Spring 2024

Improving Sexually Transmitted Infections (STI) Education and Access to Education for Healthcare Workers in a Rural Ambulatory Clinic

Savannah Elmore
Gardner-Webb University, selmore1@gardner-webb.edu

Improving Sexually Transmitted Infections (STI) Education and Access to

Education for Healthcare Workers in a Rural Ambulatory Clinic

by

Savannah Elmore, BSN, RN

A project submitted to the faculty of
Gardner-Webb University Hunt School of Nursing
in partial fulfillment of the requirements for the degree of
Doctor of Nursing Practice

Boiling Springs, NC

2024

Submitted by: Approved by:

Savannah Elmore   *Melissa McNeilly*
Savannah Elmore   Melissa McNeilly, EdD, MSN, RN, CNE

04/22/2024   *04/22/2024*
Date   Date

Acknowledgements

Words cannot express my gratitude to my project chair for her patience, unwavering support, and feedback. I could not have begun or completed this journey without my fellow classmates. I am also thankful for all of the Gardner-Webb University Hunt School of Nursing professors and leaders who pushed me and supported me throughout my time in the program. I am appreciative of the clinic and participants who allowed me to use their space to base my project out of.

I am eternally grateful for God's plan for my life. For placing me in health care and continually opening countless doors for me. For the unwavering faith that propels me to reach my goals and invest in myself. Also, for providing me with the strength and knowledge to ultimately make a difference in the lives of patients.

I want to also thank my family including my husband, my parents, and my sister who believed in me and supported me when I did not believe in myself. Lastly, I want to thank myself for pushing through in order to prove to myself that I am a strong, hard-working, and determined woman in order to set an example for my daughter.

Abstract

Sexually transmitted infections (STIs) are prevalent across the United States, with one in five people diagnosed in 2018, resulting in nearly $16 billion in medical costs. The prevention and treatment of STIs have been identified as a priority area for improvement, with healthcare providers playing a critical role in education, diagnosing, and treating STIs. The aim of this capstone project was to improve STI education and access to education for healthcare workers in a rural ambulatory clinic. Through a needs assessment and the development of objectives and a timeline, the project identified and addressed gaps in STI education and resources, as well as improving the quality of care and outcomes for patients. Theoretical underpinnings will guide the project, with a focus on project management, cost-benefit analysis, and evaluation. The implementation of the project will be monitored for threats and barriers, with data interpretation and personal reflection contributing to ongoing quality improvement. Ultimately, the project aims to improve the health and well-being of patients in the rural community by enhancing STI education and access to education for healthcare providers.

Keywords: sexually transmitted infections, STIs, healthcare workers, education, rural ambulatory clinic, online

Table of Contents

Appendices

List of Figures

Introduction

Sexually transmitted diseases (STDs)/sexually transmitted infections (STIs) are prevalent across the nation with one in five people being diagnosed in 2018. This diagnosis alone encompassed nearly $16 billion in medical costs (Centers for Disease Control [CDC], 2021). Data can be used to combat the increasing prevalence of STIs and holds importance in influencing policy and decision-making. A large portion of STIs are preventable, but nearly 20 million estimated cases yearly (U.S Department of Health and Human Services [USDHHS], (n.d.). Clearly, there is a lapse in either education, effective diagnosing, and/or treatment. The United States has identified prevention and treatment of STIs as the need to improve STIs impacting a person's health and well-being is one of the 2030 major goals (USDHHS, n.d.). Furthermore, those providing medical care to patients must remain up to date with everchanging news, statistics, symptom prevalence, diagnosis guidance, and changes in treatments to provide the utmost best care along with education for creating a healthier tomorrow.

Problem Recognition

Each year, a specific rural county in North Carolina (NC) demonstrates a higher number of STI cases per 100,000 people (County Health Rankings, 2023). This rural area in North Carolina reported higher rates of sexually transmitted infections (STI's) than the entire United States did from 2007 until 2019 (County Health Rankings, 2023). Per the 2019 Community Health Assessment, several initiatives by County Public Health Centers to address the rising STI rates have been considered. One of the initiatives includes a "Roadmap to STI testing" (Cleveland County Public Health Center, [CCPHC] 2020, p. 46). The roadmap initiative involves posters detailing the process for testing and

treatment, facts, and accessing care (Cleveland County Public Health Center, 2020). Posters were distributed to exam offices, restrooms, Law Enforcement centers, school health centers, public areas, and other county agencies (Cleveland County Public Health Center, 2020). However, STI rates remain higher than the national average despite these initiatives (County Health Rankings, 2023).

In 2015, "prevention of STIs" was noted on the community health assessment survey and then a steady rise in STI cases occurred in 2016, 2017, and 2018. This finding indicates more education is required for patients, healthcare staff, and the community to specifically address the rising occurrence rates (County Health Rankings, 2023). However, there has not been a focus on educating the healthcare workers. The rural county in North Carolina (NC) has a need for increased education among healthcare workers regarding STIs. A lack of healthcare provider knowledge concerning STIs leads to delays in preventative care services and directly causes missed opportunities for STI prevention services for patients (Workowski et al., 2021, p. 21). Healthcare workers are the "grassroots" educators for the public. Healthcare workers should have the ability to provide current knowledge confidently and consistently regarding STI education to patients, but for this to occur they must first be adequately and continuously educated (Barnes & Cathart, 1998). The patient's future hope of becoming healthy, knowledgeable, and protected is directly related to healthcare workers receiving and having access to timely, current, and factual STI education.

Electronic education has far outreached traditional paper/PowerPoint/email update methods by allowing for flexible, effective, and efficient learning and information requisition for healthcare workers (HealthManagement, 2017). Streamlined education for

healthcare workers in a rural clinic would be easily accessible, and current regarding prevention, signs and symptoms, treatment, proper test packaging and labeling, and potential effects of untreated STIs. A 2015 study in Bangladesh found healthcare workers had low levels of STI knowledge and misconceptions regarding STI transmission and treatment (Alam et al., 2015). This finding led to the implementation of a training program that has been shown to improve healthcare providers' knowledge and comprehension of STIs (Alam et al., 2015). This is necessary to combat the high incidence rates of STIs and the uneducated situations in which healthcare workers sometimes fail to provide accurate patient education. Healthcare workers are responsible for always maintaining contemporary education on more than one medical issue at a time.

Ambulatory clinics are an example of one healthcare setting where large numbers of STI testing is completed. Clinics need educational materials available for healthcare workers who complete the initial patient assessments and then request additional testing be obtained. These outpatient areas are in fact one of the most used service providers for patients who do not have a primary healthcare provider.

Problem Statement

STI rates are rising yearly and not only negatively impact a patient's sexual health, but impact overall medical costs. There is a notable lack of education amongst patients, healthcare workers, and the community in general concerning STI identification and reporting. High rates of STIs and the lack of education support a need for improved and accessible education for healthcare workers to foster positive health and decision-making for the entire patient population.

Literature Review

Adequate education arguably encompasses two important aspects of one's healthcare. Healthcare workers have a primary responsibility to the patient concerning comprehensive education to improve personal health. Promoting healthcare worker education will impact the delivery of knowledge to patients who will receive better education. By ensuring healthcare workers have access to updated and reliable information will directly impact the competent delivery of health education. A comprehensive literature review was conducted using CINHAL, PubMed, and the National Institutes of Health (NIH). The literature review included topics such as sexually transmitted infections (STIs), education on infections, healthcare worker case management strategies, electronic medical record tools, areas of concern, and educational programs.

Education Provider Impact

Harrison et al. (1998) conducted a study including primary care clinics in rural South Africa. The study used five complementary methods with simulated patients trained to present STI symptoms. Approximately, 10 clinics participated in the study to measure how the staff handled various situations involving STIs and health-seeking behavior key points. Quality of care was measured using a standardized interview questionnaire for the simulated patients during the visit. The interview determined if a physical exam was performed on the patient, or if a complete history including medical history, sexual history, and social/behavioral issues was obtained. The study results indicated only 19% of patients were offered a physical exam, and only 45% had a complete history performed. Patient treatment plans consisted of men who had urethral

discharge treated approximately 67% more than women with pelvic inflammatory disease symptoms at 13%. Major concerns within the study included staff stigmatization of STIs along with a lack of sufficient STI clinic training and support. Intervention strategies compiled from findings included: STI management education workshops for nursing staff, quick reference packets with symptoms and treatment, on-going training programs, and increased support districtwide.

Rose et al. (2021) ran a trial involving two phases. The trial included 26 clinical staff in three primary clinics using a new clinical tool (STI management tool) within the electronic medical record (EMR). The clinical tool used the New Zealand Sexual Health Society's (NZSHS) guidelines for best practice of STI screening and management in the EMR. The clinical tool was implemented for easy use and access by clinical staff. The number of times the clinical tool was used, best key practice fields, and tool acceptability were measured over a 3-month trial period. The findings concluded that 80% of users found the clinical tool favorable, with 73% of users recommending the use of the clinical tool to other healthcare workers. Several key themes noted following the conclusion of the trial included efficiency of care, top standard care being provided, improved continuity of care, and educational opportunities for staff. Limitations of the clinical tool included functionality within the system EMR, patient comfortability with personal questions, and consultation styles. The trial found that the STI EMR tool was beneficial in both the documentation and management of the patient, which could ultimately lead to a decrease in STIs. The limitations of using the tool involved content revisions that allowed for automatic prompting on the EMR for healthcare workers rather than relying on one's memory to access and complete the tool.

Leung et al. (2019) conducted a comprehensive review of educational programs in several countries. The review evaluated different sex education programs to determine the effectiveness of changed attitudes towards enhanced knowledge of STIs, sex, knowledge regarding relations and contraception, and learned behaviors of contraception use and sex frequency. There was a lack of data evaluating sex education programs in Asian societies. The study ultimately found that there are gaps in sex education for patients, healthcare workers, and the community. Gaps determined parents, teachers, social workers, and healthcare workers need to be involved in patients' lives and the community to enhance the effectiveness of sex education programs in schools.

Systematic Reviews

Brookmeyer et al. (2021) conducted a narrative review of 2,700 studies determining the completion of sexual history assessment among clinics in the United States between 1998 and 2018. Brookmeyer et al. (2021) reviewed all studies, and the 10 studies were used for data abstraction pertaining to U.S samples, peer-reviewed, and obtained sexual histories within a medical setting. During the literature review, Brookmeyer et al. (2021) found that clinicians do not obtain comprehensive histories from patients, which exposes the gaps between CDC clinical guidelines and actual clinic practice. Additional findings included barriers when obtaining a patient's sexual history. About 71.8% of clinicians reported obtaining sexual histories from sexually active females, whereas 20.8% of them noted only doing a sexual history after a chart review was conducted. The overall goal of the review was to determine if certain factors such as the patient, healthcare provider, and setting impacted the likelihood of a healthcare provider acquiring a sexual history from patients. The review noted specific factors

influenced documentation such as age ranges between 13-15 years old and older than 45, male-gendered, those of the "other" race not identifying as Caucasian or African American, privately insured patients, and patients in emergency care clinics. Patients in these categories were less likely to be asked about sexual history. Since sexual health can directly impact overall patient health, findings indicated a need to influence and guide workers in the importance of obtaining sexual health history or behavior for all patients.

Goesling et al. (2014) conducted a systematic review of 200 programs effective in reducing STIs, teen pregnancy, and sexual risk behaviors from 1989-2011. However, only 88 of the programs met the criteria to be included in the final analysis (Goesling et al., 2014). The criteria for inclusion determined whether curriculum-based, abstinence-based, clinic individualized services, special population programs, or youth development programs had evidence of reducing teen pregnancy, STIs, and/or associated sexual risk factors. The literature review findings determined almost 50% of programs used curriculum-based sex education programs, while other programs used an abstinence-based curriculum (19%), individualized services in a clinic (11%), youth development programs (11%), and special population (pregnant teens, foster youth, juvenile justice system) programs (11%). Some educational programs were presented at school during normal school hours. Other educational programs were offered by after-school or community organizations. Of the 31 effective programs, education regarding sexual activity and the use of contraceptives seemed the most promising in increasing education. A common value among the studies involved realistically educating about teen pregnancy and STI prevention.

Maggio et al. (2019) conducted a systematic meta-analysis review of 10,811 relevant studies. Of these studies, 25 comparative studies were used to evaluate electronic knowledge resources and their impact on clinical and learning outcomes. Articles from 1991 until 2017 were screened for content items such as knowledge, behaviors, patient effects, skills, attitudes, and cost. Data was obtained from studies after a Newcastle-Ottawa Scale evaluated sample selection, attrition, and comparability. Electronic resources used by clinicians have a positive impact on clinical staff behaviors and effects on patients. Paper copies of journals as resources were less beneficial to clinicians when searching for answers quickly compared to electronic resources. Limitations included the quality and quantity of published articles, vague reporting, conflicts of interest/bias results, and publication timeframe of the articles.

Newton-Levinson et al. (2016) sought to assess views on appropriate medical care for STI services among adolescents and healthcare workers. Newton-Levinson et al. (2016) determined knowledge and awareness were barriers for youth seeking care for STIs. Newton-Levinson et al. (2016) used a qualitative systematic review of peer-reviewed studies. Notable findings indicated that although youth want more information, often parents and/or healthcare workers were unwilling or perhaps unable to provide additional information. The review determined that the availability of supplies, staff, and funds, along with the lack of knowledge among youth regarding STIs and services available were common hindrances. Shame and stigma were noted as the most prevailing barriers to receiving education. Limitations consisted of specific study exclusion that measured interventions and community projects, most qualitative studies that may not accurately represent all youth, and the lack of English studies in Latin America. Newton-

Levinson et al. (2016) note barriers to be addressed for improvement including education and utilization of resources for STIs in youth.

Education Changing Care

Szucs et al. (2020) conducted a cross-sectional survey among public and private students in grades 9-12. The survey evaluated condom and contraceptive use for participants' last sexual intercourse encounters. The survey noted that 7% of respondents reported sexual intercourse before the age of 13, 54.3% reported condom use with their last sexual encounter, 22.2% reported using contraceptive methods, and 10.3% reported not using condoms or any other pregnancy prevention methods. Most sexually active students reported condom or contraceptive use, but 19.8% reported withdrawal or other methods such as not using a condom or birth control. There were prominent differences in condom and contraceptive use among Hispanic and African American students indicating higher rates of no pregnancy prevention or use of contraceptive methods. Szucs et al. (2020) concluded that yearly surveying will be necessary when promoting clinical approaches to unintended pregnancy and STI rates among the youth. The study had several limitations which included a lack of knowledge for males regarding their female partners' contraceptive use, and only one method of pregnancy prevention could be selected in the survey, so those who used two may not be adequately reflected.

Goodreau et al. (2021) performed a data analysis survey collection for CDC's Youth Risk Behavior in U.S. high school students. Regression coefficients were used to predict sexual behaviors among different student groups. The coefficients estimated a behavioral change rate was then used to predict gonorrhea and chlamydia incidence rates along with medical costs over a year. The study noted that from 2007-2017, a behavior

change occurred, and a decrease was noted in gonorrhea and chlamydia rates along with a decrease in medical costs. However, the effect "dampened" years later (Goodreau et al., 2021, p. 637). Limitations of the survey included a need for a more diverse age population and the presence of opposite-sex relationships only.

Molla et al. (2020) sought to determine participant knowledge of gonorrhea, risky sexual behaviors, and prevention strategies. Findings were obtained from participants via a self-administered survey. The school administered the survey and was the first to implement "modern western type" education as compared to other school counterparts. Participants were students in 11th and 12th grades (Molla et al., 2020). Results indicated that 40% of those surveyed reported knowledge of gonorrhea transmission along with signs and symptoms. Condoms were reported as a known protection from gonorrhea by 52.2% of students. More than half of the students reported being uncomfortable discussing gonorrhea, while 59% noted sexual education is important, and 78.5% of participants/students reported that gonorrhea sex education prevention and control have a large role in student's quality of life.

Needs Assessment

There are various considerations to think of when determining why STI rates continue to rise in the US. There is a significant need to determine the major causes and areas of concern to combat this issue. However, there is not a pinpoint cause or answer for this issue. Therefore, further investigation into the need for education is a common denominator between patients and healthcare workers. The importance of STI proper education must be considered for all parties involved in healthcare with healthcare workers being the common middleman between patients and patient knowledge of

personal well-being. With everchanging STI education and guidelines, healthcare workers must be confident in their STI education, but also quickly refer to educational resources during patient exams or history assessments when they are unsure.

Target Population

Healthcare workers at a rural ambulatory clinic conduct large numbers of sexually transmitted disease testing. Due to the patient population seen by the rural ambulatory clinic, the site will be the prime focus of the DNP project. Healthcare workers include nurses, radiology technicians, nursing assistants, medical assistants, ambulatory managers, nurse practitioners, physician assistants, medical doctors, and patient services specialists who work in the clinic. This population is responsible for triaging, assessing, obtaining specimens from, diagnosing, treating, and educating STD/STI patients in this specific project site and across healthcare systems nationwide.

Stakeholders

There are many stakeholders considered for the DNP project. The DNP project has the capability to impact many individuals in healthcare such as patients, workers, and the surrounding community. At the patient level, appropriate discharge and treatment knowledge is key in combatting the complications of STIs. Healthcare workers have a stake in the project, as members are passionate about patient health and the potential for change. The healthcare workers and clinic leaders are stakeholders, as patient information provided will bring an increased knowledge regarding STIs to provide high-quality care and further the clinic's ability to accurately diagnose, test, and treat STIs. This will in turn decrease future diagnostic rates of STIs around the surrounding community and within the clinic. Most importantly, the patients will be stakeholders as the increased

knowledge amongst healthcare workers will provide them with a focus on accurate testing and treatment which will positively impact the patient's sexual health and quality of life moving forward.

Other stakeholders are outside the clinical setting. These stakeholders include laboratories where specimens are sent. An increase in healthcare worker's education regarding packaging and labeling of specimens will decrease the rates of improper packaging/labeling throw aways within the lab. By decreasing packaging/labeling issues, there will be an increase in reliable specimen samples sent for testing. The healthcare corporation that funds the clinic where the project is taking place will be a stakeholder. They will prosper from increased testing, diagnosing, and successful treatment which will make them more desirable to patients.

Available Resources

The office space being utilized was at the healthcare facility where the project will be conducted. Materials for the project were electronic and essentially free as paper documents were not necessary. The DNP project leader and healthcare workers had access to the shared network folder at work and home if they wished to preview the information prior to or after the education session. The overall cost was low as the project was electronic-based.

Desired and Expected Outcomes

By expanding healthcare workers' education about patient symptoms, patient education initiatives, testing options available, specimen packaging/labeling, and the creation of an easily accessible hub of education materials, there will be an increase in healthcare worker's confidence. Access to educational materials will enhance healthcare

workers' knowledge and with the enhancement of knowledge better patient care outcomes. It is desired that educators will continue to implement the improved education strategies and information in years going forward to reach other clinics and other healthcare worker groups within the corporation. Going forward, the process for STI continuing/yearly education for healthcare workers will be different as it will be local, accessible, and easily understandable. The current process includes initial general education during the healthcare worker's onboarding and then a PowerPoint review or refresher information once a year. By creating a localized accessible folder, up-to-date education, and policy changes are available year-round for all members of the team. Not only will healthcare workers become more confident in triaging, assessing, and treating STI patients, but healthcare workers will also be confident in accessing resources needed to guide them in assessing, treating, and obtaining specimens for collection and testing for STI patients.

In turn, the education will provide healthcare workers with confidence when educating patients. Thus, encouraging safer sex practices and increased education initiatives among patients. An increase in healthcare worker's knowledge along with easy access to educational materials will assist in the identification and management of patient symptoms. The main initiative is to provide STI education to patients, testing options available, specimen packaging/labeling, and the creation of an easily accessible hub of educational materials after education is provided. By providing learning opportunities and educational materials for healthcare workers, confidence in presenting the information to patients will increase and hopefully lead to more education being provided to patients. The knowledge expansion for healthcare workers will cause a reduction in

future documented cases of STIs in the community surrounding the rural ambulatory clinic. Furthermore, an expansion of knowledge will stimulate positive sexual health moving forward for community members.

Team Selection

Team formation is an important aspect of the DNP project. Team members who have a direct understanding and knowledge base of STIs, corporation policies regarding specimen packaging and labeling, and computer-based skills will be beneficial. These individuals will embody the idea of better-educated healthcare workers who are focused on the recognition and treatment of STIs. In turn, a healthier, safer community that focuses on the advancement of education regarding sexual heath will prevail. Members of the team included the DNP project leader, the DNP project chair, and all full-time clinic healthcare workers. The team members play a major role in the success of this project. Networking will be beneficial in building the team.

The DNP project leader created educational materials, established the shared network folder, and focused on learning strategies with the help of team members. The focus of the DNP project leader was to effectively guide healthcare workers on identifying patient symptoms, patient education initiatives, testing options available, and proper specimen packaging/labeling. Team members will play a key role in not only presenting the streamlined information in conjunction with the DNP project leader but also in stimulating continued sustainability in the project for years to come. Each team member will contribute their own input while simultaneously building the project into one that is the most beneficial for healthcare workers and patients going forward. The

goal of the team is centered around creating a viable program that can stimulate a healthier sexual future for the community.

The main team members/participants of the DNP project are registered nurses (RN), certified medical assistants (CMA), certified nursing assistants (CNA), patient service specialists (PSS), radiology technicians (RTR), nurse practitioners (NP), physician assistants (PA), and medical doctors (MD). Each member plays a vital role in the success and progression of the DNP project. Pre-survey and post-survey data obtained from participants will determine the project's impact and overall success. From the minute a patient walks into the door until they are discharged, there will be multiple interactions with different members of the team. It is imperative that each member have a strong STI education foundation and be able to carry out their role in the assessment and treatment of STI patients. This aligns strongly with the project goal and will be determined by participant opinions.

Scope of the Project

The DNP project was focused on providing education to healthcare workers within a rural ambulatory clinic. The project will first create a shared network folder with educational materials, a link for the materials, and place necessary educational materials within the hub. After discussing ways to use the materials, the aim was to draw attention to the need for expansion of, accessibility of, and continuous updating of education accessible for healthcare workers during daily operations. The project will be backed by the DNP project leader and the previously selected team members who are educated in the topic and able to provide input. The project will aim to simultaneously educate those

coming in direct contact with patients to become increasingly confident and deliver the education to patients.

The DNP project will increase the healthcare worker's knowledge of available materials for patient education, confidence in STI's manifestations, and the healthcare worker's ability to educate patients. The project will improve the healthcare worker's confidence when asking the patient necessary sexual history questions and provide accurate education to enhance the patient's sexual health knowledge. The project will not provide education to patients directly as the focus is on healthcare workers. The project will not survey patient responses, extract data from patients, and/or attempt to gather patient experiences. The focus of this project is pointed towards increasing healthcare worker's confidence, education, and accessibility to resources needed to carry out patient care regarding STIs.

Goals, Objectives, and Timeline

Education, process change information, and guidelines provided to healthcare workers within their role are passive and mostly self-taught. Education is often presented in the form of PowerPoints, emails, and/or passing verbal communication. While all these processes are time efficient, this is less ideal. Many healthcare workers may forget the information, not have direct access to the information after the initial learning, or perhaps accidentally delete emails containing educational materials. The prevalence of sexually transmitted infection (STI) in the US increases each year with approximately 20 million new cases diagnosed (USDHHS, n.d.). Healthy People 2030's focus is on reducing STIs, and STI complications, and improving access to quality care for those with STIs (USDHHS, n.d.). Therefore, it is important for healthcare workers to have direct access to

an updated, easy-to-locate, and easily accessible hub for STI information pertinent to their workflow. The information necessary to be accessible includes patient symptoms, patient educational materials, testing options available within the healthcare system, and packaging/labeling specimen guidelines. The availability of this information and education for healthcare workers is important and the point of focus to obtain goals set forth for the DNP project.

Goals

The goals for this project are simple and streamlined. However, these goals will make an impact on the need for change and improvement of STI education along with accessibility of education for teammates. The overall goals of increasing the availability of this information and education for teammates include:

- To efficiently improve health care worker's daily operations regarding STI symptom recognition and testing during patient triage/interviews

- To improve healthcare worker education and system guidelines regarding STI patient education, treatment, and testing options

- To improve healthcare worker education and system guidelines regarding packaging/labeling specimens after collection is made

- To increase patients with STI's or concern for possible STI's overall health outcomes

- To increase access to quality STI care in a rural area

These goals are obtainable and can reap vast benefits for all parties involved. By focusing on and breaking down the issues that lie within basic education to teammates within a clinic, focus can promote more prompt, guided, and refined care for those with STIs.

Objectives

Creating objectives from goals is equally important as objectives point out how the project outcomes are measured and achieve the goals set forth. The project data will be examined over 3 months following the implementation of the newly accessible, continuously updated, streamlined folder of STI information via a shared network point. The project objectives include:

- The teammates will demonstrate improvement in their interviewing skills with patients who may be experiencing STI symptoms via an anonymous rating scale following introduction to the new education hub after 2 months.

- The teammates will be able to locate and demonstrate the appropriate use of the education hub created for STIs to the team leader after a 2-month implementation.

- The teammates will be able to accurately label and package three STI testing specimens after a 2-month implementation of the new education hub.

The DNP project is intended to improve healthcare workers' STI education by creating an easily accessible and continuously updated shared network hub for rural ambulatory clinic teammates. The DNP project will foster the creation of the hub and provide education to healthcare workers to increase their confidence, provide a better understanding of and easier access to education resources on patient symptoms, patient education, testing options, and packaging/labeling specimens as compared to current resource retrieval and education methods.

Timeline

The project will take place over 16 months (Figure 1) beginning in the DNP project leader's second semester of project courses. The first 2 months will include
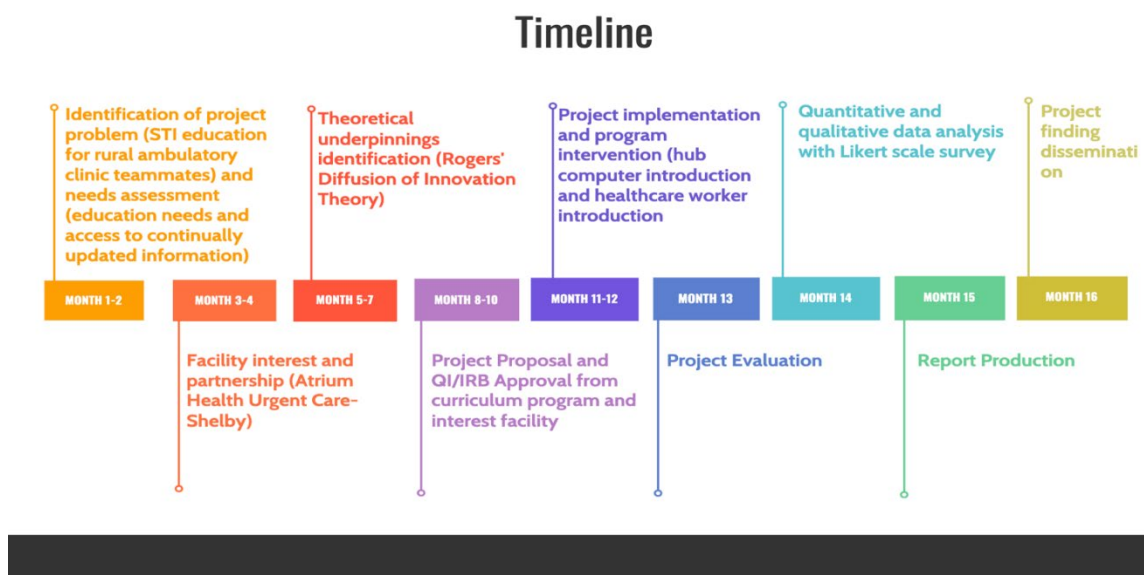
identification of the project's problem and needs assessment. Once the problem is identified, STI education for rural ambulatory clinic teammates and the ongoing rise of STIs in the US will be addressed. The needs assessment identified rural ambulatory clinic teammates needing education and continuous access to up-to-date information regarding patient symptoms, patient education needs, testing options and availability, and specimen packaging/labeling requirements.

The 3rd and 4th months of the semester focused on facility topic interest and a partnership including goal and objective creation. Months 5 through 7 will encompass the incorporation of the theoretical underpinnings of the project. Nursing theories were explored and used to guide the project through the upcoming implementation phases. Months 8 through 10 focus on the project proposal and submission of Quality Improvement/Institutional Review Board (QI/IRB) approval from the project leader's program and the facility/project site QI/IRB approval process. QI and IRB approval was obtained first from the project leader's program (Appendix A) and then the facility/project site (Appendix B and C), as the site approval should be included once DNP Project approval has occurred. Following approval from QI and IRB committees, months 11 and 12 focused on project implementation planning. First, participants will complete a pre-survey that will be sent via email. The educational hub will then be introduced to the clinic's computers initially, then the hub will be introduced to healthcare workers. Each healthcare worker will be provided with education on where and how to access the hub and its contents. After this education is conducted, implementation of the hub's resources will begin immediately. Upon completion of hub implementation, a post-survey will be sent to participants via email. After this survey is

complete, data will be analyzed and reported to the facility and the DNP project leader's institution.

The end of month 15 through month 16 will consist of quantitative and qualitative data analysis of Likert scale surveys obtained from healthcare workers. Likert scales are useful in obtaining data that is unobservable. This can include things such as feelings or opinions that are objectively unmeasurable (Bhandari & Nikolopoulou, 2020). These are useful for conducting surveys within this project due to the participant's ability to choose the option that corresponds best with their feelings regarding a specific statement. This includes the identification of themes and patterns amongst the data that are notable. Month 15 will be comprised of report production. Data is presented in the form of charts and graphs to represent trends, changes, and patterns for the clinical significance of the project. The 16th month of the program will focus on project finding dissemination. This part of the DNP project is where the results are reported to the stakeholders, those within the academic community, and others in similar settings as the project setting.

Whether or not the project produced the anticipated results, the findings will be shared. Findings will be presented to the project facility site subjects via an in-person meeting. The presentation of findings will be informational for project subjects and provide them with data regarding the impact of the project. The findings will also be shared with the project leader's graduate-level program staff, Gardner-Webb Hunt School of Nursing. Some aspects and parts of the timeline may change depending on the progression of the project, data collection milestones, or perhaps QI approval delays. There will be adjustments made when necessary whilst falling within the overall timeline goal.

Figure 1

Project Timeline

Timeline

MONTH 1-2	MONTH 3-4	MONTH 5-7	MONTH 8-10	MONTH 11-12	MONTH 13	MONTH 14	MONTH 15	MONTH 16

Identification of project problem (STI education for rural ambulatory clinic teammates) and needs assessment (education needs and access to continually updated information)

Theoretical underpinnings identification (Rogers' Diffusion of Innovation Theory)

Project implementation and program intervention (hub computer introduction and healthcare worker introduction

Quantitative and qualitative data analysis with Likert scale survey

Project finding dissemination

Facility interest and partnership (Atrium Health Urgent Care– Shelby)

Project Proposal and QI/IRB Approval from curriculum program and interest facility

Project Evaluation

Report Production

Note. Project timeline created by project leader.

Theoretical Framework

The healthcare field encompasses the need for change to provide quality patient care. Success within an organization is impacted by the organization of, implementation of, and adherence to change. Changes within healthcare often align with treatment, workers, shortages, clinical leadership, population changes, patient satisfaction, the safety of staff and patients, and protocols (Mitchell, 2013). Change can be sustained if those involved are motivated. Motivation for the change is planned appropriately, and communication is maintained. Theories are useful for guiding change or projects within a facility.

Rogers' Diffusion of Innovation Theory was developed in 1962 and designed to document how an idea or project gains momentum and can spread through a population (LaMorte, 2022). The end goal is the adoption of a new idea or behavior. Rogers' theory

is based on five key phases of change: knowledge, persuasion, decision, implementation, and confirmation. In the knowledge phase, education is provided to staff to expose them to the proposed change. Next, the persuasion phase encompasses persuading staff by providing useful information regarding the change. The third step, decision, is where the decision to fully adopt the change is determined by the staff. Next, the implementation step is where the change is implemented and put into practice. The last step, confirmation, is where staff determine the benefits of the change and ultimately accept the change into continued practice (Barrow et al., 2022).

Roger's theory can be incorporated into this project to maximize the extent of and longevity of change. The first step of Rogers' theory, knowledge, is arguably the most important as exposing staff to the proposed change is the initial hurdle. Allowing staff to be made aware of and included in proposed changes can start the project off on a positive point. If staff are blindsided by new education, they are less likely to move forward with the proposed change. However, appropriate exposure to the components of the proposed change will be more likely to foster cooperation. The DNP project leader will be responsible for educating the staff on the proposed project, the benefits, and the expected outcomes along with usefulness in practice. The next step, persuasion, will be accomplished by exposing the current practice problem within the facility and advocating for the effectiveness of the newly proposed project. The project leader will create momentum for the project by outlining the inconveniences of the current education model regarding STIs for staff and highlighting the ease of use, the accessibility of the hub, and its mainstreamed functionality. This is where the third step, decision, comes in and staff

can see that the prior method for STI education and resources for staff is inferior to the newly proposed method.

Once these steps are completed, Rogers' theory revolves around the implementation step where the new project is put into place. The project will encompass the creation of a centralized, accessible hub of education materials for staff to refer to for education pertaining to patient symptoms, patient education initiatives, testing options available, and specimen packaging/labeling. The hub will be created, and staff will be educated on where to locate the hub, what information is in the hub, and how to access and use the education. Once this is completed, staff will be able to effectively access and use education regarding STIs. Lastly, the final step of Rogers' theory, confirmation, is assessed. In this step, staff determine the value of the new project and its overall profitability within the practice. From there, staff will ultimately determine that the new method outweighs the old and will continue to use the new process. Once the project is implemented, staff will begin to understand the usefulness of the hub and will gain increased education and accessibility to education that is beneficial to them regarding STIs within the practice. Once they form this conclusion, the sustainability of the project is concrete and will be long-lasting. With this, there will be an increase in healthcare worker's confidence. Access to educational materials will enhance healthcare workers' knowledge and directly impact positive patient care outcomes. Rogers' Diffusion of Innovation Theory has been used as a framework for projects across various disciplines and makes an effective framework for this project as well.

Figure 2

CTE Diagram
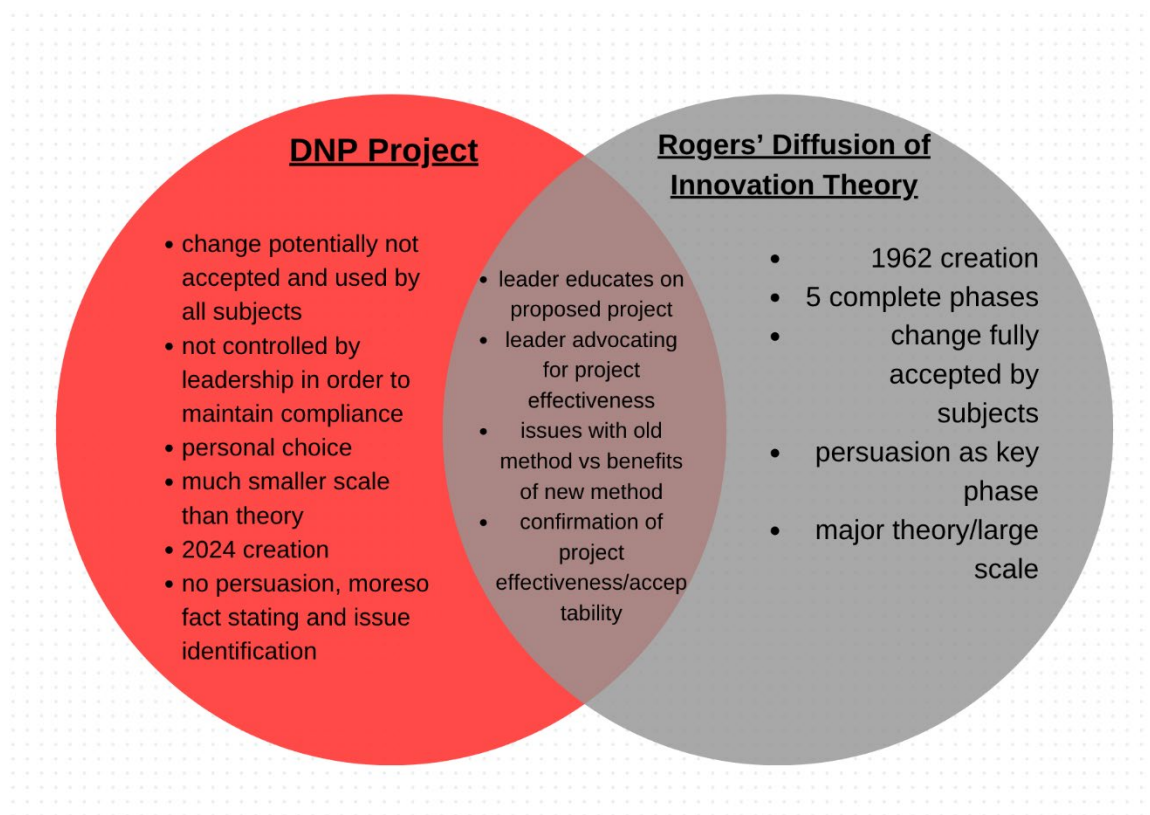
Note. CTE Diagram of the project compared to Rogers' Theory.

Methods

The project is centered around increased education for healthcare workers at a
rural clinic. The focus will consist of organized and available information, education
material and links (Appendix D-L), and a survey of education/confidence levels before
and after the education session and materials are provided. Both quantitative and
qualitative data will be evaluated.

Participants

The invited participants included 20 individuals comprised of males and females
between 20 and 60 years of age. These participants are health care workers in a rural

ambulatory clinic. Included are participants of different education levels, work backgrounds, and roles within the facility. Professional titles include registered nurses (RN), certified medical assistants (CMA), certified nursing assistants (CNA), patient service specialists (PSS), radiology technicians (RTR), nurse practitioners (NP), physician assistants (PA), and medical doctors (MD). Their identity remained anonymous and was voluntary.

Ethical consideration and approval were obtained through the DNP project leader's educational program QI/IRB board and the rural ambulatory clinic's QI/IRB board prior to participant recruiting. Participants were selected to be included in the project as they are all currently employed full-time within the clinic. The exclusion criteria for participants were focused on those who are considered as needed workers (PRN) and float/resource team members. Of the 20 participants invited to participate, 75% provided anonymous consent for the pre-survey. There was no compensation provided to participants and they were made aware of this before giving consent.

Materials

A pre- and post-Likert scale survey was used to measure education confidence and educational resource retrieval method comfortability during project implementation. These surveys (Appendix M and N) consisted of 10 (pre-survey) and 10 (post-survey) questions regarding confidence with current STD/STI guidelines, referencing, accessibility of, and ability to package/label specimens within the workplace. Also, how often STD/STI referencing is used, current education level, need for change with the current method, and preferred learning method. Participants selected their level of agreement on statements with a 4- or 5-point scale depending on the question. Responses

ranged from: "no confidence" to "extremely confident", "not accessible" to "extremely

accessible", "every patient interaction" to "never", and "strongly disagree" to "strongly

agree". There were two questions concerning the need for change in the current education

method and preferred learning method for which the responses included: "total

makeover" to "current method", and "current method-email" to "email, new checkoff

with each change, and monthly in-service".

Procedure

Participants were notified in the pre- and post-survey emails that their responses

would be completely anonymous and they would provide informed consent (Appendix

O). The surveys were distributed via a secured link within an email. The surveys were

created and administered by Qualtrics, an online survey creator. Qualtrics will produce

reports based on the data collected. The DNP project leader will then synthesize the data

into the dissertation. Findings will then be presented to the healthcare workers during a

staff meeting. The education will be presented in the form of a PowerPoint, email, easy-

access links, and easy-to-understand and read pages created by the group. The DNP

Project faculty will provide the DNP project leader with useful information and guidance

during the tenure of the project. Should there need to be printing resources, the project

leader will use a local office supplier for copies. The project leader will develop

improved strategies and learning methods for healthcare workers to enhance healthcare

worker's confidence in and accessibility of STI education provided to healthcare workers

within a rural ambulatory clinic.

Work Planning

Project Management

The project will be managed within the clinic continuously by the DNP project leader. The design and plan of the project are unique as it was not copied from the design of another project. The project was intended to be straightforward and manageable to bring about a positive and easily accessible education hub and obtain data regarding its efficacy. Easy manageability will hopefully ensure future implementation and maintenance.

Design and Plan

The DNP project takes place in a rural ambulatory clinic that conducts large numbers of STI testing in western North Carolina. The clinic is comprised of healthcare workers including nurses (RNs and LPNs), radiology technicians (RTs), certified medical assistants (CMAs), patient service specialists (PSSs), doctors (MDs and DOs), and advanced practice providers (PAs and NPs). Identification of the issue regarding lack of access and availability to STI testing, patient symptoms, treatment, education, and specimen packaging/labeling resources was determined by the DNP project leader. The DNP project will assess the healthcare worker's initial confidence with a pre-project implementation survey in the form of an anonymous 10-question survey using a Likert scale to assess current STI testing, patient symptom recognition, treatment options and availability, education to provide to patients, and specimen packaging/labeling guidelines prior to the implementation of the intervention. The project will start with the creation and implementation of a shared network hub that is remote and easily accessible for all healthcare workers. The hub will contain educational resources on patient symptoms,

patient education, testing options, and compliance with packaging/labeling specimens. The hub will be centrally located on each desktop for quick, easy access to necessary STI information and education. There will be a post-project implementation of an anonymous 10-question Likert scale survey to determine the effectiveness of the intervention in increasing healthcare worker confidence with STI testing, patient symptom recognition, treatment options, and availability, education to provide to patients, and specimen packaging/labeling guidelines. Both surveys will be completely anonymous, and information will be kept confidential by the DNP project leader. By conducting and gathering data from the pre- and post-project implementation surveys, the DNP project leader can better determine the initial baseline and the effectiveness and success of the DNP project.

The steps necessary to initiate the DNP project began with an email to all full-time healthcare workers at the clinic detailing the purpose of the project and a link to complete the anonymous pre-survey. Informed consent to participate in the survey and project was listed as the first question within the survey. Once the surveys are complete, the network hub will be downloaded and affixed to each desktop in the office by the project leader. Then, another email will be sent out discussing the findings of the presurvey and the next steps for mandatory education. Healthcare workers will be offered two different 1-hour in-office training dates or one 1-hour recorded online video to complete required education for location, use, and contents of the hub and will have 1 week to sign up. Those who opt for the recorded session will sign up as well and there will be a follow-up questionnaire at the end of the video assessing understanding. The sessions will include skills checkoff by the DNP project leader to examine participant

competency on the location, use, and concepts of the hub as well as three correct

specimen orderings (for providers) and specimen packaging/labeling for clinical

teammates who are required to do so within their job role. Once all healthcare workers

are educated, the hub can begin to be used for day-to-day operations. A third email will

be sent out with instructions for the post-survey completion.

Cost/Benefit Analysis

The cost versus benefit of a project is very important to all stakeholders as this

determines the liability that may be obtained if the project is unsuccessful. To analyze the

cost and benefits, the DNP project leader must look at direct and indirect costs. The

budget determined for the project is approximately $1,000. Further breakdown, the most

expensive aspect of the project will be paying healthcare workers 1 hour of wage for

coming in for the mandatory education. Participant pay will not be provided by the DNP

project leader. Each full-time staff member is paid differently based on position and

seniority. The direct sources of funding include wage pay for education, utilities for the 2

hours of use in the facility for education sessions, and packaging/labeling supplies needed

for an education session and checkoffs. The wage cost will amount to approximately

$600, while utilities will account for approximately $100 and packaging/labeling supplies

will use approximately $100. Indirect costs will include snacks for education sessions,

staff computer use, and internet use. Snacks will account for approximately $50, with

staff computer and internet use will account for approximately $100-150. With the cost

effectively being low and there already being continuous access to desktop computers

and internet which could essentially be free for use of the project since it is for the

betterment of the clinic. The low cost of the project combined with the positive benefits of the project will be clear-cut for the stakeholders as a win all around.

Implementation

Implementation of the shared network hub that houses easily accessible educational resources regarding STD/STI information in guidelines is the most important aspect of the DNP project. Not only is the shared hub instrumental in achieving the goal of increased access and confidence in STD/STI education within the clinic, but it also provides the platform to gather post-project implementation survey data to determine its success. Plan implementation must be completed on a strict timeline to maintain timely data procurement. A GANTT chart was used for project management (Figure 3). The chart will serve as a visual aid for the project schedule and timeline. The chart will direct the leader to critical tasks needed to ensure deadline adherence. GANTT charts are visually appealing and easy-to-use for project management.

Figure 3

GANTT Chart
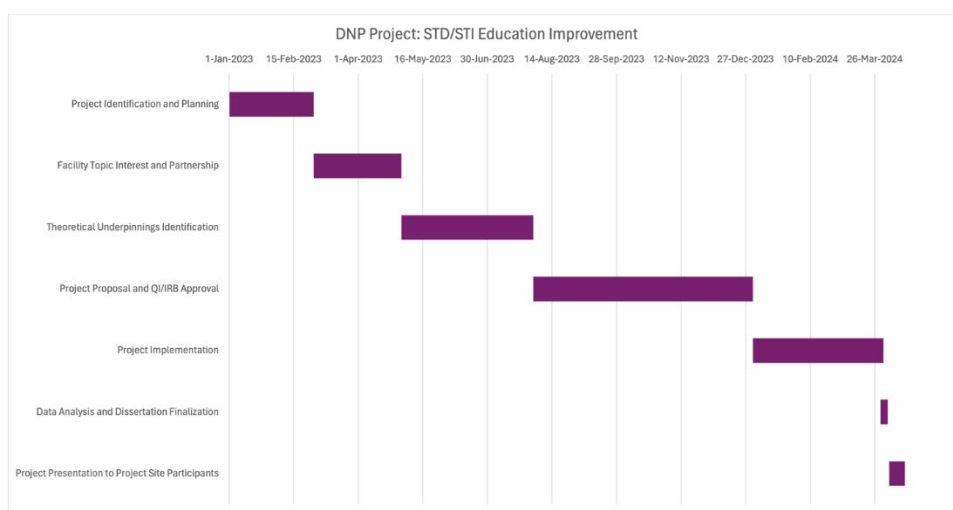
Note. GANTT Chart for Project Management

Pre-Intervention

Pre-intervention steps are needed to begin the project and gain insight into the depth of the issue at hand. The project will begin with an email to all full-time healthcare workers at the clinic detailing the purpose of the project and a link to complete the anonymous Likert scale pre-survey. The email begins with an introduction to the DNP project leader's program of study. This email also includes other relevant information regarding the DNP project's purpose and goal to increase education and access to educational resources for healthcare workers within the rural ambulatory clinic. The email encourages participation but includes information regarding nonmandatory participation. Email recipients are provided with both a link and a QR code to access the pre-survey with instructions on survey access.

Once the survey link is opened, the participant will be directed to the informed consent agreement first. The consent includes relative information including the project being completely voluntary with the participant's ability to withdraw at any time without penalty. Participants are made aware that the responses are anonymous and confidential. Participants are informed their names will not be collected or linked to the data. Also, there is no compensation for participation. Other information that is clarified includes: the ability to obtain a hard copy of the disclosure if necessary and that data will not be used or distributed for future research studies. Participants then select "I agree" or "I do not agree" to the following items: reading and fully understanding the contents of the disclosure, the chance to ask questions concerning the project, and if they wish to withdraw, to close out of the window at that time with no storage of responses and no consequences. The survey will also include approximately 10 questions ranging from

confidence with STI patients and testing processes to current education strategy comfortability to uncertainties with packaging/labeling specimens. There will only be one submission allowed per person. With the survey responses being anonymous, there is no guarantee that participants will not complete the survey more than once. However, participants are instructed to only complete the survey once. The DNP project data collection will rely on participant honesty and ethical guidance to not complete more than one survey response. The current issue involves addressing healthcare workers within the clinic, and it is understood that the plan implementation will be respected and welcomed which will promote compliance with the survey. Once the pre-survey has been released for 1 week, the project can begin to be implemented.

During implementation, participants will be educated regarding the use of the hub via a PowerPoint presentation (Appendix P). After the education session, participants will be checked off on successful STI/STD specimen packaging/labeling. During this checkoff, seven participants who are in direct roles that require specimen labeling and packaging will be checked off by the DNP project leader. These participants include direct clinical care workers limited to RNs, CMAs, LPNs, and RTs. Providers (DO, MD, PA, NP) as well as PSS staff will be excluded as their positions do not require them to complete packaging and labeling of STD/STI lab specimens. The DNP project leader provided each participant with a fictitious patient label example and had the participant demonstrate how to correctly place the label on the specimen collection tube as demonstrated in the Specimen Labeling Job Aid (Appendix Q). This was informal and strictly observed as no physical check-off form was completed for each participant. Following observation, the DNP project leader provided verbal feedback to the

participant. The evaluation method is appropriate as there were only seven participants required to demonstrate.

Post-Intervention

Post-intervention assessment is important to determine if the project was effective at creating change. The main goals of the project are to increase healthcare worker confidence with STI testing, patient symptom recognition, treatment options, and availability, education to provide to patients, and increasing compliance with specimen packaging/labeling guidelines. After the implementation of the shared network education hub, there will be an email with a link to an anonymous Likert scale survey of approximately 10 questions. Some questions will be the same as the pre-survey assessing confidence with STI patients and testing processes and current education strategy comfortability. However, it will also include questions like a new understanding of comfortability with packaging/labeling specimens, whether the project was effective, and if the new education way is more favorable than the standard paper or email education method. There will be an open-ended section at the end for the surveyor to write their concerns, what they want to change, or other ideas or comments. This data will be analyzed via Qualtrics reports to determine the overall effectiveness and acceptability of the project.

<div align="center">

Evaluation Plan

</div>

Project outcome and goal achievement measures are pointed out with objectives. The overall goal of the project was to improve rural ambulatory healthcare workers' STI education by creating an easily accessible shared network hub to increase confidence and provide a better understanding of and easier access to educational resources on patient

symptoms, education, testing options, and packaging/labeling specimen guidelines. This project's objectives are based on the overall goal.

Objectives

Objective One

The first objective of the project is that at least 75% of teammates will demonstrate improvement in confidence regarding STD/STI patients, education, and guidelines via an anonymous rating scale following introduction to the new education hub after 2 months. This will be measured by obtaining a pre- and post-intervention anonymous Likert scale survey sent out via email. The pre- and post-intervention ratings will be analyzed and reported. Pre-intervention survey questions focus on determining participant confidence with STD/STIs packaging/labeling of STD/STI specimens, confidence being a health care worker involved in the care of STD/STI patients, confidence using current education, accessibility of current education methods, and current education level of STD/STI guidelines and resources. These questions create a baseline set of data prior to project implementation to determine project impact once the pre-survey is obtained.

Post-intervention survey questions included most of the same questions from the pre-survey, but with indications for confidence and education level after implementation of the project's shared network hub. The survey also inquired about the accessibility and user-friendliness of the hub after project implementation. With the pre- and post-survey data, the DNP project leader can determine whether participants respond with an improvement in confidence regarding STD/STI patients, education, and guidelines.

Objective Two

Objective two addresses at least 80% of teammates will be able to locate and demonstrate appropriate use of the education hub created for STIs to the team leader after a 2-month implementation. Objective two will be measured using the required in-person training sessions. There will be two different 1-hour in-office training sessions offered and a 1-hour recorded online video to complete the required education for the location, use, and contents of the hub. All healthcare full-time team members will have 1 week to determine which session works with their schedules.

Objective Three

Objective three addresses at least 80% of teammates will be able to accurately label and package three STI testing specimens after a 2-month implementation of the new education hub. These will be measured with the above required in-person training session. The sessions will include skills checkoff by the DNP project leader to examine participant competency on the location, use, and concepts of the hub as well as correct specimen packaging/labeling for clinical teammates who are required to do so within their job role. The project leader will provide each participant with a fictitious patient label example and have the participant demonstrate how to correctly place the label on the specimen collection tube.

Figure 4

Evaluation Plan- Logic Model
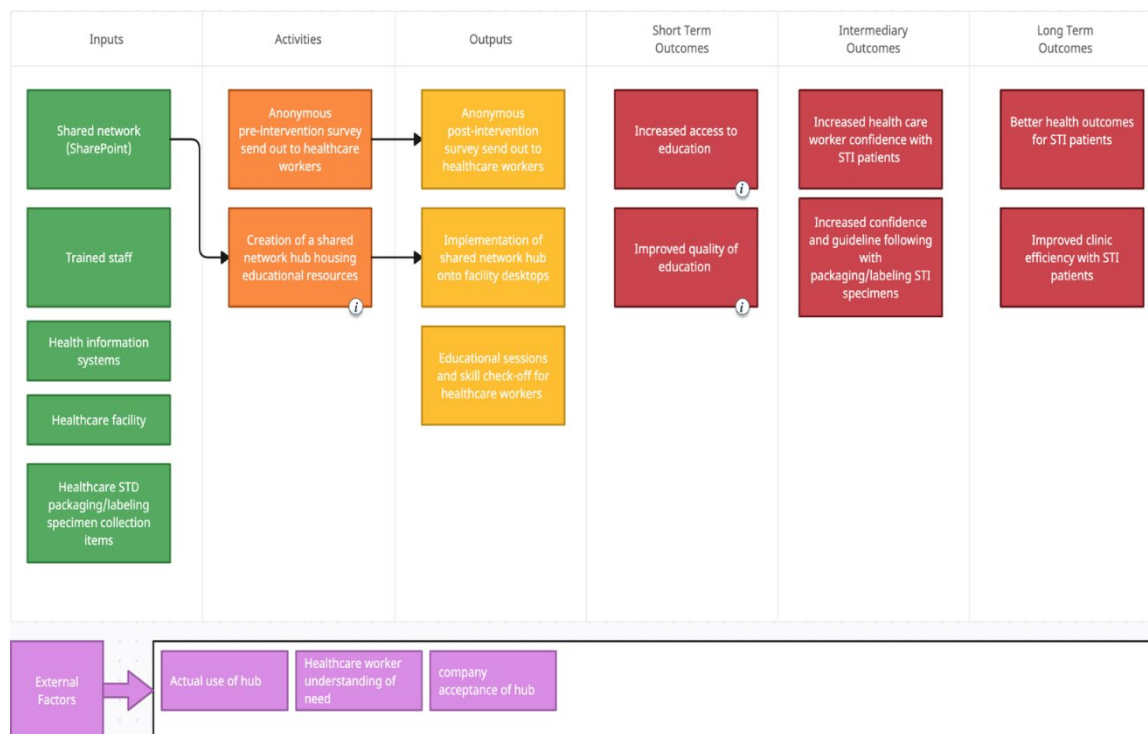
Note. Evaluation plan created by the DNP project leader.

Implementation

Project implementation is critical and must be completed in a timely manner while maintaining the preapproved timeline. Implementation can be carried out with ease with the proper preparation beforehand. However, even if all aspects of implementation are lined up correctly, there is a chance of threats and barriers along the way. The DNP project leader must adequately monitor the project and be able to adapt appropriately to prevent complications during the DNP project implementation phase. QI/IRB approval from both the Hunt School of Nursing and Atrium Health was obtained prior to project implementation.

Threats and Barriers

Prior to project implementation, threats and barriers were assessed and considered. The largest barrier to the success of this project was the use of technology. There were varying degrees of technological savviness which, in turn, may directly affect the usability of the hub for some of the DNP project's participants. Other technological barriers that may pose a threat include a stable continuous internet connection and hub accessibility due to SharePoint access/connection. Another barrier addressed is the dynamic patient variability day to day. There may be multiple patient's presenting for STI/STD testing one day and none the next. Therefore, it may pose an issue to some DNP project participants not requiring the use of the hub as often.

There were also barriers regarding specimen retrieval and use after sending via transport from the clinic. Most notably, specimen transportation from the clinic to the lab after packaging occurs by another individual not employed by the clinic. The company that transports the specimens, MedSpeed, may have an automobile accident or may lose/misplace/damage a specimen during transport. This barrier is not a direct reflection of the rural ambulatory clinic for which the DNP project is taking place and is out of the DNP project leader's control. The receiving lab may also lose/misplace/damage a specimen or incorrectly enter the result on the patient which is simple human error.

The training session barriers included continuous attentiveness by those in attendance and configuring scheduling conflicts to ensure the education of participants. Concentration was intermediate due to patient trends and patient load in direct relation to how many patients were present to be seen and participants responding to those situations. Participants were mostly vigilant during the session but still required follow-

up. Scheduling conflicts and overlapping between participants posed another threat to all-inclusive education. The project leader presented on two different days to include most full-time working participants. In the event participants were unable to attend in person, an emailed copy of the education session was emailed to all full-time participants for self-review.

Project barriers directly related to the DNP project leader included the necessary time management alongside work schedules, graduate schoolwork load, and life changes. The DNP project leader experienced a slight setback in the DNP project by 2 weeks. The DNP project leader had to move days around in order to accomplish each implementation initiative. Although this will most likely not negatively affect post-survey results, it is still a barrier to the implementation of the project.

Another possible threat to the project was the possibility of participants thinking the project was irrelevant or ignoring the overall DNP project goal. Participants may be adequately educated and shown how to properly use the hub, but may not necessarily use it as they should or continue to hastily choose the wrong order and/or package/label specimens incorrectly. Although these are appropriate threats and barriers, it is important to understand that all DNP projects encompass some degree of possible issues. Threats and barriers must be overcome by pushing forward to advocate for the overall goal: increasing access to, availability of, and quality of STI educational materials for healthcare workers in a rural ambulatory clinic.

Monitoring of Implementation

The DNP project leader was in charge of all aspects of DNP project implementation including consent obtainment creation of the hub and education

materials, conducting education sessions, communication with project participants, monitoring hub use, maintaining availability for participant questions or concerns, and DNP project data analysis. Consent was obtained initially and completed via pre- and post-survey responses emailed to all full-time project participants.

This aspect of the DNP project went very smoothly as the participants were within the DNP project leader's email base and regularly checked their email. Two education sessions were conducted, and specimen labeling/packaging checkoff was completed. All seven of the required participants noted within their job description were able to checkoff on their specimen labeling and packaging. These were completed individually by the DNP project leader intermittently throughout the day with each being pulled for a short time for their short demonstration. All participants demonstrated successful specimen labeling.

There were few questions and overall positive learning experiences voiced amongst participants. Hub implementation within the clinic began approximately 1 week later on February 12, 2024. Each week, the DNP project leader rounded either in person or via email on newfound concerns and questions presented by participants. Rounding was conducted with only a few questions/needs for guidance regarding the hub's location and/or use. The project was set back approximately 2 weeks due to outstanding circumstances on the DNP project leader's behalf. However, the DNP project was able to be reigned back in sufficiently in order to ensure timely completion. Data completion for the pre-survey was at 70% as only 14 of the 20 possible participants partook. For post-survey, 45% or 11 of the 20, participants completed the survey response. The DNP project leader reminded potential participants via email of post-project implementation

survey participation. Despite this attempt to obtain more post-survey data, no new participant survey responses were collected.

Project Closure

After approximately 6 weeks of hub use, the DNP project closed on March 29, 2024. Participants were notified of the DNP project conclusion and any last-minute questions and/or concerns were addressed. The post-project surveys were sent to participants via an email with a confidential link to be completed. The DNP project leader began to conduct the data analysis of participant survey responses with the help of the Qualtrics data management system. Data dissection and analysis were then placed into a report and graphics for interpretation to determine project and goal outcome, anticipated favorability, and soundness.

<div align="center">

Interpretation of Data

</div>

Qualitative and quantitative data were gathered during the initiation, implementation, and closure of the DNP project. The DNP project began with a pre-project intervention survey and ended with a post-project intervention survey used to collect pre- and post-project implementation data. The surveys were collected via Qualtrics, a web-based software, which scores and creates distributions and reports of the data collected. Qualtrics created reports in which the data was easily visible and trends were able to be appreciated. Coding was also completed by Qualtrics software by assigning a numerical value to each answer choice for each question to distribute data within an easily viewable and understandable simple bar graph. Data retrieved from the pre- and post-project implementation surveys was compared to determine and measure DNP project impact. Prior to the DNP project implementation, 20 full-time healthcare workers at the rural ambulatory clinic where the DNP project was conducted were identified as

potential participants and received an invitation to complete the pre-intervention survey which also obtained consent to participate in the DNP project. Of the 20 possible participants, there were only 14 completed responses for each question in the pre-survey and 11 for the post-survey. The missing data from the other six possible participants from the pre-survey and nine from the post-survey were not available for scoring or coding. A barrier that may have contributed to the missing participant data includes but is not limited to vacations, requested time off, illness, lack of computer/email access, and indifference.

Qualitative Data

Qualitative data within this DNP project were collected via observation and a checkoff after applicable education was provided. Data was gathered with nine survey questions including responses. Confidence regarding STI patients, education, and resources within the workplace was evaluated during the pre- and post-surveys. The survey found that respondents had some degree of confidence with current STI guidelines and referencing within the workplace with 71% noting "mostly confident". After project implementation, 100% of participants noted "mostly" or "extremely confident". Furthermore, 100% of participants also agreed that their overall confidence had increased following the implementation of the new education hub. Confidence with correct packaging and labeling of STI specimens was found approximately 36% less than minimal confidence and 63% mostly confident. Participants were much more confident with packaging and labeling after the DNP project closure with "mostly" and "extremely" confident votes. The DNP project leader found approximately 15% less than minimal confidence and approximately 85% mostly confident appropriate for the care of these patients. This rose to 100% of mostly confident or more post-project implementation. STI educational resource and guideline referencing was noted to be used at least once per shift or

more frequently by approximately 29% of participants, 50% responded with "sometimes", and 21% responded with "never".

Accessibility and current method preference were also evaluated within the pre- and post-project intervention surveys. Current accessibility of updated sexually transmitted infection (STI) educational resources responses noted over 50% accessibility as compared to less than half of participants noting decreased accessibility. One hundred percent of participants noted the STD/STI education resources to be "very" or "extremely" accessible after project implementation. Nine of the 14 participants "somewhat agree" that they are properly educated on STI symptoms, testing options, packaging/labeling specimens, and treatment options whereas three participants disagreed. This could be directly related to the varying education preferences of each participant and/or their misunderstanding of the question. After the DNP project closure, approximately 82% of participants voted strong agreeance to proper education on STD/STI symptoms, testing options, packaging/labeling specimens, and treatment options. When asked if participants felt as if there needed to be a change in STI guidelines, resources, and education accessibility and reference ability, 10 participants stated issues with nine of the ten noting the current method needing revision. Only one participant noted a preference for the current method. Preferred learning method data obtained found that over half of the participants preferred something other than the current email method however most preferred email, new checkoff with each change, and a monthly inservice. Six participants preferred the current method over a changed method. Of the post-survey participants, 100% of them agreed that education was more accessible and user-friendly than the method prior.

Result Interpretation

Data interpretation was derived from Qualtrics survey reports. The survey reports found obvious improvements in confidence and accessibility of STD/STI education, guidelines, and specimen packaging/labeling as noted by participants in the post-survey as compared to the pre-survey. Participants noted an increased confidence and accessibility of education after the implementation of the shared network hub. Participants also noted a preference for the new method compared to the old method of education.

Quantitative Data

Quantitative data within the DNP project was collected via pre- and post-project intervention surveys. This data includes pre- and post-project implementation survey completion participants, specimen labeling and collection checklist participants, and participants noting how often they refer to educational resources regarding sexually transmitted infection (STI) guidelines within the workplace in the pre-intervention survey. Of the 20 participants who received survey invitations, 14 unidentified participants completed the pre-intervention survey and provided consent to be anonymously involved in the DNP project. There were 11 participants who completed the post-intervention survey. There were 12 participants who were checked off on the successful collection and labeling of three different simulated STI/STD specimen collection orders. Of the 14 pre-intervention survey participants, results from the question "How often do you have to refer to educational resources regarding sexually transmitted infection (STI) guidelines within your workplace?" included one participant who answered "every patient interaction"; one participant answered "a few times per shift"; two participants answered at least once per shift"; seven participants answered "sometimes"; and three participants answered "never".

Result Interpretation

Although all participants were invited to take part in the project, only 15 completed/consented to the pre-survey and only 11 completed the post-survey. Data reports were analyzed nonetheless. Seventy-three percent of participants who completed the pre-survey indicated needing to refer to educational resources regarding STD/STIs "sometimes" or more which can be interpreted as there needing to be continuous education as referencability is important and necessary to some degree.

Outcomes

The main goal of this DNP project was to increase education and access to education for healthcare workers at a rural clinic. The focus consisted of organized and available information, education material links, and a survey of education/confidence levels before and after the education session and materials. The outcomes of the DNP project were equally positive and with the help of this DNP project, there was more readily available access to STD/STI education for healthcare workers within the rural urgent care clinic. Not only were the healthcare workers within the clinic adequately educated regarding STD/STI guidelines, the information was easily accessible to all. There was improved use of the SharePoint system for accessing documents and information within the healthcare clinic. There was also a checklist completed that verified the ability of clinical staff to accurately collect and package/label STD/STI specimens verified by the DNP project leader.

Another goal for the project included patient and community impact. Not only will increased education regarding STD/STIs for healthcare workers increase their knowledge, but their day-to-day work and impact on patient care. With a better understanding of STD/STI education and guidelines, healthcare workers can directly improve patient care standards. Going

forward, healthcare workers within the rural ambulatory clinic will foster better relationships with STD/STI patients by providing quality care and a positive impact on their education as well. With the improvement noted in this specific clinic, there is hope that other clinics may adopt the network hub and see acceptability and change as well.

<div align="center">**Process Improvement**</div>

Process improvement is a multifactoral aspect of day-to-day operations within any facility or system. The impact of a project directly impacts its acceptability and implementation within a system. The ultimate goal is improvement and a positive outcome from the project. There was a direct correlation between quality improvement within a system and its success overall.

Impact

This DNP project impacted healthcare workers within the rural healthcare clinic regarding education about and access to resources for STD/STIs. Not only was STD/STI education more easily accessible, but it was provided in a concise, viewer, and user-friendly platform easily accessible by all healthcare workers within the rural ambulatory clinic. There was an increase in STD/STI guidelines confidence, guideline reference ability, and packaging/labeling of STD/STI specimens. This impact was measured via responses to both a pre-project implementation and post-project implementation survey. The post-survey indicated that 80% of participants noted an overall increase in their confidence in STD/STI symptoms, treatment options, and specimen/labeling guidelines after the new education hub was implemented within the DNP project.

Sustainability and Future Data

The DNP project was sustainable as it was a clinic public page that was editable. The SharePoint page was shared with all of the healthcare workers at the rural ambulatory clinic and can be updated by them. The goal of the DNP project was not only to improve STD/STI education but also to provide an easy-to-use and accessible platform for education to be housed. With that, the idea that the DNP project participants would customize the page going forward as education is presented/passed down to them from the educational leaders within the larger organization. This would allow the hub to stay up to date with the healthcare workers as they continue to become familiar with and grow accustomed to using the SharePoint hub page. This access also allows for the addition of new education as it is presented in the future. The hub is very easy to access and use by those within the clinic. The hub can be shared and exported an unlimited number of times as well making it easier to continue past this specific DNP project timeline. For years to come, the DNP project can be ongoing and modifiable.

In the future, one would be able to build on this DNP project by incorporating a wider array of education surrounding STD/STI including but not limited to STD/STI testing options expand, as less common STD/STIs become more prominent, and education or policies change. One could potentially go more in-depth with the DNP project and measure the number of STD/STI specimens that are discontinued or not run by the lab due to ordering and/or labeling/collection issues. Another option would be to take the DNP project to a larger stage or reciprocate in other clinics as the DNP project was only completed within one rural ambulatory clinic. This would provide a different data set that could be compared among clinics. Another possibility could be measuring STD/STI testing and the need for accessing the hub based on days of the week, portions of the month, and months of the year could be measured as well thus

adding to the DNP project shared network hub to educate the participants on trends within the

clinic.

References

Alam, N., Mridha, M., Kristensen, S., & Vermund, S. (2015). Knowledge and skills for management of sexually transmitted infections among rural medical practitioners in Bangladesh. *National Library of Medicine, 5*(4), 151-158. https://doi.org/10.4236/ojpm.2015.54018

Barnes, C., & Cathcart, S. (1998). The role of training in STD prevention and control. *Afr Health*, *20*(3). https://pubmed.ncbi.nlm.nih.gov/12348790/

Barrow, J., Annamaraju, P., & Toney-Butler, T. (2022). Change management. *National Library of Medicine*. https://www.ncbi.nlm.nih.gov/books/NBK459380/

Bhandari, P., & Nikolopoulou, K. (2020). What is a Likert scale? Guides and examples. https://www.scribbr.com/methodology/likert-scale/

Brookmeyer, K., Coor, A., Kachur, R., Beltran, O., Reno, H., & Dittus, P. (2021). Sexual history taking in clinical settings: A narrative review. *Sexually Transmitted Diseases, 48*(6), 393-402. https://journals.lww.com/stdjournal/Fulltext/2021/06000/Sexual_History_Taking_in_Clinical_Settings__A.2.aspx

Centers for Disease Control and Prevention (CDC). (2021). 1 in 5 people in the U.S. have a sexually transmitted infection. https://www.cdc.gov/nchhstp/newsroom/2021/2018-STI-incidence-prevalence-estimates.html

Cleveland County Public Health Center (CCPHC). (2018). *2018 State of the County*

    Health Report [PDF].

    https://www.clevelandcountyhdnc.com/2018%20SOTCH%20Final%20Version%

    20Cleveland%20County.pdf

Cleveland County Public Health Center (CCPHC). (2020). *Cleveland County 2019*

    community health assessment [PDF].

    https://www.clevelandcountyhdnc.com/2019%20Community%20Health%20Asse

    ssment%20Corrected.pdf

County Health Rankings. (2023). *Sexually transmitted infections.*

    https://www.countyhealthrankings.org/explore-health-rankings/county-health-

    rankings-model/health-factors/health-behaviors/sexual-activity/sexually-

    transmitted-infections?year=2022&county=37045

Goesling, B., Colman, S., Trenholm, C., Terzian, M., & Moore, K. (2014). Programs to

    reduce teen pregnancy, sexually transmitted infections, and associated sexual risk

    behaviors: A systematic review. *The Journal of Adolescent Health: Official*

    Publication of the Society for Adolescent Medicine, 54(5), 499–507. https://doi-

    org.ezproxy.gardner-webb.edu/10.1016/j.jadohealth.2013.12.004

Goodreau, S., Pollock, E., Wang, L., Aslam, M., Barrios, L., Dunville, R., Rosenthal, E.,
Hamilton, D., Katz, D., & Rosenberg, E. (2021). Impacts of changing sexual
behavior on chlamydia and gonorrhea burden among US high school students,
2007 to 2017. *Sexually Transmitted Diseases, 48*(9), 635-64.
https://journals.lww.com/stdjournal/Fulltext/2021/09000/Impacts_of_Changing_S
exual_Behavior_on_Chlamydia.5.aspx

Harrison, A., Wilkinson, D., Lurie, M., Connoly, A., & Karim, S. (1998). Improving
quality of sexually transmitted disease case management in South Africa. *AIDS,
12*(17).
https://journals.lww.com/aidsonline/fulltext/1998/17000/improving_quality_of_se
xually_transmitted_disease.15.aspx

HealthManagement. (2017). The importance of continuous education in healthcare.
https://healthmanagement.org/c/healthmanagement/issuearticle/the-importance-
of-continuous-education-in-healthcare

LaMorte, W. (2022). *Diffusion of innovation theory*. Boston University school of public
health. https://sphweb.bumc.bu.edu/otlt/mph-
modules/sb/behavioralchangetheories/behavioralchangetheories4.html#:~:text=Di
ffusion%20of%20Innovation%20(DOI)%20Theory,specific%20population%20or
%20social%20system

Leung, H., Shek, D., Leung, E., & Shek, E. (2019). Development of contextually-relevant
sexuality education: Lessons from a comprehensive review of adolescent
sexuality education across cultures. *International Journal of Environmental
Research and Public Health, 16*(4), 621. https://doi.org/10.3390/ijerph16040621

Maggio, L., Aakre, C., Fiol, G., Shellum, J., & Cook, D. (2019). Impact of clinicians' use of electronic knowledge resources on clinical and learning outcomes: Systematic review and meta-analysis. *PubMed Central, 21*(7). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6690166/

Mitchell, G. (2013). Selecting the best theory to implement planned change. *Nursing Management, 20*(1), 32-37.

Molla, G., Desalegn, A., & Tigu, F. (2020). Prevalence of gonorrhea and associated knowledge, attitude and risky behaviors and preventive practices among high school students: A cross-sectional study. *Journal of Community Health*, 46, 358–366. https://doi-org.ezproxy.gardner-webb.edu/10.1007/s10900-020-00945-2

Newton-Levinson, A., Leichliter, J., & Chandra-Mouli, V. (2016). Sexually transmitted infection services for adolescents and youth in low- and middle-income countries: Perceived and experienced barriers to accessing care. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine, 59*(1), 7–16. https://doi-org.ezproxy.gardner-webb.edu/10.1016/j.jadohealth.2016.03.014

Rose S., Garrett, S., & Pullon, S. (2021). Improving management of sexually transmitted infections in primary care: Feasibility and acceptability of a new patient management tool for clinicians. *Journal of Primary Health Care, 13*(2), 171-179. https://doi.org/10.1071/HC20051

Szucs, L., Lowry, R., Fasula, A., Pampati, S., Copen, C., Hussaini, K., Kachur, R.,

    Koumans, E. H., & Steiner, R. (2020). Condom and contraceptive use among

    sexually active high school students - youth risk behavior Survey, United States,

    2019. *Morbidity and Mortality Weekly Report (MMWR)supplements, 69*(1), 11–

    18. https://doi.org/10.15585/mmwr.su6901a2

United States Department of Health and Human Services (USDHHS). (n.d.). *Sexually*

    transmitted infections. https://health.gov/healthypeople/objectives-and-

    data/browse-objectives/sexually-transmitted-infections

Workowski, K., Bachmann, L., Chan, P., Johnston, C., Munzy, C., Park, I., Reno, H.,

    Zenilman, J., & Bolan, G. (2021). Sexually transmitted infections treatment

    guidelines [PDF]. *Centers for Disease Control and Prevention, 70*(4).

    https://www.cdc.gov/std/treatment-guidelines/STI-Guidelines-2021.pdf

Appendix A

University QI/IRB Approval

GARDNER-WEBB UNIVERSITY

Institutional Review Board

THIS IS TO CERTIFY THAT THE RESEARCH PROJECT TITLED

Improving Sexually Transmitted Infection (STI) Education and Access to Education for Healthcare Wo

being conducted by ___Savannah Elmore_____

has received approval by the Gardner-Webb University IRB. Date ___10-13-2023_____

Exempt Research

Signed _____

       IRB Institutional Administrator

Expedited Research

Signed _____

       IRB Institutional Administrator

       IRB Chair

Full Review

Signed _____

       IRB Administrator

       IRB Chair

       Member

Expiration Date: ___10-12-2024_____   **IRB #** 23101201

IRB Approval: ___X___ Exempt _____ Expedited _____ Full Review

Appendix B

Project Site QI/IRB Approval

WAKE FOREST
UNIVERSITY
HEALTH SCIENCES

Office of Research
INSTITUTIONAL REVIEW BOARD

MEMORANDUM

To: Savannah Elmore
          Clinical and Translational Science Institute {CTSI}

From: Jeannie Sekits, Senior Protocol Analyst
          Institutional Review Board

Date: 1/2/2024

Subject: Exempt Protocol: IRB00103536
          Improving Sexually Transmitted Infection (STI) Education and Access to Education
          for Healthcare Workers in a Rural Ambulatory Clinic

No protected health information will be used or disclosed in this research proposal; therefore the requirement for individual Authorization does not apply.

null (Category null).

Note that only the Wake Forest University School of Medicine IRB can make the determination for its investigators that a research study is exempt. Investigators do not have the authority to make an independent determination that research involving human subjects is exempt. Each project requires a separate review and approval or exemption. The Board must be informed of any changes to this project, so that the Board can determine whether it continues to meet the requirements for exemption.

The Wake Forest School of Medicine IRB is duly constituted, has written procedures for initial and continuing review of clinical trials; prepares written minutes of convened meetings, and retains records pertaining to the review and approval process; all in compliance with requirements of FDA regulations 21 CFR Parts 50 and 56, HHS regulations 45 CFR 46, and International Conference on Harmonisation (ICH) E6, Good Clinical Practice (GCP), as applicable. WFSM IRB is registered with OHRP/FDA; our IRB registration numbers are IRB00000212, IRB00002432, IRB00002433, IRB00002434, IRB00008492, IRB00008493, IRB00008494, and IRB00008495.
WFSM IRB has been continually fully accredited by the Association for the Accreditation of Human Research Protection Programs (AAHRPP) since 2011.

Appendix C

Facility Permission and Partnership Email

From: **Petty, Trudy K** Trudy.Petty@atriumhealth.org
Subject: DNP-FNP Project Idea
Date: March 27, 2023 at 4:57 PM
To: Elmore, Savannah A Savannah.Elmore@atriumhealth.org

To Whom It May Concern:

Savannah Elmore will be completing her DNP-FNP Project on STD Education to clinical staff at our Facility, Atrium Health Urgent Care Shelby.
This project will begin at a later date. I agree to facilitate a partnership for this project.

Trudy Petty
Ambulatory Manager
AHUC Shelby
1010 East Dixon Blvd., Suite B
Shelby, NC 28152
980.487.2917

Appendix D

CDC Pocket Guide Link

CDC STD pocket-guide.pdf
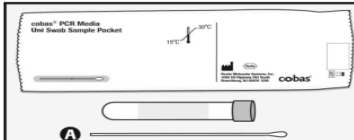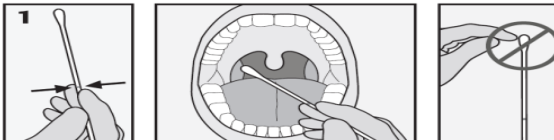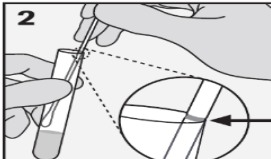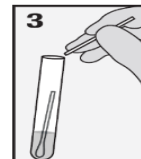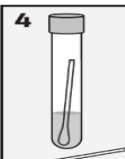
Appendix E

STI Collection- Oropharyngeal

cobas® PCR Media Uni Swab Sample Kit

Oropharyngeal (throat) swab specimen – clinician collection

WARNING: DO NOT PRE-WET SWAB IN cobas® PCR MEDIA BEFORE COLLECTION!

The cobas® PCR Media Uni Swab Sample kit contains:

cobas® PCR Media Tube
Woven Swab: A

1. COLLECT: To collect the specimen, hold the woven swab (Swab A) with the scoreline above your hand and insert the swab into the mouth and collect the specimen from the bilateral posterior pharynx, both tonsils and the uvula.

   Withdraw the swab carefully. Do not let the swab touch any surface before placing it into the collection tube.

2. ALIGN: Remove the cap from the cobas® PCR Media Tube and lower the swab specimen into the tube until the visible scoreline on the swab is aligned with the tube rim. The tip of the swab should not be submerged into the liquid prior to breaking the shaft.

3. BREAK: Carefully leverage the swab against the tube rim to break the swab shaft at the scoreline.

4. CLOSE: Tightly re-cap the cobas® PCR Media Tube. The specimen is now ready for transport. Discard the top portion of the swab.

Specimen transport and storage

- Following specimen collection, transport and store the cobas® PCR Media Tube containing the collection swab at 2°C to 30°C.
- Consult the test-specific Instructions for Use for collected specimen stability claims.
- Transportation of collected specimens must comply with all applicable regulations for the transport of etiologic agents.[3]
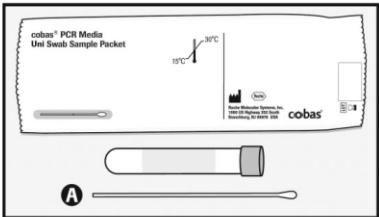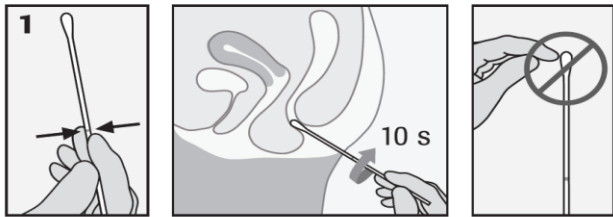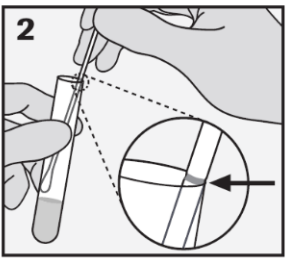
08246394001-06EN
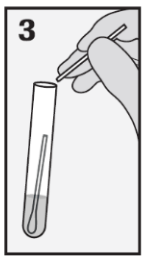Doc Rev. 5.0   10

STI Collection - Oropharyngeal.pdf

Appendix F
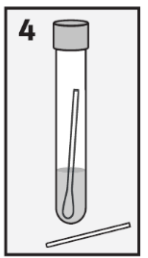
STI Collection- Rectal

Anorectal (rectal) swab specimen – clinician collection

WARNING: DO NOT PRE-WET SWAB IN cobas® PCR MEDIA BEFORE COLLECTION!

The cobas® PCR Media Uni Swab Sample kit contains:

cobas® PCR Media Tube
Woven Swab: A

1. COLLECT: To collect the specimen, hold the woven swab (Swab A) with the scoreline above your hand and insert the swab about 3 to 5 cm (1-2 inches) into the anal canal. Gently turn the swab in a clockwise direction for about 5-10 seconds while running the swab against the walls of the rectum. If the swab is grossly contaminated with feces, discard and repeat the collection.

Withdraw the swab carefully. Do not let the swab touch any surface before placing it into the collection tube.

2. ALIGN: Remove the cap from the cobas® PCR Media Tube and lower the swab specimen into the tube until the visible scoreline on the swab is aligned with the tube rim. The tip of the swab should not be submerged into the liquid prior to breaking the shaft.

3. BREAK: Carefully leverage the swab against the tube rim to break the swab shaft at the scoreline.

3. CLOSE: Tightly re-cap the cobas® PCR Media Tube. The specimen is now ready for transport. Discard the top portion of the swab.

Specimen transport and storage

- Following specimen collection, transport and store the cobas® PCR Media Tube containing the collection swab at 2°C to 30°C.
- Consult the test-specific Instructions for Use for collected specimen stability claims.
- Transportation of collected specimens must comply with all applicable regulations for the transport of etiologic agents.[3]

STI Collection - Rectal.pdf

Appendix G

Swab Reference List

Swab/Tube Reference List – STI Testing

Please reference STI Order Panel order in EPIC for information on placing STI orders.

Roche Cobas Urine- GC/Chlamydia

Aptima Urine-trichomonas

Aptima Swab-trichomonas

Roche Cobas Swab- GC/Chlamydia

Swab A – Woven Swab/Use for throat collections
Swab B – PCR (Flocked) Swab/Use for most other collections

Swab Reference List – Most Common Tests

Culture – Throat Culture, Wound Culture, etc.:

BBL™ CultureSwab™ Collection & Transport System

Created 6/1/22, Updated 6/15/23, 6/19/23.

Appendix H

Male Dysuria STI Testing Standing Order

Atrium Health Urgent Care

Male (>=13 years) Dysuria Testing – Standing Order

SUMMARY STATEMENT: The following order may be initiated on male patients who present with urethral discharge and/or concern for a sexually transmitted disease.

CPOE: After order is electronically entered, it will be routed to and signed by the provider in the EMR and will become a permanent part of the patient's medical record.

PARAMETERS/DEFINITIONS	TEST/ORDER	ICD-10 CODE(S)
Male patients >= 13 years of age	Chlamydia / Gonococcus (GC), NAAT – **LAB1330** - Collect urine specimen using first catch technique	R36.9 Urethral discharge N36.8 Urethral irritation R30.0 Dysuria
Complaints of a possible STD with any or all of the following symptoms: - Urethral discharge - Urethral irritation/itching - Dysuria		
Exclusion criteria: - No history of sexual activity - Asymptomatic		

REFERENCES:
- NC General Statute Chapter 90, Article 1, Practice of Medicine: http://www.ncga.state.nc.us/enactedlegislation/statutes/html/bychapter/chapter_90.html
- SC Code of Laws, Chapter 1, Physicians: http://www.scstatehouse.gov/code/t40c047.php
- NC General Statute Chapter 90, Article 9, Nursing Practice Act: http://www.ncleg.net/EnactedLegislation/Statutes/HTML/ByArticle/Chapter_90/Article_9A.html
- SC Code of Laws, Chapter 33, Nurses: http://www.scstatehouse.gov/code/t40c033.php
- Etiology and evaluation of dysuria in children and adolescents. UpToDate (last updated 1/15/18).
- Urethritis in adult men. UpToDate (last updated 4/8/19).

Chris Branner, MD, MPH   6/7/22
Approving AHUC Specialty Medical Director   Date

Last Updated: **10/11/19, 6/7/22.**

Male Dysuria STI Testing Standing Order.pdf

Appendix I

STI Available Orders

Atrium Health   IAS Communication

LABORATORY ORDERS: Vaginitis, STI, Urogenital Pathogen Test Menu Options

Purpose: To provide education regarding available orders for vaginitis, sexually transmitted infections, and urogenital pathogen testing.

Effective Date: Immediately available in Encompass

Target Audience: Atrium Health Providers and Clinical Support Staff

What is the change?
- ☐ Effective September 5th, 2022 AH Core laboratory will no longer send LAB000 orders for the following LabCorp sendout tests.
- ☐ Providers need to select testing using available orderables (EAPS/OSQs) and collect appropriate specimens.

LC Code	Test Name / Description	Order	
		Ambulatory	**Inpatient**
180021	Vaginitis Plus (VG+), NuSwab	O492125	O491933
183160	Chlamydia trachomatis, Neisseria gonorrhoeae, and Trichomonas vaginalis, NAA	**Urethral Swab**	
		O585783	O585782
		Urine	
		O585800	O585799
		Vaginal Swab	
		O585784	O585797

- ☐ The following Table provides a quick reference guide for providers regarding available test menu options for vaginitis, sexually transmitted infection, and other urogenital pathogen testing.

AH GREATER CHARLOTTE REGION - VAGINITIS, STI, UROGENITAL AMBULATORY TEST OFFERINGS					
*Refer to Specimen Collection Job Aid for more detailed information. Distributed separately through AH Core Laboratory Client Services.					
Orderable (EAP/OSQ)		**Test Name / Description**	**Performing Lab (TAT estimate)**		**Acceptable Specimens**	**Collection***
			AH Core Lab	**LabCorp**		
LAB9022		Candida 6 Species Profile PCR (Vaginal Swab)		3-4 days	Vaginal Swab	Aptima/NuSwab Multitest
LAB1325		Bacterial Vaginosis (BV) and Candida via NAA (Swab)		3-4 days	Vaginal Swab	Aptima/NuSwab Multitest
LAB1327		Bacterial Vaginosis (BV), Candida, and Trichomonas via NAA (Swab)		3-4 days	Vaginal Swab	Aptima/NuSwab Multitest
AMB	O492125	Bacterial Vaginosis (BV), Candida, Trichomonas and Chlamydia / Gonococcus (GC) via NAA (Swab)	≤ 1 day Chlamydia/ GC	3-4 days BV, Candida, Trich	Vaginal Swab X2 (One Roche & One Aptima/NuSwab)	🔵 Roche Cobas Swab ⚫ Aptima/NuSwab Multitest
IP	O491933					
LAB9191		Chlamydia trachomatis and Neisseria gonorrhoeae (CT/NG) PCR (Pharyngeal Swab)	≤ 1 day		Pharyngeal Swab	Roche Cobas Swab
LAB5758		Chlamydia trachomatis and Neisseria gonorrhoeae (CT/NG) PCR (Rectal Swab)	≤ 1 day		Rectal Swab	Roche Cobas Swab
AMB	O585783	Trichomonas and Chlamydia / Gonococcus (GC) via NAAT (Urethral Swab)		3-4 days	Urethral Swab	Aptima/Nuswab Unisex
IP	O585782					

What can I do if I need assistance?

You can always contact the Atrium Health Service Center at **704-446-6161 or 1-866-446-6161**.

STI Available Orders 3.17.23.pdf

Appendix J

STI-STD Order Panel

STI/STD Order Panel

Uh oh, not sure how to order a certain STI test or which collection tube is needed? Great news! We've now developed an *STI Order Set*! The order set will ensure the most up-to-date order is being used, and also lists the specimen container required in the description. This will be the *new and improved* way to order STI tests that we believe will help decrease the amount of order and collection errors we've seen and be an efficiency gain when needing to order multiple STI tests.

1. To access the **STI/STD Order Panel**, type in "<u>STI</u>" in the order menu at the bottom left while in the patient's chart (you do not need to use SmartSets or Express Lane).

2. After you search the order, choose the **O742790** <u>STI/STD Panel</u>

3. <u>Select the STI test(s) that apply:</u>

   Do NOT save this order panel as a favorite(if there is a lab update, it will not update automatically if it is saved as a favorite).

4. Pay close attention to the collection container in the comments! <u>REMEMBER</u>, when in doubt, always refer to the Procedure Catalog if you are unsure which collection tubes are required.

5. Finally, associate a diagnosis, and you're all set!

STI-STD Order Panel.pdf

Appendix K

UpToDate Links

UpToDate Links (4)

STD Types	UpToDate Link
Chlamydia	https://www.uptodate.com/contents/epidemiology-of-chlamydia-trachomatis-infections?search=chlamydia&source=search_result&selectedTitle=3~150&usage_type=default&display_rank=3
Gonorrhea	https://www.uptodate.com/contents/treatment-of-uncomplicated-gonorrhea-neisseria-gonorrhoeae-infection-in-adults-and-adolescents?search=gonorrhea&source=search_result&selectedTitle=1~150&usage_type=default&displa
Trichomonas	https://www.uptodate.com/contents/trichomoniasis-treatment?search=trichomonas&source=search_result&selectedTitle=2~92&usage_type=default&display_rank=2
Herpes	https://www.uptodate.com/contents/treatment-of-genital-herpes-simplex-virus-infection?search=herpes&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1
Syphyllis	https://www.uptodate.com/contents/syphilis-treatment-and-monitoring?search=syphilis&source=search_result&selectedTitle=2~150&usage_type=default&display_rank=2
HIV/AIDS	https://www.uptodate.com/contents/acute-and-early-hiv-infection-treatment?search=hiv%20aids%27&source=search_result&selectedTitle=4~150&usage_type=default&display_rank=4

Appendix L

SharePoint (Hub) Link

STI/STD Education Materials and Resources Hub

Appendix M

Survey (Pre-Intervention)

Electronic Link:

https://gardnerwebb.az1.qualtrics.com/jfe/preview/previewId/d58ae9cf-014b-4ccf-866f-3f0087b9f8a9/SV_0dkmJiFOaT3ZZD8?Q_CHL=preview&Q_SurveyVersionID=current

Survey (Pre-Intervention)

DNP Project Pre-Intervention Survey

Start of Block: Default Question Block

Q1 Participation in this project is voluntary. You have the right to withdraw from the QI project at any time without penalty. You also have the right to refuse to answer any question(s) for any reason without penalty. The information that you provide during the project will be handled confidentially. Your data will be anonymous which means that your name will not be collected or linked to the data. There are no anticipated risks in this project. You will receive no payment for participating in the project. You have the right to withdraw from the project at any time without penalty by exiting the survey, simply by closing the browser window. Data from this project will not be used or distributed for future research studies. I understand I may receive a hard copy of this disclosure if I so wish. I have read the information in this consent form and fully understand the contents of this document. I have had a chance to ask any questions concerning this Quality Improvement project and they have been answered for me. If you agree to continue, click "I agree" and continue the survey. If you wish to withdraw, close out of the survey now. None of your information will be stored or shared and there are no consequences for withdrawal.

○　　I agree (1)

○　　I do not agree (2)

Q2 How confident do you feel with current sexually transmitted infection (STI) guidelines within your workplace?

○   No Confidence (1)

○   Minimal Confidence (2)

○   Mostly Confident (3)

○   Extremely Confident (4)

Q3 How confident do you feel referencing current sexually transmitted infection (STI) guidelines within your workplace?

○   No Confidence (1)

○   Minimal Confidence (2)

○   Mostly Confident (3)

○   Extremely Confident (4)

Q4 How would you rate the current accessibility of updated sexually transmitted infection (STI) educational resources?

○   Not Accessible (1)

○   Slightly Accessible (2)

○   Very Accessible (3)

○   Extremely Accessible (4)

Q5 How confident do you feel in packaging and labeling sexually transmitted infection (STI) specimens accurately?

○   No Confidence (1)

○   Minimal Confidence (2)

○   Mostly Confident (3)

○   Extremely Confident (4)

Q6 How confident do you feel being a team member in the care of sexually transmitted infection (STI) patients?

○   No Confidence (1)

○   Minimal Confidence (2)

○   Mostly Confident (3)

○   Extremely Confident (4)

Q7 How often do you have to refer to educational resources regarding sexually transmitted infection (STI) guidelines within your workplace?

○   Every patient interaction (1)

○   A few times per shift (2)

○   At least once per shift (3)

○   Sometimes (4)

○   Never (5)

Q8 I am properly educated on sexually transmitted infection (STI) symptoms, testing options, packaging/labeling specimens, and treatment options (providers).

○   Strongly disagree (1)

○   Somewhat disagree (2)

○   Somewhat agree (3)

○   Strongly agree (4)

Q9 Do you feel as if there needs to be a change in sexually transmitted infection (STI) guidelines resources, education accessibility, and reference ability?

○   Total makeover (1)

○   Current way is not good, unsure if new would be either (2)

○   Current method needs revision (3)

○   I prefer the current method (4)

Q10 What is your preferred learning method for updated sexually transmitted infection (STI) education within your workplace?

○   Current method- email (1)

○   Email and hands-on checkoff (2)

○   Localized hub with demonstration (3)

○   Email, new checkoff with each change, and monthly in-service (4)

End of Block: Default Question Block

Appendix N

Survey (Post-Intervention)

Electronic Link:
https://gardnerwebb.az1.qualtrics.com/jfe/preview/previewId/1d947da2-e52e-486d-86c6-3adac41152ce/SV_07iS1fgxml7kyeW?Q_CHL=preview&Q_SurveyVersionID=current

Survey (Post-Intervention)
DNP Project Post-Intervention Survey

Start of Block: Default Question Block

Q1 Participation in this project is voluntary. You have the right to withdraw from the QI project at any time without penalty. You also have the right to refuse to answer any question(s) for any reason without penalty. The information that you give in the project will be handled confidentially. Your data will be anonymous which means that your name will not be collected or linked to the data. There are no more than minimal anticipated risks in this project. You will receive no payment for participating in the project. You have the right to withdraw from the project at any time without penalty by exiting the survey, simply by closing the browser window. Data from this project will not be used or distributed for future research studies. I understand I may receive a hard copy of this disclosure if I so wish. I have read the information in this consent form and fully understand the contents of this document. I have had a chance to ask any questions concerning this Quality Improvement project and they have been answered for me. If you agree to continue, click "I agree" and continue the survey. If you wish to withdraw, close out of the survey now. None of your information will be stored or shared and there are no consequences for withdrawal.

○   I agree (1)

○   I do not agree (2)

Q2 How confident do you feel with current sexually transmitted infection (STI) guidelines within your workplace after the new education hub implementation?

○   No Confidence (1)

○   Minimal Confidence (2)

○   Mostly Confident (3)

○   Extremely Confident (4)

Q3 How confident do you feel referencing current sexually transmitted infection (STI) guidelines within your workplace after the new education hub implementation?

○   No Confidence (1)

○   Minimal Confidence (2)

○   Mostly Confident (3)

○   Extremely Confident (4)

Q4 How would you rate the new accessibility of updated sexually transmitted infection (STI) educational resources after the new education hub implementation?

○   Not Accessible (1)

○   Slightly Accessible (2)

○   Very Accessible (3)

○   Extremely Accessible (4)

Q5 How confident do you feel packaging and labeling sexually transmitted infection (STI) specimens accurately after the new education hub implementation?

○   No Confidence (1)

○   Minimal Confidence (2)

○   Mostly Confident (3)

○   Extremely Confident (4)

Q6 How confident do you feel being a team member in the care of sexually transmitted infection (STI) patients after the new education hub implementation?

○   No Confidence (1)

○   Minimal Confidence (2)

○   Mostly Confident (3)

○   Extremely Confident (4)

Q7 How often do you have to refer to educational resources regarding sexually transmitted infection (STI) guidelines within your workplace?

○   Every patient interaction (1)

○   A few times per shift (2)

○   At least once per shift (3)

○   Sometimes (4)

○   Never (5)

Q8 I am properly educated on sexually transmitted infection (STI) symptoms, testing options, packaging/labeling specimens, and treatment options (providers) after the new education hub implementation.

○   Strongly disagree (1)

○   Somewhat disagree (2)

○   Somewhat agree (3)

○   Strongly agree (4)

Q9 The new education hub change in sexually transmitted infection (STI) guidelines, resources, and education is more accessible and user-friendly than the method before.

○   Strongly disagree (1)

○   Somewhat disagree (2)

○   Somewhat agree (3)

○   Strongly agree (4)

Page Break

Q10 My overall confidence with sexually transmitted infection (STI) symptoms, treatment options, and specimen/labeling guidelines has increased since the new education hub implementation.

○   Strongly disagree (1)

○   Somewhat disagree (2)

○   Somewhat agree (3)

○   Strongly agree (4)

Appendix O

Consent Statement

Consent Statement (Electronic on Qualtrics Survey)

Participation in this project is voluntary. You have the right to withdraw from the QI project at any time without penalty. You also have the right to refuse to answer any question(s) for any reason without penalty. The information that you give in the project will be handled confidentially. Your data will be anonymous which means that your name will not be collected or linked to the data. There are no more than minimal anticipated risks in this project. You will receive no payment for participating in the project. You have the right to withdraw from the project at any time without penalty by exiting the survey, simply by closing the browser window. Data from this project will not be used or distributed for future research studies. I understand I may receive a hard copy of this disclosure if I so wish. I have read the information in this consent form and fully understand the contents of this document. I have had a chance to ask any questions concerning this Quality Improvement project and they have been answered for me. I agree to participate in this QI project.

Appendix P

Education Session PowerPoint Link

Education Session PPT.pptx

Appendix Q

Specimen Labeling Job Aid

Specimen Labeling Job Aid.pdf