

Integration of TeamSTEPPS Framework and Escape Room to Improve Teamwork and
Collaboration

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Abstract

Problem & Purpose

As the need for health care professionals continues to grow, different learning environments have been assessed to optimize knowledge while keeping the student engaged. Escape rooms, live action, team-based exercises (Adams & Crawford, 2018), supplemented with TeamSTEPPS tools can assist in overall team performance, while keeping the participant engaged in a new learning environment (Sheppard, Williams, & Klein 2013). The goal of this quality improvement project was to enhance teamwork and collaboration through the integration of TeamSTEPPS concepts and escape room active learning. This concept was explored through the integration of TeamSTEPPS tools and strategies in an escape room setting to improve team dynamics and cohesiveness in a new dynamic way with a small cohort of nurse leaders in a large urban academic medical center, while exploring the engagement and depth of learning experience for the participant.

Methods

Twelve nurse leaders completed two different escape rooms while observers completed the TeamSTEPPS observation tool assessing team dynamics and performance and participants assessed their perceptions before and after intervention. These nurses also were observed at staff meetings and completed a perceptions tool on teamwork pre and post intervention. A post-escape room survey was completed by participants to assess learning and interest in this interactive learning exercise.

Results

There was a significant statistical difference after TeamSTEPPS and escape room intervention (Mean 17.3 and $p=0.004$ SD 5.9) when compared to before intervention as well as has a more positive sense of teamwork was noted. In addition, 75% of the nurses strongly agreed that the escape room was engaging and fun with 25% agreeing. Ninety-one percent agreed or strongly agreed that the escape room was an effective team building exercise with 100% agreeing or strongly agreeing to recommend the escape room experience to others.

Conclusion

This cohort validated the integration of TeamSTEPPS tools and strategies in an escape room setting as an enjoyable and engaging way to learn while providing an effective team building activity. This small cohort demonstrates that new methods of learning such as an escape room should be explored further for engaging participants and improving communication and teamwork skills.

Introduction

As the need for health care professionals continues to grow, different learning environments have been assessed to optimize knowledge. Escape rooms are live action team-based exercises where participants solve puzzles and accomplish predetermined tasks within a time period (Miller, 2015). They can be used for fun but also used as active learning interactions where participants can solidify knowledge they have already learned or use it as a team building exercise to enhance cohesiveness (Adams & Crawford, 2018). Escape rooms, supplemented with education and implementation of TeamSTEPPS-- a training initiative to improve team dynamics and communication developed by the Agency for Healthcare Research and Quality-- further optimizes team performance, enhances leadership, situation monitoring, mutual support, and communication (Sheppard, Williams, & Klein 2013). Time constraints for nurses to focus on leadership instead of patient care is also a factor, as priority is always given to patient care. In many organizations, nurses report having a large patient load which limits their time to take on leadership activities and are concerned that they may have fewer opportunities to participate in decision making or leadership development within the organization (Elliot, Begley, Sheaf, & Higgins 2016). Strong teamwork is a critical component of patient safety as communication failure can create medical errors, thus hospitals are looking to supplement team training to improve patient safety in new innovative ways (Vertino, 2014).

In this quality improvement project, the leadership in the Emergency Department of a large urban university hospital had identified that the senior clinical nurse (SCN) group struggled with communication and teamwork and knew that poor communication and teamwork can threaten patient safety (Yi, 2015). This was evidenced by disrespectful language during team meetings and frequent write-ups on communication and behaviors. The purpose of this

evidence-based quality improvement project was to leverage the integration of TeamSTEPPS training and tools in an escape room setting in order to optimize team performance of this group of SCNs and to assess communication and teamwork as well as decrease negative feedback toward each other.

Literature Review

A literature search was completed to identify escape room formats of learning and TeamSTEPPS. Studies were somewhat limited due to the newness of the concept of escape rooms which have surfaced in the United States in 2012 (Miller, 2015). Each article was thoroughly reviewed and analyzed utilizing the Johns Hopkins Evidence-- Based Practice tool (Newhouse, 2006)-- see Appendix A. While there are no level 1A research articles to review at this time, these studies were supportive and favorable to escape room learning with promising results.

Adams, Burger, Crawford and Setter (2018) reported that leadership development of nurses should be restructured to include creative and innovative design methods. In their study, nurse residents participated in an escape room. They found that 94% of experienced nurses and 80% of nurse residents strongly agreed or agreed that this type of learning environment improved their nursing practice. Cain (2018) suspected that utilizing an escape room as a learning tool would be helpful to pharmacy students. In this study, each group of students had to decipher clues and puzzles to “escape” from the learning activity. Post assessment of the escape room shows that utilizing an escape room as a learning tool can increase student engagement. Connelly, Burbach, Kennedy and Walters (2017) were concerned about the nursing recruitment process and at a recruitment event, an escape room was delivered to nursing students regarding key nursing concepts and patient health conditions. Following the escape room, participants

perceptions were assessed and the researchers found that an escape room concept should be utilized as a way to recruit new nurses to assess their readiness. Yi (2015) also researched nursing students and assessed team building effects on communication and teamwork within a group of nursing students. The researcher concluded that team building should be included in nursing education as it improved teamwork and communication. Eukel, Frenzel, and Cernusca (2017) designed an escape room game for pharmacy students to evaluate their knowledge of diabetes management. Following the escape room, a post-knowledge assessment was performed and compared to a pre-assessment test. The validated assessment tool showed that there was a benefit of conducting the escape room as a hands-on learning experience.

Gomez-Urquiza et. al (2018) utilized an escape room to assess theoretical and practical knowledge as well as a way to promote teamwork. The researchers concluded that an escape room is a highly useful tool to promote, recall and apply knowledge and should be utilized more in nursing studies. Walsh and Spence (2018) also utilized an escape room for students and assessed engineering students' ability to problem solve utilizing knowledge they previously have learned. The researchers concluded that having an escape room offered an enjoyable experience to students and increased their interest in the library and services it provided. Warmelink, Weber, Mayer and Heijligers (2017) evaluated students in a mixed reality game evaluating team building and assessment. Each participant filled out a pre and post-game validated questionnaire about team dynamics, team composition and the game experience. The researchers concluded that there was a strong and positive effect on team cohesiveness

Finally, two articles on TeamSTEPPS were reviewed to understand the concept of teamwork. Vertino (2014) found that utilizing TeamSTEPPS can promote a positive change in staff as related to team structure, leadership, situational monitoring, mutual support, and

communication. Sheppard, Williams and Klein (2013) also implemented TeamSTEPPS in two large healthcare systems to improve patient safety. The researchers concluded that implementing TeamSTEPPS into these institutions, improved teamwork, communication and patient satisfaction and has improved the culture of safety in the sample hospitals.

Theoretical Framework

Before any change can be implemented, a theoretical framework should be utilized as an approach for organizational readiness. The Change Theory by Kurt Lewin- Figure 1, developed this framework with three major components: unfreezing, changing and refreezing and is known as one of the key middle range theories in managing change (Cummings, Bridgman, & Brown, 2016). In this model, people are pushed toward change by a driving force while at the same time participants are pushing against the change. Unfreezing is the idea that old behaviors must be unlearned, change is the new model and refreezing is the concept of a more acceptable behavior (Butts & Rich, 2018). Refreezing refers to the new state of equilibrium after the change (Sullivan & Decker, 2009).

There is much to ‘unfreeze’ in this project as this phase is centered around assessing the problem. Unfreezing will require assessing the restraining and driving forces within the pilot group and developing a plan to align everyone around the common goal of optimizing team performance. During this unfreezing phase, buy-in was sought by the SCN group.

The next part of the Lewin model is on change. Changing will be the concept that leaders will need to formalize their leadership education and performs tasks and exercises as well as self-assessments like the escape room and TeamSTEPPS questionnaire. Lastly, the concept of refreezing will take time for a large organization with thousands of employees.

Teamwork and collaboration are valued by this organization, as evidenced by the recent development and publishing of their new core values. Despite this, there is not currently any standardize educational offerings on these topics. By utilizing Lewin's Change Theory, this organization can be assessed for readiness for change. The three concepts of this theory—unfreezing, changing and refreezing can be integrated into this organization's team training curriculum.

Methods

A quality improvement project designed to assess team communication and leadership knowledge utilizing an escape room tactic was utilized. In 54-bed adult emergency department, 12 senior clinical nurses were included in this project. Two objective personnel had the opportunity to observe the SCN group at their monthly staff meeting and scored their interactions utilizing the TeamSTEPPS observation tool (Appendix C) and the Perceptions T-TPQ tool (Appendix B). These were completed before and after intervention by the staff members. These tools are scaled by a level of agreement using a 5-point scale (1=strongly agree to 5=strongly disagree) with a higher score indicating a more positive perception of teamwork. All tools are available for use per their website with the Agency for Healthcare Research and Quality (www.ahrq.gov).

Following this observational day, the escape room tactic was performed at an established Escape Room organization. During the session, after a brief introduction, the 12-member SCN group were randomly divided into 2 groups-- Group A and Group B. Each group then went into either Escape Room A or B- a 60-minute live action room where puzzles, objectives and interactive games were completed. Each escape room was kept confidential of the specifics of the game but each room provides observable team dynamics that are accessible for all

participants and created in a unique and fun room. During the escape room, each group was observed by trained raters and used the TeamSTEPPS Observational tool (Appendix C) completed based on their group interaction.

After the first escape room, a 2-hour TeamSTEPPS educational program-- TeamSTEPPS Essentials- -on team dynamics, communication tools and leadership, was taught by a TeamSTEPPS master. After the educational program, the two divided SCN group switched escape rooms and were observed with each observer completing the Observational Tool. Following the escape room, students were asked to complete the post escape room questionnaire—Appendix D-- and were then free to leave.

After the completion of the escape room day, weekly emails with literature on communication tools were sent to the SCN group. At the next SCN monthly meeting, approximately 1 month after the escape room tactic and TeamSTEPPS educational session, the SCN team was again observed utilizing the Observation tool and the Perceptions tool was repeated by the participants. Lastly, as there was evidence by multiple emails and “write-ups” to the nurse manager about poor communication during these meetings, the leadership shared the number of negative and positive communications between SCN members during the 14-week observation time period.

Results

This quality improvement project occurred for 14 weeks in the Fall of 2019 with 12 senior clinical nurses from an adult emergency department. This sample of nurses completed the T-TPQ Perceptions survey before and after the TeamSTEPPS intervention with 100% of the sample completing the survey. Data was compared pre- and post-escape room tactic to see if there was any improvement in communication via the observational tool. Because the sample

was the same pre- and post-intervention, a paired T test was run on the data for each observer as well as perceptions before and after the intervention and escape room tactic using a 95% confidence intervals (CI).

A paired t test was performed by assessing an average score of each of the five topics in the observational survey—team structure, leadership, situational monitoring, mutual support, and communication—before and after intervention. There was a statistical difference after escape room intervention (Mean 17.3 and $p=0.004$ SD 5.9) and a more positive sense of teamwork was noted.

An additional paired t test was performed on the perceptions survey from each participant before and after TeamSTEPPS education and escape room intervention on each of the five topics which were the same topics as the observational survey—team structure, leadership, situational monitoring, mutual support, and communication. There was also a statistical difference after escape room intervention (Mean 3.554 before intervention and 3.85 after intervention with a $p=0.0111$).

Descriptive statistics were also assessed. Following an escape room and TeamSTEPPS learning, a post escape room validated survey was completed to assess learning and interest this interactive learning exercise. Of those surveyed, 75% of the nurses strongly agreed that the escape room was engaging and fun with 25% agreeing. In addition, 91.7% agreed or strongly agreed that the escape room was an effective team building exercise with 100% agreeing or strongly agreeing to recommend the escape room experience to others who are interested in team-work.

Lastly, negative and positive feedback between SCN members was gathered weekly before and after the intervention. Before the TeamSTEPPS education and escape room tactic

there were on average 2.86 negative feedbacks between SCN nurses communicated to the leadership and 0.286 positive feedbacks weekly. Following the intervention, there was a decrease of negative feedbacks to 1.33 communications per week and an increase of 1.83 positive feedbacks per week.

Discussion

This project hypothesized that there would be an improvement of observational scores on teamwork as well as perceptions of teamwork in this small sample size and indeed there were statistical difference before and after intervention from both the observers and from the individual participants with an increase score reflecting a more positive perception of teamwork following the escape room. Conducting the escape room itself provided insight on the value of new and innovative tools on teamwork.

This group of ED nurses completed two escape rooms and a TeamSTEPPS training and all agreed in the post-assessment survey, that an escape room can be a fun way to motivate while providing an effective team building activity. This group of nurse leaders validated the integration of TeamSTEPPS tools and strategies in an escape room setting in an enjoyable and engaging way to learn while providing an effective team building activity. This small cohort, in line with the literature, demonstrates that new methods of learning such as an escape room should be explored for engaging participants and improving communication and teamwork skills.

Strengths to this project included that it is a new and innovative way for the SCN group to focus on teamwork skills and participants shared that this project was exciting and fun. Also, the support from the Quality Improvement Department in the hospital was helpful in the development and success of this project. However, there were limitations to this study. First, this was a very small same size- N=12 so having a larger sample to reproduce this project would

be helpful to validate the results. Secondly, the escape room was costly, as a commercial Escape Room company was utilized. There were also time constraints in this commercial escape room-- 60 minutes-- and perhaps a longer escape tactic would offer more observations and opportunities for teambuilding. If an organization is supportive of this project, perhaps developing an in-house escape room would save on cost but also could provide more personal objectives as some of the other studies did on diabetes mellitus or nursing oriented questions. Lastly, having a dedicated time for TeamSTEPPS training and strategies over a longer period of time may help solidify these concepts instead of just a 2-hour training.

Conclusion

Escape rooms can be a dynamic and interactive way to promote teamwork training and education. Integration of TeamSTEPPS tools and strategies within the escape room framework provides for an engaging learning environment where participants can deepen their understanding of concepts through active learning. This group of nurse leaders validated the integration of TeamSTEPPS tools and strategies in an escape room setting in an enjoyable and engaging way to learn while providing an effective team building activity. This small cohort demonstrates that new methods of learning such as an escape room show can keep the participants engaged while improving communication and teamwork skills.

A recommendation to continue the escape room tactic and TeamSTEPPS in this institution based on results and feedback was given and there are plans for other escape room learning this year to sustain this project. Integrating TeamSTEPPS into an escape room offers this institution a way to continue this project while providing valuable team-building skills to its participants. While this was just a small sample in one intercity hospital, new methods for learning should be reviewed for successful teamwork, as there was some data to suggest that

utilizing an escape room could have a positive impact on team cohesiveness as well as leadership skills for the individual.

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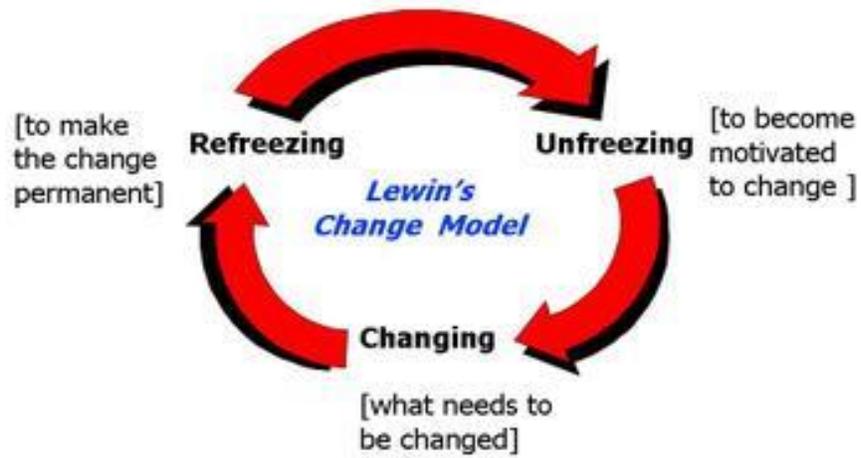
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Figure 1

Lewin's Change Theory



Source: http://ic-pod.typepad.com/design_at_the_edge/organisational_change/

Appendix A

Evidence Review Table: Escape Room

Author, year	Study objective/intervention or exposures compared	Design	Sample (N)	Outcomes studied (how measured)	Results	*Level and Quality Rating
Adams, V, Burger, s., Crawford, K., & Setter, R. (2018)	To change the format on how nurses are trained from a passive approach to active learning. Additionally, the study evaluated if nurse residents retained information from residency seminars	Simple quasi experimental study	213 nurses- 167 nurse residents and 46 experienced nurses- from a 700-bed academic medical center in the Midwest	1) 10 educational objectives from nurse residency seminars including catheter-associated urinary tract infection prevention, central line associated bloodstream infection prevention, critical lab reporting, fall prevention, general organization information, hospital-acquired	1) Incorporating critical thinking and teamwork and utilizing communication skills into active learning improved adult learning principles 2) Development, design and implementation of game-based learning were successful in providing nurses with interactive learning experiences.	6B

				<p>pressure injury prevention, patient identification, and urinary catheter removal</p> <p>2.) Following experience, a survey about the experience was performed</p>		
Cain, J. (2018)	To use an educational escape room using a mixture of online and paper-based clues to increase student engagement and provide a fun learning environment on the topic of foundational human resources knowledge	Simple quasi experimental study	141 third year pharmacy students at a large mid-west pharmacy school	<p>1.)prior to escape room were given a 2 hour in class instruction on human resources</p> <p>2.)escape room was then performed to assess understanding of human resource laws and the hiring process.</p> <p>3.) Following escape room an online student survey was performed to assess team dynamics</p>	A blended education escape room format could be utilized in a large enrollment classroom setting which increases student engagement and knowledge reinforcement	6B

Connelly, L. & Kennedy, C. (2018)	Utilizing an escape room during nursing recruiting events may have a positive impact in recruiting more nurses	Simple quasi experimental study	7 nursing recruits at a rural medical center college of nursing	1). Feedback was positive from the recruits, including comments about expanding the game to more health care scenarios and reaching out to more recruits for a larger sample size 2.) Utilized a modified Plus-Delta method for debriefing to reflect on their experience	The escape room strategy holds promise as a valuable recruiting tool that may ultimately cultivate a desire for potential participants to enter the nursing profession.	6B
Eukel, H., Frenzel, J., & Cernusca, D. (2017)	To design an educational game that will increase third-professional pharmacy students knowledge of diabetes management and to evaluate their perceived value of the game	Simple quasi experimental study	83 third year pharmacy students at a rural pharmacy state university	1.)An authentic escape room gaming environment using a locked room, an escape time limit, and game rooms to measure knowledge of diabetes disease management	By utilizing an escape room, participants improve their knowledge in diabetes management and reported a positive perceived value of this learning activity.	6B

				2.) A pre-test and posttest to measure knowledge they've gained and a perception survey to identify moderating factors that could help instructors improve the game's effectiveness and utility		
Gomex-Urquize, J., Gomez-Salgado, J., Albendin-Garcia, L., Correa-Rodriquez, M., Gonzalez-Jimenez, E., & Canadas-De la Fuente, G. (2018)	To assess if escape room teaching methods are more dynamic option to assess theoretical and practical knowledge and promote teamwork and the idea of performing under pressure and time constraints	Cross-sectional descriptive study	105 second year nursing students enrolled in adult nursing 1	1.)Participants would have 30 minutes to solve riddles and puzzles that were related to nursing techniques and adult nursing knowledge. 2.)following the room, a questionnaire was sent to them applying knowledge they have learned in the room	Utilizing an escape room as a learning activity is highly useful and allows participants to recall and apply knowledge. This escape room concept also is fun and promotes teamwork	6B

Sheppard, F., Williams, M. & Klein (2013)	TeamSTEPPS programs can improve the working environment between team members and clinical outcomes within organizations	Case control study	Comparison of 2 large health systems	Pre-survey followed by education of TeamSTEPPS then a post survey about leadership and team dynamics as well as an observational using a validated tool	Utilizing TeamSTEPPS has led to measurable improvements in teamwork, communication and patient satisfaction	4B
Vertino, K. (2014)	Structured team training initiative provided to inpatient nursing staff improved staff attitudes on teamwork	Simple Quasi experimental study	26 full and part time staff of RN, LPNs and Nursing Assistants at a hospital	Assessing team cohesiveness pre and post mixed reality game	TeamSTEPPS can promote positive change in staff steam dynamics, leadership and communication	6B
Walsh, B. & Spence, M. (2018)	As a result of dropping interest in orientation activities of engineering students, an escape room was created to introduce students to introduce essential library research skills to students	Simple Quasi experimental study	293 1st year engineering students at a large urban university in Canada	1-hour escape room using clues that students should know after reading the syllabus	Post-game feedback suggested that having participants complete as escape room for an introduction to the library and its resources was an enjoyable introduction.	6B

Warmelin k, H., Mayer, I., Weber, J., Heijgers, B., & Haggis, M (2017)	To establish how to design and measure complex social interaction effects like team building in a mixed reality escape room.	Simple Quasi experimental study	30 participants- 18 men and 12 women	Assessing team cohesiveness pre and post mixed reality game	Using a missed reality escape room will increase and have a positive outcome for team cohesiveness.	6B
Yi, Y. (2015)	To measure effectiveness of team-building communication competence, and team effectiveness among nursing students	Quasi-experimental	195 junior year nursing students in Korea- 100 students were in the leadership experimental group and 95 were in the control group	1.)Pre and posttest after 100 days of interventions- didactic lecture on team building, plus perform a team building activity	Team building excises performed over a 100-day period can improvement teamwork skills and team effectiveness	6B
Zhang, X., Lee, H., Rodrigue z, C., Rudner, J., Chan, T., & Papanagn ou, D. (2018)	To see if emergency medicine staff could undergo a commercial escape room and improve their team-building skills	Simple Quasi experimental study	10 participants- 9 emergency medicine residents and 1 senior emergency medicine faculty member	A 1-hour escape room session followed by a post-event debriefing to practice teamwork, communication, task-delegation, critical thinking and divergent thinking to tackle a series of complex puzzles.	Commercial escape rooms can be utilized as effective team building activities by immersing participants in interactive, unpredictable and chaotic environments that can promote participants to solve problems differently	6B

Rating System for Hierarchy of EvidenceLevel of the Evidence Type of the Evidence

I (1)	Evidence from systematic review, meta-analysis of randomized controlled trials (RCTs), or practice-guidelines based on systematic review of RCTs.
II (2)	Evidence obtained from well-designed RCT
III (3)	Evidence obtained from well-designed controlled trials without randomization
IV (4)	Evidence from well-designed case-control and cohort studies
V (5)	Evidence from systematic reviews of descriptive and qualitative studies
VI (6)	Evidence from a single descriptive or qualitative study
VII (7)	Evidence from the opinion of authorities and/or reports of expert committees

Melnyk, B.M. & Fineout-Overholt, E. (2014). *Evidence-based practice in nursing & healthcare: A guide to best practice* (3rd ed.). New York: Lippincott, Williams & Wilkins.

Rating Scale for Quality of Evidence

A: High – consistent results with sufficient sample, adequate control, and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific literature

B: Good – reasonably consistent results; sufficient sample, some control, with fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence

C: Low/major flaw – Little evidence with inconsistent results; insufficient sample size; conclusions cannot be drawn

Newhouse, R.P. (2006). Examining the support for evidence-based nursing practice. *Journal of Nursing Administration*, 36(7-8), 337-40.

Appendix B

TeamSTEPPS Teamwork Perceptions Questionnaire- T-TPQ Survey

Instructions: Please complete the following questionnaire by placing a check mark [√] in the box that corresponds to your level of agreement from *Strongly Agree* to *Strongly Disagree*. Please answer every question, and select only one response for each question. The questionnaire is **anonymous**, so please do not put your name or any other identifying information on the questionnaire.

Team Structure	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. The skills of staff overlap sufficiently so that work can be shared when necessary.					
2. Staff are held accountable for their actions.					
3. Staff within my unit share information that enables timely decision making by the direct patient care team.					
4. My unit makes efficient use of resources (e.g., staff supplies, equipment, and information).					
5. Staff understand their roles and responsibilities.					
6. My unit has clearly articulated goals.					

7. My unit operates at a high level of efficiency.					
Leadership	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
8. My supervisor/manager considers staff input when making decisions about patient care.					
9. My supervisor/manager provides opportunities to discuss the unit's performance after an event.					
10. My supervisor/manager takes time to meet with staff to develop a plan for patient care.					
11. My supervisor/manager ensures that adequate resources (e.g., staff, supplies, equipment, information) are available.					
12. My supervisor/manager resolves conflicts successfully.					
13. My supervisor/manager models appropriate team behavior.					
14. My supervisor/manager ensures that staff are aware of any situations or changes that may affect patient care.					

Situation Monitoring	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
15. Staff effectively anticipate each other's needs.					
16. Staff monitor each other's performance.					
17. Staff exchange relevant information as it becomes available.					
18. Staff continuously scan the environment for important information.					
19. Staff share information regarding potential complications (e.g., patient changes, bed availability).					
20. Staff meets to reevaluate patient care goals when aspects of the situation have changed.					
21. Staff correct each other's mistakes to ensure that procedures are followed properly.					
Mutual Support	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
22. Staff assist fellow staff during high workload.					

23. Staff request assistance from fellow staff when they feel overwhelmed.					
24. Staff caution each other about potentially dangerous situations.					
25. Feedback between staff is delivered in a way that promotes positive interactions and future change.					
26. Staff advocate for patients even when their opinion conflicts with that of a senior member of the unit.					
27. When staff have a concern about patient safety, they challenge others until they are sure the concern has been heard.					
28. Staff resolve their conflicts, even when the conflicts have become personal.					
Communication	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
29. Information regarding patient care is explained to patients and their families in lay terms.					
30. Staff relay relevant information in a timely manner.					
31. When communicating with patients, staff allow enough time for questions.					

32. Staff use common terminology when communicating with each other.					
33. Staff verbally verify information that they receive from one another.					
34. Staff follow a standardized method of sharing information when handing off patients.					
35. Staff seek information from all available sources.					

TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ) Manual. Content last reviewed April 2017. Agency for Healthcare Research and Quality. Rockville, MD.
<http://www.ahrq.gov/teamstepps/insctructor/reference/teamperceptionsmanual.html>

Appendix C

TeamSTEPPS® Observational Tool

Date: _____

Unit/Department: _____

Rating Scale (circle 1) *Please comment if 1 or 2*

- 1 = Very Poor
- 2 = Poor
- 3 = Acceptable
- 4 = Good
- 5 = Excellent

1. Team Structure	Rating: 1= very poor	Rating: 2= Poor	Rating: 3= Acceptable	Rating: 4= Good	Rating: 5= Excellent
a. Assembles a team					
b. Assigns or identifies team members' roles and responsibilities					
c. Holds team members accountable					
d. Includes patients and families as part of the team					
Comments:					
Overall Rating – Team Structure					
2. Communication	Rating: 1= very poor	Rating: 2= Poor	Rating: 3= Acceptable	Rating: 4= Good	Rating: 5= Excellent
a. Provides brief, clear, specific and timely information to team members					
b. Seeks information from all available sources					
c. Uses check-backs to verify information that is communicated					

d. Uses SBAR, call-outs, and handoff techniques to communicate effectively with team members					
Comments:					
Overall Rating – Communication					
3. Leadership	Rating: 1= very poor	Rating: 2= Poor	Rating: 3= Acceptable	Rating: 4= Good	Rating: 5= Excellent
a, Identifies team goals and vision					
b. Utilizes resources efficiently to maximize team performance					
c. Balances workload within the team					
d. Delegates tasks or assignments, as appropriate					
e. Conducts briefs, huddles, and debriefs					
f. Role model’s teamwork behaviors					
Comments:					
Overall Rating – Leadership					
4. Situation Monitoring	Rating: 1= very poor	Rating: 2= Poor	Rating: 3= Acceptable	Rating: 4= Good	Rating: 5= Excellent
a. Monitors the status of the patient					
b. Monitors fellow team members to ensure safety and prevent errors					
c. Monitors the environment for safety and availability of resources (e.g., equipment)					
d. Monitors progress toward the goal and identifies changes that could alter the plan of care					

e. Fosters communication to ensure team members have a shared mental model					
Comments: Overall Rating – Situation Monitoring					
5. Mutual Support	Rating: 1= very poor	Rating: 2= Poor	Rating: 3= Acceptable	Rating: 4= Good	Rating: 5= Excellent
a. Provides task-related support and assistance					
b. Provides timely and constructive feedback to team members					
c. Effectively advocates for patient safety using the Assertive Statement, Two-Challenge Rule, or CUS					
d. Uses the Two-Challenge Rule or DESC Script to resolve conflict					
Comments: Overall Rating – Mutual Support					
Team Performance Rating					

Team Performance Observation Tool. Content last reviewed March 2014. Agency for Healthcare Research and Quality, Rockville, MD.
<http://www.ahrq.gov/teamsteps/instructor/reference/tmpot.html>

Appendix D

Post-Escape Room Participant Survey

	5	4	3	2	1
Strongly Agree		Agree	Neutral	Disagree	Strongly Disagree
1. I was able to relate elements of the escape room to my clinical setting/environment	5	4	3	2	1
2. Some of the interactions I had with colleagues in the escape room are similar to the interactions we have in our team/clinical setting?	5	4	3	2	1
3. I found the escape room experience to be an engaging and fun way to learn.	5	4	3	2	1
4. I found this experience to be useful in learning teamwork tools and strategies.	5	4	3	2	1
5. I would prefer a more formal lecture or PowerPoint to learn.	5	4	3	2	1
6. This escape room experience motivated me to learn more about working in a team.	5	4	3	2	1
7. This experience enhanced my perception of the importance of teamwork and communication in teams/clinical settings.	5	4	3	2	1
8. The escape room experience was an effective team building activity.	5	4	3	2	1
9. The instructor(s) was knowledgeable about team building and provided helpful tools and strategies for use in my daily work	5	4	3	2	1
10. I would recommend the escape room experience to others who are interested in team building.	5	4	3	2	1

Adapted from Post Escape Room Survey Questionnaire (Li Sherbino, Chan, 2017)

Li, SA, Sherbino, J., Chan, CM. (2017). McMaster modular assessment program (McMAP) through the years: residents' experience with an evolving feedback culture over a 3-year period. Acad Emerg Med Educ Train. 1; 5-14

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