IMPROVING TEAMWORK IN MEDICAL EDUCATION

AHA Team Training Monthly Webinar
November 14, 2018
RULES OF ENGAGEMENT

• Audio for the webinar can be accessed in two ways:
  • Through the phone (*Please mute your computer speakers)
  • Through your computer
• A Q&A session will be held at the end of the presentation
• Written questions are encouraged throughout the presentation and will be answered during the Q&A session
  • To submit a question, type it into the Chat Area and send it at any time during the presentation
UPCOMING TEAM TRAINING EVENTS

Grab your cowboy boots and block your calendar - AHA Team Training is heading to San Antonio next June for our annual conference! We'll be sharing more conference information over the coming months, but first get ready to answer our Call for Proposals. Registration will open in January 2019.
UPCOMING TEAM TRAINING EVENTS

We have spots available in our final Master Training Course in 2018:

• December 6-7 in New Orleans, LA with Tulane University

Monthly webinars:

• December 12: “Taking Stepps to Sustain a Just Culture” with Lynn Fricke, MPS, RN and Ronnie McKinnon RN, JD, CPHRM, CPSO, CPPS, Adjunct Professor Health Law, Loyola Law School, Beazley Institute for Health Law and Policy
Web: www.aha.org/teamtraining
Email: TeamTraining@aha.org
Phone: 312-422-2609
TODAY’S PRESENTERS

Rick Lang
TeamSTEPPS Master Trainer
Medical Student – Class of 2019
Rutgers Robert Wood Johnson Medical School
Pat Tillman Foundation – Tillman Scholar

Tom Kuriakose
TeamSTEPPS Master Trainer
Medical Student – Class of 2019
Rutgers Robert Wood Johnson Medical School
STUDENT CHAMPIONS: OUR RWJMS STUDENT TEAM

Kevin Fitzpatrick
TeamSTEPPS Master Trainer
Medical Student – Class of 2019
Robert Wood Johnson Medical School

Kristin Raphel
TeamSTEPPS Master Trainer
Medical Student – Class of 2019
Robert Wood Johnson Medical School

Stephanie Latham
TeamSTEPPS Master Trainer
Medical Student – Class of 2021
Robert Wood Johnson Medical School
KEY SUPPORT / CHAMPIONS

Rutgers - Robert Wood Johnson

• Project Faculty Advisors
  – Dr. Carol Terregino, MD
  – Dr. Greg Peck, DO

• Additional Faculty Champions
  – Dr. Joyce Afran, MD
  – Dr. Robert Lebeau, EdD
  – Dr. Robert Like, MD
  – Dr. Karen Lin, MD
  – Dr. George Mulheron, PhD
  – Dr. Paul Weber, MD

AHA / AHRQ

• Abby Evensky
• Chris Hund
• Dr. Kevin Krane, MD
• Rita Preiskaitis, RN
WEBINAR LEARNING OBJECTIVES

• Discover how a combined student-faculty implementation team can enhance teamwork training within the academic medical center

• Learn challenges and limitations associated with attempts to teach teamwork through an ‘exposure-based’ model in academic curriculums

• Illustrate the importance of recurring teamwork barrier assessment in iterative teamwork training program improvement

• Understand how to apply lessons learned from this initiative to improve teamwork training programs at local academic institutions
DISCLOSURES

Financial: This work was partially supported with funding provided by:
1) American Medical Association (AMA)
   • Home Visit / Interprofessional Learner Team (ILT) Grant
2) Pat Tillman Foundation
   • Travel & scholarship support – Rick Lang

DOD: “The views expressed in this article reflect the results of research conducted by the author and do not necessarily reflect the official policy or position of the Department of the Navy, Department of Defense, nor the United States Government”
WEBINAR OUTLINE

• Background: Identifying & Understanding the Problem 5 min
• Initial TeamSTEPPS Intervention (High Points) 10 min
• Results & Survey Analysis 12 min
• Lessons Learned & Application 12 min
• Questions 15 min
BACKGROUND:
What is the problem?
“I am still unsure as to whether we were trying to help with his leg, disregard the leg and focus on blood pressure, or if any of us were on the same page (with each other or the patient) as to exactly what the patients goals and desires for his appointment were …”

- RWJMS M1 Student-Veteran Clinical Reflection
SPRING 2016: RESEARCH PHASE

Naval Safety Center & Trauma Systems

- High Reliability Organizations (HROs)
- Symposium: *Interprofessional Models in Global Injury Care & Education*
- Books:
  - *Why Hospitals Should Fly*
  - *Checklist Manifesto*

Culture of Patient Safety

- Institute of Medicine (IOM)
- Joint Commission
- Agency for Healthcare Research & Quality (AHRQ)
- Comprehensive Literature Review

Critical Component: “Teamwork”

- Joint Commission
- Competencies: IPEC, AAMC, RWJMS
- TeamSTEPPS Master Trainer Certifications
• 18% decrease in mortality ($p = .01$)

• Dose-response relationship:
  • For every increase in briefing / debriefing ➞ mortality reduced 0.6/1000 procedures
OVERVIEW OF RWJMS CURRICULUM

• Years 1 & 2 = “Pre-clinical” (didactics)
• Years 3 & 4 = “Clinical” (rotations)

• Longitudinal Patient Centered Medicine thread

• Existing “Teamwork” Curriculum: “EXPOSURE-based”
  • Repeated exposures to INTER & INTRAprofessional “team” environments
  • **NO INTEGRATED TEAMWORK TRAINING MODEL**
INITIAL TEAMSTEPPS INTERVENTION
Goals

1. Understand teamwork behaviors within existing “exposure-based” curriculum
2. Increase teamwork behaviors
3. Understand barriers to effective teamwork training in existing curriculum

“Hail Mary”: Ignite cultural change within the academic health system

Implementation Focus:  Preclinical curriculum ➔ Follow-on expansion to Clinical curriculum

Student-Faculty Implementation Team:  2 student-veterans + 2 faculty champions
## Three Selected Team Settings

<table>
<thead>
<tr>
<th>Team Setting</th>
<th>Student Year</th>
<th>Team Makeup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy Lab</td>
<td>M1</td>
<td>Intra-professional</td>
</tr>
<tr>
<td>Home Visit Program / Interprofessional Learning Teams</td>
<td>M2</td>
<td>Inter-professional</td>
</tr>
<tr>
<td>Promise Clinic</td>
<td>M1 - M4</td>
<td>Primarily Intra-professional</td>
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</tbody>
</table>
PROJECT TIMELINE

CONTROL GROUPS
- “Exposure-Based” Curriculum
- PRE-TeamSTEPPS

Clinical Reflection
Fall 2015

IRB Approval
Spring 2017

Initial Survey Assessment
July 2017

Tailored Student & Faculty Training
Aug/Sept 2017

90-Day Survey Assessment
January 2018

Revised AY 2018-2019 curriculum
IRB APPROVED SURVEY

- 43-item TeamSTEPPS-based survey
  - Teamwork behaviors
  - Frequency of briefing & debriefing
  - Curriculum effectiveness

- Limitations:
  - TS-TPQ & TS-TAQ competency domains combined
  - Slight modification for applicability to student curriculum
PROJECT TIMELINE

CONTROL GROUPS
- “Exposure-Based” Curriculum
- PRE-TeamSTEPPS
My team meets to discuss the team’s plan BEFORE team events:

- **ALWAYS**
- **MOST OF TIME**
- **ABOUT HALF THE TIME**
- **SOMETIMES**
- **NEVER**

Frequency of BRIEFING (All 3 team settings)

My team meets to discuss the team’s plan AFTER team events:

- **ALWAYS**
- **MOST OF TIME**
- **ABOUT HALF THE TIME**
- **SOMETIMES**
- **NEVER**

Frequency of DEBRIEFING (All 3 team settings)

- **60%** of 283 students reported NEVER or SOMETIMES for briefing & debriefing
- **Only 10%** of 283 students reported ALWAYS for briefing & debriefing
“Students don’t like working in teams because they don’t understand the fundamental importance of it.”

“…Limited tools are provided to teach students how to be effective team members of healthcare teams. Evidence-based methods are not taught.”

“…there needs to be training to teach us HOW to do dissections as a team.”

“School tends to tell us we’re going to be leaders one day, instead of showing us how to properly lead…”

“We did NOT have a team leader.” (multiple students)
PROJECT TIMELINE

- IRB Approval
- Initial Survey Assessment
- Tailored Student & Faculty Training
- 90-Day Survey Assessment

RESULTS

- Clinical Reflection
- Research/Plan

Fall 2015
Spring 2017
July 2017
Aug/Sept 2017
January 2018

Revised AY 2018-2019 curriculum
INITIAL TEAMSTEPPS INTERVENTION

• 90-minute didactic presentation (student-instructed)

• “RWJMS Teamwork Playbook”

• Targeted TeamSTEPPS competencies:
  • Teamwork = Patient Safety
  • Team Structure
  • Leading Teams
    • Briefing & Debriefing Frequency
  • Communication
AY 2017-2018 TRAINING COMPLETED

- 650 Students Trained
  - Instructed by Student TeamSTEPPS Master Trainers

- 80 Clinical Faculty Trained
  - AHRQ TeamSTEPPS Master Trainer Course
  - Dr. Kevin Krane, MD (Tulane University)
  - Rita Preiskaitis, RN (Tulane University)
**Team Set-Up / Structure**

- **Establish Designated Leader** (Situational leaders may emerge real time)
- **Select Team Size & Members**
  - Diversify talents/background
  - Involve Patient &/or Family
- **Set Brief Time**
- **Set Conditions for team success**
  - Sufficient personnel, training/skills, equipment / space, time needed

**Monitoring and Modifying the Plan**
- **Huddle** - Ad hoc meeting to re-establish situational awareness, reinforce plans already in place, and assess the need to adjust the plan

**Reviewing the Team’s Performance**
- **Debrief** - Informal information exchange session designed to improve team performance and effectiveness through lessons learned and reinforcement of positive behaviors

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**DEBRIEF Checklist**

- **Quick factual recap of events**
- **What went well?**
- **What can we improve?**
  - E.g. Errors or near misses?
  - E.g. Breakdowns in situational awareness
- **Did teamwork barriers exist?**
- **Did we achieve stated goal(s)?**
- **Clarity of roles / responsibilities**
- **Resource management**
- **Workload distribution**

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**Feedback**

Information provided to team members for the purpose of improving team performance

Feedback should be:
- **Timely** – given soon after the target behavior has occurred
- **Respectful** – focuses on behaviors, not personal attributes
- **Specific** – relates to a specific task or behavior that requires correction or improvement
- **Directed toward improvement** – provides directions for future improvement
- **Considerate** – considers a team member’s feelings and delivers negative information with fairness and respect

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**BARRIERS to TEAMWORK**

- Inconsistency in Team Membership
- Lack of Time
- Lack of Information Sharing
- Hierarchy
- Defensiveness
- Conventional Thinking
- Complacency
- Varying Communication Styles
- Conflict
- Lack of Coordination and Followup With Coworkers
- Distractions
- Fatigue
- Workload
- Misinterpretation of Cues
- Lack of Role Clarity
SBAR
A technique for communicating critical information that requires immediate attention and action concerning a patient's condition.

**Situation** – What is going on with the patient?
"I am calling about Mrs. Joseph in room 251. Chief complaint is shortness of breath of new onset."

**Background** – What is the clinical background or context?
"Patient is a 62-year-old female post-op day one from abdominal surgery. No prior history of cardiac or lung disease."

**Assessment** – What do I think the problem is?
"Breath sounds are decreased on the right side with acknowledgment of pain. Would like to rule out pneumothorax."

**Recommendation and Request** – What should I do to correct it?
"I feel strongly the patient should be reassessed now. Can you come to room 251 now?"

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Check-Back
Using closed-loop communication to ensure that information conveyed by the sender is understood by the receiver as intended.

The steps include the following:
1. Sender initiates the message
2. Receiver accepts the message and provides feedback
3. Sender double-checks to ensure that the message was received

**Example:**
- **Doctor:** “Give 25 mg Benadryl IV push”
- **Nurse:** “25 mg Benadryl IV push”
- **Doctor:** “That’s correct.”

**Application:**
Medication orders, Patient Hand-offs, complex or rapidly delivered important communication, etc.

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Call-Out
A strategy used to communicate important or critical information.

- **Benefits of Effective Teamwork**
  - Shared Mental Model
  - Improved Performance (Adaptability, Accuracy, Productivity, & Efficiency)
  - Improved Knowledge & Attitudes
  - Decreased Medical Error & Improved Patient Safety

**Patient HANDOFF**
"Poor handoff’s => Risk of Patient Harm"

**I** Illness Severity
- Stable, "watcher," unstable

**P** Patient Summary
- Summary statement
- Events leading up to admission
- Hospital course
- Ongoing assessment
- Plan

**A** Action List
- To do list
- Time line and ownership

**S** Situation Awareness and Contingency Planning
- Know what’s going on
- Plan for what might happen

**S** Synthesis by Receiver
- Receiver summarizes what was heard
- Asks questions
- Restates key action/to do items

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DESC Script
A constructive approach for managing and resolving conflict.

**D** Describe the specific situation or behavior; provide concrete data

**E** Express how the situation makes you feel what your concerns are

**S** Suggest other alternatives and seek agreement

**C** Consequences should be stated in terms of impact on established team goals; strive for consensus

**CUS**
Assessive statements:
- I am CONCERNED!
- I am UNCOMFORTABLE!
- This is a SAFETY ISSUE!

"Stop the Line!"

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Joint Commission Handoff Guidelines
1) Face-to-Face, two-way communication
2) Standardized handoff templates / procedures ("30% medical error reduction")
3) Make quality handoffs a cultural priority
4) Transfer ownership/responsibility

Rev(3): 7/1/18

References:
RESULTS
PROJECT TIMELINE

INTERVENTION GROUPS
• POST-TeamSTEPPS Training
DATA ANALYSIS

• Quantitative Analysis
  • Teamwork behaviors
  • Pre & Post mean scores by teamwork competency
  • Cohen’s-D effect size: magnitude of behavioral change

• Qualitative Analysis
  • Perceived Effectiveness of teamwork curriculum
  • Frequently expressed Implementation Barriers

• Graphically plotted for visual analysis
**Frequency of BRIEFING** (All 3 team settings)

- 60% of students reported ALWAYS or MOST OF THE TIME for briefing & debriefing
- Only 12% of students reported NEVER for briefing & debriefing
Areas of Training Focus

Magnitude of Change in Medical Student Teamwork Knowledge and Behaviors in Three Student Team Settings

- Team: M1 Anatomy Lab Students
- Team: M2 Home Visit / ILT Students
- Team: Promise Clinic

Legend:
- Cohens High Effect Line (0.8)
- Cohen’s Moderate Effect Line (0.5)
- Cohen’s Low Effect Line (0.2)

Bar Graph:
- Perceived Preparedness for Team Events
- Frequency of BRIEFING & DEBRIEFING
- LEADERSHIP Behaviors
- TEAM SET-UP/STRUCTURE Behaviors
- COMMUNICATION Behaviors
- MUTUAL SUPPORT Behaviors
- SITUATION MONITORING Behaviors
- Teamwork Attitudes
Open Response Analysis: Student Perceived Effectiveness of RWJMS Teamwork Training in Three Team Settings

- Promise Clinic: Ratio of Positive to Negative Responses
- M2 Home Visit / ILT: Ratio of Positive to Negative Responses
- M1 Anatomy Lab: Ratio of Positive to Negative Responses

Legend:
- Red: Post TeamSTEPPS Training
- Blue: Pre TeamSTEPPS Training
Variations Across Groups:
Teamwork Barrier Analysis
M2 Home Visit / ILT Student Comments:

- Intra-team training disparities
- Participation requirements not standardized across schools
- Team members not responding to team emails

Anatomy Lab Student Comments:

- "Too much": too many competing demands, too little time

Present in BOTH GROUPS

- Desired more small-group reinforcement through M1-M4
- Insufficient faculty support / knowledge of concepts

**TeamSTEPPS Evidence-Based Barriers to Teamwork**

Identified M2 Home Visit Programmatic Barriers

- Inconsistency in Team Membership
- Lack of Information Sharing
- Lack of Coordination and Follow-up With Coworkers

- Hierarchy
- Defensiveness
- Conventional Thinking
- Complacency
- Varying Communication Styles
- Conflict
- Distractions
- Fatigue
- Misinterpretation of Cues
- Lack of Role Clarity

Identified M1 Anatomy Lab Programmatic Barriers

- Lack of Time
- Workload
LESSONS LEARNED
PROJECT TIMELINE

Clinical Reflection
IRB Approval
Initial Survey Assessment
Tailored Student & Faculty Training
90-Day Survey Assessment

Fall 2015
Spring 2017
July 2017
Aug/Sept 2017
January 2018

Revised AY 2018-2019 curriculum
DISCUSSION: PROMISE CLINIC ENVIRONMENT

• No consistent teamwork barriers identified in student comments
  • Clear clinical application of TeamSTEPPS tools
  • Training and TeamSTEPPS tool use reinforced via Promise Clinic leadership
  • All Promise Clinic students received TeamSTEPPS training
  • Student-led appointments with consistent team member attendance

• Promise Clinic infrastructure/leadership allowed continuous real-time barrier identification and mitigation ➞ more effective teamwork training
KEY LESSONS LEARNED

1. “Exposure-based” curriculums result in **IMPROPER** teamwork habit patterns
   i. Medical education curriculums need an effective teamwork training model
2. Student-instructed TeamSTEPPS training is effective within medical education curriculum
3. Most limiting barriers to effective training were:
   i. Institutional/programmatically-imposed
   ii. Initially unforeseen in intervention planning
4. Magnitude of behavioral change is **INVERSELY** proportional to presence of barriers
5. **Effective training requires** RECURRING barrier analysis and ITERATIVE change
APPLICATION:
DESIGNING EFFECTIVE TEAMWORK TRAINING CURRICULUMS
PROJECT TIMELINE

**CONTROL GROUPS**
- “Exposure-Based” Curriculum
- PRE-TeamSTEPPS

**INTERVENTION GROUPS**
- POST-TeamSTEPPS Training

**RESULTS**

- Spring 2017
- July 2017
- Aug/Sept 2017
- January 2018

**Revised AY 2018-2019 curriculum**
TEAMSTEPPS-BASED CURRICULUM RESULTS (POST-INTERVENTION)

**Frequency of BRIEFING** (All 3 team settings)

My team meets to discuss the team’s plan **BEFORE** team events:

- **ALWAYS**
- **MOST OF TIME**
- **ABOUT HALF THE TIME**
- **SOMETIMES**
- **NEVER**

**Room for Improvement**

**Frequency of DEBRIEFING** (All 3 team settings)

My team meets to discuss the team’s plan **AFTER** team events:

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**Room for Improvement**
1. Students have **strong desire** for standardized teamwork training
2. Longitudinal TeamSTEPPS curriculum likely **more effective** than traditional single-dose course
   i. Two-day Master Trainer course not feasible within most academic curriculums
3. Suggested model: 30-45 min didactic + recurring small-group case-based application
4. Organized one-page pocket reference helpful (example: *RWJMS Teamwork Playbook*)
5. Sufficient Faculty support & coaching critical
6. Tie training into reward pathway (graded events) periodically to enhance student motivation
CONCLUSION
INSPIRED CULTURAL CHANGE

- Inspired Cultural Change
  - Expansion throughout medical school curriculum
  - Growth of TeamSTEPPS movement among Rutgers interprofessional schools
  - Integration of TeamSTEPPS into multiple hospital departments
  - Project briefings to RWJ Executive Council & RWJ/Barnabas Chief Medical Officer

- TeamSTEPPS Community Involvement
  - 2018 AHA Team Training National Conference – Poster
  - 2018 AAMC Accelerate Change in Medical Education Consortium – Case Study
“TeamSTEPPS has transformed how my team functions. We are so much more organized, directed, and efficient. Communication and knowledge of our roles has greatly increased. I think it has translated to better care for our patient and a better experience for students.”

- Student, Robert Wood Johnson Medical School
QUESTIONS?

• Stay in touch! Email teamtraining@aha.org or visit www.aha.org/teamtraining