Designing Measurement of TeamSTEPPS Implementation Success – a Civilian Perspective

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UNCHCS TeamSTEPPS experience

- Awarded AHRQ contract, TeamSTEPPS; Adoption in Action 10/2007
- Implemented in Pediatric ICU and Surgery ICU and Respiratory Therapy department as part of the contract
- Since spread to ED, Radiology, Medicine ICU, Medicine and Surgery Step-down units, L&D, Neonatal Critical Care Center and High-risk Ante partum/Post partum unit
- Spread at unit leaders request, not an org-wide initiative
- Training
  - 1.5 hours self-directed learning with video and 2 pre-readings
  - 1 hour interactive lecture with role play
  - Heavy emphasis on coaching in the unit
Objectives

• Learn why measurement is important
• Understand different types of measurement and value of each
• Have a list of sample measurements for TeamSTEPPS implementation
• Have a list of tools to help develop new measures for TeamSTEPPS
Why measure?

Only way to know if TeamSTEPPS implementation is successful
Only way to know if change is an improvement
Only way to know if improvement is lasting

Excellent way to make improvement visible to larger organization
Excellent way to encourage continued resource support
Excellent way to sustain change
Excellent way to nudge spread
What to measure?

Implementation Evaluation
- What did you do for TeamSTEPPS implementation?
- Was the implementation well executed?

Outcome Evaluation
- What difference has TeamSTEPPS made?
  - Short-term
  - Intermediate
  - Long-Term
Implementation Evaluation

Consider:
- Goals of the implementation – action plan, training plan, time frame
- Will the measures be meaningful to the stakeholders?
- Are the measures well specified?
- Did you meet the goals?
- Is the training well received?

Example Metrics:
- Number trained, Master trainer or fundamentals
- Participant training evaluations
Outcome Evaluation – Short-term

Consider:
  • Immediate goals of the training
  • Baseline measure

Example Metrics:
  • Change in knowledge or attitudes
  • TeamSTEPPS knowledge and attitudes test
Outcome Evaluation – Intermediate

Consider:
- Goals following training for change in behavior
- Baseline will be needed
- Likely to include observation, are the resources available?
- Are the measures well specified?
- Collect stories to support
Outcome Evaluation – Intermediate cont.

Example Metrics;

- Change in Leadership, Communication, Mutual Support, and Situation Monitoring behavior (observation)
  - TENTS
  - CATS
  - TeamSTEPPS Team Performance Observation tool
- Use of TeamSTEPPS tools that are part of the implementation design
  - Count of interdisciplinary AM rounds
  - Count of scheduled huddles
  - Count of post event (intubation, RRT call, etc) debriefings
- Reflective journals
- Interview
- Focus group
- Supporting stories
  - Harm/error prevented
  - Better approaches to fostering interpersonal relations
Value of Demonstrating Early Wins (Intermediate Outcomes)

Create some visible, unambiguous successes as soon as possible (6-18 months)

- Visible to large numbers of people
- Unambiguous
- Clearly related to the change effort

Why?

- Provide evidence that sacrifices are worth it
- Demonstrates that the intervention is adopted
- Reward change agents with a pat on the back
- Help fine-tune vision and strategies
- Undermine cynics and self-serving resisters
- Keep bosses on board
- Build momentum
Outcome Evaluation – Long-term

Consider:

• Qualitative and Quantitative changes as a result of knowledge, attitude and behavior change goals
• Baseline will be needed
• Can be more difficult to demonstrate a direct relationship (but worth it to try)
Outcome Evaluation – Long-term cont.

Example Metrics:

• Clinical measures (process and outcome)
  – Infection rates
  – Mortality, 30-day Mortality, 30-day Readmission rates
  – Reduced time for decisions or action

• Perception change
  – Patient Safety Culture Survey
  – Employee Satisfaction Survey
  – Patient Satisfaction Survey

• Change in frequency of adverse events (Global Trigger Tool), patient complaints, disruptive behavior corrective action
Demonstrating Success to Facilitate Spread
(Using intermediate and long-term measures)

Spread influence

• Difficult to decide if it will be worthwhile
• Value needs to be visible
• Need to demonstrate good feedback and monitoring processes
• Conformers (early and late majority and laggards) are more driven by performance and monitoring measures
Measuring Spread

**Awareness**
- Monitor communication activity based on plan
- Track inquiries for information
- Attempt to learn what motivated inquiries

**Decision**
- Has a commitment to implement been made

**Implementation**
- Stage of implementation; training of change/leadership team, action planning steps, design of training, etc.

**Learn from Failure**
- Increases understanding and may aid development of standards
UNC Measures of Implementation (unit level)

- Training evaluation – used the standard required for continuing education credit at UNC
- Number trained – tracked the percent of staff trained during implementation, goal was 100%
- Not included on Dashboard but reported back to implementation leadership team
UNC Health Care System TeamSTEPPS Dashboard

UNC Measures of Outcome - Short-Term (unit level)

- Knowledge and Attitude Change post initial training
- TeamSTEPPS Attitudes Questionnaire
- TeamSTEPPS Learning Benchmarks
- Not included on Dashboard but reported back to implementation leadership team
UNC Health Care System TeamSTEPPS Dashboard

UNC Measures of Outcome – Intermediate (unit level)
- Count of huddles completed as planned – marked on calendar
- Use of debriefing form
- Collecting and sharing stories
- Observations – example next slide

Other examples provided by collaborative participants
- Compliance with surgical safety checklist
- Compliance with Multidisciplinary rounds
- Diary
- Unplanned extubation
- Anecdotes of staff empowerment and use of TeamSTEPPS tools
UNC Health Care System TeamSTEPPS Dashboard

Measures of Outcome - Long-Term (org level)

- Clinical measures (process and outcome)
  - Infection rates
  - Reduced time for decisions or action
  - Perception change - dimensions or questions related to teamwork – examples next slides
    - Patient Safety Culture Survey
    - Employee Satisfaction Survey
    - Patient Satisfaction Survey

Other examples provided by collaborative participants

- Mortality, 30-day mortality, 30-day readmission rate
- Core Measures
- Ventilator associated pneumonia and Central Line Associated Bloodstream infection rate
- Sentinel events, patient falls, Medication reconciliation
UNC Health Care System TeamSTEPPS Dashboard

UNC Measures of Outcome - Long-Term (org level)

% of units reaching 90th %tile

HSOPS Teamwork Perception

Red – TS areas
Blue – Non-TS areas
UNC Measures of Outcome - Long-Term (org level)

% of units reaching goal

Employee Opinion Survey 'My unit works well together'

Red – TS areas
Blue – Non-TS areas
UNC Health Care System TeamSTEPPS Dashboard

UNC Measures of Outcome - Long-Term (unit level)

*Pediatric Intensive Care Unit*

**HSOPS Teamwork Perception**

- 2007
- 2008
- 2009
UNC Health Care System TeamSTEPPS Dashboard

UNC Measures of Sustainment (unit and org level) –
example of spreadsheet next slide

• Percent of TeamSTEPPS Units sustaining improvement
• Use selected measurable change
  – Interdisciplinary AM rounds
  – Scheduled huddles
  – Debriefing
  – Periodic observation
  – Reduced time for decisions or action – examples next slides
### UNC Health Care System TeamSTEPPS Dashboard

#### Measures of Sustainment (org level) – track quarterly

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<th>Unit/Area</th>
<th>Total # non-MD staff</th>
<th># w/ basic training</th>
<th># Master Trainers</th>
<th>% non-MD staff trained</th>
<th>Total # attendings &amp; fellows</th>
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UNC Health Care System TeamSTEPPS Dashboard

UNC Measures of Sustainment – Unit level

PICU ECMO Response Time

Pre - TS Training

Post - TS Training

Nov-07 Feb-08 Jun-08 Sep-08 Dec-08 Mar-09 Jul-09 Oct-09 Jan-10 May-10
UNC Measures of Spread (org level)
Tips to Remember

SMART goals
- **Specific**
- **Measurable**
- **Achievable**
- **Realistic**
- **Time-based**

Is the data collection for measurement burdensome?
Do you have a plan for ongoing measurement?
Can at least some of the measures be directly attributed to the TeamSTEPPS implementation?
Are the measures useful at the unit/area and organization level?
Are the results presented in a way that is easy to understand?
Summary – Why measure?

• Understand and improve your program
• Test the theory underlying your program
• Tell your program’s story
• Be accountable
• Inform the field
• Ongoing budget support

Source - Innovation Network

• Shows respect for hours and hours of time many have devoted to TeamSTEPPS Implementation on faith that it’s the right thing
• Helps sustain momentum and furthers continued innovation at the unit level
• Positive results reward senior leadership support
• Facilitates spread

UNC Health Care Experience
Measurement Tools

UNC Health Care System TeamSTEPPS Dashboard
  • http://www.med.unc.edu/cce/programs-initiatives/teamstepps

Will It Work Here? A Decisionmaker’s Guide to Adopting Innovations
  • http://www.innovations.ahrq.gov/resources/InnovationAdoptionGuide.pdf

The Innovation Network workbook to plan an evaluation of implementation and outcomes
  • http://www.innonet.org/client_docs/File/evaluation_plan_workbook.pdf

Institute for Healthcare Improvement - Improvement Tracker
  • http://www.ihi.org/ihi/workspace/tracker/
Knowledge and Attitudes Tests

TeamSTEPPS Attitudes Questionnaire

TeamSTEPPS Learning Benchmarks
Observation Tools

TeamSTEPPS Team Performance Observation Tool

Communication and Teamwork Skills Assessment (CATS)

Teamwork Evaluation of Non-Technical Skills (TENTS)
References


Fraser, S., *Accelerating the Spread of Good Practice, A Workbook for Health Care*, 2002

Kotter, J., *Our Iceberg Is Melting*, 2005
