of team structure, leadership, situation monitoring. In addition, significant improvements post interventions were found in TTPQ subscales of team structure and communication. The AITCS instrument showed significant improvements in partnership. The ITPS instrument showed no significant differences post learning program.  |
| Wong et al. | 1. The TeamSTEPPS**®** Teamwork Attitudes Questionnaire (TTAQ)2. Hospital Survey on Patient Safety Culture (HSOPS) | Simulation Center | Animated mannequin | 3 hours | 2 event-based simulations were developed; an elderly man with rapidly worsening respiratory distress secondary to bacterial pneumonia and a 60-year old man in cardiogenic shock secondary to complete heart block.  | 72 emergency department nurses and resident physicians completed responses immediately following the training and 32 completed responses 1 year post | The TeamSTEPPS**®** curriculum was adapted to fit the goals of the study and teach multistep teamwork and interprofessional skills throughout the program. | Instructors conducted debriefings after each case. Major discussion points focused on teamwork and communication.  | 4/5 teamwork construct questions groups showed significant improvement following the program. The remaining, ‘communication’ was nearly significant (p=0.107). HSOPS responses were 100% before the program and 44% at one year. 3/6 safety culture composites showed significant improvement in the percentage of positive responses following the program. |