

## Implementing TeamSTEPPS via Interprofessional Simulation in a Quaternary Level Obstetric Unit

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## Disclosures

No financial or conflict of interest disclosures.

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## Objectives

- Background on patient safety and preventable harm
- Team STEPSS Team Training Program
- Using Simulation to implement Team STEPSS training at Froedtert/MCW

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## Why now?

*Maternal mortality and severe maternal morbidity are rising in the US (1)*

*Over the past decade, severe maternal morbidity in the US has increased by 75% for complications associated with delivery (2)*

*Excellent communication and teamwork will further increase the efficiency and effectiveness of the emergency response. (2)*

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## Increasing delivery volume



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## Quality Review Process

- Monthly case review of severe maternal morbidity

Interdisciplinary committee involving residents/fellow, patient safety specialist, advanced practice provider, labor and delivery nurses, general OB/GYN faculty and maternal fetal medicine providers

Identify opportunities for system improvements to enhance safety and efficiency of our care to patients

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## Quality Review Process

Examples of screening tools for severe maternal morbidity available through ACOG (1)

- Transfusion of >4 units of blood
- Admission of a pregnant or postpartum woman to an ICU

"Institutions may choose to incorporate additional screening criteria to highlight cases for detailed review."

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## Communication and Error

One of the leading causes of medical errors is breakdown in communication (3)

- Occurs at any level of the health care system
- Leading cause of preventable error in studies of closed malpractice claims
- Major contributor to poor clinical outcomes in obstetrics and the labor and delivery unit (4, 7)

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## TeamSTEPPS



Evidence-based teamwork system designed for healthcare professionals and made available through Agency for Healthcare Research and Quality (AHRQ) (5)

Goals of TeamSTEPPS training (5):

- Producing highly effective teams which optimize use of information, people and resources to achieve best clinical outcomes
- Increasing team awareness and clarifying their member roles/responsibilities
- Resolving conflicts and improving information sharing
- Eliminating barriers to quality and safety

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## 4 Components:



### 1. Leadership

How we bring the team together, helps define the plan

### 2. Communication

How we talk to each other, make sure the plan is shared

### 3. Mutual Support

How we create a culture of support for the patient and each other

### 4. Situation Monitoring

How we monitor for change that may affect our patient's care or goal of patient safety

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## TeamSTEPPS (6)

BARRIERS	TOOLS and STRATEGIES	OUTCOMES
<ul style="list-style-type: none"> <li>■ Inconsistency in Team Membership</li> <li>■ Lack of Time</li> <li>■ Lack of Information Sharing</li> <li>■ Hierarchy</li> <li>■ Defensiveness</li> <li>■ Conventional Thinking</li> <li>■ Complacency</li> <li>■ Varying Communication Styles</li> <li>■ Conflict</li> <li>■ Lack of Coordination and Follow-up</li> <li>■ Distractions</li> <li>■ Fatigue</li> <li>■ Workload</li> <li>■ Misinterpretation of Cues</li> <li>■ Lack of Role Clarity</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Communication</b> <ul style="list-style-type: none"> <li>• SBAR</li> <li>• Call-Out</li> <li>• Check-Back</li> <li>• Handoff</li> </ul> </li> <li>■ <b>Leading Teams</b> <ul style="list-style-type: none"> <li>• Brief</li> <li>• Huddle</li> <li>• Debrief</li> </ul> </li> <li>■ <b>Situation Monitoring</b> <ul style="list-style-type: none"> <li>• STEP</li> </ul> </li> <li>■ <b>Mutual Support</b> <ul style="list-style-type: none"> <li>• Task Assistance</li> <li>• Feedback</li> <li>• Assertive Statement</li> <li>• Two-Challenge Rule</li> <li>• CUS</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Shared Mental Model</li> <li>■ Adaptability</li> <li>■ Team Orientation</li> <li>■ Mutual Trust</li> <li>■ Team Performance</li> <li>■ <i>Patient Safety!!</i></li> </ul>

## Team STEPPS and Simulation

Simulation is a common method for team training in obstetrics (7).

Use of Simulation-based Team Training has become an effective tool to reduce global maternal and perinatal morbidity and mortality (4).

Can be used to improve technical skills of providers with additional value in improving team performance (4).

Variety of Simulation-based scenarios available for use in the Labor and Delivery setting available through Team STEPPS (8)

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## Implementing Team STEPPS locally at MCW

### 3 Phases of Implementation (5):

1. Assess the Need
2. Planning, Training and Implementation
3. Sustainment



## Assess The Need

Need identified in our OB quality review process and through Root Cause Analysis:

- Handoff errors
- Teams not always talking to each other
  - e.g. RN and MD chart different FHT interpretation on the same patient
- Failure to "voice up" patient safety concerns
  - e.g. Team member noting concerning FHT but not voicing concern because the attending was aware/in the room



## Further Assessment of Need

Hospital administration deployed  
 AHRQ Survey on Patient Safety Culture  
 62 participants from Obstetric Unit, March 2018

Staff position in the hospital		
RN	37	60%
PA/NP	1	2%
Allied staff	6	10%
Attending	9	15%
Resident	3	5%
HUC	1	2%
Technician	4	6%
Other	1	2%



## Further Assessment of Need



## Assess the Need

### TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ):

- A validated survey to measure individuals' perception of group-level team skills and behavior
- Self reported measure of teamwork within a unit
- Based on core TeamSTEPPS components: team structure, leadership, communication, mutual support and situation monitoring



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, 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.					

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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.					

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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.					

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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.					

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### March 2018 T-TPQ Administered to our staff

#	Answer	%	Count
1	OB attending physician	28.30%	15
2	Family medicine attending physician	0.00%	0
3	Anesthesia physician	7.55%	4
4	OB resident physician	24.53%	13
5	Labor and Delivery nurse	26.42%	14
6	Labor and Delivery technician	5.66%	3
7	Health Unit Coordinator	5.66%	3
8	Other	1.89%	1
	<b>Total</b>	<b>100%</b>	<b>53</b>

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### March 2018 T-TPQ Administered to our staff

#### Section Averages

	N	Statistics					
		Valid	Mean	Mean	Stiation	Percentiles	
					25	50	75
Team Structure Average	54	3.5	3.63	.7	3.1	3.6	3.9
Leadership Average	54	3.7	3.69	.8	3.3	3.9	4.2
Situation Monitoring Average	54	3.7	3.59	.6	3.3	3.7	4.0
Mutual Support Average	54	3.5	3.66	.7	3.1	3.6	4.0
Communication Average	54	3.7	3.81	.6	3.3	3.8	4.0

Results from AHQO validation studies of TTP-Q.

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## March 2018 T-TPQ Qualitative Responses

“Nurses communicate well with each other. *Nurse-physician communications is not as effective*, and it is difficult to approach most physicians with a different opinion without being met with condescension.”

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“Need better communication between all staff and patients. *Too many inform patient on different plans of care.*”

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“The trust and respect between RNs, RN and MD’s, and between Anesthesia and nursing is lacking. I see more people talking ABOUT rather than TO each other.”



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## Planning, Training, Implementation

Multidisciplinary Team STEPPS leadership team

Institutional and unit leadership, Maternal fetal medicine, General OB/GYN, Anesthesia, Nursing staff, Resident, Simulation center staff

Developed strategy for training everyone who works on the unit

Team STEPPS Master Trainer certification

2 Physicians and 3 Nurses

Available online, approximately 14 hours of content



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## Planning, Training, Implementation

Part 1 - Didactic session teaching concepts of Team STEPPS (1 hour)

Part 2 - Simulation-based training allowing participants to practice using Team STEPPS techniques (3 hours)

Utilized Obstetric simulations available online through Team STEPPS




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## Assessment of Simulation

- Evaluate the educational impact of the simulation (immediate impact)**
  - Pre- and post-simulation surveys administered
  - Followed Knowledge, Attitude, Practice (KAP) Paradigm
- Evaluate unit culture change (long term impact)**
  - T-TPQ administered immediately post simulation and then again 6 months after simulation
  - Data collection on-going



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## Immediate Impact of Simulation

- Pre-Survey administered via hard copy
- Included 3 anonymizing questions to generate an alphanumeric code to link to post-simulation surveys
- Post survey administered via email link attached with T-TPQ



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**Team STEPPS OB Simulation  
Pre-participation Evaluation**

(The first 3 questions are to assign you a de-identified code that will be used for data purposes only)

What is the final letter in your last name? \_\_\_\_\_

What is the first letter of your home street name? \_\_\_\_\_

What is the final digit of your phone number? \_\_\_\_\_

Please circle one answer for each of the following questions:

1. How confident are you in your knowledge of TeamSTEPPS communication tools?

Very Confident   Slightly Confident   Uncertain confidence   Little Confidence   Very little confidence

1. How confident are you that TeamSTEPPS can improve communication in L&D?

Very Confident   Slightly Confident   Uncertain confidence   Little Confidence   Very little confidence

1. How often do you utilize TeamSTEPPS tools in your current practice in L&D?

Daily   4-6 times a week   2-3 times a week   Once a week   Never



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### Immediate Impact of Simulation

- 150 pre-survey replies
- Received 58 post-simulation surveys (38.6%)
- Of 58 respondents, 42 were able to be correlated to pre-survey



### Immediate Impact of Simulation

	Valid	Missing	Mean	Median	SD	Interquartile Range	
						25	75
(Pre) Knowledge - How confident are you in your knowledge of TeamSTEPPS communication tools?	42	0	3.3	3.0	.8	3.0	4.0
(Post) Knowledge - How confident are you in your knowledge of TeamSTEPPS communication tools?	42	0	3.7	4.0	.8	3.0	4.0
(Pre) Attitude - How confident are you that TeamSTEPPS can improve communication in Labor and Delivery?	42	0	3.9	4.0	1.0	3.0	5.0
(Post) Attitude - How confident are you that TeamSTEPPS can improve communication in Labor and Delivery?	42	0	3.9	4.0	.9	3.0	4.3
(Pre) Practice - How often do you utilize TeamSTEPPS tools in your current practice in Labor and Delivery?	42	0	2.6	3.0	1.4	2.0	3.3
(Post) Practice - How often do you utilize TeamSTEPPS tools in your current practice in Labor and Delivery?	42	0	3.1	3.0	1.4	2.0	5.0



### Immediate Impact of Simulation

	Sig (p)
(Post) Knowledge - How confident are you in your knowledge of TeamSTEPPS communication tools? - (Pre) Knowledge - How confident are you in your knowledge of TeamSTEPPS communication tools?	.007
(Post) Attitude - How confident are you that TeamSTEPPS can improve communication in Labor and Delivery? - (Pre) Attitude - How confident are you that TeamSTEPPS can improve communication in Labor and Delivery?	.988
(Post) Practice - How often do you utilize TeamSTEPPS tools in your current practice in Labor and Delivery? - (Pre) Practice - How often do you utilize TeamSTEPPS tools in your current practice in Labor and Delivery?	.218

a. Wilcoxon Signed Ranks Test



### Immediate Impact of Simulation

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Little Confidence	7	16.7	16.7	16.7
Uncertain	19	45.2	45.2	61.9
Confident	14	33.3	33.3	95.2
Very Confident	2	4.8	4.8	100.0
Total	42	100.0	100.0	

  

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Little Confidence	4	9.5	9.5	9.5
Uncertain	7	16.7	16.7	26.2
Confident	27	64.3	64.3	90.5
Very Confident	4	9.5	9.5	100.0
Total	42	100.0	100.0	



### Sustainment

- Standardized Handoff
  - I PASS - (Illness Severity, Patient Summary, Action Items, Situation Monitoring, Synthesis)
- Scheduled Huddles
- Identification of Coaches - Information posted on labor and delivery unit



### Sustainment

#### Tracking Huddle Occurrences

- November 2018 94%
- December 2018 90%
- January 2019 94%



## Sustainment



### Plan / Do / Study / Act:

Repeat Teamwork Perceptions Questionnaire to monitor our ongoing progress

### Building Team STEPPS into our culture

Ongoing simulation program incorporating Team STEPPS concepts and AIM bundles

Including didactic content into unit orientation for new team members

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## Sustainment

Early return on qualitative data from long-term follow up:

**“The huddles are the most beneficial thing that has come from TeamSTEPPS”**

**“Evening sign outs still are not very inclusive of the whole team and could be much more cohesive.”**

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## Future Goals

**Does Team STEPPS improve our rate of adverse outcomes?**

**Does Team STEPPS impact our patient satisfaction with care?**

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