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Education Strategies to Promote Interprofessional Team Collaboration Skills for Health Professions Students: Efficacy and Impact

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Objectives:

Discuss development of educational strategies to incorporate disciplinary specific, shared, and collaborative TeamSTEPPS performance competencies.

Contrast participation in a web based didactic TeamSTEPPS training session and an interactive interprofessional TeamSTEPPS workshop on competency development and impact on team performance.

Examine the effectiveness of educational strategies on the perception and performance of team based behaviors during a simulated patient care scenario and impact on patient care.

Recognition

Patrick Crane, DNP, RN, AGNP-BC (MSU College of Nursing)

Rosemarie Tolson, DO (MSU College of Osteopathic Medicine)

Anne Ottney, PharmD (Ferris State University)

Mary Kay Smith, MSN, RN, PhD(c) (MSU Learning Assessment Center)

Teresa Wehrwein, PhD, RN, NEA-BC (MSU College of Nursing)

Della Hughes, DNP, RN, BC-GNP

The purpose

of this study was to assess the efficacy and impact of teaching strategies to facilitate development of interprofessional team collaboration skills in pharmacy, osteopathic medicine, and nursing students. Evidence of learning will be demonstrated during participation in simulated case scenarios.

**Michigan State University
Learning Assessment Center
Mary Kay Smith MSN, RN Director**

Background and Significance

Health professions education is **accountable for training graduates who can work as members of an interprofessional team** (Interprofessional Education Collaborative Expert Panel, 2011).

Teamwork and collaborative skills are not intuitive or acquired through clinical indoctrination or simple exposure to other disciplines (Doll, Packard, Furze, Hugget, Jensen, et al., 2012).

Students need **opportunities to interact in meaningful ways** (World Health Organization, 2010).

Model
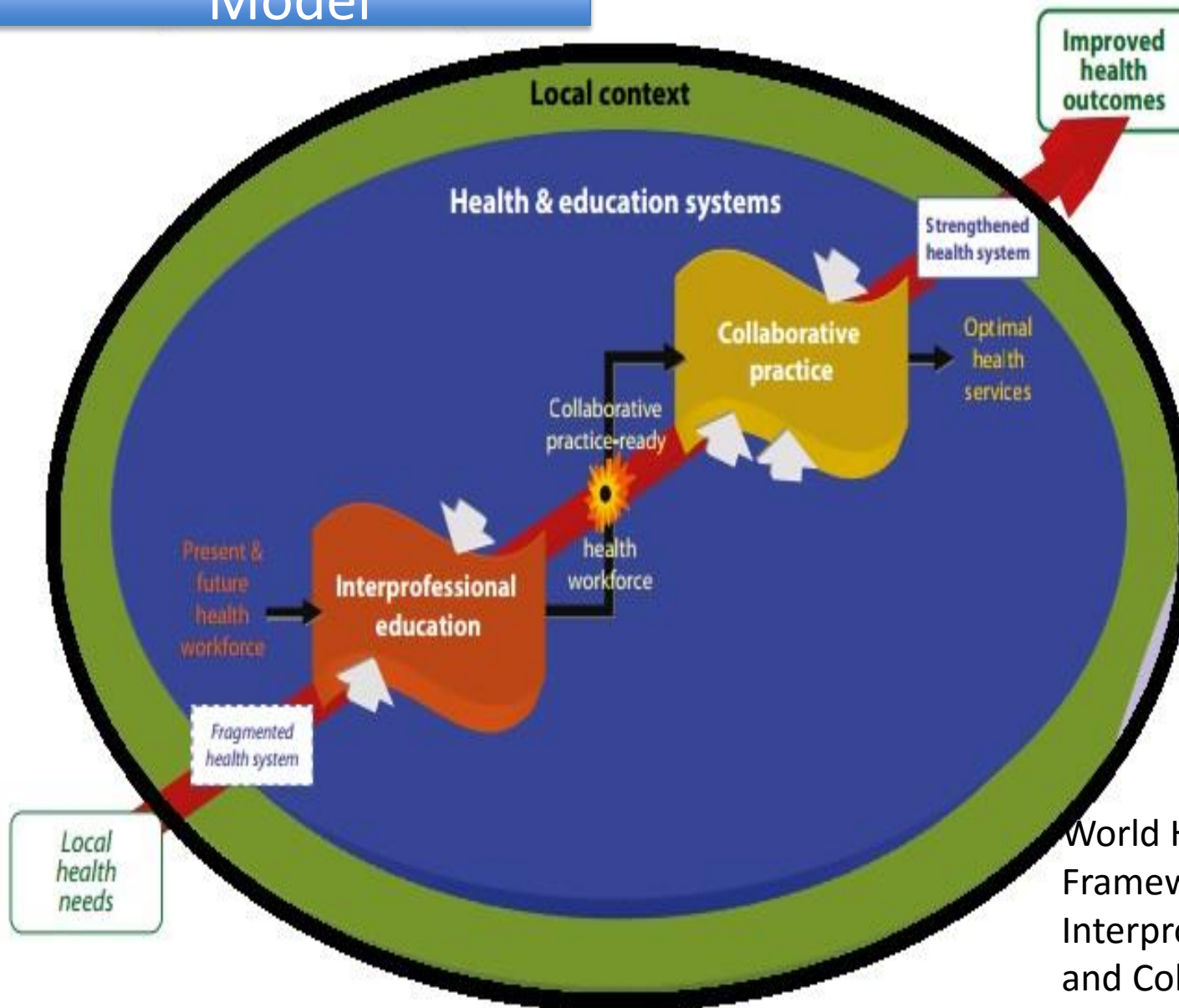
World Health Organization Framework for Action on Interprofessional Education and Collaborative Practice guided development of the project.

Objective 1:.

DISCUSS DEVELOPMENT OF EDUCATIONAL STRATEGIES TO INCORPORATE DISCIPLINARY SPECIFIC, SHARED, AND COLLABORATIVE TEAMSTEPPS ™ PERFORMANCE COMPETENCIES.

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Goal: Quality and Safety!!

Core Competencies for Interprofessional Collaborative Practice

Sponsored by the Interprofessional Education Collaborative*
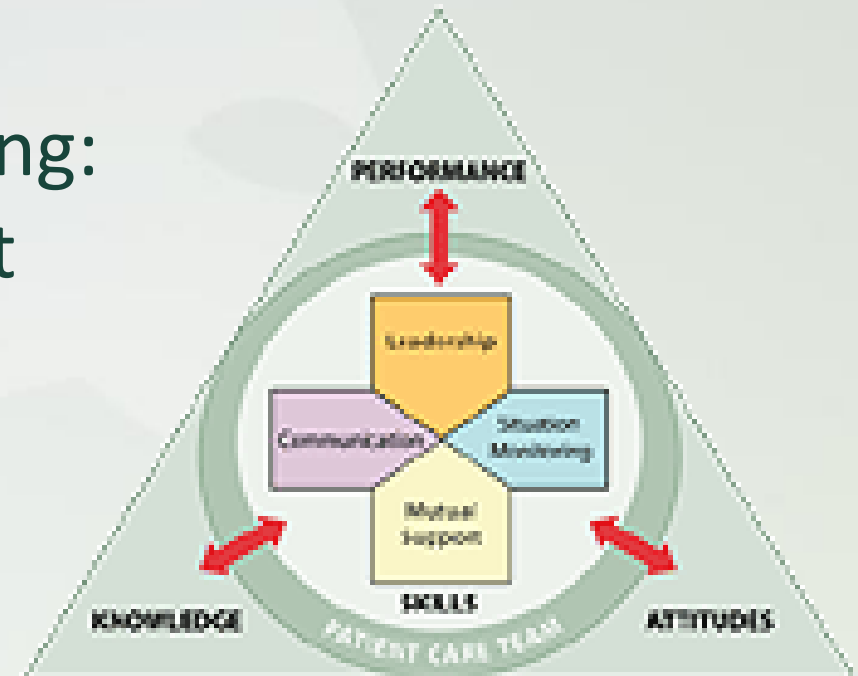
IPE DOMAINS
Roles/Responsibilities
Values/Ethics
Team/Teamwork
Communication

http://www.aacn.nche.edu/education-resources/ipecreport.pdf

TeamSTEPPS™ Training:
Module Development

http://teamstepps.ahrq.gov/teamsteppslogo.htm

Interprofessional Learning & Team Based Competencies

- **TeamSTEPPS ™ Workshop**
- **Simulated Case Studies**

Variable Curricular Integration

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Interprofessional Participation

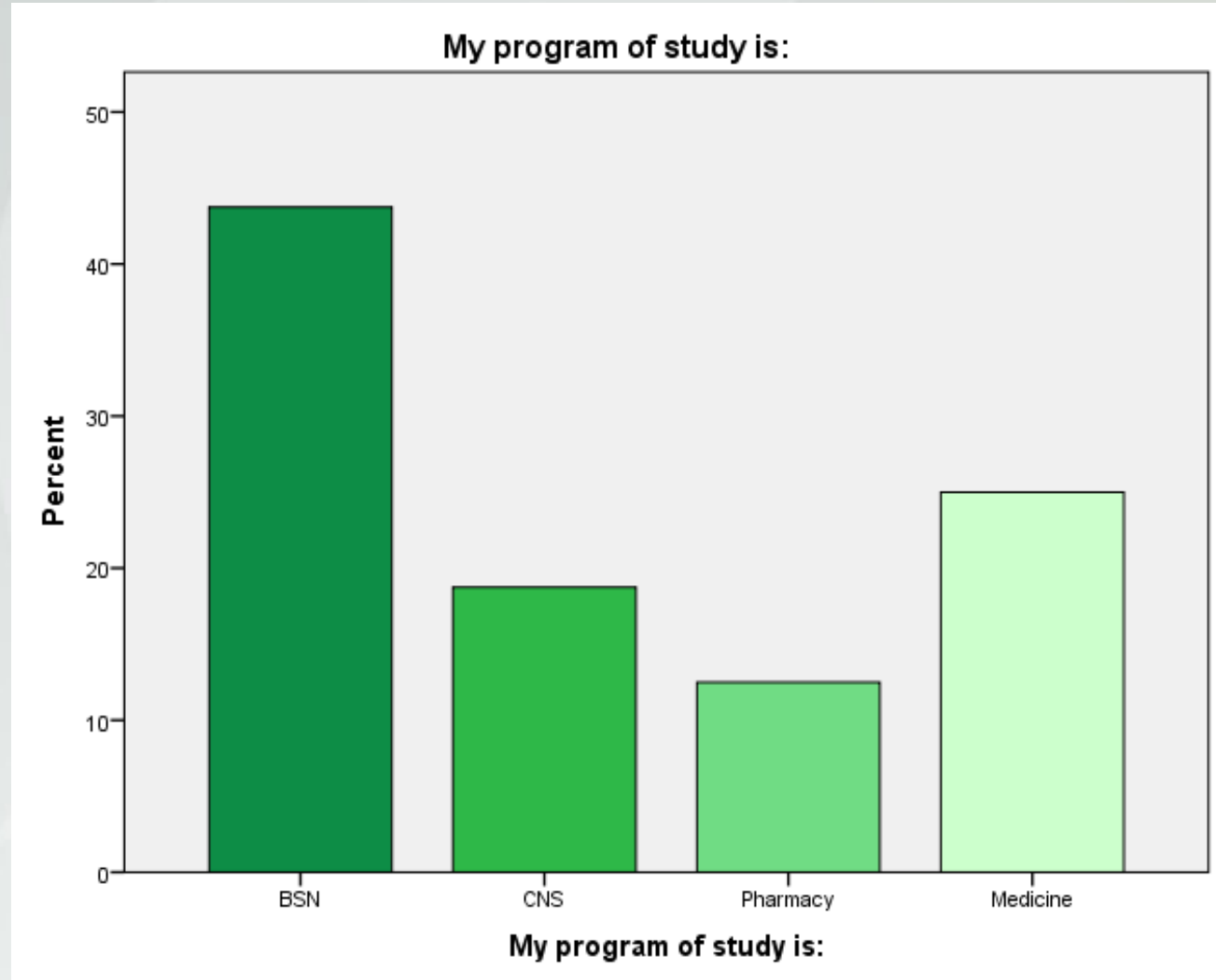**MSU**

College of Nursing
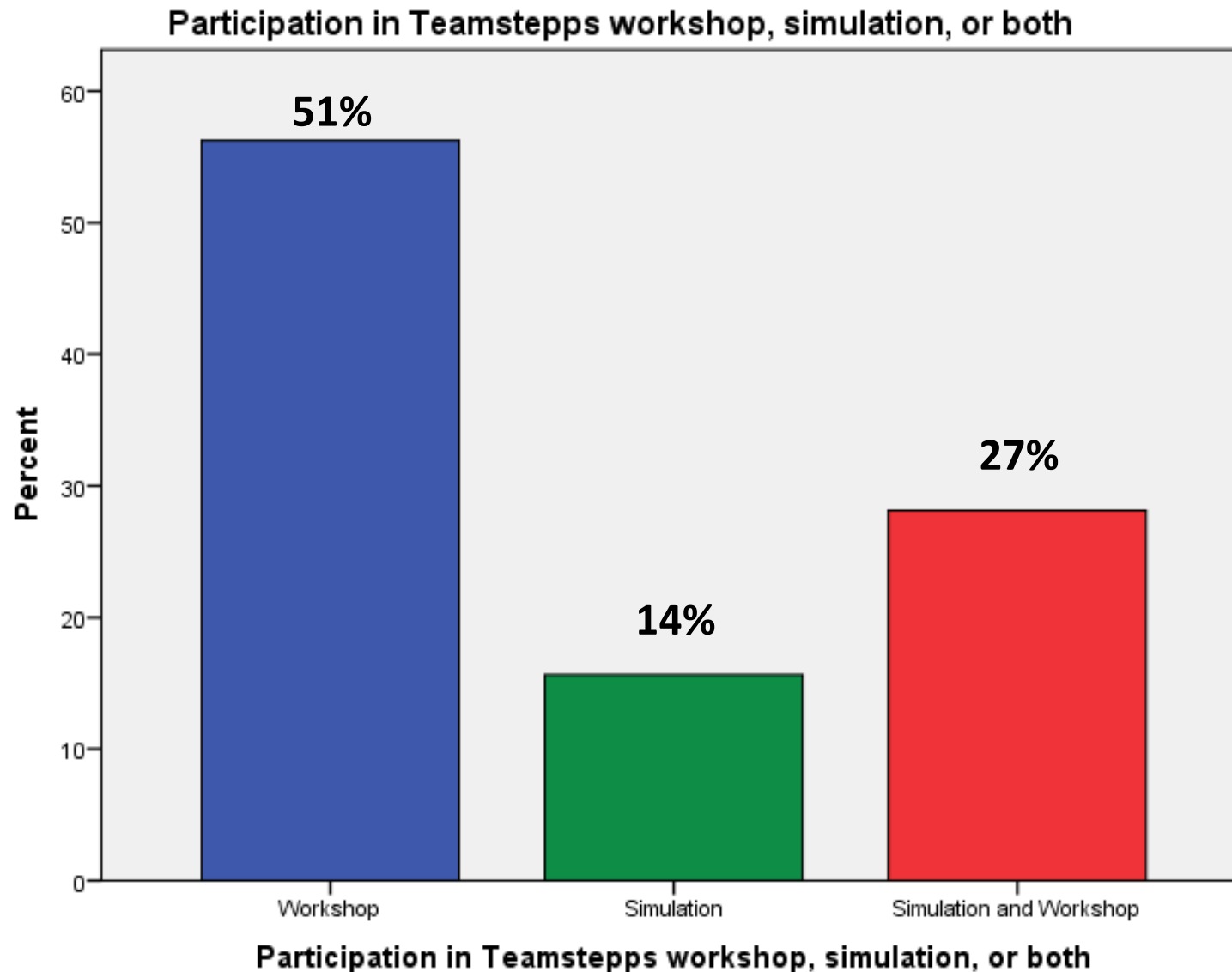
*BSN

CNS

MSU College

Osteopathic Medicine
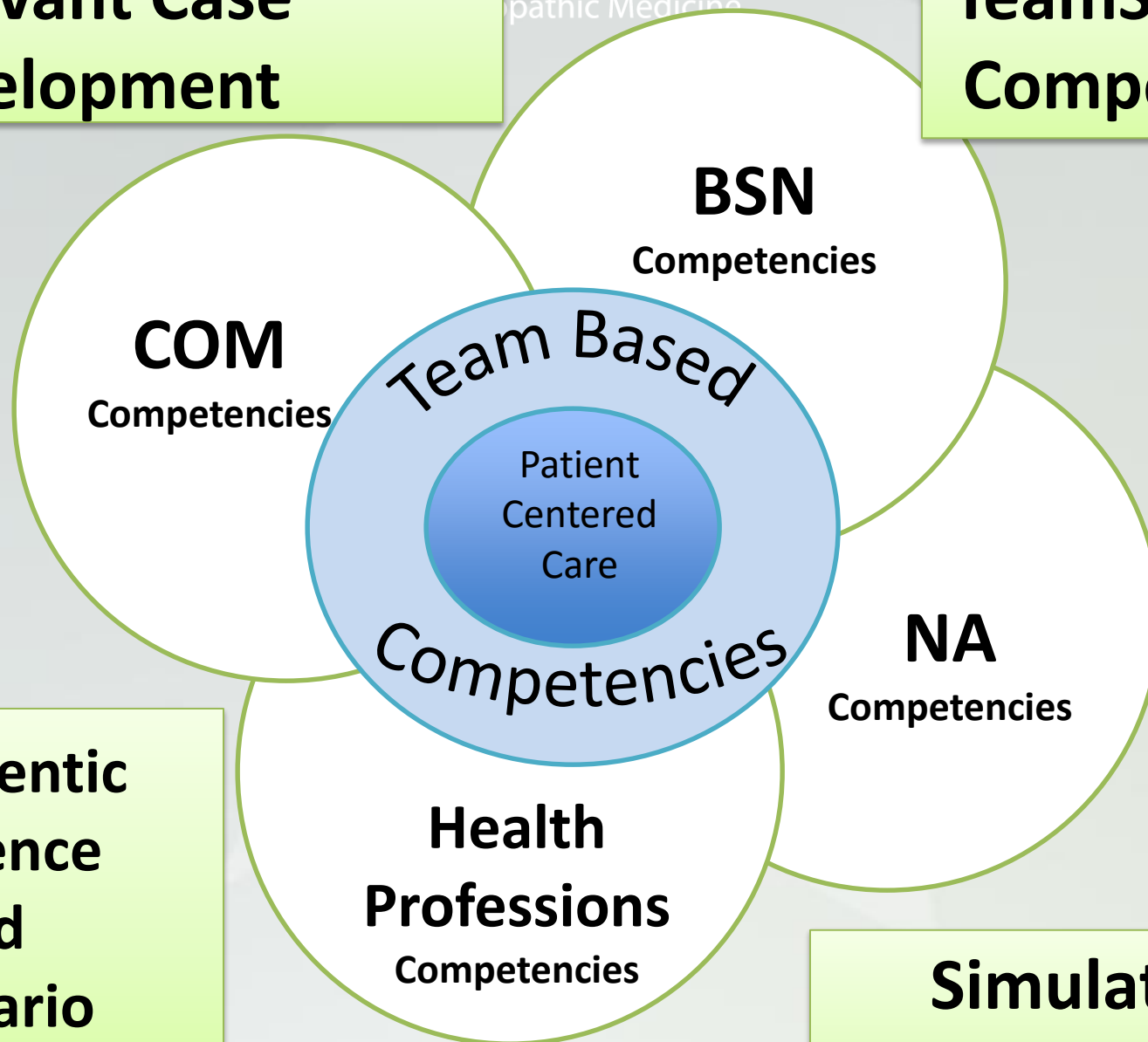
Ferris State University

Pharmacy Students

BSN students required to participate in workshop and simulation – Not Study

My program of study is:

Participation in Teamstepps workshop, simulation, or both

Simulated Critical Event Team Performance Competencies

Simulation Case:	Team Role	Frequency	Quality of Effort
Cardiac	BSN Primary Nurse	P – performed	E – excellent and confident
	BSN Secondary Nurse	NP – not performed	S – satisfactory - some hesitation
	Physician	NO – no opportunity to perform	NI – needs improvement
Respiratory	Nurse Anesthetist		

Team Behaviors Observation Tool

Team Competencies	Behavioral Elements	Frequency	Quality of Effort	Comments
• **Leadership**	Assumes Leadership Role (appropriate to situation)	P NP NO	E S NI	
	Delegates (effectively)	P NP NO	E S NI	
	Communicates Goals	P NP NO	E S NI	
• **Situation Monitoring (STEPS)**	Includes patient/family in communication	P NP NO	E S NI	
	S – status of patient	P NP NO	E S NI	
	T – Team members	P NP NO	E S NI	
	E – Environment	P NP NO	E S NI	
	P – Progress towards goal	P NP NO	E S NI	
• **Mutual Support**	Provides assistance	P NP NO	E S NI	
	2 challenge rule or CUS	P NP NO	E S NI	
• **Inter-professional Communication**	Closed loop (acknowledge verbally)	P NP NO	E S NI	
	SBAR	P NP NO	E S NI	
	Call Outs	P NP NO	E S NI	

Methods

➢ **A convenience sample** of pre-licensure and graduate students from MSU College of Nursing, College of Osteopathic Medicine, and Ferris State University Pharmacy Program

➢ Invitation to complete **Pre and Post survey (ISVS)**

➢ TeamSTEPPS Master Trainer conducted a 3 hour **TeamSTEPPS workshop**

➢ **Simulation event – Participation 2 case scenarios** (BSN (required), COM (voluntary), and Hired Respiratory and Nurse Tech Team Members: participated in team training)

➢ **Video review** TeamSTEPPS (Performance and Impact)

➢ Participation in the study portion was **voluntary**

Interprofessional Socialization and Valuing Scale

24 Items

3 Subscales

➤ Ability to work with others (α.89)

➤ Value working with others (α.82)

➤ Comfort working with others (α.79)

Likert Scale

- 1 – "Not at all"

- 6 – "To a very great extent"

Cronbach's alpha = 0.90 (entire scale)

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Objective 2

CONTRAST PARTICIPATION IN A WEB BASED DIDACTIC TEAMSTEPPS™ TRAINING SESSION AND AN INTERACTIVE INTERPROFESSIONAL TEAMSTEPPS™ WORKSHOP ON COMPETENCY DEVELOPMENT AND IMPACT ON TEAM PERFORMANCE.

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Pre and Post Intervention Survey Data N =

Pre IPE Activities	39		Workshop	18
Post IPE Activities	28		*Simulation	5
BSN	38		Simulation and Workshop	14
CNS	11		*TeamSTEPPS course, online or ppt review prior to simulation	
Pharmacy	11		Groups No Statistically Significant Differences Levene Statistic	
Medicine	7			

ISVS Results

N Pre – 39 Post – 28 2 tailed alpha .05	Pre Post Participation in IPE Activity	Differences between groups: BSN, CNS, COM, Pharm	Workshop, Simulation or BOTH	Prior Experience with Interprofessional Activities
Ability to Work with others	**Significant .01**	**No Significance .73**	**No Significance .82**	**Significant .01**
Value working with others	**No Significance .16**	**No Significance .59**	**No Significance .99**	**Significant .03**
Comfortable working with others	**No Significance .11**	**No Significance .66**	**No Significance .99**	**Significant .03**

Participation in TeamSTEPPS…	Strongly Agree	Agree	Disagree	Strongly Disagree
Workshop contributed to Clinical practice	**29%**	**43%**	**0%**	**0**
Simulation contributed to Clinical practice	**14%**	**20%**	**3%**	**0**
Training improves **teamwork and collaboration**	**40%**	**46%**	**3%**	**0**

Objective 3

EXAMINE THE EFFECTIVENESS OF EDUCATIONAL STRATEGIES ON THE PERCEPTION AND PERFORMANCE OF TEAM BASED BEHAVIORS DURING A SIMULATED PATIENT CARE SCENARIO AND IMPACT ON PATIENT CARE.

Team Competencies	Performed	Not Performed
Leadership	79%	21%
Situation Monitoring (STEPS)	89%	10%
Mutual Support	80%	20%
Inter-professional Communication	71%	29%

%Team Behaviors 2016 and 2015	E 100%	S >74%	NI <75%
Leadership TeamSTEPPS Workshop TeamSTEPPS video/ppt	29% 6	50% 66	21% 28
Situation Monitoring TeamSTEPPS Workshop TeamSTEPPS video/ppt	34% 14	40% 60	26% 26
Mutual Support TeamSTEPPS Workshop TeamSTEPPS video/ppt	34% 9	47% 41	18% 50
Communication TeamSTEPPS Workshop TeamSTEPPS video/ppt	29% 4	40% 71	32% 20

Significant Trends Observed

Significant Errors: 11 out of 44 scenarios

Major Precipitating Factors:

#1 Lack of Leadership

#2 Failure to Repeat Orders (Closed Loop)

#3 Failure to Communicate Goals with Team (or no SBAR)

#4 Failure to Delegate Directly

#5 TASK Orientation

OUTCOME: Delay of Care

RRT calls ranged from 6:34 to 14:00 minutes

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Significant Trends Observed

Good Teamwork

Major Precipitating Factors:

Clear Leader (include 2nd member assuming role)

Complete SBAR

Repeat Orders (Closed Loop Communication)

Direct Delegation

Patient Care Goals Communicated to Team (huddle)

Situation Monitoring – Team/Patient/Environment

Call outs and Check Backs

* Included the Patient in Communication

Major Shifts Noted

❖ Team Huddles

❖ Physician Team Collaboration – Mutual Goal Setting

❖ CUS and 2 Challenge Rule

❖ Team Member Skill Level

❖ Increase Valuing Team Work

Conclusion

The outcome of this ongoing longitudinal study supports participation in team based educational training and authentic simulation has the potential to promote collaborative interdisciplinary teamwork, improve patient outcomes and reduce healthcare errors. Integration of interprofessional team training competencies may promote a collaborative practice-ready health care workforce.

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Who Framework for action on interprofessional education and collaborative practice http://www.who.int/hrh/resources/framework_action/en

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