

THE USE OF SBAR COMMUNICATION TOOL DURING WARM HAND-OFF
IN INTEGRATED CARE

by

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As members of the DNP Project Committee, we certify that we have read the DNP Project prepared by Phung Kim Nguyen entitled “The Use of SBAR Communication Tool During Warm hand-Off in Integrated Care” and recommend that it be accepted as fulfilling the DNP Project requirement for the Degree of Doctor of Nursing Practice.

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Final approval and acceptance of this DNP Project is contingent upon the candidate’s submission of the final copies of the DNP Project to the Graduate College.

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DEDICATION

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TABLE OF CONTENTS

LIST OF FIGURES	9
LIST OF TABLES	10
ABSTRACT	11
INTRODUCTION	13
Background	13
Purpose	15
Study Question	15
THEORETICAL FRAMEWORK	16
Phase 1: Plan	17
Phase 2: Do	18
Phase 3: Study	19
Phase 4: Act	20
CONCEPTS AND DEFINITIONS	20
Primary Care Provider	20
Mental Health	21
Behavioral Health Staff	21
Patient	21
Integrated Healthcare	21
Warm Handoff	22
Situation	22
Background	22
Assessment	22
Recommendation	22
SYNTHESIS OF EVIDENCE	23
Literature Search	23
Effectiveness of SBAR	23
SBAR in Hospital Settings, Special Settings and Outpatient	24
Hospitals	24

TABLE OF CONTENTS – *Continued*

Special Settings	25
Outpatient Settings	28
Strengths, Weaknesses and Gaps	29
Strengths	29
Weaknesses and Gaps	30
Ethical Considerations	31
Timeline of Project	32
METHODOLOGY	33
Project Design	33
Description	33
Setting	33
Participants	34
Data Collection Tools	35
The Collaboration and Satisfaction about Care Decision (CSACD)	35
Observation	35
Structured Interviews	36
Process for Data Collection	36
Pre-test and Post-test Questionnaires	36
SBAR Education	37
Patient’s Assessment	37
Utilizing SBAR Tool	38
Observation Process	38
Structured Interview Process	39
Data Analysis	39
Questionnaires	39
Observation and Structured Interviews	40
RESULTS	41
Participant Demographic Information	41

TABLE OF CONTENTS – *Continued*

Quantitative Analysis: Pre- and Post-test Questionnaire	42
Qualitative Analysis: Observation and Interview	49
Observation	49
Primary Care Providers’ Perception of Using SBAR	50
Behavioral Health Workers’ Perception of Using SBAR	51
DISCUSSION	52
Discussion Related to Objective One	52
Discussion Related to Objective Two	53
Discussion Related to Objective Three	53
Discussion Related to Framework - PDSA Cycle	54
Impact of Results on Practice	55
Strengths of the Project	56
Limitations of the Project	56
Suggestions for Further Research	57
CONCLUSION	58
APPENDIX A: WARM HAND-OFF CHECKLIST.....	59
APPENDIX B: VALLE DEL SOL WHOLE HEALTH SCREENER (ADULT ENGLISH VERSION).....	61
APPENDIX C: VALLE DEL SOL WHOLE HEALTH SCREENER (ADULT SPANISH VERSION).....	63
APPENDIX D: VALLE DEL SOL TOTAL HEALTH SCREENER (CHILD ENGLISH VERSION).....	65
APPENDIX E: VALLE DEL SOL TOTAL HEALTH SCREENER (CHILD SPANISH VERSION).....	67
APPENDIX F: COLLABORATION AND SATISFACTION ABOUT CARE DECISIONS (CSACD)	69
APPENDIX G: LIST OF INTERVIEW QUESTIONS.....	72

TABLE OF CONTENTS – *Continued*

APPENDIX H: UNIVERSITY OF ARIZONA IRB APPROVAL.....	74
APPENDIX I: SITE AUTHORIZATION.....	76
APPENDIX J: SCRIPT OF ORAL CONSENT	78
APPENDIX K: EVIDENCE APPRAISAL TABLE.....	80
REFERENCES	88

LIST OF FIGURES

<i>FIGURE 1.</i> IHI Model for Improvement	16
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LIST OF TABLES

TABLE 1.	<i>Comparison of Participant's Satisfaction: Pre- and Post-SBAR Implementation...</i>	43
TABLE 2.	<i>Wilcoxon Matched-Pairs Test for Question 1.....</i>	44
TABLE 3.	<i>Wilcoxon Matched-Pairs Test for Question 2.....</i>	44
TABLE 4.	<i>Wilcoxon Matched-Pairs Test for Question 3.....</i>	45
TABLE 5.	<i>Wilcoxon Matched-Pairs Test for Question 4.....</i>	45
TABLE 6.	<i>Wilcoxon Matched-Pairs Test for Question 5.....</i>	46
TABLE 7.	<i>Wilcoxon Matched-Pairs Test for Question 6.....</i>	46
TABLE 8.	<i>Wilcoxon Matched-Pairs Test for Question 7.....</i>	47
TABLE 9.	<i>Wilcoxon Matched-Pairs Test for Question 8.....</i>	47
TABLE 10.	<i>Wilcoxon Matched-Pairs Test for Question 9.....</i>	48
TABLE 11.	<i>Wilcoxon Matched-Pairs Test for Question 10.....</i>	48

ABSTRACT

Objective: According to the Joint Commission (2012), about 80% of serious medical errors are related to miscommunication between healthcare providers. The Joint Commission (2012) recommended the utilization of standardized communication tools to reduce the number of medical errors related to the miscommunication. The Situation-Background-Assessment-Recommendation (SBAR) communication tool is a standardized tool that has been used to improve the effectiveness of communication between healthcare providers. The purpose of this project was to evaluate the effectiveness of using SBAR communication tool for warm handoff between primary care providers and behavioral health providers in order to provide a continuous and complete transition of care for patients with psychiatric disorders or psychosocial issues.

Method: A mixed method design was implemented in an integrated primary care clinic at two locations in Phoenix, Arizona. A brief presentation about the SBAR tool and copies of the SBAR tool was provided for the clinic staff. Data were gathered from four participants (two nurse practitioners and two behavioral health workers) using structured observation, pre-and post-test surveys, and structured interviews. Length of study was one month.

Results: During the data collection, there were 40 observed warm handoffs, 12 unobserved warm handoffs between primary care nurse practitioners and behavioral health workers. Seventy-five percent of the participants felt that the SBAR helped them in organizing their thoughts and providing/obtaining adequate information during warm handoff. They reported satisfaction when using the SBAR tool. There was no statistically significant difference in the scores of collaboration and satisfaction about care decisions between pre and post-SBAR intervention.

Conclusion: The SBAR communication tool has the potential to improve communication between primary care providers and behavioral health workers to improve the quality and safety of care for patients with psychosocial concerns. Utilizing SBAR may increase teamwork and ensures adequate hand-off information on the warm handoff. Multiple PDSA cycles should be conducted to refine the change and make it applicable and sustainable in the integrated care setting.

Key words: SBAR, Warm Handoff, Communication, Integrated Care, Primary Care Provider, Underserved Population, Psychiatric Disorders, or Psychosocial Issues.

INTRODUCTION

Background

In 2014, in the United States, there were about 43.6 million adults diagnosed with acute and chronic mental illnesses (Center for Behavioral Health Statistics and Quality, 2015). Approximately 9.6 million adults had serious mental illness, and 21.5 million people age 12 or older had a substance use disorder (Center for Behavioral Health Statistics and Quality, 2015). About 4.3 percent of the U.S. adults were diagnosed with co-occurring mental illness and a substance use disorder (Center for Behavioral Health Statistics and Quality, 2015). About one-third of them received no mental health treatment within that year (Substance Abuse and Mental Health Services Administration (SAMHSA), 2015). Individuals with complicated mental health disorders required care from specialty mental healthcare providers. There are about 40,000 psychiatrists in the country (Unutzer & Ratzliff, 2014). Only 20% of patients with mental disorders are treated by mental health specialists (Wang et al., 2005). The patient's access to these healthcare providers may be limited due to lack of insurance, financial issues, inability to follow up, or limited availability of specialty services (Wang et al., 2005). Many mental health disorders such as depression and anxiety are often managed in the primary care settings (SAMHSA, 2015). However, the treatment may not be as effective due to the provider's lack of expertise in mental health (SAMHSA, 2015). Many patients reported that they did not receive adequate doses or duration of their psychiatric medications and regular monitoring and adjustment from their primary care providers (Unutzer & Ratzliff, 2014). As a result, integration of care between primary care and mental health is essential in order to provide adequate care for this population (Padwa et al., 2015). Integrating a trained community of healthcare providers,

behavioral personnel, and psychiatric providers into primary care may provide patient-centered care that increases effective treatment (Freeman, 2015).

One of the interventions to improve the quality of treatment of mental health in the primary care setting is using a warm handoff (Raney, Lasky, & Scott, 2014). Warm handoff refers to a direct referral in which the primary care provider (PCP) introduces the behavioral health providers to the patient directly (Collins, 2009). Warm handoff is a team-based approach to improve patient's experiences, quality of care, and coordination of care. Using warm handoffs may increase the proportion of patients that receive mental health treatment 85 to 90% compared to 10% when using traditional referral (Collins, 2009).

A local family practice clinic in Phoenix is transitioning to integrated care by moving mental health services into the primary care practice. This clinic offers care to underserved populations. Many of them have a diagnosis of mental illness or have been under diagnosed. The primary care provider initially screens and evaluates patients for psychosocial concerns during their primary care visits. If a referral is needed, the primary care provider will directly introduce the patient to the behavioral health provider, a process described as a "warm handoff" (Collins, 2009). The patient will receive mental health counseling on the same visit. The goal is to increase the number of patients receiving mental health services in the primary care setting. However, primary care providers and behavioral health personnel may fail to communicate important information during this transition of care. Therefore, using a Situation-Background-Assessment-Recommendation (SBAR) checklist during warm handoff could help to ensure an adequate, effective, and continuous transition of care for patients with a psychiatric disorder or psychosocial issue. SBAR communication is a tool of communication in which the reporter

identifies the patient's situation, background, assessment, and proposes a recommendation to the next provider.

Purpose

The purpose of this project is to evaluate the effectiveness of utilizing SBAR communication with warm handoff between primary care providers and behavioral health providers in order to provide a continuous and complete transition of care for patients with psychiatric disorders or psychosocial issues. In this project, the researcher defines the effectiveness of communication based on the perception of participants in terms of detailed, complete, and organized information on the handoff. The primary objective is to improve the quality of communication between primary care providers and behavioral health workers in the integrated care setting. There are three objectives for this project. First, the SBAR communication tool will be used in at least 75% of referrals between primary care providers and behavioral health workers during the transition of care during a one-month trial. Second, at least 75% of providers will report satisfaction when using the SBAR after the one month. Third, at least 75% of providers will report that the SBAR helped them organize thoughts and expedite the handoff compared to traditional report after the one-month period. Stakeholders include clinic primary care providers, psychiatrists, psychiatric nurse practitioners, behavioral health staff members, manager, supervisor, integrated service coordinator, patients and their families.

Study Question

Does the utilization of SBAR communication during warm handoff improve the effectiveness of communication between primary care providers and behavioral health staff? To learn about the effectiveness of a checklist during warm handoff, the following PICOT question

was developed: In the primary care setting for an underserved population, how does using an SBAR checklist during warm handoff between primary care provider and behavioral health workers compare to casual unstructured face-to-face discussions during transition of care in assuring effective reporting and providing a continuous transition of care?

THEORETICAL FRAMEWORK

The Institute for Healthcare Improvement (IHI) proposes a Model for Improvement as a framework to guide an improvement project (IHI, 2016). There are five steps in this framework including setting an aim, establishing measures, identifying changes, testing changes, and implementing the changes. The testing changes step involves four phases: Plan, Do, Study, and Act (PDSA cycle). Using the PDSA cycle will allow the investigator to implement the change, test the change, observe results, and act on learned information to improve the project.

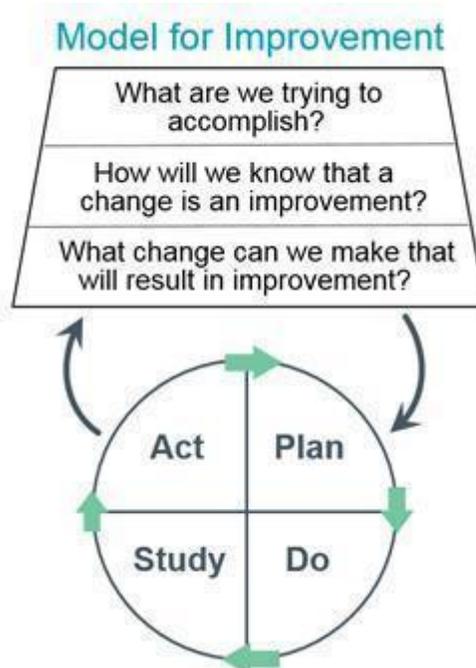


FIGURE 1. IHI Model for Improvement (2016)

There are three questions in the IHI Model for Improvement to be answered prior to initiating the change.

1. *What are we trying to accomplish?* This is the objective of the study. In this case, the objective is to improve the quality of communication between primary care providers and behavioral health workers during warm handoff in the integrated care setting.
2. *How will we know a change is an improvement?* The comparison between the objectives of the study and the real outcomes will allow the researcher to determine if there is an improvement related to the change.
3. *What change can we make that will result in improvement?* In this study, the change is the utilization of SBAR tool to improve the communication between primary care providers and behavioral health workers during warm handoff. This question is similar to the stated PICOT question.

Phase 1: Plan

In this phase, a detailed plan of the project was proposed. It included the plan to test (participants, timeline, location, information), data collection, objectives of the change, and predictions of the study (IHI, 2016). The identified participants were primary care providers and behavioral health workers who were currently working at an integrated care facility in Phoenix Arizona. The timeline of the project was over a one-month period with at least 30 referrals that are observed by the investigator. The question of this study to be asked was “will SBAR tool improve the effectiveness of communication between primary care providers and behavioral health workers during warm handoff?” The investigator predicted that the SBAR tool would help the participants to receive an adequate report during warm handoff. The investigator conducted

a mixed method study using pretest and posttest questionnaires, observation, and structured interviews.

In this step, a well-developed description of the study consisted of a clear mission and identified objectives. The description of the study discussed the need for the study, expected outcomes, project activities, resources, and stage of development. In this case, the need for the study was to promote an efficient and continuous transition of care between primary care providers and behavioral health staff in an integrated clinic. The outcome of this study was to enhance the communication between primary care providers and behavioral health staff by meeting the objectives in a given period of time. In addition, the study would include the description of all activities such as direct introduction to behavioral health staff by the primary care provider to the patient, information is needed in the report, discussion with mental health staff after the patient visit, development of the intervention(s) and plan of care. The required resources were time, adequate staff (available mental health staff and primary care providers), investment, funding, community resources, information, and support from the management team.

Phase 2: Do

In this phase, the change was implemented. The investigator provided an overview of SBAR tool for the participants. All questions and concerns about the change were answered prior to the initiation of the implementation. In the waiting room, all patients that were coming for the primary care visit would be screened for any psychiatric disorders or psychosocial issues using the Valle del Sol Whole Health Screener. Afterwards, the provider would assess and evaluate the patient. If there was any concern about the patient's psychosocial or psychiatric concern, the primary care providers would consult with the behavioral health workers. During this direct

handoff, both the primary care providers and behavioral health workers used SBAR tool as a communication checklist. The investigator also observed for any physical signs, environmental effects, communication skill and barriers, and the completion of the report on the warm handoff. The investigator took note of these observations.

Phase 3: Study

The changes were done in a small-scale pilot. During the first month, there were five participants from Valle del Sol in the study. PDSA cycles might promote the utilization on a small-scale to test the intervention, enable rapid assessment and flexibility to adapt to the changes according to the feedback. The small-scale tests allowed users to act and learn, minimizing the risk to patients, and provide a prediction of the outcome of the test of a change. The small-scale tests also provided quantitative and qualitative measurement to evaluate the effectiveness of the intervention.

In this phase, the collected data were analyzed and compared to the initial prediction. The investigator utilized the Wilcoxon matched-pairs test to analyze the quantitative data from the pre and posttest. The interview results were evaluated by the investigator and a Doctor of Pharmacy researcher to identify the common themes of perception and experience with the utilization of the SBAR checklist of primary care providers and behavioral health staff. They evaluated their satisfaction with the study and provided recommendations for improvement. In addition, the investigator analyzed the results of the observations and evaluate the communication effectiveness of the participants.

After the data analysis, the investigator summarized and reflected on the changes. It is essential to consider all the limitations of the evaluation such as biases, internal and external

validity of results, and reliability of results. The conclusion should provide an answer to the study objectives, institutional goals, and human rights concerns. Recommendation to implement or modify the study depends on the findings of this study. If the analysis shows significant improvement and a high reliability value, then the study is supported.

Phase 4: Act

In this phase, the investigator would refine the changes based on the result of the study and make any modifications as needed. If the result was favorable, then the investigator would plan for the next PDSA cycle. This could be done by increasing the participants or conducting the change over longer periods of time. If the result was not favorable, the investigator would evaluate the cause and refine the change to make it more applicable in this setting. During the testing of multiple PDSA cycles and refining the change, the change would be ready for implementation as a permanent and sustainable intervention.

CONCEPTS AND DEFINITIONS

Primary Care Provider

Primary care providers are individuals that specialize in comprehensive and continuing care for person with medical conditions and health concerns. They include medical and osteopathic doctors, physician assistants, and nurse practitioners. They provide “health promotion, disease prevention, counseling, patient education, diagnosis, and treatment of acute and chronic illnesses in variety of healthcare settings” (American Academy of Family Physicians, 2016).

Mental Health

Mental health is defined as “emotional, psychological, and social well-being” of an individual (MentalHealth.gov, n.d.). Individuals with mental health problems may experience poor judgment, stress, disability, or ineffective relationships.

Behavioral Health Staff

Behavioral health staffs are healthcare and allied health providers that work with patients with mental health problems and provide them appropriate counseling and treatment (MentalHealth.gov, n.d.). They include psychiatrists, psychiatric nurse practitioners, psychologists, community health workers, behavioral therapists, and psychiatric counselors.

Patient

Patient is an individual who is seeking care from healthcare providers for medical concerns or well-being.

Integrated Healthcare

Integrated healthcare is a patient-centered, personalized, and holistic approach to care (SAMHSA-HRSA Center for Integrated Health Solution, n.d.). Patients are not only treated for physical illnesses, but also emotional and psychosocial concerns. In integrated healthcare systems, behavioral health will be combined with primary care in order to provide more effective and better outcomes to all patients. Behavioral health staff will provide support and resources to the primary care providers in order to treat patients with behavioral and physical healthcare needs.

Warm Handoff

Warm handoff is defined as direct face-to-face referral between primary care provider and behavioral health staff (Collins, 2009). During this process, the primary care provider will discuss patient information and introduce the behavioral health staff directly to the patient during the same visit.

Situation

The situation is defined as patient conditions which required a referral. The situation needs to be clear and brief (Dingley, Daugherty, Derieg, & Persing, 2008).

Background

The background is a patient's medical history in the clinical context. Pertinent background information includes patient's condition, current medication, medical history, and psychiatric history (Dingley et al., 2008).

Assessment

Assessment is the provider's perceptions of the condition (Dingley et al., 2008). An example is a reason why the provider thinks the patient needs behavioral counseling.

Recommendation

Provider proposed interventions and prevention measures for patients, such as pharmacologic or non-pharmacologic interventions, lifestyle modifications, or behavioral modifications (Dingley et al., 2008).

SYNTHESIS OF EVIDENCE

Literature Search

A literature search was conducted by utilizing PubMed, General Evidence-Based Decision Making (EBM) search, Psych Info, and Google Scholar for articles published in English with keywords of “Situation, Background, Assessment, Recommendation (SBAR)”, and “warm handoff” or “communication”. Ninety-five articles were considered for review. The literature search was filtered to articles in English with no date limitation in order to evaluate the effectiveness of SBAR in communication between healthcare providers including the most current evidence on SBAR. As a result, 10 articles were appropriate to the purpose of this study and were evaluated. However, there is only one relevant study discussed about warm handoff or using SBAR in primary care.

Effectiveness of SBAR

The SBAR was first introduced in the healthcare settings in an effort to improve communication between nurses and physicians regarding patient information. The implementation of SBAR had strong support from the nursing management and physician leaders due to its simplicity and ease of implementation. The Joint Commission International Patient Safety Goal recommended that effective communication between healthcare professionals is required in order to improve patient outcomes (Dunsford, 2009). The Institute for Healthcare Improvement and the Joint Commission supported the utilization of SBAR as a form of structured communication (Dunsford, 2009).

The SBAR communication tool was implemented in multiple healthcare settings including hospitals, outpatient clinics, rehabilitation facilities, obstetric units, and long-term care

facilities. The outcomes of the implementation of SBAR tool showed improved effective communication between healthcare providers, increased quality of care, reduced medical errors, and decreased mortality (Randmaa, Martensson, Swenne, & Engstrom, 2013; De Meester, Verspuy, Monsieurs, & Van Bogaert, 2013). Additionally, healthcare providers felt more effective in communication when using the SBAR tool (Compton et al., 2012).

SBAR in Hospital Settings, Special Settings and Outpatient

Hospitals

De Meester, Verspuy, Monsieurs, and Van Bogaert (2013) studied the effectiveness of SBAR communication on the perceptions of effective communication and collaboration between nurses and physicians in serious adverse events of deteriorating patients. The serious adverse events were evaluated by utilizing questionnaires for nurses before and after the introduction of SBAR in the hospital (De Meester et al., 2013). In order to evaluate the perceptions of effective nurse-physician communication and collaboration, nurses and physicians had to respond to the Communication, Collaboration and Critical Thinking Quality Patient Outcomes Survey Tool (De Meester et al., 2013). The result of the study indicated that during 37,239 admissions, 207 serious adverse events occurred and were checked for SBAR items. After the introduction of SBAR, there was an increased perception of effective communication and collaboration between nurses and physicians. Nurses were better prepared and trained to notify physicians by utilizing SBAR items in patient records. As a result, there was a decline in unexpected patient deaths ($p < .001$).

Compton et al. (2012) conducted an evaluation of the implementation of SBAR in the multihospital health system. They used Nurse Audit Tool and physician surveys to evaluate the

utilization of SBAR. Approximately 97.4% of the nurses had been educated about SBAR and only 58.3% used it as a communication tool during critical situation (Compton et al., 2012). Approximately 78.1% of the physician reported that they received adequate and organized information when nurses used SBAR format (Compton et al., 2012).

SBAR is a communication tool that may be utilized to improve nurse report during shift change and interdisciplinary rounding (Cornell, Gervis, Yates, & Vardaman, 2014). Cornell, Gervis, Yates, and Vardaman (2014) conducted an observational study using interviews, surveys, sampling, and direct patient observation in medical-surgical unit in a hospital. Findings included significantly more shift reports using SBAR ($p < .05$) with shorter report time ($p < .01$) (Cornell et al., 2014). Significantly less time was spent on each patient report during interdisciplinary rounds using SBAR compared to pretest ($p < .01$). These studies result indicated that if SBAR is introduced properly within the organization, communication and collaboration between healthcare professionals may be greatly enhanced. As a result, serious adverse events may be avoided and improved patient outcomes.

Special Settings

Despite the recommendation of implementing SBAR in clinical practice, there are few intervention studies with a comparison group utilizing pre-assessments and post-assessments of staff member's perceptions of communication and incident reports due to communication errors. A prospective intervention study was conducted to evaluate the effects of implementation of SBAR at an anesthetic clinic (Randmaa, Martensson, Swenne, & Engstrom, 2013). The participants were nurses and physicians that were working in the anesthesia clinics. The primary outcomes of the study were staff members' perceptions of communication and patient safety.

The secondary outcomes were psychological empowerment and incident reports related to communication errors. Data from questionnaire were collected from staff in an intervention and a comparison groups at the anesthetic clinic. The study result indicated that the intervention group had significant improvements in group communication accuracy and safety climate ($p=.011$). The incident reports due to communication errors were also significantly lower in the SBAR group compared to the control group ($p<.0001$). The implementation of SBAR in anesthesiology clinics showed an improvement in staff members' perceptions of communication between healthcare professionals, patient safety, and decreased incident reports due to communication errors.

The integration of SBAR may improve the quality and patient safety outcomes in pediatric/prenatal settings. Beckett and Kipnis (2009) introduced collaborative communication integrating SBAR communication process in a pediatric and prenatal service department of a community hospital. The study outcomes were patient safety, team-work, and communication between healthcare professionals. The outcomes were measured through pre/post intervention questionnaires and surveys over time. The study results showed improved patient safety outcomes by enhancing healthcare professionals' communication and trust. The utilization of SBAR in conjunction with collaborative communication had a significant impact on teamwork, patient safety, and communication ($p<.05$) (Beckett & Kipnis, 2009).

Woodhall, Vertacnik, and McLaughlin (2008) conducted a survey before and after the implementation of SBAR communication in Magee-Women's Hospital of UPMC. Before the intervention, there was no standard communication tool between nurses and providers in critical events (Woodhall, Vertacnik, & McLaughlin, 2008). After implementing SBAR, there was a

major improvement of communication in five areas: perception of staff about providing clear and concise information during report, organizing and preparing reports, appropriate clinical decisions, and satisfaction with communication (Woodhall et al., 2008). The results of the survey were recorded in percentages.

Renz, Boltz, Capezuti, and Wagner (2015) conducted a study with the implementation of the SBAR tool in a long-term care setting. Primary care providers and nurses in this setting emphasized the importance of quality communication between healthcare professionals. The gaps in communication may lead to unnecessary hospitalization of patients and increase healthcare costs. SBAR provides a systematic method for healthcare professionals to evaluate and document changes in the patients' medical status. The objective of this study was to evaluate the feasibility of utilizing SBAR as a structured method for healthcare professionals to collect and communicate patient change in status in a long-term setting (Renz, Boltz, Capezuti, & Wagner, 2015). Nurses received training on the SBAR protocol, and the intervention uptake was evaluated in terms of SBAR quality such as completeness of SBAR form. The study resulted in decreased hospital transfers after the implementation of SBAR protocol and improvements in physician-nurse communication and collaboration.

The utilization of SBAR may be applied beyond acute care and nurse-physician communication. Velji et al., (2010) objective was to implement SBAR on two inter-professional rehabilitation teams with high fall risks and evaluate its impact on patient outcomes. The participants involved in this study consisted of all healthcare professionals and leaders of the rehabilitation units. A pre-post test design was utilized in this study to collect the data. The outcome measures were perceptions of team communication, patient safety, safety best practices,

team effectiveness, fall incidents and safety reporting (Velji et al., 2010). The data were collected through surveys. This study proved that SBAR was beneficial to the inter-professional rehabilitation teams and an effective method to communicate urgent and non-urgent safety issues ($p < .05$) (Velji et al., 2010).

The implementation of SBAR had a major influence on the staff perceptions of patient safety and the importance of communication. The method to collect data among different studies was similar. Most of the studies utilized surveys and questionnaires to evaluate the outcomes of SBAR. As a result, the studies shared similar conclusions. The results of these studies indicated that the utilization of SBAR enhanced communication between healthcare professionals and improved patient outcomes in terms of treatment continuity and decreased adverse events (Velji et al., 2010).

Outpatient Settings

Horevitz, Organista, and Arean (2015) conducted a “sequential medical record review of patients who received depression treatment in integrated behavioral health service” in Latino patients (p.824). Warm handoffs, traditional referral, and language have effects on the decision making of Latino patients diagnosed with depression to follow up depression treatment in an integrated primary care setting (Horevitz, Organista, & Arean, 2015). Four themes were identified during qualitative interviews: illness narrative, readiness, sense of connection, and everyday barriers (Horevitz et al., 2015).

SBAR has been effective with structuring and standardizing communication among healthcare professionals. However, there is limited research to support of SBAR as a communication method between healthcare providers and patients (Jenerette, Brewer, & Hill,

2011). Jenerette, Brewer, and Hill (2011) attempted to show that SBAR may be used to improve communication and care-seeking experience among patients with sickle cell disease who frequently visited the emergency department. Patients with sickle cell disease (SCD) often received delayed treatment due to lack of communication skills. The authors recommended that patients with sickle cell disease utilize SBAR in order to provide pertinent information to the healthcare professionals. The utilization of SBAR may improve patient treatment, outcomes, and establish trust between the patients and the providers (Jenerette et al., 2011). However, no actual intervention was conducted to investigate the effectiveness of SBAR utilization between patients with SCD and healthcare providers. The results of these studies indicated that the utilization of SBAR has an impact in the outpatient setting (Jenerette et al., 2011). SBAR utilization facilitates healthcare professionals and patients to communicate with each other. The relationship between healthcare professionals and patients may be established through SBAR. Patient trusts in their healthcare treatment may also be enhanced through effective communication with their healthcare providers. As a result, potential barriers may be avoided and improved patient outcomes.

Strengths, Weakness and Gaps

Strengths

Despite many quality improvement studies on patient warm handoffs, standardized and reliable measurement tools remain elusive (Patterson & Wears, 2010). Patterson and Wears (2010) conducted a literature review of approximately 400 related articles. The study was able to identify seven primary functions for patient handoffs such as information processing, stereotypical narratives, resilience, accountability, social interaction, distributed cognition,

cultural norms (Patterson & Wears, 2010). The study indicated that the diversity of handoff measurement methods demonstrated a lack of consensus of the primary purpose of handoff and effective interventions for improving handoff processes.

Evidence-based literature supported the utilization of SBAR to improve the communication among healthcare professionals. SBAR is easy to comprehend due to its simplicity. The SBAR communication tool has been implemented in multiple healthcare settings. It proved to be effective in improving the communication between healthcare providers and increasing patient quality of care and safety. Therefore, SBAR tool has the potential to improve the communication between primary care provider and behavioral health staff in integrated care.

Weakness and Gaps

There are limited studies on the safety and efficacy of current standardized patient handoff system. Anderson et al. (2010) conducted an evaluation within the Veteran Affairs healthcare system that consisted of electronic medical record linked handoff tool to improve the quality of physicians' handoff and efficiency of handoff process. The handoff methods were analyzed through printed handoff sheets and questionnaires of internal medicine residents. The study indicated consistent improvements of transferred information for all handoff content and perceptions of ease of use, efficiency and readability. The result of this study showed that standardized handoff tools may improve user satisfaction, data accuracy, patient safety, quality, and efficiency. However, the evaluation of this study reveals many limitations including the data being restricted to the Veteran Affairs healthcare system, thus limiting the application of the results.

Inconsistency and lack of provider education about SBAR could lead to poor communication and patient care. Advanced nurse practitioners and nurses are assumed to be very familiar with the use of SBAR communication tool. However, there are a few individuals that did not receive adequate education of SBAR. Another limitation is many available studies about SBAR are conducted within the hospital settings and not in the primary care settings. The majority of research is focused on improving nurse-provider communication. There is no available research on using SBAR in integrated care between primary care provider and mental health staff or using SBAR in a primary care setting. In addition, the effectiveness of “warm hand-off” communication has not been well studied. There is a need for more studies utilizing SBAR tool and warm hand-off communication in integrated care.

Ethical Considerations

The investigator obtained the approval from the University of Arizona Institutional Review Board prior to conducting the project (Appendix H). The respect for the participants was maintained through informed consent. Participants in the study were provided adequate information about the study to ensure that they had a good understanding of the study. In addition, participants’ autonomy was maximized. They had the right to participate or refuse to enroll in the study. They also had the right to protect their identity and secure health information. The risks and benefits were discussed in detail with the participants. The oral informed consent was obtained from each participant prior to conducting the study. There was no anticipated risk from this quality improvement study. The benefit of this study was the improvement of communication between primary care providers and behavioral health staff. The major benefit was to improve the quality and continuity of care for patients with behavioral or mental health

concerns in the primary care setting. The research design was safe and appropriate for the study. The target participants of this study are healthcare providers in an integrated care setting that provides care for the underserved population. Therefore, they would receive a direct benefit from the research. The sample for the study was a convenience and purposive sample. All the staff in the primary care settings was invited to participate in the study. The inclusion requirements are staff currently employed in the primary care clinic from Valle del Sol, active licenses as primary care providers where appropriate (MD, DO, NP, or PA) and behavioral health staff. This study has no exclusion criteria.

Timeline of Project

The project was approved by the University of Arizona on September 20th, 2016 (Appendix H). The investigator discussed the project with Valle del Sol director and received an authorization to conduct this study at Valle del Sol (Appendix I) (Brubaker, 2016). The investigator sent out emails to all primary care providers and behavioral health workers who are currently working at Valle del Sol. A PowerPoint introduction of SBAR was also attached in the email. The investigator also presented the information in-person and obtained oral consents from them. A pretest was conducted prior to the initiation of the study. The study was initiated on September 22nd, 2016 at the first location and September 29th at the second location. The study ended on October 27th, 2016. The posttest and in-depth interviews were conducted in person and via email from October 27th to November 3rd, 2016. The length of the study was approximately four weeks.

METHODOLOGY

Project Design

This was a pilot quality improvement study to evaluate the effectiveness and provider's satisfaction of using SBAR as a standardized checklist for communication during warm handoff process between primary care providers and behavioral health staff. This study utilized a mixed method research design, with surveys, observation, and structured interviews. The investigator conducted the study to collect, analyze, and integrate qualitative and quantitative data.

Description

The description of the study included the reason for conducting the study, length of study, target population, setting, method and analysis, description of intervention (SBAR during warm handoff), and desired outcomes. The SBAR tool has been developed to improve communication between nurses and providers to provide safe and quality patient care (Labson, 2013). The current practice in the clinical setting was using unstructured warm handoff during communication process between primary care providers and behavioral health counselors. A checklist using SBAR format was developed to improve the warm handoff process through a more structured information communication process. The project aim was to evaluate the improvement of communication using SBAR tool during warm handoff referrals between primary care providers and behavioral staff. The goal was to have at least 30 referrals using the SBAR tool.

Setting

The chosen clinical setting was located in Phoenix, Arizona. This clinic was initially founded to provide behavioral health and social services for the underserved populations (Valle

del Sol, 2015). This organization has been accredited and specializes in substance abuse and mental health treatment. It was recently expanded to become an integrated organization that provides not only behavioral health and social services, but also primary care services for children and adults. This organization has two locations in Phoenix, Arizona.

Participants

The participants in this project were primary care providers and behavioral health workers who were currently practicing in the integrated primary care setting in Phoenix, Arizona. This was a convenience and purposive sample. The investigator emailed and made appointments to meet each participant to obtain consent prior to the implementation (Appendix J). There are five healthcare providers currently practicing at Valle del Sol. They all agreed to participate in the project while the investigator did clinical hours there in April. However, after the project received IRB approval, the investigator could not contact the pediatrician for consent. There were four participants (n=4) who provided consent to participate in this study. There were two nurse practitioners that provided primary care services and two behavioral health workers that provided direct counseling to patients who required mental health services in the primary care setting. The investigator provided them information about the SBAR tool, project design, risks and benefits of the study. The investigator answered all questions and concerns regarding to the study. They all agreed to fill out pre and post questionnaires, and participate in a structured interview with the investigator in-person or via phone. Two participants were available to have the investigator observe their warm handoff process. All participants in this project were men or women who were 18 years old or older, currently practicing at Valle del Sol. They were currently holding Arizona license to practice at the time of study conducted.

Data Collection Tools

The Collaboration and Satisfaction about Care Decision (CSACD)

Data collection utilized pretest and posttest questionnaires, observation, and structured interview methods. The pre and posttest surveys were based on the Collaboration and Satisfaction about Care Decision (CSACD) (Appendix F) (Baggs, 1994). The CSACD was created to evaluate the quality of interactions in the decision-making process and satisfaction with the decision making process in the healthcare settings (Baggs, 1994). The tool includes 10 questions on a 7-point Likert scale to assess collaboration and satisfaction. Eight questions focus on collaboration and the other 3 questions focus on satisfaction. This tool uses Likert scale from 1-strongly disagree to 7-strongly agree. It is a self-administered questionnaire. This tool has internal consistency, high correlation between collaboration and satisfaction with the decision-making process (Baggs, 1994). The CSACD content is valid since it is used to measure the satisfaction and collaboration between healthcare providers.

Observation

A small sample size could affect the internal validity of the results of pre and post survey. Therefore, the investigator also observed the providers' communication skill when using SBAR during the warm handoff process. The investigator noted eye contact, hand gestures, facial expression, position, and verbal communication, tone of voice, any comments, reflections, or responses relating to the study. Participant observation allowed the researcher to collect physical signs, nonverbal and verbal communication, participants' communication, and the external environment (Terry, 2015). The investigator also observed the actual use of the tool in communication and the data communicated was standardized with the tool. The observations

were able to pick up on items that were not standardized on the tool (nonverbal communication or off-track data).

Structured Interviews

The structured interviews were conducted individually with all four participants in order to understand their reflections on the quality improvement project and how it affects their daily practice. The interviews included open-ended questions that focused on the addressed issues, reflective listening, confirmation, summarizing, and empathy. Interviews were done in-person with three participants and over the phone with one participant due to availability issue (Appendix G).

Process for Data Collection

Pre-test and Post-test Questionnaires

A Collaboration and Satisfaction about Care Decisions form was sent via email to all four participants immediately after given consent. The investigator also handed the pretest questionnaires directly to two participants when obtaining the consent. The participants had one week to fill out the questionnaire and email back or submit the hard copy to the investigator in person. One behavioral health worker sent a completed questionnaire to the investigator via email, and one primary care provider and the other behavioral health worker handed the filled form to the investigator in person. The other primary care provider did not return the questionnaire. The posttest questionnaire was sent out on October 26, 2016 to all participants via email. Two behavioral health workers returned the questionnaires on November 1st. The primary care provider who responded to the first questionnaire handed a response directly to the investigator on November 3rd. The investigator kept these forms in a sealed envelope and stored

in a locker in the investigator's home office. Each form was coded one or two to denote two groups A and B. Group A was composed of primary care providers and group B consisted of behavioral health workers.

SBAR Education

After obtaining consent from all four participants, the investigator provided them with a presentation on SBAR tool. The presentation showed the current evidence about the effectiveness of SBAR tool in improving communication between healthcare providers, and its application in clinical practice. This presentation was provided to each individual participant once they consented to participate in the study. The presentation was five to seven minutes long. The investigator also provided copies of SBAR tool to the participants and explained it in detail. There were no questions or concerns from any of the participants.

Patient's Assessment

Primary care providers initially screened the patients for any behavioral or mental health concerns using the screening form developed by the facility for behavioral and physical health concerns called Valle del Sol Whole Health Screener. This screener is available in English and Spanish versions for both adults and children (Appendix B, C, D, and E). The secretary provided to all the patients the applicable screening form to fill out at the time of check-in at the clinic. Patients gave the form to the medical assistant when being roomed. Afterwards, the primary care providers reviewed the form prior to entering the exam room. If the patient scored high on the form for any psychiatric concerns or psychosocial issues, the primary care providers would assess more about patient's condition. If there was any concern based on the patient's psychiatric

assessment, the primary care providers would refer the patient to behavioral health staff for counseling.

Utilizing SBAR Tool

The SBAR tool were developed based on the input of the primary care providers and behavioral health workers while the investigator did clinical at the site. Primary care providers and behavioral health staff utilized the SBAR checklist during the warm handoff communication (Appendix A). Assessment and recommendation were two-way processes. Primary care providers initially reported their assessment and recommendation to the behavioral health staff. After the behavioral health workers counseled with the patient, they would discuss their thoughts and recommendations with the primary care providers. The primary care providers and behavioral health staff developed an appropriate plan to manage the patient's' conditions. The primary care providers were responsible for prescribing the medications and ordering interventions as needed while the behavioral staff would provide counseling to the patient if necessary.

Observation Process

The investigator came to one of the clinics on every Tuesday and Thursday for four and half weeks, spending 8 hours per day as part of the clinical day. There were three to five direct referrals during each day. The investigator was present to observe at the time of the handoff. The investigator observed the primary care provider and behavioral health worker during the handoff. The investigator also paid attention to the communication, verbal and nonverbal behavioral, gestures, positioning, and the completion of report. All of that information was de-identified and recorded in the investigator's daily diary.

Structured Interview Process

The investigator sent out an email to all the participants in order to make an appointment with them on October 19, 2016 for a structured interview. However, no participants responded to the email. The investigator sent out another email on October 26, 2016 with no responses. With the two participants in the clinic at 1209 location, the investigator met them in person during observation and made an appointment with them to conduct the structured interview during their lunch hours. Two visits were made to the 3807 clinic location by the investigator to meet with the other two participants. The investigator had a difficult time scheduling an appointment with them initially. Afterwards, the investigator was able to meet one of the primary care providers and conducted an in-person interview with her during the lunch hour. The behavioral health worker was also busy and unable to have an in-person interview. As a result, the investigator managed to conduct an interview with the behavioral worker via telephone. Each interview was five to ten minutes long and included 10 open-ended questions (Appendix G). The investigator wrote down their responses on four different sheets of paper that contained the questions.

Data Analysis

Questionnaires

Pretest and posttest questionnaires were collected from three participants. The questionnaires from the pretest and posttest survey had 10 questions. Each question was graded on the ordinal scale from 1 to 7, 1-strongly disagree/no collaboration to 7-strongly agree/complete collaboration. The Wilcoxon matched-pairs test was used to analyze the difference between each of the 10 paired measurements of the CSACD questionnaire between pretest and posttest from the three participants.

Observation and Structured Interviews

Content analysis was utilized to analyze the data from the structured interviews and comments or response from the observation. Content analysis allows the investigator to interpret the data in an objective, simple, and systematic way (Terry, 2015). The investigator documented all of the answers during each interview. The content of each interview and observation diary note was analyzed by the investigator. The investigator solicited the advice of a Doctor of Pharmacy (PharmD) researcher, who recently published a study, to identify common themes in the data. The PharmD mentioned was familiar with this research and the data analysis. These themes allowed the investigator to understand the perspectives of participants related to implementation of the project. In addition, based on the results of the study, the investigator could modify the plan and intervention to be more applicable to the clinical setting. The content analysis of this project included the evaluation of the credibility, dependability, conformability, authenticity, and transferability of the project.

The investigator performed an inductive content analysis. The interview scripts were divided in two categories: primary care providers and behavioral health workers. The investigator and the PharmD researcher read each note multiple times individually. They used open coding to code the data. Based on the content of the interview, the investigator and the Pharm D researcher coded the data into four categories: experiences with SBAR, perception of providing or receiving adequate report, perception of organizing thought process prior to handoff, and perception of the need of a structured communication tool. The content of observation daily diary note was coded into three categories: verbal communication (tone of voice, feedback), nonverbal communication (body language, position, pauses, facial expression),

and the completion of report. Each category was highlighted with different color. The investigator and the PharmD researcher classified the relevant information for each category and highlighted the information with the same color. Then, they read the information multiple times and identified the common themes individually. Afterwards, they met together to discuss openly about their identified common themes. The investigator and the PharmD researcher agreed on the common themes.

RESULTS

The investigator distributed the questionnaire to all four participants who gave oral consent to participate in the study (two nurse practitioners and two behavioral health workers). The response rate of the survey for pre intervention was 75% (n=3) and post intervention was 75% (n=3). In addition to the response rate survey, the investigator observed 40 warm handoffs between the primary care provider and behavioral health worker in the clinic at 1209 location. The investigator also conducted structured interviews with all four participants after the implementation of SBAR.

Participant Demographic Information

The responders were all females including two nurse practitioners who served as the primary care providers and two behavioral health workers. One of the nurse practitioners has been working at the clinic for two years while the other one has been there for six months. In regards to education, both nurse practitioners hold the Master of Science in Nursing (MSN) degree. One of them also had a Doctor of Philosophy (PhD) degree. They both have been nurse practitioners for more than two years. Both of the behavioral health workers had their bachelor degree in social services and were in their thirties. One of the behavioral health workers has been

employed at Valle del Sol for more than one year while the other one has been working there for five months.

Quantitative Analysis: Pre and Post-test Questionnaire

From September 22 to October 27, there were 52 warm handoffs using SBAR tool conducted at two Valle del Sol locations. There were 12 warm handoffs conducted at the 3807 location and 40 warm handoffs conducted at the 1209 location. The investigator used SPSS to analyze the data between pretest and posttest. The investigator used Wilcoxon matched-pairs signed rank test for this study to determine whether there was a difference in the median response of the pretest and posttest questionnaires among the participants. In order to utilize the Wilcoxon matched-paired signed rank test, it requires at least five pairs of measurement. In the study, there were only three participants that provided feedback via questionnaires. As a result, this analysis did not meet the power requirements of this test. However, the investigator wanted to compare each matched question between pretest and posttest to determine if there were any differences.

Table 1 provides the mean of each individual survey question in the pretest and posttest. There was no statistically significant difference between the means of the pretest and posttest score ($p=.062$). The use of SBAR format had no significant differences in improving collaboration and satisfaction about care decision between primary care providers and behavioral health workers.

TABLE 1: *Comparison of Participant's Satisfaction: Pre- and Post-SBAR Implementation*

	Pre SBAR (n=3) Mean	Post SBAR (n=3) Mean	Status
1. Team members planned together to make the decision about care for this patient.	5.33	5.33	Unchanged
2. How satisfied are you with your current way of communication during warm handoff?	5.33	4.67	Decreased
3. With the current direct referral, you feel that you provide and receive adequate information to other team members.	5.67	5	Decreased
4. Decision-making responsibilities for this patient were shared among team members.	4.33	4.67	Improved
5. Team members cooperated in making the decision.	5	6	Improved
6. In making the decision, all team members' concerns about this patient's need were considered.	4.67	6.67	Improved
7. Decision-making for this patient was coordinated among team members.	5	6.67	Improved
8. How much collaboration among team members occurred in making the decision for this patient?	5	5	Unchanged
9. How satisfied are you with the way the decision was made for this patient, that is with the decision-making process, not necessarily with the decision itself?	5.33	7	Improved
10. How satisfied were you with the decision made for this patient?	5.33	6.67	Improved

- *Question 1: Team members planned together to make the decision about care for this patient.*

TABLE 2. *Wilcoxon Matched-Pairs Test for Question 1*

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between pretest and posttest equals 0.	Related-Samples Wilcoxon Signed Rank Test	1.000	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

There was no difference in the median score of team member planning between the pretest and posttest groups ($p=1$).

- *Question 2: How satisfied are you with your current way of communication during warm handoff?*

TABLE 3. *Wilcoxon Matched-Pairs Test for Question 2*

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between pretest and posttest equals 0.	Related-Samples Wilcoxon Signed Rank Test	1.000	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

There was no difference in the median satisfaction score of current communication tool between the pretest and posttest groups ($p=1$).

- *Question 3: With the current direct referral, you feel that you provide and receive adequate information to other team members.*

TABLE 4. *Wilcoxon Matched-Pairs Test for Question 3*

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between pretest and posttest equals 0.	Related-Samples Wilcoxon Signed Rank Test	1.000	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

There was no difference in the median score of the perception of providing and receiving adequate report between the pretest and posttest groups ($p=1$).

- *Question 4: Decision-making responsibilities for this patient were shared among team members.*

TABLE 5. *Wilcoxon Matched-Pairs Test for Question 4*

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between pretest and posttest equals 0.	Related-Samples Wilcoxon Signed Rank Test	.785	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

There was no difference in the median score of decision-making responsibilities between the pretest and posttest groups ($p=.785$).

- *Question 5: Team members cooperated in making the decision.*

TABLE 6. *Wilcoxon Matched-Pairs Test for Question 5*

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between pretest and posttest equals 0.	Related-Samples Wilcoxon Signed Rank Test	.083	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

There was no difference in the median score of team member cooperation between the pretest and posttest groups ($p=.083$).

- *Question 6: In making the decision, all team members' concerns about this patient's need were considered.*

TABLE 7. *Wilcoxon Matched-Pairs Test for Question 6*

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between pretest and posttest equals 0.	Related-Samples Wilcoxon Signed Rank Test	.180	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

There was no difference in the median score of team member's concerns between the pretest and posttest group ($p=.180$).

- *Question 7: Decision-making for this patient was coordinated among team members.*

TABLE 8. *Wilcoxon Matched-Pairs Test for Question 7*

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between pretest and posttest equals 0.	Related-Samples Wilcoxon Signed Rank Test	.102	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

There was no difference in the median score of coordination in decision-making among team member planning between the pretest and posttest groups ($p=.102$).

- *Question 8: How much collaboration among team members occurred in making the decision for this patient?*

TABLE 9. *Wilcoxon Matched-Pairs Test for Question 8*

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between pretest and posttest equals 0.	Related-Samples Wilcoxon Signed Rank Test	.655	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

There was no difference in the median score of team member planning between the pretest and posttest groups ($p=.655$).

- *Question 9: How satisfied are you with the way the decision was made for this patient that is with the decision-making process, not necessarily with the decision itself?*

TABLE 10. *Wilcoxon Matched-Pairs Test for Question 9*

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between pretest and posttest equals 0.	Related-Samples Wilcoxon Signed Rank Test	.102	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

There was no difference in the median score of team member's satisfaction in decision making process between the pretest and posttest groups ($p=.102$).

- *Question 10: How satisfied were you with the decision made for this patient?*

TABLE 11. *Wilcoxon Matched-Pairs Test for Question 10*

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between pretest and posttest equals 0.	Related-Samples Wilcoxon Signed Rank Test	.102	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

There was no difference in the median score of team member's satisfaction of between the pretest and posttest groups ($p=.102$).

In conclusion, the result of eight collaboration questions and two satisfaction questions of the CSACD questionnaires showed no statistically significantly different between the pretest and

posttest group. There was not enough data to evaluate the improvement of communication using SBAR tool, but a trend toward increased satisfaction was noted.

Qualitative Analysis: Observation and Interview

Observation

After one month of the SBAR tool implementation, there were 40 SBAR tools used by both primary care provider and behavioral health workers in the clinic at 1209 location. The primary care provider used SBAR in 24 warm-handoffs. The primary care provider used SBAR three to four times per day for one month. The behavioral health worker used SBAR 16 times in the one-month period. On average day, the investigator observed three to four direct warm handoffs between the primary care provider and the behavioral health worker. Both of the primary care provider and behavioral health worker demonstrated strong communication skills during the handoff. During the handoff, they demonstrated mutual respect for each other. They kept eye contact during the handoff. Their body language, such as hand gestures and facial expression were purposeful and deliberate. The primary care provider tended to stand comfortably while the behavioral health worker sat or stood comfortably (depending on the situation). Both listened actively to each other, verbalized confidently, clearly, and concisely to the patient's information. Their tone of voice was moderate to low during the handoff. They sometimes paused to think. The listener responded to the speaker by nodding or saying "uh-huh". The listener would stop the speaker to ask questions or clarifications during the handoff as needed. The investigator noted that handoff content was adequate and complete. The primary care provider and the behavioral health worker also collaborated to make treatment decisions for the patient. All patient identifiers were protected during warm handoff.

Primary Care Providers' Perception of Using SBAR

The investigator interviewed the two primary care providers. Prior to the SBAR tool implementation, there was not a standardized communication tool used to communicate with the behavioral health worker when referring a patient with psychiatric disorders or psychosocial issues. Three common themes were identified among the primary care providers' perception of SBAR format.

First, they both had previous experiences with SBAR. Both of the primary care providers in this study were nurse practitioners. They stated that they were familiar with using SBAR during report when they were nurses. They used SBAR tool in 100% of their warm handoffs. They stated that the utilization of SBAR format during warm handoff with the behavioral health workers was more effective.

Second, both of the primary care providers believed a structural communication tool such as SBAR format would improve their communication and facilitate teamwork with the behavioral health workers. Both of them stated that using SBAR tool increased the collaboration and satisfaction of patient's care.

Third, they perceived that utilization of SBAR format helped them organize their thoughts and information in order to provide an adequate report to the behavioral health workers. One of the providers identified two weaknesses of the SBAR tool such as lack of space to fill out the patient information and time consumption. The other nurse practitioner did not see any barriers that could prevent the use of SBAR format. This nurse practitioner stated she was proficient using SBAR during communication and SBAR had been "a part of her nature".

Behavioral Health Workers' Perception of Using SBAR

There were three common themes identified during the interview from both behavioral health workers. First, they did not have previous experience with the SBAR communication. This tool was new to them. One of the behavioral worker stated that it took her a couple of times to remember the order of SBAR and its information. Second, both felt that prior to the initiation of the SBAR tool, the collaboration and teamwork was not so strong in terms of making effective patient treatment plan. Third, they both felt that they received adequate and organized information about referred patient from the primary care providers who used SBAR format. After the implementation of SBAR tool, one of them found that the SBAR tool improved the communication with the primary care providers. However, the other community health worker did not feel any benefit from using the SBAR tool.

According to one of the behavioral health workers, after the implementation of the SBAR tool, this individual used SBAR tool in 16 handoffs with the primary care providers. The SBAR tool helped to receive adequate information about the patients in a systematic way. It allowed the individual to write down all the information in the form. SBAR also provided an option to report back to healthcare providers in some situations when the patient had duplicated clinic visits. The SBAR form helped organize information and communicate more effectively with the primary care providers. The primary care providers and behavioral health workers recommended having more space in the SBAR form to fill out the information. The biggest barrier that prevented the healthcare providers from using SBAR was the lack of training and education. The training session was short and did not allow the participants to think of appropriate questions.

The other behavioral health worker used SBAR twice in the one-month-period of the implementation of SBAR. This individual stated that the SBAR tool lacked important information regarding behavioral health such as identifying history of substance abuse, drug or alcohol usage, social, behavioral health, and sleeping habit. The lack of information could lead to the wrong patient diagnosis. This individual stated that SBAR did not help when giving report to the primary care providers. This individual felt unsatisfied and frustrated when using SBAR format due to lack of information.

DISCUSSION

The purpose of this project is to evaluate the effectiveness of using SBAR communication tool between primary care providers and behavioral health workers in integrated care for an underserved population. Pretest and posttest surveys and structured interviews were completed after implementation of the SBAR during warm handoffs as well as observation during the implementation processes to evaluate the participant's communication skill. The findings are discussed based on the project's purpose, objectives, aims, and framework. In addition, the strengths, limitations of the project, and suggestion for further research are discussed in this section.

Discussion Related to Objective One

Objective number one: The SBAR communication tool will be used in at least 75% of referrals between primary care providers and behavioral health workers during transition of care during a one-month trial.

The consistent utilization of the SBAR tool provides more reliable results. Both primary care providers reported that they used SBAR communication tool during all their warm handoff

with behavioral health workers. However, one of the behavioral health workers reported that this individual used SBAR tool in 75% of the warm handoff while the other only used the SBAR tool twice. During the in-depth interview, there are some identified barriers of not using SBAR such as old habit; SBAR tool was not present at the time, and lack of time for warm handoff.

Discussion Related to Objective Two

Objective number two: At least 75% of providers will report satisfaction when using the SBAR after the one month

All primary care providers and one behavioral health worker reported high satisfaction when using SBAR tool while one of the behavioral health worker felt unsatisfied with the tool. They used SBAR as a standardized communication tool during referral for patient with psychosocial concerns. They stated SBAR tool was easy to use. The tool created a common language between the providers and effective organization of information regarding to patient's condition. The tool also improved teamwork in making decision of care for patient by facilitating collaboration and sharing decision making process.

Discussion Related to Objective Three

Objective number three: At least 75% of providers will report that the SBAR helped them organize thoughts and expedite the handoff compared to traditional report after one-month period.

Three out of four the participants reported that the SBAR tool helped them organize their thoughts during the warm hand-off. All participants stated that they provided and received adequate information about the patient when they used SBAR tool. However, all of them stated that the handoff was longer when they used SBAR tool. They estimated that there were about 1-3

minutes extra for each warm handoff when using SBAR tool compared to their casual communication. As investigated further, one of the behavioral health workers stated that this individual was not familiar with the new tool. This person had a difficult time remembering the order of report. However, this individual felt that the SBAR tool would help them expedite the handoff in the future. On the opposite hand, the other behavioral worker felt using SBAR was not helpful in providing or receiving report.

Discussion Related to Framework - PDSA cycle

The result of the data analysis was different from the investigator's predictions. It was predicted that the implementation of SBAR communication tool would lead to an improvement. However, the actual data showed that the use of SBAR tool did not significantly improve the communication between primary care providers. One primary care provider did not respond to the survey. One behavioral health worker reported frustration about the tool and provided the low scores on posttest questionnaire. The observation and structured interviewed showed that at least 75% providers thought that SBAR helped them improve their communication process with other providers during warm handoff. Based on the information from the structured interview, the collaboration of the primary care providers and behavioral health workers in the clinic at 3807 was not strong. The primary care providers tend to make their own decision regardless of other's recommendation. Lack of information in the SBAR tool regarding to behavioral health contributed to participant's frustration and poor satisfaction. Therefore, more information should be added to the SBAR form during the next PDSA cycle to gain satisfaction among all healthcare providers.

Based on the result, modification of the SBAR tool is required to increase buy-in by stakeholders. The investigator will provide more space in the SBAR tool for participants to write down the patient's information. The investigator will also add some behavioral health information in the SBAR such as alcohol use, substance abuse, sleeping habit in the "relevant psychosocial history" portion. The investigator plans to test the change using the modified SBAR tool in the same population. The investigator predicts that all participants will report that the SBAR tool helps them provide and receive adequate information about the patient and increase teamwork. The investigator plans to use the same project design, aim and objectives, participants, and setting to test the change. In addition to the current participants, the investigator will attempt to consent the pediatrician and the new primary care provider to participate in the project.

Impact of Results on Practice

Improving communication between healthcare providers has the potential to increase the quality of patient care and transitions for patients with behavioral health issue in the integrated care setting. The current literature about SBAR suggested that using SBAR would lead to an improvement of communication between healthcare providers. Although the quantitative result of this project was not significant, the qualitative result showed that SBAR tool was effective in helping the healthcare providers organize thoughts, and provide or receive adequate information. The results of the project helped the investigator understand the need to change, learn to manage adequate data collection during next cycle and get participants to be more involved in the project. The study also helped the investigator to understand and how to modify the intervention to be more suitable for this clinical setting. The implementation and sustainability of SBAR tool would

take place after several PDSA cycles of testing and refining of the change. The sustainability of the change requires more support from staff and leadership from the interdisciplinary team.

Strengths of the Project

The strengths of the study included the appropriate design and target population. This was a pilot quality improvement study using mixed methods with surveys, observation, and structured interviews. Pretest and posttest surveys provided the baseline measurement of the participants' satisfaction of their current communication tool and allowed the investigator to compare the result before and after implementing an intervention. The observation and structured interviews also helped the investigator to explore more about the perception of participants regarding to the use of SBAR tool such as its strengths, limitations, and recommendations for improvement. The target population and clinical setting were also considered strengths of this study. The chosen clinical setting was an integrated clinic where they have both primary care providers and behavioral health staff on-site at all time. The inclusion and exclusion criteria allowed the investigator to control the differences.

Limitations of the Project

There were important limitations to this study. First, this project had a small sample size. There were only four Valle del Sol staff members that gave consent to participate in the project. The small sample size might increase type II errors and decrease the significance level of the findings. Second, there was one primary care provider that provided consent but did not return either pre and post survey. Third, the data were self-reported measures which could affect the validity of the finding. Even though the questionnaire includes ordinal data, these data only provide the order of each unit but not the distance between them. Fourth, the length of the project

was short. A one month period was a short period of time for the providers to fully adapt to the change, familiarize with the tool, and use it efficiently.

Suggestions for Further Research

This project had many limitations which might require further research in order to support the positive outcomes of SBAR. The results did not show statistically significant improvement in the provider's' satisfaction. However, it is likely to be feasible to implement the SBAR tool as a standardized communication tool between primary care providers and behavioral health workers in an integrated care setting for underserved patients with psychosocial concerns. Multiple PDSA cycles should be considered to refine the change. Future research should be conducted with a refined SBAR tools, or in a longer period of time with a larger sample size to increase the significant level of findings. Another recommendation is to provide detailed education regarding the SBAR to all staff prior to the implementation. One of the behavioral health workers recommended providing more space in SBAR form in order to fill in the patient's information easier. Another provider found that it would be easier to write down the patient information in the SBAR forms prior to performing warm handoff. Further research should include all physicians, nurse practitioners, physician assistants, and behavioral health workers to have more generality of the result. The project should expand to the whole Phoenix area, or even to all integrated care clinics in Arizona. The expansion will provide more generalizable data.

CONCLUSION

This was a pilot quality improvement project that focused on the improvement of communication between primary care providers and behavioral health staff. The aim of this research project was to improve communication between primary care providers and behavioral health worker in integrated care using SBAR communication tool during warm handoff. The findings and results of this project met all the objectives. Even though the results are not statistically significant, implementation of SBAR as a standardized communication tool had a perceived increased satisfaction in communication between primary care providers and behavioral health workers. Moreover, the current evidenced-based literature also supported the use of SBAR as a standardized communication tool between health care providers. Therefore, multiple PDSA cycles should be tested to refine the change and improve the quality of communication between primary care providers and behavioral health workers. The project should include at least five participants in each PDSA cycle. Due to a number of limitations of this project, further research should be conducted in order to provide more positive outcomes of SBAR.

APPENDIX A:
WARM HAND-OFF CHECKLIST

Warm Handoff Checklist

S Situation	Patient name:		Date:	
	Room number:			
	Chief complaint:			
	Psychosocial concerns:			
B Background	Medical history:			
	Relevant psychosocial history:			
	Previous or current psychiatric/behavioral health treatment:			
	Current medications:			
	Support systems (Family/Social Support):			
A Assessment		By Primary Care Provider	By Behavioral Health Staff	
	Patient's current situation: Screening score:			
	Mentation: Alert? Oriented? Cooperative?			
	Psychological assessment: Anxiety? Depression? Nervous?			
	Behavioral observations: Eye contact? Verbal and nonverbal communication? Tone, pace, inflection, volume of speech?			
R Recommendation	Goals:			
	Treatment:			
	Referral needs:			

APPENDIX B:

VALLE DEL SOL WHOLE HEALTH SCREENER (ADULT ENGLISH VERSION)

Valle Del Sol Whole Health Screener (Adult English Version)

Patient name _____ Patient Date of Birth _____

At Valle del Sol we know that your health is more than a number. We strive to look at your health from an integrated perspective because we know that what's going on in your life is just as important as what's going on with your physical and mental health.

Valle Del Sol provides a variety of services and we want to make sure that we give you the best we have to offer. To help us better serve you, please answer the following questions to let us know what services are right for you.

PLEASE CIRCLE YOUR RESPONSE TO EACH QUESTION.

How satisfied are you with the relationships you have with your family?

Very Unsatisfied	Somewhat Unsatisfied	Neutral	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

How satisfied are with your mental or behavioral health since your last visit?

Very Unsatisfied	Somewhat Unsatisfied	Neutral	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

How satisfied are you with relationships that you have with others?

Very Unsatisfied	Somewhat Unsatisfied	Neutral	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

How satisfied are you with your physical health?

Very Unsatisfied	Somewhat Unsatisfied	Neutral	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

How satisfied are you with your work and/or volunteer performance?

Very Unsatisfied	Somewhat Unsatisfied	Neutral	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

Thank you for your time in completing this form. If you have any questions, please ask your medical providers

APPENDIX C:

VALLE DEL SOL WHOLE HEALTH SCREENER (ADULT SPANISH VERSION)

Cuestionario de Valle Del Sol Salud Total (Adult Spanish Version)

Nombre de Paciente: _____ Fecha de Nacimiento: _____

En Valle del Sol sabemos que su salud es más que un número. Nos esforzamos para mirar a su salud desde una perspectiva integrada, porque sabemos que lo que está pasando en su vida es tan importante como lo que está pasando con su salud física.

Valle del Sol ofrece una variedad de servicios y queremos asegurarnos en darle lo mejor que tenemos para ofrecer. Para ayudarnos a servirle mejor, por favor conteste las siguientes preguntas sobre su salud y bienestar.

POR FAVOR MARQUE CON UN CIRCULO SU RESPUESTA

¿Qué tan satisfecho está usted con las relaciones que tiene con su familia?

Muy	Algo		Algo	Muy
Insatisfecho	Insatisfecho	Neutral	Satisfecho	Satisfecho
1	2	3	4	5

¿Qué tan satisfecho está con su salud mental o de comportamiento desde su última visita?

Muy	Algo		Algo	Muy
Insatisfecho	Insatisfecho	Neutral	Satisfecho	Satisfecho
1	2	3	4	5

¿Qué tan satisfecho está usted con las relaciones que tiene con los demás?

Muy	Algo		Algo	Muy
Insatisfecho	Insatisfecho	Neutral	Satisfecho	Satisfecho
1	2	3	4	5

¿Qué tan satisfecho está usted con su salud física, la nutrición, y / o el peso?

Muy	Algo		Algo	Muy
Insatisfecho	Insatisfecho	Neutral	Satisfecho	Satisfecho
1	2	3	4	5

¿Qué tan satisfecho está usted con su trabajo y / o el rendimiento voluntario?

Muy	Algo		Algo	Muy
Insatisfecho	Insatisfecho	Neutral	Satisfecho	Satisfecho
1	2	3	4	5

Gracias por su tiempo para llenar este formulario.
Si tiene alguna duda, consulte a su proveedor médico.

APPENDIX D:

VALLE DEL SOL TOTAL HEALTH SCREENER (CHILD ENGLISH VERSION)

Valle Del Sol Total Health Screener (Child English Version)

Patient name _____ Patient Date of Birth _____ Date _____

At Valle Del Sol we know that your child's health is more than a number. We strive to look at your child's health from an integrated perspective because we know that what's happening in your child's life is just as important as what's going on in their body.

Valle Del Sol provides a variety of services for your family and we want to make sure that we give you the best we have to offer. To help us better serve you, please answer the following questions to let us know what services are right for you and your child.

PLEASE CIRCLE YOUR RESPONSE TO EACH QUESTION.

How satisfied are you with the relationships your child has with family members?

Very Unsatisfied	Somewhat Unsatisfied	Neutral	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

How satisfied are you with your child's emotional and behavioral health since your last visit?

Very Unsatisfied	Somewhat Unsatisfied	Neutral	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

How satisfied are you with how your child gets along with other children?

Very Unsatisfied	Somewhat Unsatisfied	Neutral	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

How satisfied are you with your child's health, nutrition, and/or weight?

Very Unsatisfied	Somewhat Unsatisfied	Neutral	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

How satisfied are you with your child's school performance?

Very Unsatisfied	Somewhat Unsatisfied	Neutral	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

Thank you for your time in completing this form. If you have any questions, please ask your medical provider.

APPENDIX E:

VALLE DEL SOL TOTAL HEALTH SCREENER (CHILD SPANISH VERSION)

Cuestionario de Valle Del Sol Salud Total (Child Spanish Version)

Nombre de Paciente: _____ Fecha de Nacimiento: _____

En Valle Del Sol sabemos que la salud de su hijo es más que un número. Nos esforzamos para mirar a la salud de su hijo desde una perspectiva integrada, porque sabemos que lo que está pasando en la vida de su hijo es tan importante como lo que está pasando con su cuerpo.

Valle Del Sol ofrece una variedad de servicios para su familia y queremos asegurarnos en darle lo mejor que tenemos para ofrecer. Para ayudarnos a servirle mejor, por favor conteste las siguientes preguntas para hacernos saber qué servicios son adecuados para usted y su hijo.

POR FAVOR MARQUE CON UN CIRCULO SU RESPUESTA

¿Qué tan satisfecho está usted con las relaciones que su hijo tiene con miembros de su familia?

Muy	Algo		Algo	Muy
Insatisfecho	Insatisfecho	Neutral	Satisfecho	Satisfecho
1	2	3	4	5

¿Qué tan satisfecho está usted con la salud emocional y comportamiento de su hijo desde su última visita?

Muy	Algo		Algo	Muy
Insatisfecho	Insatisfecho	Neutral	Satisfecho	Satisfecho
1	2	3	4	5

¿Está satisfecho con la forma en que su hijo se lleva bien con otros niños?

Muy	Algo		Algo	Muy
Insatisfecho	Insatisfecho	Neutral	Satisfecho	Satisfecho
1	2	3	4	5

¿Qué tan satisfecho está usted con la salud, la nutrición, y / o el peso de su hijo?

Muy	Algo		Algo	Muy
Insatisfecho	Insatisfecho	Neutral	Satisfecho	Satisfecho
1	2	3	4	5

¿Qué tan satisfecho está usted con el rendimiento escolar de su hijo?

Muy	Algo		Algo	Muy
Insatisfecho	Insatisfecho	Neutral	Satisfecho	Satisfecho
1	2	3	4	5

Gracias por su tiempo para llenar este formulario.
Si tiene alguna duda, consulte a su proveedor médico.

APPENDIX F:
COLLABORATION AND SATISFACTION ABOUT CARE DECISIONS (CSACD)

APPENDIX G:
LIST OF INTERVIEW QUESTIONS

List of Interview Questions

1. What was the previous communication tool that you used, if any?
2. What was your experience with that communication tool? How effective was it when you communicated with the primary care provider/behavioral health staff?
3. How often did you use SBAR checklist during your warm handoff process?
4. What is your perception of the effectiveness of using SBAR checklist?
5. How does SBAR checklist help you during your handoff?
6. Compare to your previous communication tool, how does SBAR checklist affect your practice? Do you feel that you provide/receive adequate information about the patient?
7. According to your opinion, what are the strengths and weaknesses of this SBAR checklist?
8. What were barriers that prevented you from using SBAR checklist?
9. What are your suggestions to improve this communication tool?

APPENDIX H:
UNIVERSITY OF ARIZONA IRB APPROVAL



Research
Office for Research & Discovery

Human Subjects
Protection Program

1618 E. Helen St.
P.O. Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
<http://rgw.arizona.edu/compliance/home>

Date:	September 20, 2016
Principal Investigator:	Phung Kim Nguyen
Protocol Number:	1609856068
Protocol Title:	THE USE OF SBAR COMMUNICATION TOOL DURING WARM HAND-OFF IN INTEGRATED CARE
Determination:	Human Subjects Review not Required

The project listed above does not require oversight by the University of Arizona because the project does not meet the definition of 'research' and/or 'human subject'.

- **Not Research as defined by 45 CFR 46.102(d):** As presented, the activities described above do not meet the definition of research as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "research means a systematic investigation, including research development, testing and evaluation, designed to contribute to generalizable knowledge".
- **Not Human Subjects Research as defined by 45 CFR 46.102(f):** As presented, the activities described above do not meet the definition of research involving human subjects as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains data through intervention *or* interaction with the individual, or identifiable private information".

Note: Modifications to projects not requiring human subjects review that change the nature of the project should be submitted to the Human Subjects Protection Program (HSPP) for a new determination (e.g. addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the research question). Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

APPENDIX I:
SITE AUTHORIZATION



Valle del Sol

CHAIR
David A. Hansen
APS

VICE CHAIR
Andrea Moreno
SRP

TREASURER
Frank X. Courmides
KS State Bank

SECRETARY
Linda Padilla McPhaul
American Express
Technologies

Art Ruiz
Community Member

Manuel S. Calero
Vanguard

Rick Carter
Wong and Carter, PC

Ixchel del Castillo
COX Communications

Helena Kendra Gudger
Community Member

Cynthia Lang
Community Member

Florentino Gabriel Licon, Jr.
Community Member

JoEllen Lynn
Fry's Food Stores

Deborah Vasquez
Community Member

Danielle Salinas
Community Member

Juno Roid
Community Member

Lourdes Smith
Community Member

Virginia Valenzuela
Community Member

Rosemary Villanueva
Community Member

Kim Farrell
Community Member

Laura Wells
Community Member

Kurt R. Sheppard, MA
President & Chief Executive
Officer

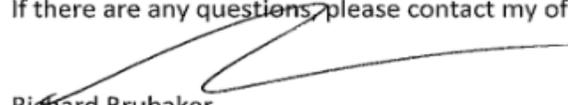
University of Arizona Institutional Review Board
c/o Office of Human Subjects
1618 E Helen St
Tucson, AZ 85721

Please note that Ms. Phung Nguyen, UA Graduate Student, has permission of the Valle del Sol to conduct research at our facility for her study, "The use of SBAR communication tool during warm hand-off in integrated care".

Ms. Nguyen will contact employees to recruit them by approaching them and ask for their willingness to participate in her study. Her plan is to have her study done in two month. Ms. Martin's on-site research activities will be completed by November 15th, 2016.

Ms. Nguyen has agreed not to interfere with the flow of patient care. Employees will not be allowed time from their work duties to complete the surveys. Ms. Nguyen also has agreed to provide to my office a copy of the University of Arizona IRB-approved, stamped consent document before she recruits participants on campus, and will also provide a copy of any aggregate results.

If there are any questions please contact my office.


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Valle del Sol
Director of Integrated Healthcare Operations
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10320 W. McDowell Rd., Ste. G-7024
Avondale, AZ 85392

8410 W. Thomas Rd., Ste. 116
Phoenix, AZ 85037

PLEASE CONSIDER VALLE DEL SOL IN YOUR ESTATE PLANNING

APPENDIX J:
SCRIPT OF ORAL CONSENT

Script of Oral Consent

My name is Phung Nguyen. I am a graduate student at University of Arizona, Doctor of Nursing Practice program. With the help of Dr. Kiviat, I am conducting a research to evaluate the effectiveness of using SBAR communication tool between primary care providers and behavioral health consultants. I am wondering if you would be willing to participate in my research.

If you agree to participate, I will ask you questions about what you think of the current communication tool that you are using currently. Then I will provide you education about the SBAR and ask you to use it during your hand-off when you are referring your patients with psychiatric or psychosocial concerns. I would like you to give feedback about the tool by filling the questionnaires before and after the intervention and participating in an structured interview.

I do not anticipate any risks to study participants. However, if the new communication tool is effective, it can increase the quality of care for your patient population.

It is completely up to you whether to participate. You may withdraw at any time and you may skip questions you would prefer not to answer. All your information and patient information will be protected under HIPPA.

Do you have any questions or concerns to discuss with me?

Please feel free to call me at 480-274-xxxx or email at pnguyen1@email.arizona.edu if you have any question or concern during the study.

APPENDIX K:
EVIDENCE APPRAISAL TABLE

Evidence Appraisal Table

Project Question: The utilization SBAR communication tool during warm handoff improves effectiveness of communication between primary care providers and behavioral health staff? To learn about the effectiveness of a checklist during warm handoff, the following PICOT question was developed: In the primary care setting for underserved populations, how does using an SBAR communication checklist during warm handoff between primary care provider and behavioral health providers (this would encompass psychiatrist, PMHNP, social workers, etc) compare to casual discussions during transition of care in assuring effective reporting and providing a continuous transition of care?

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
De Meester, Verspuy, Monsieurs, and Van Bogaert (2013). SBAR improves nurse–physician communication and reduces unexpected death: A pre and post intervention study.	SBAR communication will help nurse to be prepared and organized information when reporting to physicians. SBAR communication will better inform physicians so that they can prioritize their work and order tasks or intervention appropriately.	Theoretical framework was not identified in this article.	Pre and post test	N=425 nurses in the Antwerp University Hospital, age 21-64 years old, mean age of 40, years of experience ranged from 0-44 years with mean of 15.4 years. There were 90% of female.	Questionnaire and patient records Communication, Collaboration and Critical Thinking Quality Patient Outcomes Survey Tool (CCCT)	There was 72% response rate for the questionnaire. Significant total score on the CCCT tool increase from 58 to 64 before and after intervention ($p<.001$). More nurses used SBAR in serious adverse events from the patient records ($p<.001$). Number of unexpected deaths decrease significantly ($p<.001$).
Randmaa, Martensson, Swenne, & Engstrom (2013). SBAR improves communication and safety climate and decreases incident reports due to communication errors in an anaesthetic clinic: A prospective intervention study.	Implementation of SBAR tool will improve staff members' perception of communication within and between different professions as well as their safety attitudes. Implementation of SBAR tool will decrease incident reports caused by communication errors.	Theoretical framework was not identified in this article.	A prospective intervention study with pre-assessment and post-assessment between intervention group (IG) (one hospital) and control group (CG) (the other hospital). Duration of study was 1 year.	N= 316 licensed practiced nurses, registered nurses, and physician in operating theatres, intensive care units, and post-anaesthesia care unit in two different hospitals.	Questionnaires: ICU nurse-physician questionnaire and Safety attitudes questionnaire	Response rate at baseline was 72% in the IG and 75% in the CG. Response rate at follow-up in was 72% in IG and 76% in CG. Intervention group had significantly more accurate information during report than control group ($p=.001$). However, within group communication accuracy is not significant with $p=.076$. IG significantly improved in factor safety climate ($p=.011$), factor perception of management ($p<.001$), incident reports related to communication error

						(p<.0001).
Jenerette, Brewer, & Hill, (2011). Situation, background, assessment, and recommendation (SBAR) may benefit individual who frequent emergency department: Adults with sickle cell disease.	Using SBAR as a communication tool will improve communication between SCD patients and healthcare provider in the emergency department.	Theoretical framework was not identified in this article.	Discussion. No actual study conducted.	Not applicable	Not applicable	Not applicable
Beckett & Kipnis (2009). Collaborative communication: Integrating SBAR to improve quality/patient safety outcomes.	In pediatric/perinatal healthcare providers working in an acute care hospital, SBAR collaborative communication for handoff reports will positively influence teamwork, communication, and patient safety outcomes as compared with traditional communication for reporting during 3-month period.	Advancing Research and Clinical Practice through Close Collaboration (ARCC) and Management Change Theory	Pretest and posttest	N=215 nursing staffs and 30 physicians in pediatric/perinatal department in Northern Arizona.	The Teamwork and Safety Climate Survey	There were 141 staff completed pretest survey and 71 staff completed posttest survey. Significant difference (p<.05) in all the Teamwork and Safety Climates items in the postintervention group compared to the preintervention group.
Renz, Boltz, Capezuti, & Wagner (2015). Implementing an SBAR communication protocol: A quality improvement project.	In long-term care setting, SBAR protocol will provide a systematic approach for nurses to assess and record changes in patient. Using SBAR will improve	Kotter's Eight Step Change theory	Single-site repeated measures design	21 RNs, 19 LPNs, and 7 physicians	Medical records and audits	SBAR was used in 100% unplanned transfers to the hospital. Timeliness of SBAR was 72%. Number of transfers declined during 4-month period of intervention. No significant was reported.

	communication between long-term care facilities to hospital during the unplanned transfer.					
Velji et al. (2010). Using SBAR to communicate fall risk and management in interprofessional rehabilitation teams.	SBAR tool will be a structured means to communicate patient issues related to falls prevention and management. Incident and near-miss reporting of falls, and severity of injury as a result of a fall will be reported using SBAR. SBAR will enhance team orientation toward communication, perceptions of team, and valuing others.	Evaluation of falls prevention and management best practices (SAFE)	Pre-post test	All clinical and non-clinical staff members and leaders of the GR and MSK rehabilitation units were invited to participate in this study. No actual number of participants recorded.	Hospital Survey on Patient Safety Culture (HSOPSC) Perceived PCI instrument Perceived Worth of Best Practices scale Medical record Face to face interviews Team Orientation Scale	There were 100% staff in the GR and MSK rehabilitation units participated in pre and posttest. Significant difference in 9/12 dimensions of staff perception of team communication and patient safety culture ($p < .05$). Significant difference in team effectiveness ($p < .05$) No significant in safety reporting between pre and posttest.
Patterson & Wears (2010). Patient handoffs: Standardized and reliable measurement tools remain elusive.	Handoff tools for healthcare providers will be standardized and reliable measurements.	A conceptual framework for studying the safety of transitions in emergency care	Systematic review	N=400 relevant articles	Databases (PubMed, Google Scholar)	Seven primary functions for patient handoffs: <ul style="list-style-type: none"> • Information processing is the most prevalent in the patient handoff literature • Stereotypical narratives, emphasizes highlighting deviations from typical narratives • Resilience, takes advantage of the transparency of the thought processes revealed through the conversation to identify

						<p>erroneous assumptions and actions accountability, emphasizes the transfer of responsibility and authority</p> <ul style="list-style-type: none"> • Social interaction, considers the perspective of the participants in the exchange distributed cognition, addresses how a transfer to a new care provider affects a network of specialized practitioners performing dedicated roles who may or may not be transitioning at the same time • Cultural norms, relates to how group values
Anderson et al. (2010). The Veterans Affairs shift change physician-to-physician handoff project.	Electronic medical record will provide a standardized approach to handoff communication between physician to physician.	Theoretical framework was not identified in this article.	Pre and post test	4 sites across the United States, N= 894 patient handoffs	Questionnaire	EMR implementation showed significant increase of patient safety ($p < .01$) in identifying allergy, room number, medication list, floor location, code status, complete patient identification information, and typed.
Woodhall, Vertacnik, & McLaughlin (2008). Implementation of the SBAR communication technique in a tertiary center.	Hospital staff will use SBAR tool consistently during shift report. Hospital staff will feel more confident in reporting using SBAR.	Theoretical framework was not identified in this article.	Pre and post test	No number of participants was recorded.	Survey	Improvement was noted in 5 areas of communication: 1. I receive clear concise information when called about a patient situation. 2. The nursing staff is clear about why they are calling

	Staff who uses SBAR will provide concise information for physician.					me. 3. The staff is organized and prepared when calling regarding a critical situation. 4. I receive the right information that I need to make the appropriate clinical decision. 5. I am satisfied with the communication from the nursing staff when there is a critical situation. Data were recorded in percentage and was not calculated for statistical significant.
Cornell, Gervis, Yates, & Vardaman (2014). Impact of SBAR on nurse shift reports and staff rounding.	SBAR will shorter shift report time, provide consistency during report, and improve quality of information during shift report. SBAR will provide consistency of information, reduce transcription, reduce average individual patient review time, and reduce paper and information handling during interdisciplinary rounds.	Theoretical framework was not identified in this article.	Pre and post test	N=36 clinical care nurses in 48-bed medical-surgical unit in a hospital.	Observations of interdisciplinary rounds and shift report.	There were 51 shift reports recorded. Shift report time was significantly less after implementation from 51 minutes to 45.1 minutes ($p<.05$). Time spent in handling paper was significantly less ($p<.01$). There were 269 patient reviews. There was significantly less time spent on reviewing each patient in posttest ($p<.01$).
Compton et al. (2012). Implementing SBAR across a large multihospital health	What is the percentage of nurse who used SBAR and physician who received report in	Theoretical framework was not identified in this article.	Descriptive quantitative study	N=156 nurses and N=155 physicians in Baylor health system	Nurse audit tool and physician survey.	There were 97.4% nurses who had been educated about SBAR and only 58.3% used it as a communication

system	SBAR format?					tool during critical situation (Compton et al., 2012). There were 78.1% physician reported that they received adequate and organized information when nurses used SBAR format (Compton et al., 2012). No statistical difference in perception of adequate report from physician survey (p=.49).
Horevitz, Organista, & Arean (2015). Depression treatment uptake in integrated primary care: How a “warm handoff” and other factors affect decision making by Latinos.	“Warm handoff” or other factors affect the decision making of Latino patients who were diagnosed with depression to follow up depression treatment in an integrated primary care setting.	Theoretical framework was not identified in this article.	Two-phase, retrospective cohort study design, mixed method.	Quantitative: N=431 patients Qualitative: N=16	Medical record Review and qualitative semi-structured interviews	One-third of referrals were warm handoffs, and 56% of all referrals were made by the patients’ regular PCP. Referral type and primary language are factors that affect the decision making to follow up with depression treatment in Latinos. There were 75% lower follow up appointment in Spanish-speaking Latinos compared to English-speaking Latinos. Qualitative: Four themes were identified: illness narrative, readiness, sense of connection, and everyday barriers.

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