SCHOOL OF NURSING
UT HEALTH SCIENCE CENTER®
ACE • ACADEMIC CENTER FOR EVIDENCE-BASED PRACTICE

IMPROVEMENT SCIENCE RESEARCH NETWORK

Dandelion Effect of a Team Training Program to Enhance Patient Safety and Quality

Kathleen R. Stevens, RN, EdD, FAAN, Michael Corneille, MD, and Frank Puga, PhD
Academic Center for Evidence-Based Practice
University of Texas Health Science Center San Antonio

Background

There is an urgent need for adoption of standardized training for interprofessional team communication:

- Inadequate communication is the largest contributing factor to the occurrence of errors and near misses in healthcare (IOM, 2000).
- Communication failures have been shown to be the leading cause of sentinel events, including preventable patient deaths, accounting for up to 80% of adverse events (AHRQ, 2008).

TeamSTEPPS is the evidence-based, standardized federal program for health care team training.

Until recently there has been no systematic TeamSTEPPS implementation in the UT System or State of Texas.

AIMS

The aims of this project were to:

1. Establish sustainable education programs and resources for TeamSTEPPS™ training in academic programs and clinical services, including a group of Master Trainers, core curriculum content, and approved courses.
2. Sustain and spread TeamSTEPPS™ training by making TeamSTEPPS training resources, developed through this project this project, broadly accessible via community engagement using established local and state-wide channels.
3. Evaluate and document the spread of TeamSTEPPS™ and its effects on team performance and patient safety.

Methodology

Following community engagement, TeamSTEPPS™ Master Trainer sessions and measures were implemented in with leadership from national trainers and in accordance with guidelines (AHRQ, 2008).

- 2 ½ day training sessions used the standardized training manual and techniques.
- November 2009-November 2011—four (4) sessions were held by the University of Texas Health Science Center at San Antonio (UTHSCSA), in collaboration with national implementation leaders.
- TeamSTEPPS™ concepts were introduced through multiple curricula venues.

Evaluation Framework

LEVEL	OUTCOME MEASURES	DESIGN
Level 4--Results Whether the affected clinical process or outcomes: increased production, improved care quality, reduced adverse events, decreased costs, or return on investment	Patient Satisfaction-Press-Ganey survey Process or practice changes- performance observations of SBAR, handoffs Staff work culture survey Patient safety culture survey (AHRQ) Adverse events abstracted from records	All indicators measured pre training and at 3 month intervals x 3.
Level 3—Transfer Whether participants change behavior in the workplace as a result of training	Teamwork behaviors during routine and simulated patient care-observation checklist	Pre and post non -participant observer of staff during routing care and students during simulation; videotapes of simulation used.
Level 2—Learning Whether the training increases knowledge, skills or attitudes	Teamwork knowledge test Survey of attitude towards teamwork Survey of self-perceived communication skills	Pre and post training measures for all indicators with staff and students
Level 1—Reaction Whether participants react positively to the training	Post training reaction survey (e.g., Will this training impact the way you do business?)	Post training measures for all indicators with staff and students

Evaluation of project impact continues through June 2012, focusing on assessment of integration of TeamSTEPPS principles into curricula.

RESULTS

Master Training sessions were held between November 2009 and November 2011. Almost 110 healthcare professionals from multiple disciplines, across the city, and across education and clinical agencies participated, filling each session to capacity.

Table 1. Demographics of Master Trainers

	Training 1	Training 2	Training 3	Training 4	Total	Total %
Administrators	7	5	7	3	22	20%
Clinicians	12	10	12	4	38	35%
Faculty	10	8	5	12	35	32%
Research Staff	2	1	1	0	4	4%
General Staff	0	2	0	4	6	5%
Residents	1	0	0	0	1	1%
Students	2	0	1	1	4	4%
Total	34	26	26	24	110	

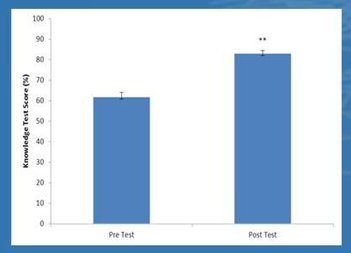

Figure 2. Pre and Post-Training Knowledge Test Scores. Master Training Sessions resulted in a significant increase in TeamSTEPPS knowledge (* $p < 0.01$).

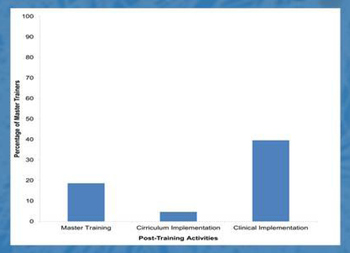

Figure 3. Post Training Activities. Master trainers contributed to sustainment and spread of TeamSTEPPS™ by engaging in various activities upon completing the Master Trainer Workshop.

DISCUSSION

Through well-placed resources from UT System , this project produced anticipated *and* unanticipated spread of the standardized team performance training. The unanticipated spread was dubbed the 'dandelion effect' and represents significant uptake across the city. The project :

- Catalyzed adoption of TeamSTEPPS as essential interprofessional competencies for patient safety.
- Created a sustained foundation for Master Training that resulted in an unanticipated spread and uptake of TeamSTEPPS™ principles in academic and healthcare settings.
- Built a cadre of Master Trainers engaged in various TeamSTEPPS™ activities including TeamSTEPPS™ training at local hospitals and clinics, quality improvement and safety initiatives, and integration of TeamSTEPPS™ into nursing and medical curricula.
- Evaluation continues through June 2012.

REFERENCES

1. Institute of Medicine (IOM). (2000). To Err is Human: Building a Safer Health System. National Academy Press. NAP.
2. AHRQ (2008). TeamSTEPPS National Implementation Project. http://teamstepps.ahrq.gov
3. IOM. (2001). Crossing the Quality Chasm: A New Health System for the 21st century. NAP.
4. IOM. (2003). Health Professions Education: A Bridge to Quality. NAP.

ACKNOWLEDGEMENTS

The investigative team acknowledges the vital support of funders and colleagues.

This project was supported by funding from The University of Texas System Healthcare Safety and Effectiveness Grants Program.

We thank Kandice Hall for her coordination of the Master Trainer Workshops.

Thank you to the entire ACE Team for their assistance with multiple aspects of this project.