



**2015 Duke AHEAD Grant Proposal**

email to [kristin.dickerson@duke.edu](mailto:kristin.dickerson@duke.edu) by August 21, 2015

**Title: Inter-professional Team Using TeamSTEPPS to Improve Elder Care**

**Principal Investigator:**

- **Maria Orsini**, EDD, RN, GRN, VHA-CM  
Nurse Educator Durham Veterans Affairs Medical Center (DVAMC)  
Master Trainer TeamSTEPPS  
Leader Elder Care in Hospital (ECHO) Geriatric Training, DVAMC

**Collaborator(s)/School(s)/Department(s):**

- **Cristina C. Hendrix**, DNS, GNP-BC  
Associate Professor – Duke University School of Nursing  
Core Investigator – GRECC, DVAMC  
Senior Fellow – Duke Center for Aging
- **Kevin McNamara**, BSN, MS, CCRN  
Simulation Lab Coordinator, DVAMC  
Master Trainer TeamSTEPPS
- **Rhonda Estok**, CRCST, RN, BSN, MPH  
Nurse Educator, DVAMC  
Master Trainer TeamSTEPPS
- **Monalesia Chapman**, MSN, RN, GRN, VHA-CM  
Nurse Educator, DVAMC

**Focused Question**

How will TEAMSTEPPS training affect the performance scores for situation monitoring, mutual support, and communication skills among the inter-professional team, including nurses and physicians, and will the total number of years of nursing experience impact nurses' scores?

**Background**

Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) were developed by the U.S. Department of Defense in collaboration with the Agency for Healthcare Research and Quality. TeamSTEPPS is an evidence-based teamwork model to improve communication and teamwork skills among healthcare providers. TeamSTEPPS has five key principles: team structure, communication, leadership, situation monitoring, and mutual support (AHRQ, 2015d). By implementing the five key principles, team members can effectively and timely decrease or eliminate barriers to quality and promote safe care environments through increased awareness (Martin, 2014). In 2014, the Joint Commission (2014) reported that the three main causes of sentinel events were, in order

of prevalence: 1) human factors, 2) leadership, and 3) communication. TeamSTEPPS consists of communication tools to prevent and reduce failures that occur when vital information is not communicated between team members or when team members incorrectly interpret messages (Brock, Abu-Rish, Chiu, Hammer, Wilson, Vorvick, Blondon, Schaad, Liner, & Zieler, 2013).

### **Specific Aims**

#### **1. Quantitative Aim:**

- a. Determine the correlation between the learner groups (RNs with less than one year of total experience and RNs with more than two years of total experience) and the TeamSTEPPS performance scores.
- b. On each sub-group, compare performance scores pre and post training using the TeamSTEPPS 2.0: Team Performance Observation Tool.

#### **2. Qualitative Aims:**

- a. Describe how the scenarios presented during the simulations trigger communication between members of the team.

### **Methods**

**Design:** This intervention study will use a pre-training/post-training mixed methods design. The intervention is TeamSTEPPS. Using the TeamSTEPPS 2.0: Team Performance Observation Tool, the study team will observe and rate the performance of members of the inter-professional team during the simulations, pre and post training. With the grant monies, videos will be developed that portray interactions between standardized elderly patients, family members, RNs, NAs, and other members of the inter-professional team. After watching the video-scenarios, RNs and physicians will have the option to actively engage and communicate face-to-face during the simulation; however, they will not be prompted to do so.

The study will use a total of 30 participants, not counting the inter-professional staff members present in the videos. The 30 participants will be divided into two major groups depending on the level of experience of the RNs (see Addendum B). Each major group will be divided in three sub-groups: SG1 to SG3 and SG4 to SG6. All subgroups (SG1 to SG6) will be composed of four RNs and one physician.

Each learner sub-group will complete the following steps (see Addendum B):

- 1) RNs will watch two different videotaped cases from Scenario A depicting interactions between members of the inter-professional team, elderly patient, and family;
- 2) participants (RNs and physicians) will have the option to communicate amongst themselves to address healthcare issues portrayed in the videos;
- 3) participants will attend a two-hour TeamSTEPPS training (intervention);
- 4) Repeat steps 1 and 2 with the use of Scenario B.
- 5) participants will participate in a focus group to obtain the qualitative data.

**Intervention:** The intervention consists of the following training elements: 1) facilitator's discussion of the fundamental elements of TeamSTEPPS; 2) reviewing video-vignettes (Johnson & Kimsey, 2012) from the AHRQ Patient Safety - YouTube portal (AHRQ, 2015a); and 3) learner demonstration of TeamSTEPPS skills (communication, monitoring and mutual support skills) using case studies.

**Setting and Participants:** Study participants are members of inter-professional teams, consisting of registered nurses (RNs), nursing assistants (NAs), and physicians. Group assignments will be based on total years of RN experience: first group consists of RNs with less than one year of total nursing experience and the second group consists of RNs with more than two years of total nursing experience. Participants will be deliberately kept ignorant of the group to which they have been assigned and about the focus of the training (Stuart-Hamilton, 2010).

**Data Collection:** Through observation, the study team will rate learners' skills in the areas of communication, monitoring and mutual support using the TeamSTEPPS 2.0: Team Performance Observation Tool. Each sub-group will watch a video with Scenario A pre-training and Scenario B post-training. The scenarios will have patient safety and risk components that should trigger participants to use communication tools to address safety concerns with the team. Videos containing the scenarios will use standardized patients, family and inter-professional staff. The use of standardized patients and the creation of the videos will be the two main sources of financial need (see Addendum A).

### **Outcomes and Measures**

1. TeamSTEPPS 2.0: Team Performance Observation Tool will measure the performance of the team in situation monitoring, mutual support, and communication. This tool has been validated for use in group training among healthcare providers (AHRQ, 2015d). This tool provides a rating scale of 1 to 5. A score of 1 means that the team demonstrated the use of the skill very poorly, a score of 2 means poor, a score of 3 means acceptable, a score of 4 means good, and a score of 5 means excellent (AHRQ, 2015b).
2. To determine the impact of TeamSTEPPS training in learner's experience, participants will be asked the following: describe how the scenarios presented during the simulations trigger communication between you and the rest of the team.

### **Data Management and Analysis**

Within group differences (pre vs post) will be analyzed using paired t tests. Analysis of variance (ANOVA) will be used to explore the differences across the two groups that

have RNs at different levels of nursing experience. All tests will apply a  $p=0.05$  level of significance. Qualitative data will be analyzed using a thematic analysis.

**IRB status:** Currently, we are applying for exemption of IRB review because this study has two qualifying criteria for exemption: 1) research conducted in established or commonly accepted educational settings, involving normal educational practices; and 2) research involving the use of educational tests survey procedures, interview procedures or observation of public behavior (USDVA, 2015).

### **Challenges**

- 1) The pre-training -post elements of the study will be all completed in one day for each sub-group to minimize possible historical confounding variables that could occur if there is a larger span of time between the pre and post observations.
- 2) The study needs six physicians. Problems involving physicians in TeamSTEPPS studies have already been recorded (Thomas & Galla, 2013; Sheppard, Williams, & Klein, 2013). To mitigate the challenge of having physicians available for an approximate period of 3.5 hours, a monetary incentive of \$300 per day will be budgeted for physician participants.

### **Sustainability**

Implementing this research will help us achieve two main goals: 1) sustain the current Geriatric Training Program at the Durham Veterans Affairs Medical Center, that is part of the hospital-wide Elder Care in Hospital (ECHO) program; and 2) spread the use of TeamSTEPPS safety-and-inter-professionally oriented communication tools among members of inter-professional teams. The videos created will serve as educational tools for the geriatric nurses to educate others on the importance of assessing and addressing as a team, the unique needs of the geriatric population.

We agree with Thomas and Galla (2013) when they stated, “staff practices in an interdisciplinary environment, so should they train” (p. 400). In their research, Thomas and Galla (2013) implemented a variety of strategies to sustain a culture of safety, such as the following: 1) using TeamSTEPPS Master trainers; 2) obtaining buy in from leadership and managers; 3) developing inter-professional training; 4) embedding the model in processes, policy, and on-boarding, and education. Additionally to all of these strategies, Noeller and Smith (2015), who have been using TeamSTEPPS in the in MetroHealth Medical Center for years, explained the importance of creating a TeamSTEPPS Action Council. This council would be interdisciplinary, empowering, and their goals will interface with the operations of the units. Some of these strategies have already been implemented at the Durham VA. A very important action is to plan sustainment from the preparation stage and that is what the study team plans to do, starting with the creation of a steering committee (Noeller & Smith, 2015).

**Opportunities for Subsequent Scholarship** After the study is completed, the study team will submit an article for publishing and will seek presentation opportunities at national conferences.

## Broader Impacts

Using and sustaining TeamSTEPPS may have a major impact in the culture of patient safety. Ferguson (2008) stated, “TeamSTEPPS transforms culture. [...] The ability to export TeamSTEPPS to many different health care settings and populations is an indication that teamwork can transform the culture of an organization through a variety of different ways” (p. 124). AHRQ (2015c) provides specific strategies to sustain the plan, such as teamwork coaching, integration, reinforcement, continuous improvement, and spread. Researchers are planning to implement such strategies to sustain the use of TeamSTEPPS.

## Timeline

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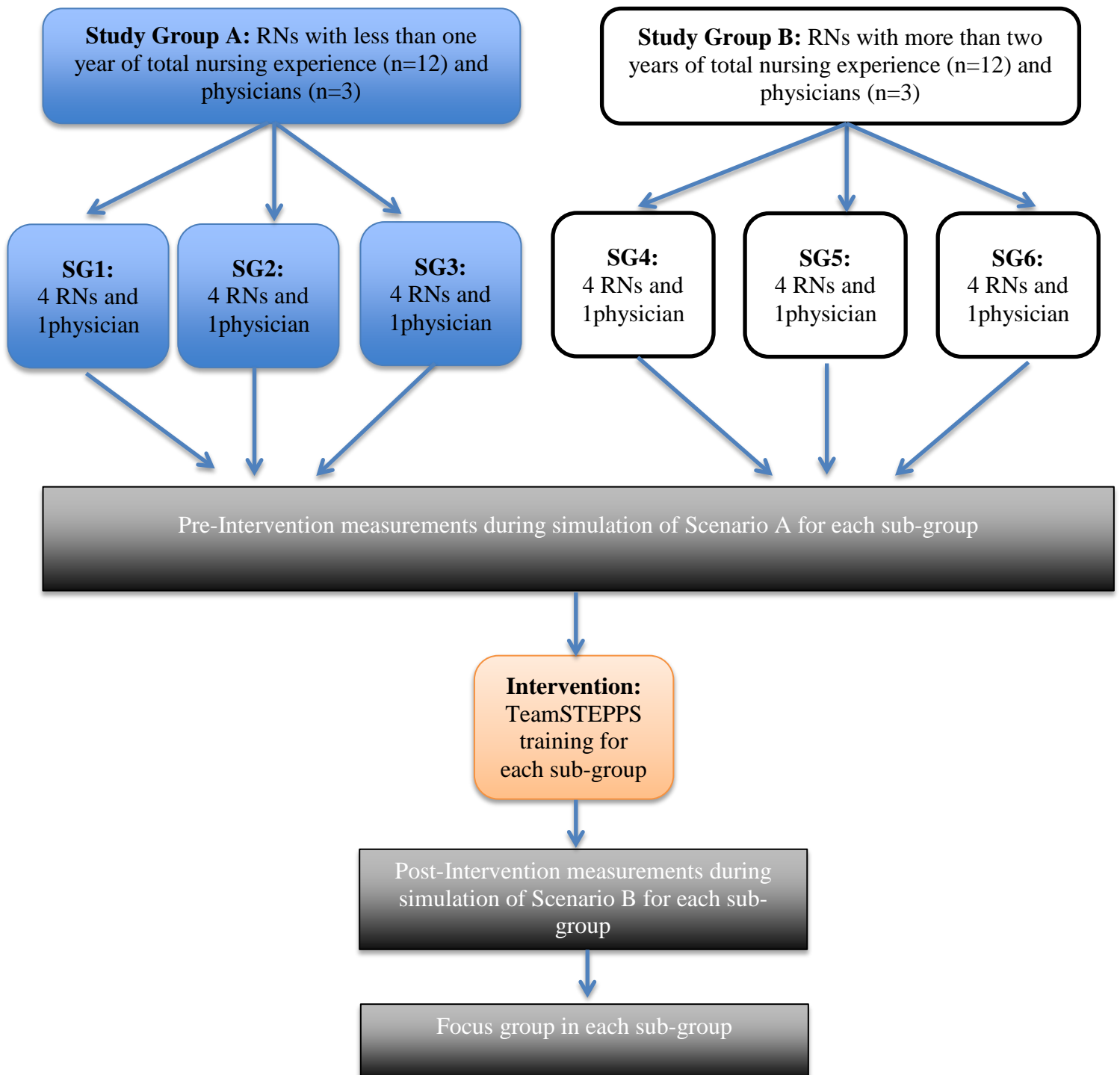
## Addendum A Resource Needs and Budget

Funding will be used primarily on the development of videos with standardize patients and rooms to film the videos and film the focus groups for the qualitative research.

### Budget:

Item	Description	Estimated Cost
Developing Video & Studio Services	\$600 per day (\$600 x 6) Estimate from Andrew Buchanan, Manager Studio Services, Duke	\$3,600
Standardize Patients for Videos	\$50 per hour minimum of 3 hours or \$150 (\$150 x 6) Estimate from Kelly Brandford Clinical Skills Program Coordinator, Duke	\$900.00
Rooms for Filming Videos	Cost per room: \$125/half day \$200/full day (\$200 x 6) Estimate from Kelly Brandford Clinical Skills Program Coordinator, Duke	\$1,200
Gratuuity for participation	\$100 per day per person (\$100 x 12)	\$1,200
Video of focus groups/qualitative study	\$75 per hour x 6 Estimate from Andrew Buchanan, Manager Studio Services, Duke	\$450.00
<a href="#">TeamSTEPPS 2.0 Pocket Guide AHRQ 14-0001-2</a>	\$2.50 each x 30	\$75.00
Food		\$475.00
15% VA charges in administrative fees		\$1,500
<b>Total Costs for Proposed Project</b>		<b>\$10,000</b>

**Addendum B**  
**Diagram of Study Design**



Legend: SG = Sub-group

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