Planning Phase of a TeamSTEPPS®

Interprofessional Collaboration Program

for Employee Health Clinics for a School System

A Capstone Report Submitted in Partial Fulfillment of the Requirements

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Abstract

The purpose of this inquiry was to perform a pre-training readiness assessment prior to undertaking a TeamSTEPPS ® (Team Strategies and Tools to Enhance Performance) based-initiative in employee health clinics for a metropolitan school system. With two locations, one clinic is nestled in the inner city, while the other sits on the outskirts of the county. The stakeholder participants, three members of management, three nurse practitioners and three medical office assistants, composed the organizational level change team. A site assessment was performed which revealed management's eagerness to embark on a team-training program as measured by the TeamSTEPPS® Organizational Readiness Assessment. Most stakeholder participants had positive attitudes about the role of teamwork in the delivery of health care and strategies for health care professionals to enhance core teamwork skills as measured by the TeamSTEPPS® Teamwork Attitudes Questionnaire. Most also had positive teamwork perceptions as measured by the TeamSTEPPS® Teamwork Perceptions Questionnaire. To identify challenges, separate focus group discussions were held with the stakeholder participants and facilitated per the evaluator and a human resource specialist. Content analysis was conducted initially by a colleague and later by the evaluator. The primary barrier to interprofessional collaboration was perceived as communication. Participants identified a number of strategies to provide solutions. The final component, definition of the goal for a TeamSTEPPS® initiative, brought forth training as a best practice in positioning healthcare team members to overcome barriers to interprofessional collaboration. Advancing to the implementation phase of TeamSTEPPS® program was the final recommendation of this assessment.

Background and Significance

Reducing the number of uninsured is a formidable challenge in healthcare reform that requires innovative solutions to address an increased demand for outpatient services and efficiency in accommodating increased volume (Litvak & Bisognano, 2011). Such challenges have prompted unique solutions. More and more businesses and organizations are linking with healthcare systems to invest human capital and resources into humane care for their insured and uninsured employees. Inventive alliances are creating convenient access to points of care before, during, and after work hours, which translates into a win-win situation for all stakeholders (Schoen, Doty, Robertson, & Collins, 2011). To guarantee that such outpatient initiatives evolve into hubs of care that provide high-quality and cost-effective patient outcomes, interprofessional collaboration has been cited for improving patient care and population health outcomes by the American Association of Colleges of Nursing (American Association of Colleges of Nursing, 2006). One of the Doctor of Nursing Practice (DNP) essentials articulated by AACN introduces "interprofessional collaboration for improving patient and population health outcomes (American Association of Colleges of Nursing, 2006, p. 14)," as a requisite essential to DNP practice. Interprofessional collaboration is known for building knowledge synergistically, embracing the strengths of each team member, and leading to a greater knowledge base (So & Bonk, 2010).

From a historical perspective (Table 1), collaboration has moved from a model of "parallel" practice to one of "integrative" practice (Boon, Verhoef, O'Hara, & Findlay, 2004). Although collaboration is intended to provide meaning regarding the relationships that exist among a variety of healthcare providers who work together to provide delivery of healthcare services, it is frequently demonstrated primarily through teamwork.

Table 1.

Collaboration practice models

Type of Practice	Description
Parallel Practice	• There is very little collaboration between healthcare providers. • The concept is similar to that recognized in toddlers known as parallel play. • Each provider functions independent of one another even when working in a collaborative setting. • Providers work within their independent scope of practice but do not collaborate in the delivery of healthcare. • There is little recognition of the unique contributions that a variety of healthcare team members can make to delivery of healthcare.
Consultative Practice	• One scope of practice may be dependent on another and one provider is seen as expert over another; for example, in advanced practice nursing, nurses in some states are constrained by boards of nursing and/or boards of medicine to demonstrate that a physician oversees the advanced practice of the nurse using a consultative role. • Depending on the situation, a consultative practice may be as restrictive as a formalized chart audit, or as professional as a referral. • Collaboration is situational, depending on regulation or professional expectations and depending on the situation, there may be little recognition of the unique contributions that a variety of healthcare team members can make to delivery of healthcare.
Collaborative practice	• One scope of practice may be dependent on another but there is less emphasis on the notion of expert over novice. • As with the consultative practice model, advanced practice nurses in some states are constrained by boards of nursing and/or boards of

Table 1 (continued)

Type of Practice	Description
	• medicine to demonstrate that a physician oversees the advanced practice of the nurse using a collaborative role. • The collaboration is situational. Depending on regulation or professional expectations and depending on the situation, there may be little recognition of the unique contributions that a variety of healthcare team members can make to delivery of healthcare.
Coordinated Practice	• An administrative process manages collaboration between healthcare providers. • Each provider functions independent of one another but collaborates in patient care under a coordinated or case management umbrella, permitting providers to work within their independent scope of practice. • Each provider also offers recognition of the unique contributions that a variety of healthcare team members can make to delivery of healthcare.
Multidisciplinary Practice	• A team approach leads collaboration between healthcare providers. • Each provider functions independent of one another but collaborates in patient care under a teamwork umbrella. • Providers work within their independent scope of practice, but also offer recognition of the unique contributions that a variety of healthcare team members can make to delivery of healthcare
Interdisciplinary Practice	• A group approach fosters collaboration between healthcare providers. • Each provider functions independent of one another but collaborates in patient care under a consensus umbrella. • Providers work within their independent scope of practice, but also offer mutual recognition of the unique contributions that a variety of healthcare providers can make to delivery of healthcare

Table 1 (continued)

Type of Practice	Description
Integrative Practice	• There is a commitment to a philosophy driven Structure-Process-Outcomes (SPO) approach that empowers collaboration between healthcare provider. • Each provider functions independent of one another and collaborates in patient care under the SPO umbrella. • Providers work within their independent scope of practice, and also demonstrate mutual respect for the unique contributions that a variety of healthcare providers can make to delivery of healthcare.

Adapted from Boon, H., Verhoef, M., O'Hara, D., & Findlay, B. (2004). From parallel practice to integrative health care: a conceptual framework. *BMC Health Services Research, 4*(1), 15.

Today's practice model goal is one of interprofessional collaboration (American Association of Colleges of Nursing, 2006). In this type of practice, one would expect significant collaboration between healthcare providers. Each provider functions independently and within his independent scope of practice, yet fully collaborates as needed to produce high-quality, cost-effective delivery of healthcare. In this model, there is shared decision-making and mutual respect for the unique contributions that all healthcare professionals can make to delivery of healthcare.

Problem Statement

In the state of Tennessee, 63% of families with at least one full-time worker are uninsured (The Henry J. Kaiser Family Foundation, 2009). As healthcare costs continue to rise and the number of uninsured workers with jobs increase, companies are looking for ways to help their employees with healthcare (Liner, 2007). In an effort to bridge the gap and assist employees with healthcare, more and more companies within the United States (U.S.) are providing in-house health clinics (Liner, 2007). The school system (SS), the fourth largest school district in Tennessee, has over 6,000 employees. In March 2010, the SS, under the direction of their department of Coordinated School Health and in conjunction with the hospital system (HS), developed employee health clinics (EHCs) for the school district to provide comprehensive patient care services.

The clinics are conveniently housed in two sites (Grey's Creek and Flicker locations) of the SS' Boards of Education. The Grey's Creek location is in the rural suburb of Arlington while the Flicker location is in the city of Memphis. Both locations are staffed by HS employees. Selected HS employees treat the employees of the SS while serving as the frontline staff for the clinics. Nurses, medical assistants and a supervising physician, who is also the medical director,

comprise the healthcare teams at the EHCs. These team members, who have been working together for two years, are growing into their roles and responsibilities in the clinic settings. As HS employees, these stakeholders are in the best position to identify the need for change in service delivery processes (Moran & Johnson, 1992).

The EHCs offer a wide range of services. Comprehensive patient care services include health and safety promotion, mandated health screenings, urgent, non-urgent, and follow-up care. These services include, but are not limited to injury/illness care, customized physical evaluations, surveillance screening, drug and alcohol testing, immunizations and health/safety promotions. Ideally, the clinics and staff members should mirror each other's efforts to provide consistent, effective, cost efficient, evidenced-based care. Comparable to foreigners in an unfamiliar land with passports and no tour guides, HS employees are gradually gaining knowledge of SS' protocols, chain of command and territory. As employees, while learning the essentials, the clinics have steadily increased their volume and their services over the past two years. More procedures, more laboratory tests, and more equipment quality assurance checks have caused staffing and training concerns. These concerns have prompted the supervising physician to work closely with the nurse practitioners and the nurse practitioners to work closely with the medical assistants. Lively discussions resulting in varying opinions on teamwork and its influence on practice and patient care have emerged. However, all staff members concur that the best teams are those that are well-trained. To date, no effective interprofessional collaboration interventions based on the existing relevant evidence have been assessed, planned or implemented for the staff members of the EHCs. The purpose of this inquiry was to perform a pre-training readiness assessment in a TeamSTEPPS® interprofessional collaboration program in the EHCs for the school district.

TeamSTEPPS® is a jointly promulgated program by the Agency for Healthcare Research and Quality (AHRQ) and the Department of Defense (DoD). It was originally designed to contribute to patient quality and safety initiatives that grew from the airline industry, national defense programs, and other safety-focused organizations (Agency for Healthcare Research and Quality, 2011). Although the initial intent was to apply the quality and safety initiatives to traditional acute care settings, the evidence-based teamwork process is broadly applicable to other healthcare organizations focused on improving communication and teamwork skills among healthcare professionals (Agency for Healthcare Research and Quality, 2011). The TeamSTEPPS® initiative seeks to optimize patient outcomes by:

- producing highly effective healthcare teams that optimize the use of information, people, and resources to achieve the best patient outcomes;
- increasing team awareness and clarifying team roles and responsibilities;
- resolving conflicts and improving information sharing; and
- eliminating barriers to teamwork (Agency for Healthcare Research and Quality, 2011).

The TeamSTEPPS® initiative offers a three-phased process focused on creating and sustaining a collaborative culture using a:

- pre-training readiness assessment phase;
- training for trainers and healthcare staff phase; and
- implementation and sustainment phase (Agency for Healthcare Research and Quality, 2011).

Brown (2010) believed TeamSTEPPS® has the ability to revolutionize the way healthcare professionals work together as a team and communicate during challenging times. The program was first developed in 2006 and AHRQ has been providing training primarily to acute care

institutions and healthcare organizations at no charge. Initial resource centers were established at Duke Medical Center, Durham, NC; Carilion Clinic, Roanoke, VA; University of Minnesota Fairview Medical Center, Minneapolis; Creighton University Medical Center, Omaha, NE; and University of Washington Medicine, Seattle. Once the pre-training readiness assessment phase is completed, a decision is made as to whether to move forward with the planning and the implementation phase. Clancy (2007) showed that the TeamSTEPPS® National Implementation Project provides support and guidance for the Team Resource Centers identified above, and their trainees, through a user support network. The network ensures proper implementation of TeamSTEPPS® principles by offering channels of communication through webinars, a toll-free telephone line, and a web site. Trainees also receive continuing education through new tools and measures that are researched, developed, and validated to supplement the curriculum. After training, facilitators return to the organization to develop a project plan for all staff (Ferguson, 2008). A variety of strategies have been used to implement TeamSTEPPS® principles to optimize patient care outcomes, including storytelling, webinars and training modules on CD-ROM and on-line (Rabinowitz, Johnson, Mazzapica, & O'Leary, 2010).

Empirical Evidence on Teamwork

Teamwork

Within the arena of teamwork, there have been several recent meta-analyses (Salas, DiazGranados, Klein, et al., 2008; Salas, DiazGranados, Weaver, & King, 2008; Salas, Nichols, & Driskell, 2007) and at least one in-depth report (Sorbero, Farley, Mattke, & Lovejoy, 2008). A meta-analysis was conducted which restricted the inclusion criteria to three specific training strategies: cross-training, team coordination and adaptation training and guided team self-correction training (Salas, DiazGranados, Klein, et al., 2008; Salas, DiazGranados, Weaver, et

al., 2008; Salas et al., 2007). Salas, DiazGranados, Weaver & King (2008) and Salas, Nichols & Driskell (2007) performed a comprehensive search spanning 53 years. Over 300 empirical articles comprised of 245 journal articles, 33 conference presentations, 20 theses/dissertations, 13 book chapters, 13 technical reports and 3 unpublished works, were utilized (Salas, DiazGranados, Klein, et al., 2008; Salas, DiazGranados, Weaver, et al., 2008; Salas et al., 2007). The 300 articles represented over 10,000 teams, 181 of which were medical (Salas, DiazGranados, Klein, et al., 2008; Salas, DiazGranados, Weaver, et al., 2008; Salas et al., 2007). Each study in this database examined the effects of team training on performance (Salas, DiazGranados, Klein, et al., 2008; Salas, DiazGranados, Weaver, et al., 2008; Salas et al., 2007). Depending on the type of team training and the outcomes measured, each study was coded and assessed to ascertain whether it was usable for the hypotheses.

Salas, Nichols & Driskell (2007) hypothesized that team coordination and adaptation training increased team members' knowledge of specific teamwork skills. The analyses looked at cross-training (CT), team coordination adaptation training (TCT) and guided team self-correction training (GSC). Overall, team training was found to improve performance (r = .29), accounting for 8.4% of variance (Salas, et al., 2007). It was also discovered that team training effectiveness with TCT (r = 61), accounted for 37.2% of variance, GSC (r = .45) accounted for 20.0% of variance and CT (r = - .09) had no effect (Salas, et al., 2007). Independent contributions to team training effectiveness TCT (r = .30) accounted for 9.0% of variance. Cross-training and guided team self-correction training were found to be insignificant in making independent contributions.

Salas, DiazGranados, Klein, et al. (2008) hypothesized that the use of the meta-analyses can gauge the effectiveness and boundary conditions of team training interventions for enhancing team outcomes and determine the true strength of the relationships between team training

techniques and team outcomes. In a parallel investigation, Salas, DiazGranados, Weaver and King (2008), hypothesized that team training interventions, were potential moderators of the relationship between team training and outcomes. Evaluating training content, team membership stability, and team size as potential moderators of the relationship between team training and outcomes, revealed that moderate, positive relationships exist between team training interventions and each of the outcome types (Salas, DiazGranados, Weaver, et al., 2008). Training content, team membership stability, and team size proved useful in improving cognitive outcomes, affective outcomes, teamwork processes, and performance outcomes. Moreover, results suggested that training content, team membership stability, and team size moderate the effectiveness of team training interventions (Salas, DiazGranados, Weaver, et al., 2008). When reflecting on teamwork, which is defined as the interaction and relationships between two or more health professionals who work interdependently to provide safe, quality patient care, one must be cognizant of the interrelated set of specific knowledge (cognitive competencies), skills (affective competencies), and attitudes (behavioral competencies) required for an interprofessional team to function as a unit (Salas, DiazGranados, Weaver, et al., 2008). Overall team training was found to have a moderate to positive effect on team functioning (p =.34), while the effects on team training had distinct outcomes on cognitive outcomes (p =.42), affective outcomes (p =.35), process outcomes (p =.44) and performance outcomes (p =.39) (Salas, DiazGranados, Klein, et al., 2008; Salas, DiazGranados, Weaver, et al., 2008).

The link between teamwork and patient outcomes was demonstrated by Sorbero et al. (2008) in a review of 16 studies categorized into three groups: (1) cross-sectional studies of the effects of teamwork practices on organizational processes and patient outcomes, (2) quasi-experimental pre/post studies that examined the effects of interventions to improve teamwork

and communication on care delivery processes, and (3) quasi-experimental studies that evaluated formal teamwork-training programs, which had a variety of study designs regarding pre/post measurement and use of controls. Teamwork effects on behaviors on the job or simulations and organizational impacts were examined (Sorbero et al., 2008). The strongest and most consistent evidence of a relationship between teamwork and patient safety derived from cross-sectional studies performed in ICUs, where adverse events occur frequently enough to detect variations (Sorbero et al., 2008). Nurses' assessments of better teamwork were related to lower risk-adjusted mortality rates and ICU length of stay for medical ICU patients, but not for surgical ICU patients (Sorbero et al., 2008). Interventions to improve teamwork and communication have been shown to enhance teamwork on the quality-of-care processes. One of the key limitations to the studies examining teamwork interventions was that they were frequently implemented at the same time as other quality improvement interventions, proving difficult to isolate the effects of the teamwork component of the intervention (Sorbero et al., 2008). Furthermore, all but one of the intervention studies used a combination of pre-/post-intervention without a control group and post-only methods to evaluate the intervention; therefore, it was not possible to determine whether observed differences were due to the intervention of interest or to other factors that might be occurring simultaneously and affecting the outcomes examined (Sorbero et al., 2008). Sobero et al. (2008) demonstrated empirical support for the relationship between teamwork behaviors (e.g., coordination, mutual respect, role clarity, shared goals, debriefing) and clinical patient outcomes (e.g., risk-adjusted mortality, cardiac arrests, nosocomial infections, adverse events, adverse drug events, complications).

Manser, Harrison, Gaba and Howard (2009) highlighted the importance of effective teamwork, team training and the need for teams to respond dynamically to changing task

requirements during crisis situations. Coordination patterns in response to the occurrence of a crisis situation showed that higher performing anesthesia crews exhibit statistically significant less task distribution ($\beta = 0.54$, $p < 0.01$) and significantly more situation assessment ($\beta = 0.57$, $p < 0.05$). The lower scoring groups were more likely to work separately, providing evidence that teams are more effective when they are trained and work together (Leggat, 2007; Manser et al., 2009; Parker et al., 2010). Parker et al. (2010) established the utilization of teamwork, after team training, with an inter-disciplinary team approach to tracheostomy management in non-critical care, led to significant reductions in mean hospital length of stay (LOS) for survivors from 50 to 27 days ($p < 0.001$) and an increase in staff knowledge, confidence and awareness of the team's role.

Overall, the teamwork studies added to the growing evidence that individual skill development, individual accountability and achievement results from teamwork and existing models of health professional training (Chang, Ma, Chiu, Lin, & Lee, 2009; Leggat, 2007; Manser et al., 2009). Team-training provides an effective vehicle for optimal-based competencies for teamwork in the healthcare setting (Chang et al., 2009; Leggat, 2007; Manser et al., 2009; Parker et al., 2010).

TeamsSTEPPS®

Branching from aviation, TeamSTEPPS®, a training-based initiative, was designed to improve team performance, efficiency, communication and safety in healthcare (Agency for Healthcare Research and Quality, 2011; Clay-Williams & Braithwaite, 2009). Health services were delivering aviation crew resource management (CRM) style training to medical staff, with the aim of improving teamwork behaviors and reducing errors (Agency for Healthcare Research and Quality, 2011; Clay-Williams & Braithwaite, 2009). Studies confirmed TeamSTEPPS® as an

intervention that increases student team skills (Clay-Williams & Braithwaite, 2009), patient safety culture (Mayer et al., 2011), and team knowledge, skills and attitudes (Stead et al., 2009).

Although the initiative has a high profile currently in health care circles, little empirical evidence exists in the literature. Optimum one day training content has been studied (Clay-Williams & Braithwaite, 2009). Clay-Williams and Braithwaite (2009), in their educational intervention for nursing and medical students, found that a 4 hour team training program was highly effective, while Mayer et al. (2011), in an implementation of a TeamSTEPPS® program in a Pediatric and Surgical ICUs, documented a 2.5 hour training session to be sufficient.

Knowledge, attitude and communication are integral components to any patient safety culture and Clay-Williams and Braithwaite (2009) found statistically significant differences with participant knowledge ($p < 0.001$) and attitude ($p = 0.004$) after TeamSTEPPS® training. The students improved their knowledge of vital team and communication skills, attitudes toward working as teams, and were able to identify effective team skills (Clay-Williams & Braithwaite, 2009). Mayer et al., (2011) observed team performance significantly improved for all core areas of competency at 1 month post-implementation and remained significantly improved for most of the core areas of competency at 6 and 12 months post-implementation. Survey data indicated improvements in staff perceptions of teamwork and communication openness in both units.

From patient safety culture to patient outcomes, Riley et al. (2011) found a statistically significant and persistent improvement of 37% in perinatal morbidity between the pre- and post-intervention for the hospital exposed to the simulation program. Mayer et al. (2011) found that the rate of nosocomial infections at post-implementation was below the upper control limit for 7 out of 8 months in both the PICU and the SICU. Overall, the studies revealed that TeamSTEPPS® implementation had a substantial impact on patient safety culture, teamwork and

encouraged a culture of learning from patient safety incidents and making continuous improvements (Clay-Williams & Braithwaite, 2009; Mayer et al., 2011; Riley et al., 2011; Stead et al., 2009).

Summary

In summary, the aforementioned systematic research reviews and individual studies support the significance of collaboration, teamwork and TeamSTEPPS® in healthcare process improvement. Collaboration, which is integral to the practice of successful teams, allows healthcare providers to utilize teamwork in their approach to patient problems that are too complex to be solved by one discipline or multiple disciplines (Risser et al., 1999; Salas, Bowers, & Johnston, 1997; San Martín-Rodríguez, D'Amour, & Leduc, 2009). The hospital system's mission states that it will collaborate with patients and their families to be the leader in providing high quality, cost-effective patient- and family-centered care and values (Methodist LeBonheur Healthcare System, 2009). As described in the literature, interprofessional collaboration, teamwork and TeamSTEPPS® can decrease morbidity, length of stay and nosocomial infection rates (Mayer et al., 2011; Parker et al., 2010; Riley et al., 2011). In healthcare, it is imperative that the performance improvement initiative ties in with the organization's mission; thus, adding value to a pre-training readiness assessment phase for the staff members of the EHCs (Lawrence, Hardy, & Phillips, 2012; Naylor, 2011).

Components of Inquiry

The aim of this inquiry was to perform a pre-training readiness assessment, a form of a needs assessment, for undertaking a TeamSTEPPS® based-initiative in EHCs (Agency for Healthcare Research and Quality, 2011). A needs assessment, a systematic process, illuminates a system's strengths and weaknesses, in order to improve the system and meet existing and future

challenges (Gould, Kelly, White, & Chidgey, 2004). Pre-training readiness assessment, the specific goal of this phase of the TeamSTEPPS® based-initiative, had guidelines and tools provided by AHRQ to support the phase (Agency for Healthcare Research and Quality, 2011). An exemplar of a needs analysis, the pre-training readiness assessment, had four components; (1) establish an organizational level change team (2) conduct a site assessment, (3) identify the problem, challenge or opportunity for improvement, and (4) define of the goal of the intervention.

Organizational Change Team Established

Management from the school system provided a letter of support to demonstrate commitment to the project (Appendix A), as did management from the healthcare system (Appendix B). The organizational change team was informally appointed by virtue of their employment and/or service as a representative of the selected stakeholder organization(s). They were also the stakeholder participants in the site assessment and focus group phase as well to define the problem, challenge or opportunity. The team was comprised of:

- Hospital System administrative representative (Director for Community Care Affiliated [CCA])
- School System administrative representative (Director of Coordinated School Health)
- Employee Health Clinics' Medical Director/Supervising Physician who oversees the Grey's Creek and Flicker Street Locations
- Employee Health Clinics' three nurse practitioners (NPs) who work at both facilities and
- Employee Health Clinics' three medical assistants (MA) who work at both facilities.

Site Assessment Conducted

The capstone inquiry was submitted for review to the Institutional Review Board (IRB) of the University of Mississippi Medical Center (UMMC) and the University of Tennessee Health Sciences Center (UTHSC). Exemptions were granted according to the Code of Federal Regulations Subpart D of 45 CFR 46.404 (U.S. Department of Health and Human Services, 1983). Although this inquiry involved three instruments (T-ORA, T-TAQ and the T-TPQ) along with three separate focus groups, the information attained was not recorded in a manner whereby individuals could be identified and disclosure of the information could reasonably place the participants at risk. Completion of the self-administered instruments and attendance at the focus group sessions was voluntary. The participants could withdraw from the inquiry at any time. There were no penalties for declining to participate or withdrawing from the inquiry at any time. Completion of instruments and attendance at the focus groups indicated consent to participate in the inquiry.

Stakeholders were provided with an informational letter (Appendix C) which offered a brief synopsis of the capstone inquiry and description of the instruments to be completed as well as the return date of one week for the instruments. One week after the invitational letters were sent, the instruments were mailed to potential participants at the appropriate work site with a return envelope addressed to the Flicker location and placed in a sealed lock box at the front desk. A follow-up letter was sent to all potential participants.

Instrumentation and Data Management

Three instruments, available via public domain and found in the TeamSTEPPS® resource kit, were used for data collection: the TeamSTEPPS® Organizational Readiness Assessment (T-ORA), the TeamSTEPPS® Teamwork Attitudes Questionnaire (T-TAQ), and TeamSTEPPS®

Teamwork Perceptions Questionnaire (T-TPQ) (Agency for Healthcare Research and Quality, 2011).

The T-ORA was intended to promote the organization's understanding of its level of readiness to initiate TeamSTEPPS®, a teamwork program (Agency for Healthcare Research and Quality, 2011). The tool was a 12-item questionnaire that elicited dichotomous data (yes/no) from closed-ended questions to determine overall organizational readiness (Agency for Healthcare Research and Quality, 2011). Upon completion, the number of "no" responses were summed according to the following scoring instructions: 0-3, good time to implement; 4-6, reduced likelihood of success; and 7-10, poor time to implement (postpone) (Agency for Healthcare Research and Quality, 2011). The researcher was unable to find documented information on validity or reliability for this tool.

The T-TAQ was a 30-item declarative statement questionnaire using a 5-point Likert scale in which scored responses ranged from 1 (strongly disagree) to 5 (strongly agree) for all items so that the higher the score, the higher the construct level although four items were reverse-coded (Agency for Healthcare Research and Quality, 2011). Five subscales comprised the T-TAQ including: (a) Team Structure (b) Leadership (c) Situation Monitoring (d) Mutual Support and (e) Communication (Agency for Healthcare Research and Quality, 2011).

According to Baker, Amodeo, Krokos, Slonim & Herrera (2010), who developed and validated the T-TAQ, a pilot test version of the questionnaire was developed and administered to 495 respondents from various healthcare organizations. Baker et al. utilized classical item statistics to select the final T-TAQ items. Based on this analysis, 30 of the original 110 items were selected for inclusion in the final instrument (Baker et al., 2010). Scale reliabilities exceed 0.7, and scales were found to be moderately correlated (Baker et al., 2010). The best evidence of

reliability was provided by Laatsch et al. (2005) in their evaluation of clinical laboratory science (CLS) students' attitudes toward teamwork when using cooperative learning (CL) as compared to individual learning (IL). This multi-institutional study, involving eight classrooms in seven states, using 216 student participants, evaluated attitudes toward teamwork with a 30-item T-TAQ administered as a posttest. Reliability was established, revealing an insignificant difference between the CL and IL students when assessing the first 30 questions on student attitudes toward teamwork (means = 98.42 and 98.22, respectively) when all institutions were combined (Laatsch et al., 2005). The T-TAQ provided a useful, reliable and valid tool for assessing individual attitudes related to the role of teamwork in the delivery of health care and strategies for healthcare professionals to enhance core teamwork skills (Baker et al., 2010; Laatsch et al., 2005).

The T-TPQ was a 35-item declarative statement questionnaire. Like the T-TAQ, the T-TPQ used a 5-point Likert scale where scored responses ranged from 1 (strongly agree) to 5 (strongly disagree) for all items so that the higher the score, the lower the construct level (Agency for Healthcare Research and Quality, 2011). Five subscales comprised the T-TPQ including: (a) Team Structure (b) Leadership (c) Situation Monitoring (d) Mutual Support and (e) Communication (2011).

As noted per the AHRQ (2011), a study was administered to 169 health care workers who completed the Team STEPPS® team training program to identify the final items for the T-TPQ, to determine subscale reliabilities and provide preliminary validation evidence. Of the 169 participants, 73.4% of the participants were direct patient care providers (Agency for Healthcare Research and Quality, 2011). The final T-TPQ includes 35 items. Construct independence was also examined by item and subscale correlations. The five T-TPQ subscales coefficients ranged

from .57 to .79 (Agency for Healthcare Research and Quality, 2011). These results suggested some multi-collinearity but allowed for the assessment of unique variance in each subscale (Agency for Healthcare Research and Quality, 2011). In a small group trial, AHRQ (2011) administered the T-TPQ to nine nurses in a pediatric ICU unit in a civilian Northeastern hospital. This was done to determine if members of the same unit produced similar ratings (Agency for Healthcare Research and Quality, 2011). Expecting that the T-TPQ items would be rated similarly, it was found that overall agreement ranged from a high of 100 % to a low of 25 % (Agency for Healthcare Research and Quality, 2011). Thirty one of the 47 T-TPQ items had agreement levels in excess of 70 %, while 8 items had agreement levels of less than 50 %, demonstrating limited reliability (Agency for Healthcare Research and Quality, 2011).

De-identified ratings on the instruments were imported into an Excel spreadsheet by the researcher. The data were kept on a flash drive and placed in a sealed lock box. Frequency counts were conducted using Predictive Analytics Software (PASW) (formerly SPSS).

Site Assessment Findings

The three members of the management team completed the readiness assessment. The frequency count from the T-ORA is presented in Appendix D; the subscale scores are presented in Table 2.

All nine participants completed the T-TAQ. Items 20, 21, 24, and 30 required reverse coding. The Cronbach's coefficient alpha for these participants on the T-TAQ was 0.86. A frequency count is presented in Appendix E; the subscale scores are presented in Table 3.

Table 2.

Subscale score for the T-ORA (n=3)

Level of Agreement	N/A	NO	YES
Defined Need			
Subscale score	1	0	5
Readiness			
Subscale score	1	0	8
Time, Resources, Personnel			
Subscale score	0	0	15
Sustainment of the Change			
Subscale score	0	0	6
Total Score	2	0	33

Table 3.

Subscale scores for the T-TAQ, (n = 9)

Level of Agreement	SD	D	Neutral	A	SA
Team Structure					
Subscale Score	0	3	2	17	32
Leadership					
Subscale Score	0	0	2	17	35
Situation Monitoring					
Subscale Score	0	0	3	17	34
Mutual Support					
Subscale Score	2	9	5	21	17
Communication					
Subscale Score	1	3	2	16	32
Total Score	3	15	14	88	150

Notes: SD, Strongly Disagree; D, Disagree; A, Agree, SA, Strongly Agree

All nine participants completed the T-TPQ. The Cronbach's coefficient alpha for these participants on the T-TPQ was 0.95. A T-TPQ frequency count is presented in Appendix F; the subscale scores are presented in Table 4.

Discussion of Site Assessment Findings

The T-ORA results affirmed management's readiness for a team-training program in the EHCs. The management personnel: (1) recognize the need, (2) are ready for the change, (3) are willing to provide time, resources and personnel, and (4) are willing to sustain the change.

The T-TAQ's Cronbach's alpha of 0.87 was acceptable. The stakeholders' responses indicated support for the core components of TeamSTEPPS®. The component within the T-TAQ that received the minimal agreement was Mutual Support.

The T-TPQ's Cronbach's alpha of 0.95 was acceptable. Again, the stakeholders' responses indicated support for the core components of TeamSTEPPS ®. The component within the T-TPQ receiving the weakest support was Mutual Support.

In conclusion, the management team agreed they are ready to proceed with a TeamSTEPPS® training-based initiative. Overall, stakeholders were positive about the concept of teamwork and its value in healthcare.

Defining the Challenge

Defining the problem, challenge or opportunity component was accomplished through focus group discussions with the organizational change team. EHC stakeholders were asked about their perceptions and opinions towards barriers to interprofessional collaboration (Locke, Spirduso, & Silverman, 2007). Questions from the semi-structured script for the focus groups (Appendix G) were asked in an interactive setting.

Table 4.

Subscale scores for the T-TPQ, (n=9)

Level of Agreement	N/A	SD	D	AS	A	SA
Team Structure						
Subscale Score	0	0	3	12	25	23
Leadership						
Subscale Score	2	0	3	17	19	23
Situation Monitoring						
Subscale Score	0	1	2	12	33	15
Mutual Support						
Subscale Score	1	1	9	9	29	14
Communication						
Subscale Score	1	0	2	5	41	14
Total Score	4	1	18	44	120	75

Notes: SD, Strongly Disagree; D, Disagree; A, Agree, SA, Strongly Agree

- Think about interprofessional collaboration. What comes to mind?
- What is the main barrier to/problem with collaboration between the clinics?
- How large is the barrier?
- What causes the barrier?

Focus group reminder letters (Appendix H) were sent to all participants. One week after completion of the surveys, focus groups were conducted. All participants were instructed on the importance of privacy and confidentiality in their informational letters and again prior to all focus groups. Focus group one was composed of administrators, focus group two was composed of nurse practitioners and focus group three was composed of medical office assistants. The duration of focus groups one and two was 30 minutes, with a four hour time lapse between sessions. Focus groups two and three were held in EHC meeting rooms at the employee health clinics prior to the opening and closings of the facilities. A Human Resources professional conducted and served as a scribe for focus group two because the facilitator participated in the nurse practitioner focus group. Two members of management then participated in a group discussion during the lunch hour for twenty minutes. At a later date, the third member of management participated in a semi-structured interview using the aforementioned questions. Focus groups' discussions and the results of the semi-structured interview were noted in a journal and placed in a sealed lock box. Focus groups and the semi-structured interview allowed the opportunity for detailed data collection via journal and clarification-seeking from participants as supported by Mertens (2009).

Content Analysis and Findings

The initial content analysis was conducted by a colleague, the chairperson of the evaluator's capstone inquiry, due to their experience with this form of analysis. Content analysis was later confirmed by the evaluator. The verbatim responses to the four questions were read and

reflected upon, initially. Then, the recurring words and/or phrases were identified and linked with relevant descriptors given by the participants for questions 1, 2 and 4. Recurring words/phrases were grouped across the three questions and connected with applicable descriptors provided by stakeholders. The evaluator then verified results stemming from each step of the analysis. One member of management provided additional content at a later date. The responses were bolded in the tables and labeled as later entries per management (LEM).

For interprofessionial collaboration, the three themes that emerged were teamwork, goal/objective-oriented, and communication. An informal presentation of content analysis was provided to stakeholder participants for verification. The words/phrases used by the participants as descriptors of teamwork were, "working together" or "working with", "cooperative partnership," "working as a unit," and "commitment to group effort." Goal/objective oriented was described as focus on "organizational goals," patient care/patient satisfaction" and "mutual organizational goals/team goals". "Communication" brought out the points of "within and across sites" which was inclusive of "knowledge of role" and "respect". The responses related to interprofessional communication are presented in Table 5.

Barriers to/problems with collaboration between clinics were grouped under " do not work as team" with descriptors like "solo provider and a MA", " ineffective communication," and "training issues" emerging from different professional preparations along with lack of training, setting and site differences and staffing issues. Responses regarding main barrier to/problem with collaboration between clinics are in Table 6.

For question three, regarding the size of the barrier, all participants judged the barrier to be small using words such as "small to medium", "small", "very small", and "not large." Causes

Table 5.

Responses related to interprofessional collaboration

Participant's Position	Teamwork	Communication	Goal/Objective-oriented
Management	"When I think of collaboration, teamwork is the first word that comes to mind."	"Another tie in to collaboration is that it goes hand and hand with communication. It is important that communication between the sites carries over within the organization. Individual clinic staff communication works well." **"Open communication, civil conversations." (late entry per management (lem))**	"Staff working together without attention to title or scope but with centered focus on the goal, patient care. With teamwork, there may be hierarchy in the team structure, but the individual members of the team know their role and perform collaboratively towards meeting the objective." Organizational – "I agree that organizational goals should be put in place by diverse members of the healthcare team to advance the organization." "A cooperative partnership with a common objective. Interprofessional

Table 5 (continued)

Participant's Position	Teamwork	Communication	Goal/Objective-oriented
			collaboration stems from the organizational goals that are put in place by diverse team members. The creation of the clinics has been a perfect blend of interprofessional collaboration."
			"It is like a synergistic union created for the sole purpose of achieving a goal or solving a problem."
			"It is like a synergistic union created for the sole purpose of achieving a goal or solving a problem."
Nurse Practitioners	"Working as a unit, cooperation." "Individual commitment to a group effort- that is what makes teamwork work, a company work,	"Educating and informing healthcare team members of their roles."	"Being knowledgeable of your organizational goals, IPC can help the healthcare team to improve patient care, patient satisfaction and patient outcomes."

Table 5 (continued)

Participant's Position	Teamwork	Communication	Goal/Objective-oriented
	a society work, and civilization work."- Vince Lombardi		"The act of teamwork for the purpose of meeting a mutual goal." "Collaboration has to do with the amount of teamwork you have and your organization's goals."
			"It can be seen as working together to meet a mutual organizational goal in any setting."
			"Working with one another to improve the patient care experience, patient experience or to achieve the goals of the team. Working together to meet a mutual goal in any setting. IPC creates new, diverse partnerships to improve the healthcare process."

Table 5 (continued)

Participant's Position	Teamwork	Communication	Goal/Objective-oriented
Medical Office Assistants	"Teamwork: Working together."	"Working together, understanding each other and communicating with one another." "Communication: Knowing how to talk to someone."	"You have to know your organization's goal so you collaborate effectively with the rest of the team." "It also means patient satisfaction, cleanliness, attitude professionalism." "Knowledge and respect of positions maintain a conflict free environment in which a continuum of care is reached and sustained."

Table 6.

Responses regarding main barrier to/problem with collaboration between clinics.

Participant's position	"Do not work as team"	"Ineffective communication"	Training
Management		"Communication and training" implying lack of?	"Staffing consistency and training new staff" "Trained staff" **"Lack of standardization in training" (lem)**
Nurse Practitioners	"We work separately as a solo provider and a single MA. Working in a silo does not foster teamwork. We do not get to work as actual teams." "There is not really a problem with teamwork in the EHC's where we work. In some of the ambulatory care settings, there is a lack of respect for the mid-level, providers. The	"Communication has not always been effective."	"Different training prior to getting a job in this clinical setting." "We have all been trained." "Our training has not been uniform." "We are credentialed and licensed. We have all had formal training and are very aware of our scope of practice."

Table 6 (continued)

Participant's position	"Do not work as team"	"Ineffective communication"	Training
	MD's do not seem to have issues, but I feel like if I ask a staff member to help out with something that is part of their typical work duties (i.e. injections, discharges), they do not complete the task in a reasonable amount of time. Part of this may be due to a lack of management (i.e. communication-not being told what they are doing wrong). Different educational backgrounds and experiences as a healthcare team."		
Medical Office Assistants	N/A	N/A	"Different providers treat differently. The clinics are not coordinated." "It is hard with different providers coming in and

Table 6 (continued)

Participant's position	"Do not work as team"	"Ineffective communication"	Training
			out."
			"Different providers treat differently. The clinics are not coordinated."
			"It is hard with different providers coming in and out."
			"Different populations, different clinic size, different patient problems, require the same providers with similar training. They have to be trained on school policies and school procedures. In this setting, a trained provider makes my job easier."
			"Workload: One clinic has more work than the other."

of the barriers also grouped under not working as a team, ineffective communication and training issues. In terms of not working as a team, one medical office assistant responded: "limited teamwork;" "no real team players;" and "everybody wants to be a boss" as factors. Interestingly, the three managers focused on lack of communication as a cause while "strained communication" was addressed by only one other participant. The three managers and two NPs spoke of lack of training. The medical office assistants addressed "limited teamwork", knowing "chain of command" as well as "direct" communication, and location issues. Responses regarding solutions to the barriers revolved around three themes: improve communication, improve training, and solve site/staffing issues as noted in Table 7.

Reviews of failed teams almost always reveal a breakdown in communication or a lack of support (Bower, Campbell, Bojke, & Sibbold, 2003). One study revealed that after TeamSTEPPS® training, a marked improvement in knowledge of vital team and communication skills, attitudes toward working as teams, and the identification of effective team skills was found (Clay-Williams & Braithwaite, 2009). A similar study revealed enrichments in staff perceptions of teamwork and communication openness (Mayer et al., 2011). In order to better understand the focus groups findings, an analysis of strengths, weaknesses, opportunities, and threats (SWOT) was conducted. The SWOT analysis is summarized in Table 8.

A possible caveat related to focus groups findings is that with groups, thoughts and opinions are not independent from one another (Speziale & Carpenter, 2007). Dominant members of a focus group discussion can skew the results (Speziale & Carpenter, 2007). This phenomenon may have occurred during this inquiry. Another potential limitation regarding the focus groups findings may have evolved from whether or not the project facilitator successfully

Table 7.

Responses regarding causes of the barrier

Participant's Position	"not working as a team"	"Ineffective communication"	"Training issues"
Management	**"Causes: Geographical differences between clinics. Our providers work in silos. Solution: Web portals, telecommunications, leveraging technology" (LEM)**	"Causes: Communication and training – Solution: Availability and feedback can alleviate these barriers. With availability you show staff that you are on hand to address issues and concerns, but staff has to provide us with feedback. Feedback provides the opportunity to assess the needs of the patient as well as staff. This would empower the staff members in their roles in the patient care setting." "Causes: Staffing consistency and training new staff – Solution: Communication	"Causes: Training Solution: This barrier can be overcome by continuously assessing the training needs of staff and seeking out-of-the-box training opportunities to meet staffing needs. This would lead to an increased knowledgebase for staff and efficiency in the patient care setting." **"Causes: Lack of standardization of training.** **Solution: Development of standardization of training." (LEM)**

Table 7 (continued)

Participant's Position	"not working as a team"	"Ineffective communication"	"Training issues"
		and adequate, timely training can resolve the barriers. Overcoming the barriers would facilitate efficient patient-centered care. In the clinic setting, staff must utilize their communication skills to assess the patients' needs. To exchange ideas with others, understand others' perspectives, to teach and learn one must effectively communicate."	
Nurse Practitioners	N/A	"Causes: Unstable staffing (short-staffed, prn staffing) and strained communication from MA to MA or from NP to MA to management to NP or MA. Everyone needs to do a better job of communication –	"Causes: Everybody has not been trained to do certain jobs. – Solution: More staffing, more cross-training. I could be more insistent on helping staff out or I should talk to management more about

Table 7 (continued)

Participant's Position	"not working as a team"	"Ineffective communication"	"Training issues"
		Solution: Increased prn staff that has been trained in this specific clinic, more meetings, improved communication (management to staff). As an NP, if I have a question or concern about anything, I will go to management and voice my concerns to get clarification on a process or an application that I am not grasping. The purpose of working in the clinic is to provide effective, efficient patient care to a unique population. Collaboration with management and the other NPs might provide the clarity I need to improve the patient's plan of care and maybe even impact the patient care outcome."	my concerns. This would allow me to follow the chain of command and do what they think is best. It would also further the organizational goals because I could provide a plan of action that would align with the organization's goals and Methodist. But changes need to be made because if we aren't working as a team, it reflects poorly on me. My patient's visit times are increased, patient satisfaction scores are reduced and I am unable to enhance the overall patient experience. We are here to serve the patient by giving the quick, quality, friendly care."

Table 7 (continued)

Participant's Position	"not working as a team"	"Ineffective communication"	"Training issues"
		"Causes: Different locations, variation in providers due to scheduling and staffing Solution: Improved communication (conference calls, more meetings, more group emails, comment/suggestion box, evaluation of concerns provided in the box). If we improve our communication, we can improve patient and staff satisfaction."	
Medical Office Assistants	Causes: Limited teamwork: No real team players. Agendas: Everybody wants to be a boss. In this type of environment, you have to be thorough in your communication. You cannot afford to leave	"Causes: Limited teamwork: No real team players. Agendas: Everybody wants to be a boss. In this type of environment, you must be thorough in your communication.	N/A

Table 7 (continued)

Participant's Position	"not working as a team"	"Ineffective communication"	"Training issues"
	anything out. Solution: Increase and improve communication between the clinics, make the clinics the same."	You cannot afford to leave anything out. Solution: Increase and improve communication between the clinics, make the clinics the same." "Causes: Decreased staffing, more meetings: We do not know chain of command, we do not communicate directly. Solution: Better communication across the board. You have to walk a tight line to do what's best for the patients, the clinics, SCS and your job in that order. That's why communication is so important."	

Table 7 (continued)

Participant's Position	"not working as a team"	"Ineffective communication"	"Training issues"
		"Causes: Patient preference and demographic location of the clinics cause the problems. Solution: Relocate the clinic with less patient flow to an area of preference would solve the problem. However, upper level management would have to support the change. Better Communication, provide chain-of-command information would also be helpful."	

Table 8.

SWOT analysis of focus groups findings

Strengths	Weaknesses	Opportunities	Threats
Participants primarily identified two strengths to interprofessional collaboration: 1. Barriers were perceived by participants to be "small." 2. Goals were perceived by participants to be centered around patient care and organizational.	Participants primarily identified minor organizational/ structural problems to be a barrier to teamwork such as a "silo" work environment.	Participants primarily identified training opportunities to be a potential solution for overcoming barriers to interprofessional collaboration.	Participants primarily identified communication as the most pressing external threat or barrier to interprofessional collaboration.

created a safe environment for the focus groups (Speziale & Carpenter, 2007). In the judgment of the evaluator, this limitation did not exist.

Defining the Goal of the Intervention

Findings from the surveys and the focus group discussions with EHC stakeholders revealed readiness to engage in such a program. The findings also uncovered some structural barriers to teamwork and further communication challenges to the exercise of interprofessional collaboration. More specifically, the T-ORA affirmed readiness to engage in a training program. TeamSTEPPS®, an evidence-based teamwork system, has been noted for improving communication and teamwork skills among health care professionals (Agency for Healthcare Research and Quality, 2011). Scientifically rooted in more than 20 years of research and lessons from the application of teamwork principles, it has produced highly effective medical teams that optimize the use of information, people, and resources to achieve the best clinical outcomes for patient (Agency for Healthcare Research and Quality, 2011). Management favors the readiness to engage in a TeamSTEPPS® interprofessional collaboration for stakeholders for the EHC's. Evidence supports that the implementation of this system in numerous healthcare settings has had a substantial impact on patient safety and teamwork and has encouraged a culture of learning from patient safety incidents while making continuous improvements (Clay-Williams & Braithwaite, 2009; Mayer et al., 2011; Riley et al., 2011; Stead et al., 2009).

Research related to the implementation and utilization of interprofessional collaboration programs in employee health clinics and/or occupational health settings is limited. However, this pre-readiness assessment exposed opportunities and potential benefits for medical office assistants, nurse practitioners and managers—key stakeholders in this setting. The positive implications to healthcare improvement resulting from interprofessional collaboration are

recognized that achieving teamwork, communication, and organizational goals leads to a greater knowledgebase (So & Bonk, 2010). Documenting and corroborating the themes, which are vital to a variety of stakeholders within employee health clinics for a school system helped align the EHC staff with the organization's commitment to excellence. Moving forward with a TeamSTEPPS® interprofessional collaboration training program in the EHC's is strongly recommended. Substantial participation from key stakeholders from the focus group discussions was responsible for crafting recommendations to identify barriers to interprofessional collaboration in the EHCs. A synopsis of the recommendations from the responses to question four from the focus groups is provided in Table 9.

A promising strategy for presenting the findings to senior management and other decision-makers is to schedule an informational reception to include all participants and those leaders and decision-makers who would jointly be responsible for implementation. It is recommended that a reception be hosted by the investigator as a thank-you for participation in the inquiry. In this environment, with all stakeholders represented, the key inquiry findings and recommendations will be shared through a poster or power point presentation. It is suggested that a task force be established with representative stakeholders from across all levels of the organization to further explore the barriers identified by participants and the associated solutions recommended. The solutions could include such approaches as the implementation of further training opportunities to improve system communication as a strategy to overcome barriers to interprofessional collaboration. It is also recommended that the EHC stakeholders move forward with a TeamSTEPPS® interprofessional collaboration training program to overcome such barriers.

Table 9.

Stakeholders' recommendations

Management	Nurse Practitioners	Medical Office Assistants
Create training opportunities	Increase staffing, increased communication (i.e., meetings)	Increase and improve communication, making the clinics uniformed
Become more available and providing feedback	Improve communication (i.e., conference calls, meetings, more group emails)	Improve communication
Provide timely training and communication	Improve staffing, improve training	Relocate the clinic to a busier area, better communication

The hospital's mission states, "The Hospital System, in partnership with its medical staffs, collaborates with patients and their families to be the leader in providing high quality, cost-effective patient- and family-centered care" (Methodist LeBonheur Healthcare System, 2009). Services are provided in a manner which supports the health ministries and Social Principles of The United Methodist Church to benefit the communities served (Methodist LeBonheur Healthcare System, 2009). In keeping with the mission of the organization, training is a viable solution.

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Appendix A. Letter of Support from Coordinated School Health Shelby County Schools

160 South Hollywood Street

Memphis, TN 38112

Shunji Q. Brown-Woods, Director

Coordinated School Health

(901) 321-2693

(901) 321-2627 FAX

September 28, 2012

To Whom It May Concern:

The clinics have been a win-win situation for all stakeholders. Collaboration is the integral component that has facilitated this outpatient initiative's evolution into a hub of care that provides high quality cost-effective patient outcomes. Interprofessional collaboration has been cited for improving patient care and population health by the American Association of Colleges of Nursing. C'sara Strong's employment in the Employee Health Clinics has sparked her interests in team work, as well as, interprofessional collaboration. As she embarks upon the final stages of her Capstone Inquiry at the University of Mississippi Medical Center, we are excited about the recommendations that could stem from C'sara's pre-training readiness assessment for team work in the clinic settings.

Sincerely,

Shunji Q. Brown-Woods, MHA
Director, Coordinated School Health

Appendix B. Letter of Support from Methodist Healthcare Community Care Associates Division

December 19, 2011

To Whom It May Concern:

As we all know, teamwork is an integral component of any clinic's success. Scholarly articles have cited teamwork and collaboration have the ability to improve patient outcomes. C'sara, one of my Associates, is a nursing student at the University of Mississippi Medical Center at Jackson. C'sara has conveyed with me and shared her interest in a Teamwork/Interprofessional Collaboration project. C'sara's focus aligns with our goal to produce highly effective healthcare teams to achieve the best patient outcomes. We await her completion of IRB to move ahead with this project and applaud her efforts to make teamwork the norm, not the exception in her patient care setting.

Sincerely,

[redacted]

David Cummings
Administrator
Community Care Associates Division

Alliance Health Services
Home Care • Home Medical Equipment • Hospice • Infusion • Lifeline
6400 Shelby View Drive • Suite 101 • Memphis, Tennessee 38134 • 901-516-1400

Appendix C. Informational Letter

Employee Health Clinics
130 South Flicker Street
Memphis, Tennessee 38104

Dear Stakeholder:

My name is C'sara R. Strong. I am nurse practitioner at the Employee Health Clinics (EHCs) for the Shelby County Schools district. Currently, I am also a nursing student at the University of Mississippi Medical Center participating in a research project that will assess readiness for a teamwork program and evaluate barriers to interprofessional collaboration in the EHCs.

TeamSTEPPS®, a jointly promulgated program by the Agency for Healthcare Research and Quality (AHRQ) and the Department of Defense (DoD), has the ability to revolutionize the way healthcare professionals work together as a team and communicate during challenging times. Per the American Association of Colleges of Nurses, interprofessional collaboration has the capacity to improve patient and population health outcomes. Both elements in clinic setting create a win-win situation for all stakeholders. The Shelby County School District, the fourth largest school system in Tennessee, has over 6,000 employees. In March 2010, Shelby County Schools (SCS), under the direction of their department of Coordinated School Health and in conjunction with Methodist LeBonheur Healthcare System (MLH) developed EHCs for the school district to provide comprehensive patient care services. The creation of these clinics was a win-win situation for the stakeholders of SCS and MLH.

Staff members, Methodist Associates, who serve as the clinics' frontline, have been working closely together while growing into their roles and responsibilities. With growth, all staff members must be cognizant of teamwork and its influence on practice and patient care. Again, the purpose of this inquiry is to perform a pre-training readiness assessment phase in a TeamSTEPPS® interprofessional collaboration program in the EHC's for the school district. This project will be conducted in two steps

STEP 1. Surveys

- Two surveys (TeamSTEPPS –Teamwork Attitudes Questionnaire, TeamSTEPPS-Teamwork Perceptions Questionnaire) will be mailed to staff and three surveys (TeamSTEPPS –Teamwork Attitudes Questionnaire, TeamSTEPPS-Teamwork Perceptions Questionnaire, TeamSTEPPS-Teamwork Organizational Readiness Assessment) will be mailed to administration, with self-addressed return envelopes.

- A reminder will be sent via mail one week after receipt of all surveys.

- Surveys should be returned within two weeks

- Returning completed surveys will indicate that you are agreeing to be a part of the study. If you decide not to complete the surveys, your employment or work status will not be

affected. The results of the study may be published and the answers to the sets of questions may be used to outline ways to improve teamwork and decrease barriers to interprofessional collaboration. The questions will have numbers on them in case the pages are separated. There will be no identifying data on these surveys (i.e., name, date of birth, social security number, and job title).

STEP 2. Focus Groups

- Two weeks after returning the completed surveys, three focus groups will be held to discuss barriers to interprofessional collaboration.
- Medical Assistants, Nurse Practitioners, Supervising Physician, Administrators from SCS and MLH comprise the clinics' stakeholders. Three individual focus groups will be held to capture the perceptions and attitudes of each group freely without inhibition or intimidation.
- Each meeting will last about 45 minutes and will be recorded via journal per a scribe to prevent loss of information. The detailed data collection will be categorized, prioritized and interpreted in the form of recommendations.
- Taking part in this meeting is your choice. You may choose not to take part or to leave the meeting at any time. The results of the study may be published and the ideas from the meetings may be used to outline ways to decrease barriers to interprofessional collaboration. Names will not be used.
- No risks or direct benefits are known with this study. As the project facilitator strives to protect all identities and anonymity, please remember that confidentiality and privacy are essential to the project

Group 1	0900-0945	Conference Room at Affiliated	Medical Assistants
Group 2	1015-1045	Conference Room at Affiliated	Nurse Practitioners
Group 3	1115-1145	Conference Room at Affiliated	Administration (SCS, MLH), Medical Director

Coming to the meeting at your scheduled time on_____ (date) will affirm your agreement to participate.

If you have any questions about the plan, please call me at [redacted] or my capstone chair-person, Dr. Barbara Boss at ([redacted] Thank you for your consideration.

Sincerely,

C'sara R. Strong, Family Nurse Practitioner

Appendix D. Frequency count for the T-ORA (n=3)

Level of Agreement	N/A	NO	YES
Defined Need			
1. Have you clearly defined the need that is driving your institution to consider implementing TeamSTEPPS®?	1	0	2
2. Is building a stronger teamwork and safety culture an appropriate strategy to address your institution's need?	0	0	3
Subscale score	1	0	5
Readiness			
3. Is now the right time for implementing a culture change (i.e., it will not compete with other major changes currently being made at your institution)?	0	0	3
4. Is a culture change that emphasizes the importance of teamwork and safety feasible and acceptable?	1	0	2
5. Will your institution's leaders support culture change and the effort required to implement and sustain the TeamSTEPPS® initiative?	0	0	3
Subscale score	1	0	8
Time, Resources, Personnel			
6. Will your institution provide sufficient staff with the necessary characteristics and attitudes to serve as instructors?	0	0	3
7. Will your institution provide sufficient staff with the necessary characteristics and attitudes to serve as coaches?	0	0	3
8. Will your institution allow time to prepare the instructors and coaches for their role?	0	0	3

Appendix D (continued)

Level of Agreement	N/A	NO	YES
9. Will your institution allow time for personnel to attend training?	0	0	3
10. Will your institution allow time for instructors to potentially customize the course?	0	0	3
Subscale score	0	0	15
Sustainment of the Change			
11. Will your institution be willing to measure and assess progress and continuously improve processes?	0	0	3
12. Will your institution be able to reinforce and reward positive teamwork behaviors and improvements in processes?	0	0	3
Subscale score	0	0	6
Total Score	2	0	33

Appendix E. Frequency count for the T-TAQ (n = 9)

Level of Agreement	SD	D	Neutral	A	SA
Team Structure					
1. It is important to ask patients and their families for feedback regarding patient care	0	0	0	0	9
2. Patients are a critical component of the care team.	0	0	0	1	8
3. This facility's administration influences the success of direct care teams.	0	1	2	4	2
4. A team's mission is of greater value than the goals of individual team members.	0	0	0	1	8
5. Effective team members can anticipate the needs of other team members.	0	2	0	5	2
6. High-performing teams in health care share common characteristics with high-performing teams in other industries.	0	0	0	6	3
Subscale Score	0	3	2	17	32
Leadership					
7. It is important for leaders to share information with team members.	0	0	0	1	8
8. Leaders should create informal opportunities for team members to share information.	0	0	0	2	7
9. Effective leaders view honest mistakes as meaningful learning opportunities.	0	0	1	1	7
10. It is a leader's responsibility to model appropriate team behavior.	0	0	1	4	4

Appendix E (continued)

Level of Agreement	SD	D	Neutral	A	SA
11. It is important for leaders to take time to discuss with their team members plans for each patient.	0	0	0	4	5
12. Team leaders should ensure that team members help each other out when necessary	0	0	0	5	4
Subscale Score	0	0	2	17	35
Situation Monitoring					
13. Individuals can be taught how to scan the environment for important situational cues	0	0	0	4	5
14. Monitoring patients provides an important contribution to effective team performance	0	0	0	4	5
15. Even individuals who are not part of the direct care team should be encouraged to scan for and report changes in patient status	0	0	1	1	7
16. It is important to monitor the emotional and physical status of other team members	0	0	0	3	6
17. It is appropriate for one team member to offer assistance to another who may be too tired or stressed to perform a task.	0	0	0	3	6
18. Team members who monitor their emotional and physical status on the job are more effective	0	0	2	2	5
Subscale Score	0	0	3	17	34
Mutual Support					
19. To be effective, team members should understand the work of their fellow team members.	1	0	2	5	1

Appendix E (continued)

Level of Agreement	SD	D	Neutral	A	SA
20. Asking for assistance from a team member is a sign that an individual does not know how to do his/her job effectively.	1	2	0	2	4
21. Providing assistance to team members is a sign that an individual does not have enough work to do.	0	3	0	3	3
22. Offering to help a fellow team member with his/her individual work tasks is an effective tool for improving team performance.	0	0	1	5	3
23. It is appropriate to continue to assert a patient safety concern until you are certain that it has been heard.	0	2	2	2	3
24. Personal conflicts between team members do not affect patient safety.	0	2	0	4	3
Subscale Score	2	9	5	21	17
Communication					
25. Teams that do not communicate effectively significantly increase their risk of committing errors.	0	0	0	3	6
26. Poor communication is the most common cause of reported errors.	0	0	0	2	7
27. Adverse events may be reduced by maintaining an information exchange with patients and their families.	0	0	2	1	6
28. Adverse events may be reduced by maintaining an information exchange with patients and their families..	0	0	0	3	6
29. It is important to have a standardized method for sharing information when handing off patients.	0	0	0	4	5

Appendix E (continued)

Level of Agreement	SD	D	Neutral	A	SA
30. It is nearly impossible to train individuals how to be better communicators.	1	3	0	3	2
Subscale Score	1	3	2	16	32
Total Score	3	15	14	88	150

Notes: SD, Strongly Disagree; D, Disagree; A, Agree, SA, Strongly Agree

Appendix F. Frequency count for the T-TPQ (n=9)

Level of Agreement	N/A	SD	D	AS	A	SA
Team Structure						
1. The skills of staff overlap sufficiently so that work can be shared when necessary.	0	0	1	1	5	2
2. Staff are held accountable for their actions.	0	0	1	1	4	3
3. Staff within my unit share information that enables timely decision making by the direct patient care team.	0	0	0	2	3	4
4. My unit makes efficient use of resources (e.g., staff, supplies, equipment, and information).	0	0	0	2	5	2
5. Staff understand their roles and responsibilities.	0	0	1	1	3	4
6. My unit has clearly articulated goals.	0	0	0	3	2	4
7. My unit operates at a high level of efficiency.	0	0	0	2	3	4
Subscale Score	0	0	3	12	25	23
Leadership						
8. My supervisor/manager considers staff input when making decisions about patient care.	0	0	1	0	5	3
9. My supervisor/manager provides opportunities to discuss the unit's performance after an event.	1	0	1	3	1	3

Appendix F (continued)

Level of Agreement	N/A	SD	D	AS	A	SA
10. My supervisor/manager takes time to meet with staff to develop a plan for patient care.	0	0	1	3	3	2
11. My supervisor/manager ensures that adequate resources (e.g., staff, supplies, equipment, and information) are available	1	0	0	4	2	2
12. My supervisor/manager resolves conflict successfully.	0	0	0	3	2	4
13. My supervisor/manager models appropriate team behavior.	0	0	0	2	3	5
14. My supervisor/manager ensures that staff is aware of any situation or changes that may affect patient care.	0	0	0	2	3	4
Subscale Score	2	0	3	17	19	23
Situation Monitoring						
15. Staff effectively anticipate each other's needs.	0	0	0	1	6	2
16. Staff monitor each other's performance	0	0	0	2	5	2
17. Staff exchange relevant information as it becomes available.	0	0	0	2	5	2
18. Staff continuously scan the environment for important information.	0	0	0	2	5	2
19. Staff share information regarding potential complications (e.g., patient changes, bed availability).	0	0	1	1	5	2

Appendix F (continued)

Level of Agreement	N/A	SD	D	AS	A	SA
20. Staff meets to reevaluate patient care goals when aspects of the situation have changes.	0	1	0	3	3	2
21. Staff correct each other's mistakes to ensure that procedures are followed properly.	0	0	1	1	4	3
Subscale Score	0	1	2	12	33	15
Mutual Support						
22. Staff assist fellow staff during high workload	0	0	1	1	6	1
23. Staff request assistance from fellow staff when they feel overwhelmed.	0	0	1	2	4	2
24. Staff cautious each other about potentially dangerous situations.	0	0	1	1	6	1
25. Feedback between staff is delivered in a way that promotes positive interactions and future change.	1	0	2	0	3	3
26. Staff advocate for patients even when their opinion conflicts with that of a senior member of the unit	0	0	2	0	3	4
27. When staff has a concern about patient safety, they challenge others until they are sure the concern has been heard.	0	1	1	3	3	1
28. Staff resolve their conflicts, even when the conflicts have become personal.	0	0	1	2	4	2
Subscale Score	1	1	9	9	29	14

Appendix F (continued)

Level of Agreement	N/A	SD	D	AS	A	SA
Communication						
29. Information regarding patient care is explained to patients and their families in lay terms	0	0	1	0	5	3
30. Staff relay relevant information in a timely manner	0	0	0	1	6	2
31. When communication with patients, staff allow enough time for questions.	0	0	0	1	6	2
32. Staff use common technology when communicating with each other.	0	0	0	1	6	2
33. Staff verbally verify information that they receive from one another.	1	0	1	0	6	1
34. Staff follow a standardized method of sharing when handing off patients.	0	0	0	1	7	1
35. Staff seek information from all available sources.	0	0	0	1	5	3
Subscale Score	1	0	2	5	41	14
Total Score	4	1	18	44	120	75

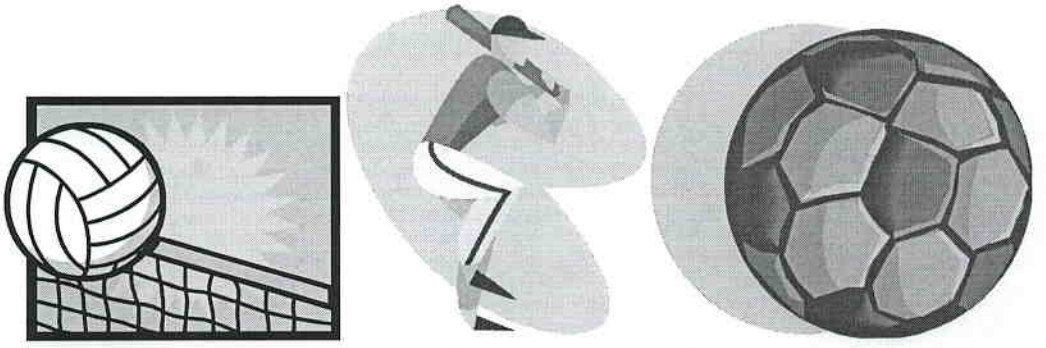
Notes: SD, Strongly Disagree; D, Disagree; A, Agree, SA, Strongly Agree

Appendix G. Semi-structured Script for the Focus Group

- Think about interprofessional collaboration. What comes to mind?
- What is the main barrier to/problem with collaboration between the clinics?
- How large is the barrier?
- What causes the barrier?

Appendix H. Survey/Focus Group Reminder

THERE IS NO "I" IN TEAM. THE BEST TEAMS ARE "WELL TRAINED."



Nurse C'sara would like to use the survey results and the focus groups to assess readiness for a teamwork program and to determine barriers to collaboration at the employee health clinics. If you are interested in being a participant, please return the surveys within one week of this REMINDER.

Please do not forget your Focus Groups on _____ (date)

Group 1	0900-0945	Conference Room at Affiliated	Medical Assistants
Group 2	1045-1130	Conference Room at Affiliated	Nurse Practitioner
Group 3	1230-115	Conference Room at Affiliated	Administration (SCS, MLH), Medical Director

Coming to the meeting at your scheduled time will affirm your agreement to participate. If you have any questions or concerns, call me at ([redacted]. Thank you for your consideration.