**Title of Activity: Using a Simulation Enhanced Interprofessional Educational (Sim-IPE) Activity to Reduce Cognitive Bias in Healthcare**

 **Identified Gap(s):** A knowledge gap exists regarding simulation enhanced interprofessional activities (Sim-IPE) that will allow for the development of IPE competencies as well as facilitate critical thinking to reduce cognitive bias and raise situational awareness within the individual and interprofessional team.In healthcare, effective interprofessional teamwork, communication, and collaboration is critical to patient safety. Unfortunately, future healthcare professionals often have limited opportunities to learn about or with other healthcare disciplines. While studies clearly support the utilization of Sim-IPE to improve interprofessional teamwork, few studies have explored the utilization of a Sim-IPE to enhance awareness of cognitive bias within individual professions or within the context of an interprofessional team (Cavnar, Van Der Like & Hobby-Burns, 2017; King et al., 2016).

**Description of current state:** The current state reflects an opportunity for improvement for healthcare providers to reduce their cognitive bias and increase their situational awareness. Many healthcare providers lack the knowledge for collaboration between healthcare professionals as an integral part of effective patient focused care. Through interprofessional collaboration, healthcare providers can challenge cognitive bias, raise their situational awareness resulting in improved patient care and outcomes. Interprofessional education (IPE) provides the opportunity for different healthcare professionals to learn about, from, and with each other (IPEC) and improve the effectiveness of patient care.

**Description of desired/achievable state:** Participants will gain knowledge as to the importance of interprofessional educational (IPE) activities to promote situational awareness and challenge cognitive bias. All participants will apply one new strategy in their professional practice that promotes interprofessional collaboration and challenges cognitive bias and raises their situational awareness when it is observed in patient care.

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| **Learning Outcome (s) for this activity as a result of participating in the activity:**1) At the conclusion of this presentation participants will have knowledge about cognitive bias and situational awareness within a simulation enhanced interprofessional education (Sim-IPE).2)At the conclusion of this presentation participants will identify how they will incorporateINACSL Standards of Best Practice: SimulationSM Simulation Enhanced Interprofessional Education (Sim-IPE) into their simulation program/area of work or practice.**Identify the INACSL Standards of Best Practice: SimulationSM that is informing this presentation:** INACSL Standards of Best Practice: SimulationSM Simulation Enhanced Interprofessional Education (Sim-IPE)**Select all that apply: X Nursing Professional Development ☐ Patient Outcome ☐ Other: Describe \_\_Interprofessional Teamwork**  |
| **CONTENT****(Topics)***Provide an outline of the content to include the INACSL Standards of Best Practice: SimulationSM and how the standard(s) is(are) applicable.* | **TIME***Time required for content (do not give ranges, instead give exact amount of time, i.e. 10 minutes, 20 minutes, etc.) Total time should include time for questions/answers.* | **PRESENTER/ AUTHOR***Provide first & last names* | **LEARNER ENGAGEMENT STRATEGIES***List the learner engagement strategies to be used by Faculty, Presenters, Authors (note: PowerPoint and lecture by themselves are not learner engagement strategies).* |
| Define situational awareness and cognitive bias and their impact on patient outcomes.* Situational awareness is having perception or understanding of the environment as well as having the ability to gather and comprehend the right information, correctly analyze it, and make decisions based on that analysis (Stephens, 2017).
* A cognitive bias can cause an error in a person’s rational thought process and subsequently can effect their decisions and/or judgments.
* There are several types of cognitive biases that are used in health care every day that can lead to ineffective care for patients (Campbell, 2017).
	+ ***Confirmation Bias*** is defined as an error in diagnostic thinking in which one sees only those patterns in the data that support one's preconceptions. (Medical Dictionary, 2009).
	+ ***Overconfidence Bias*** is when a person's subjective confidence in his or her judgments is reliably greater than the objective accuracy of those judgments, especially when confidence is relatively high. (Pallier et al., 2002).
	+ ***Bandwagon Bias*** is a type of herd mentality in which belief or trend cascades and becomes increasingly popular as more people “climb on board” and subscribe to belief or trend, regardless of personal convictions and scant evidence the bandwagon’s validity (Selgans, 2011).
* These biases may lead to perceptional distortion, inaccurate judgment, illogical interpretation and poor decisions.
* Cognitive bias is a normal response in humans and recognition of the biases in both individuals and in teams is essential for critical thinking development.
 | 10 minutes | *Julie Hollenbeck, M. Ed, RT(T)* Carman Turkelson DNP, RN, CCRN, CHSE | Lecture, PPT presentation, discussion among presenters. Participants will be asked to reflect upon and write down their own experiences regarding situational awareness and cognitive bias. |
| Describe how a simulation enhanced interprofessional education (Sim-IPE) experience focusing on situational awareness was developed to promote recognition of individual and professional cognitive biases that may negatively impact patient care. * Impetus for initial and continued development of simulation enhanced interprofessional activities at the University of Michigan –Flint
	+ Previous success with development, implementation and evaluation of multiple (7) Sim-IPE activities since winter of 2016.
	+ Previous successes with receiving internal and external grant funding to support the development of on-going Sim-IPE.
	+ Lead faculty for Sim-IPEs TeamSTEPPS Master Trained in 2017
	+ Three of 4 lead faculty for Sim-IPEs Interprofessional Fellows for University of Michigan
	+ CHSE (2) and CHSOS (2) certified faculty and staff on Sim-IPE team.
* Planning for new Sim-IPE focusing on situational awareness
	+ Simulation (House of Horrors) previously conducted in both nursing and physical therapy programs but in individual silos without other professions
	+ Identification by faculty and students of need for additional opportunities for interprofessional education.
	+ Decision in fall 0f 2017 to enhance learning by adding other healthcare profession students including Radiation Therapy program.
	+ Additional focus on cognitive biases unique to individuals and within different professions.
	+ Theoretical model guiding additional Sim-IPE centers on the premise of Ericcson’s work on expert performance.
		- Creation of multiple Sim-IPE programs over the course of each program.
		- Students need repeated exposure and opportunities to learn with and about different professions to facilitate development of core IPEC competencies.
		- Model also used to guide other Sim-IPE activities.
	+ Timeframe for development, implementation and evaluation
		- Planning during fall of 2017
		- Utilization of current simulation activity (House of Horrors) that was used for individual professions (tested and validated).
		- Development of IPE objectives focusing on cognitive bias and IPEC core competencies.
		- Development of cognitive bias pre-learning materials and team perception activities and self-reflection questions.
		- Review by content experts representing each discipline and course.
		- Identification of IPE debriefing strategy
			* Pearls method utilized
			* Debriefing for IPE Guide for faculty to follow.
		- IRB approval fall 2017
		- Scheduling
			* Coordination of multiple groups of students from three programs
		- Winter 2018 implementation of first Sim-IPE House of Horrors
			* 12 sessions offered for nursing (n=39), physical therapy (n=57) and radiation therapy (n=16) students.
		- Fall 2018 implementation of “control” group House of Horrors with nursing students only to provide comparison data.
			* Eight sessions offered for nursing students (n=41)
* Implementation of House of Horrors Sim-IPE and comparison group
	+ Both simulation sessions (winter and fall 2018) included a pre-briefing, 5 minutes in a House of Horror simulation room, team perception activities, and a debriefing session.
	+ Each individual student was instructed to identify their top 3 items related to safety in the House of Horror simulation room.
	+ Each team (12 total IPE teams and 8 non-IPE teams in comparison group) were then encouraged to agree on their top 3 patient safety errors for the patient room and turn in a data collection sheet.
	+ Following the IPE event, all students were asked to submit an assignment and provide answers to the following 3 questions related to cognitive bias in healthcare.
		- How does cognitive bias and situational awareness apply to your work in a health care setting?
		- Can you give an example of cognitive bias that you have experienced or witness in the clinic?
		- Can you think of a solution to help resolve or make yourself aware of cognitive biases?
* Evaluation
	+ Individual student data sheets collected as well as team data sheets
	+ Reviewed by faculty to identify top three safety errors in room.
	+ Student self-reflections reviewed by two faculty members representing different professions (e.g. nursing self-reflections reviewed by physical therapy and radiation therapy faculty) independently to identify ability to identify cognitive bias in clinical setting, link to IPEC competencies and ability to identify methods to reduce risk.
		- Consensus attained by both faculty then reviewing self-reflections together and discussing findings.
		- Third faculty member (e.g. nursing) utilized to facilitate consensus if needed.
 | 25 minutes  | *Julie Hollenbeck, M. Ed, RT(T)*Carman Turkelson DNP, RN, CCRN, CHSE | Didactic PPT, discussion among presenters; participants will be asked to reflect upon the discussion among the presenters’ discussion as to how it could be applicable to their simulation practice.  |
| Discuss strategies to facilitate awareness and recognition of cognitive bias and methods to reduce the risk in future healthcare professions students.* Results of this project
	+ Nursing (n=39), physical therapy (n=57), and radiation therapy students (n=16) participated in a House of Horrors situational awareness interprofessional educational learning experiences (IPELE) in the winter of 2018.
	+ Nursing (n=41) students participated in the House of Horrors situational awareness learning experience in the fall of 2018 (as a control group for comparison).
	+ The top three items identified by individual students (n=112) during the winter 2018 Sim-IPE were: exposed bodily fluids (31.25%); medications not properly secured (28.57%); and a mess on floor and in the room (26.79%).
	+ The top three items identified by nursing students (N=41) only during the fall 2018 (comparison group) were: medications not properly secured (73%), mess on the floor and in the room (49%), and bed in high position (27%).
	+ The oxygen not connected was the top item agreed upon by the IPE teams (n=12), which was identified by 58.30% of them. Exposed bodily fluids, bed in high position, and patient identification were tied for second at 50.00% of groups during the winter 2018 Sim-IPE.
	+ During the fall 2018 nursing only House of Horrors simulation the top item identified by the nursing teams (n=8) was medications not secured (63%) followed by oxygen not connected (50%) and patient identification (38%)
	+ 90% of all students participating in either the Sim-IPE House of Horrors or the nursing only House of Horrors (n=138) were able to identify a cognitive bias that they have witnessed in a healthcare setting.
	+ 34% (n=33) of the students identified ***Confirmation Bias***; 24% (n=23*)* ***Overconfidence Bias***; and 14% (n=14) ***Bandwagon Bias*** *in their reflections after the Sim-IPE in the winter of 2018*
	+ *66% (n=27) of the students identified* ***Confirmation bias;*** *17% (n=7)* ***Overconfidence bias;*** *and 7% (n=3****) Bandwagon bias*** in their reflections after the fall 2018 nursing only House of Horrors in the fall of 2018.
	+ IPEC Core Competencies: More than half (55%) of the students participating in the Sim-IPE House of Horrors were able to link IPEC competencies as a factor in reducing the likelihood of cognitive bias: 25 total students recognized ***interprofessional teams and teamwork*** as an important solution in awareness of cognitive biases; 18 students recognized ***interprofessional communication***; 12 students recognized ***roles/ responsibilities***; and 6 students recognized ***values/ethics***.
	+ Only 7% (n=3) of the nursing students in the control group were clearly able to link IPEC competencies as a factor in reducing the likelihood of cognitive bias. All three students identified **interprofessional teams and teamwork and interprofessional communication** as an important solution to reduce cognitive bias.
	+ Students recognized their profession cognitive bias to the activity as demonstrated by their responses to what they identified in the House of Horrors simulation room.
	+ Most students have already seen cognitive bias situations occurring in the clinical setting and were able to recognize and make themselves aware of the biases.
	+ Many students recognized the Sim-IPE as an opportunity to improve communication, teamwork, and understand each other roles and responsibilities as it relates to situational awareness.
	+ Students who participated in the same House of Horrors activities without other professions had differences in their recognition of safety issues, identification of examples of cognitive bias and were significantly less likely to identify the interprofessional team as an important measure to reduce the risk of cognitive bias.
	+ This type of activity can assist in developing awareness of cognitive bias and improving the IPEC competencies for future healthcare providers when offered as a Sim-IPE activity.
 | 15 minutes | *Julie Hollenbeck, M. Ed, RT(T)* | Didactic PPT, discussion among presenters. Participants will be asked to reflect upon and write down their own experiences regarding the use of Sim-IPE. |
|  Discussion and summary | 10 minutes | *Julie Hollenbeck, M. Ed, RT(T)*Carman Turkelson DNP, RN, CCRN, CHSE  | Discussion among presenters. Participants will be asked to reflect upon and write down their own ideas as to how they can use Sim-IPE to reduce cognitive bias. |
| **List a minimum of 3 evidence-based references used for developing this educational activity (no more than 3 years old):**1. Campbell, S.G., Croskerry, P., and Petrie, D.A. (2017). Cognitive bias in health leaders*. Healthcare Management Forum*. 30(5) 257-261. DOI: 10.1177/0840470417716949.
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**\* denote that the work is classic** |

**Gap to be addressed by this activity: X** **Knowledge**       **Skills**  **Practice**       **Other: Describe\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**If Live:**

**Note: Time spent evaluating the learning activity may be included in the total time when calculating contact hours.**

**Total Minutes \_\_45\_\_divided by 60 = 0.75 CNEs**

**If Enduring:**

**Method of calculating contact hours:**

      **Pilot Study \_\_\_\_ Mergener formula**       **Historical Data**       **Complexity of Content**        **Other: Describe**

**Number of Contact Hours to be awarded: 1\_\_\_\_\_\_\_\_\_\_**

**\_Carman Turkelson DNP, RN, CCRN, CHSE\_\_& Leslie Smith PT, DPT\_\_ October 15, 2020**

**Completed By: Name and Credentials Date**