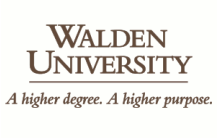

2016

Best Practices for Controlling Tuberculosis - Training in Correctional Facilities: A Mixed Methods Evaluation

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This is to certify that the doctoral dissertation by

Ellen Murray

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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2016

Abstract

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by

Ellen R. Murray

BS, Jacksonville University, 2005

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

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Abstract

According to the literature, identifying and treating tuberculosis (TB) in correctional facilities have been problematic for the inmates and also for the communities into which inmates are released. The importance of training those who can identify this disease early into incarceration is vital to halt the transmission. Although some training has been done by public health authorities for corrections, there is little to no evaluation of such training. The aim of this mixed methods retrospective study was to evaluate the effectiveness of a training to control TB in correctional facilities. The Southeastern National Tuberculosis Center (SNTC) conducted 12 trainings between 2010 and 2014 with custody, medical, and public health staff working in correctional facilities, as well as with TB program staff from health departments. A total of 442 participants quantitatively and qualitatively evaluated the trainings. Gagne-Briggs and tripod models comprised the theoretical framework of the study. Quantitative data were analyzed using descriptive statistics and qualitative data were analyzed thematically. Analysis showed that the usefulness of the training was considered very good to excellent in each of the trainings. Also, many participants stated that they were going to educate others as well, in order to improve the management of TB in their facilities. The results of this study revealed that using systematic training can contribute to promote a more coordinated release of TB-infected inmates into the community, and therefore improve the quality of life of this population group, resulting in the promotion of social change.

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Dedication

This dissertation is dedicated to the National Tuberculosis Nurse Coalition and the National Tuberculosis Controllers Association Corrections Committee (NTNC/NTCA) who tirelessly work with dedication and determination to raise the awareness of tuberculosis in correctional facilities. While we may never eradicate TB in these facilities, we hope to raise the awareness that TB may hide in areas where high risk people congregate. As we begin to see decreases of TB in communities, we will continue to strive to educate those who work with inmates and other high risk people. Infectious diseases such as TB, when left untreated in correctional facilities, filter out to the communities where staff, their families and friends, and others reside.

This is also dedicated to those people who feel they just couldn't go any further in a career, education, or a mission. I am here to tell you that it can be accomplished, with prayer, dedication to populations less fortunate than your own, and a willingness to move mountains. Change has to happen if we are to have peace. And it only takes one person to begin that change. You can do it.

Acknowledgments

I would like to thank those who have helped me reach this point in my academic career; my husband and friend, Richard, who tirelessly and without qualms helped to maintain sanity in a very disorderly world. Also, my best friend Chris, who singlehandedly managed to maintain my very challenging issues with my computers, held my hand when I cried over frustrations, and supported and challenged me to do better. I would also like to thank friends such as Lorena, Sue, Tara, Kathy, Helena, Nancy, Karen, and others who listened to me (on a regular basis) discuss my issues with my writing and do nothing but encourage me that I could do better and the finish line was in sight. Lastly, I want to acknowledge my sons, and my sisters and brothers, both familial and spiritual, and their contribution on this journey. Their encouragement and praises helped lift me up during many of the most awful of times, when writing was a block, or exhaustion was close at hand. The many blessings and prayers are what got me through this dissertation and it will always be a part of what is written. Additionally, I would be remiss without also thanking Dr. Jeanne Connors, who helped me to begin this journey, and gave me much needed encouragement and guidance along the way. Last, and certainly not least, I truly would not be completing this without the assistance of my current committee chair, who kindly stepped in to see me to the end in this journey; Dr. Vasileios Margaritis. He gave me hope that there was a light at the end of the tunnel, and that indeed I would graduate.

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Chapter 1: Introduction to the Study

Introduction

As the healthcare field moves toward a more evidence-based approach to education provided to staff in correctional facilities, studies are needed to support training that is being done and whether or not it is able to effect social change within these facilities. More specifically, an evaluation of the training and education for correctional facility staff is necessary to increase the need for awareness of identification of tuberculosis (TB) disease, and to safely release infectious and high-risk inmates into the community. In this study a training being done by the Southeastern National Tuberculosis Center (SNTC) for the corrections and public health audience to raise the awareness of TB in corrections and all implications thereof was examined. This chapter includes a description of the background of this study, the problem statement, the research design, the nature of the study, the research questions and hypotheses, the conceptual framework, the assumptions, and the significance of the study.

Background

Delays in identifying and treating TB in correctional facilities have been an ongoing challenge for public health for years (MacNeil, 2005). Over 2 million people were incarcerated in the U.S. in 2014 according to the Bureau of Justice Statistics (Kaeble, Glaze, Tsoutis, & Minton, 2016), and approximately 4% of reported TB cases were identified in U.S. correctional settings, as noted from the Centers for Disease Control and Prevention (CDC, 2015). The importance of identifying this disease early into incarceration is critical to halt transmission (CDC, 2006). Studies have shown that inmates in corrections are not always screened according to CDC guidelines and TB may be missed (MacNeil, 2005).

Another challenge is the number of people incarcerated in local jails as the federal government does not mandate reporting. In 2014, this number represented 81,738 (Carson, 2015); however, these are only the jurisdictions that report to the Bureau of Justice. Not all states or jurisdictions are included in this number. In fact, according to a report by the Vera Foundation, the number of incarcerated people in all the jails in the U.S. makes up a population as large as some cities (Subramanian, 2015). There is a vast difference between jails and prisons, including federal facilities. Jails incarcerate people from the street and hold them for a short time generally, whereas prisons are for those people who are found guilty of a crime and are sentenced to more than one year. Local jails have large numbers of inmates who are released to the community without ever going on to prison. According to the report by Subramanian, the average inmate was released from jail approximately 23 days after incarceration in 2013, as opposed to 14 days incarceration in 1983; a 64% increase in "length of stay." (Subramanian, 2015, pg. 10). Even though the average duration of incarceration has increased, this is still such a short period that it creates a conundrum when dealing with infectious diseases, as inmates may be released back to the community prior to diagnosis. Conversely, this affords an increased opportunity for potential diagnosis with the longer average stay, once staff are properly trained to look for this disease.

The primary ramification of delays in identifying inmates and staff with TB in corrections is increased disease transmission, as the corrections environment historically is a closed environment with recirculated air (CDC, 2006). Public health has been instrumental in educating corrections medical staff regarding infectious diseases; however, challenges occur when there is discordance between policies and practice (Rutz et al., 2008). Educating public

health on the definition of terms in the culture of corrections helps them to understand some of the challenges that jails and prisons face when dealing with inmates. Educating correctional staff on TB symptoms and treatment and the effects that can occur in an enclosed facility with recirculated air can lead to enhanced surveillance and interruption of disease transmission. As Rutz et al. (2008) identified, educating custody and medical staff was a challenge. Even when public health educated custody and medical staff with regard to screening using the correctional facility's own policy, little change in behavior occurred. Instead, through a monitored surveillance, they identified that during inmate intake health interviews, "only 28 out of 97 times were correct TB screening questions asked." (Rutz et al., 2008, p. 442). This study demonstrated that education and discussions using terminology that is appropriate for corrections enlightens both custody and medical staff and helps them to understand the importance of rapid identification of inmates and staff who have symptoms of TB disease. Through education and discussions with public health, correctional staff can also understand the importance of release planning, (planning for an inmate's imminent discharge from the facility), and communicate with public health prior to the release of high risk inmates with infectious diseases into the community (Taub, 2009).

This study evaluated training being done by the SNTC using the Gagne Briggs model, along with the tripod model of training as an adjunct. The curriculum is formulated using a public health corrections liaison trained in communicating with custody and medical staff, in addition to local and state public health nurse consultants. The Gagne Briggs model of instructional training uses the cognitive learning theory, with three phases of design; (a) to define objectives, (b) to place items into a specific sequence, and (c) to define and establish specific

goals external to the training, which will be relevant to this study (Blanchard, 2010). The establishment of each specific sequence is relevant to the custody staff, which allows them to learn in the military style that is so prevalent in corrections (Bouchard, 2009). The training met the requirements outlined in this theory, and through the evaluation phase of this study, it is hoped to identify a change within the corrections staff behaviors to occur and be sustained. Through the use of the tripod model, three different target audiences are identified as a component of the training to ensure actualization across three very different disciplines; which ensures understanding and knowledge for all. The three disciplines include (a) custody staff, (b) medical staff within corrections, and (c) public health TB program staff.

Training for Corrections

A study by Hammett (2001) looking at public health and corrections collaboration in 1998 identified discussions and education surrounding TB, HIV, and STDs. Currently training for TB focuses on collaboration between public health and corrections, and while there is much information regarding the need for effective training (CDC, 2006; Hammett, 2006; MacNeil, 2005; Rutz et al., 2008; Sosa, Lobato, CondrenWilliams, & Hadler, 2008), to date, there has not been a formal evaluation of training using public health staff that has been accomplished with regard to TB.

There is much information regarding diseases such as HIV and Hepatitis for corrections that has been done, and many conferences specifically for the corrections audience discuss issues surrounding infectious diseases in corrections. However, very few address the differences between public health and corrections culture and language. The National Commission on Correctional Healthcare (NCCHC) and the American Correctional Association (ACA) are two

organizations that hold national conferences annually for the corrections audience, with small breakout sessions discussing public health and corrections and the need for greater awareness of infectious diseases, such as the Accreditation Report in 2012 (Palm Beach Sheriff's Office, 2012) and those in the upcoming spring conference (NCCHC, 2016). The audiences are target-specific, which reduces the need to define language disparities. Public health is invited to speak on infectious diseases in corrections; however, the absence of custody leadership at the medical venues has decreased the awareness of terminology differences. Terms such as safety and screening have different meanings when used by medical professionals versus custody staff.

Training and education is currently being done for public health by five regional training and medical consultation centers (RTMCCs) that are funded by the Centers for Disease Control and Prevention (CDC, 2013). Training and education by public health for the corrections audience is either informal, or given formally by only two of the RTMCC's, the Heartland Tuberculosis Center and the Southeastern National Tuberculosis Center (SNTC).

The training Arresting TB: Best Practices in Controlling TB in Corrections is designed specifically for the corrections and public health audience and this and other training for corrections has been ongoing since 2008 by the SNTC (SNTC, 2008). The training consists of a 1-day course developed by the SNTC in collaboration with a team of public health nurse consultants, nurses working in correctional facilities, and a jail administrator. One essential component in the training is the use of a public health corrections liaison and others familiar with public health and corrections, and includes preplanning with the correctional facility and public health staff. The corrections liaison is versed in both public health and corrections culture and

can assist in identifying terminology challenges, and policy and procedure exclusions that can be inherent in some TB programs in corrections.

To request the training, the public health TB program staff contacts the SNTC and requests the 1-day training for their state, along with their counterpart correctional facility (generally the prison system). It is with a series of questions and discussions that other types of correctional facilities are identified and included in the target audience. Prework, such as contacting administrators at local jails and inviting them personally, is required for the facilitators and health department TB program staff.

Exercises throughout the training allow communication to flow freely between all participants. Goals are identified during the training and discussions around how to effectively reach those goals are discussed. Although evaluations are collected at the end of each training, no formal research evaluation has been done to identify the follow-up and follow-through of goals and practices identified at the training, or the effectiveness of the training.

The curriculum of the 1-day training (see Appendix A) will be discussed further in Chapter 3, but consists of the following:

- Welcome and Introduction
- Overview of the training
- Case Presentation: Outbreak! What happens when TB goes unrecognized in correctional facilities!
- TB Epidemiology and Concerns for Correctional Facilities
- TB in Corrections: What You Need to Know
- Exercise I: TB or Not TB

- Effective TB Infection Control Programs in Corrections
- Case Management, Contact Investigation and Discharge/Release Planning for TB in Corrections
- Exercise II: Intake to Isolation
- Assuring Effective Evaluation of TB Control Programs in Correctional Facilities
- Exercise III: Let's Talk TB
- Discussions after and during each presentation and participation in the exercises aid in the understanding by each of the participants, including custody staff.

Gagne-Briggs Theory of Instructional Design

The Gagne-Briggs theory of instructional design (Blanchard, 2010) has been effective when training military personnel, which is the structure of most correctional environments. The theory allows the instructor the necessary steps to move forward using a design that fits the culture within corrections. The steps for the theory are closely related to the social learning theory, yet are explicit in their detail. When presented in sequential order, these steps can garner results in a "logical and understandable format" (citation, p. #). According to citation, the steps include the following:

1. Gain attention
2. Inform the trainee of the goal (objectives)
3. Stimulate recall of prior knowledge
4. Present the material
5. Provide guidance for learning
6. Elicit performance

7. Provide informative feedback
8. Assess performance
9. Enhance retention and transfer.

These nine steps will be discussed further in the format section of the training.

Tripod model as Adjunct to Gagne-Briggs

The tripod model is an effective method when training multidisciplinary teams (Bouchard, 2009). This model uses three distinct target audiences, all hearing the same message and in their own specific language or niche. The language is English; however, terminology and meaning often differ, and learning terminology as defined by each audience is an important component when training custody staff and public health together. In this instance, the three target audiences include (a) public health TB program staff, (b) medical staff working in correctional facilities, and (c) custody staff.

Problem Statement

Public health reaches out to many audiences to raise awareness for infectious diseases within communities. Corrections is one of those audiences. It is important for health care educators to understand not only the culture of corrections, but also the definitions and connotations of the language used by the corrections populations when working with a correctional audience; however, this area has not been studied. While studies demonstrate a need for greater awareness for infectious diseases in corrections, I was unable to find a study that cited terminology or culture as a catalyst for change. The hierarchy of the military style that makes up much of the staff of correctional facilities lends itself to educating all participants on this basic premise when working with this group. Due to the differences between the culture of public

health and the culture of corrections, including definitions of the same word or topic, challenges when educating the corrections staff are inherent. The culture within corrections is one that creates a mindset of prisonization (Dobbs, 2004) of both staff and inmates, and that ideology must be identified when using exercises and discussions during training to enhance the training. One study discusses the culture of corrections and addresses the need for awareness (Dobbs, 2004), but little addresses the terminology and language; which could be an impetus for change.

Inmates who are released to the community with infectious diseases have the potential for creating outbreaks when public health is not aware of releasees with such diseases (Sosa, 2008). Collaboration and training by public health for custody and medical staff in corrections related to TB is currently being done, and continues to demonstrate challenges of sustainability for identifying and diagnosing inmates with tuberculosis (Wilper, 2009). According to the Centers for Disease Control and Prevention (CDC), training does not allow for inmates' safe release into the community or for safe transfers to other facilities (Fenton, 2010).

Raising the awareness for medical and custody staff on the importance of identifying infectious diseases, isolating if applicable, and releasing inmates safely into the community, is essential for a more secure environment and to protect the community from outbreaks such as TB, a disease that is preventable if identified early in the disease process. While public health understands this, they do not understand the challenges that abound in the corrections culture including, but not limited to the difficulties with educating this population. Besides the prisonization of inmates (Dobbs, 2004), there is an attitude which abounds with the custody staff and many times permeates the medical staff working in these facilities (National Minority Aids Council, 2002). Therefore, training becomes a challenge itself. In this study it was demonstrated

that with small changes in public health training for corrections, it creates a desire and potential ability to sustain positive change within the corrections system.

Purpose

The purpose of this study is to use both qualitative and quantitative data to evaluate the TB training for correctional facilities, which is conducted by the Southeastern National Tuberculosis Center (SNTC); however, this study focuses on 12 trainings done from 2010-2014. This study is intended to support the hypothesis that the perception from participants that training for correctional facilities using a public health corrections liaison along with public health TB program staff was well received and that change can occur within the setting of corrections. The evaluation of the training determines whether the training enhanced the education for the participants, and idenfitied the probability that public health can make strides and sustain change when working with local and state correctional facilities concerning infectious diseases, once the culture of corrections is understood.

Research Questions

1. Quantitative descriptive; Which proportion of participants perceived the usefulness of the training as excellent or very good?
2. Quantitative descriptive; Which proportion of participants believe that the training helped them demonstrate the importance of recognizing discordant results when reviewing statistics & quality improvement (QI) documents for TB in corrections

3. Qualitative; What changes do the participants intend to make to their programs as a result of this training?

4. Qualitative; What are the challenges associated with the implementation of the desired change?

The research questions were answered using available secondary data from past evaluations and follow-up evaluative questionnaires that were collected. The follow-up questionnaires garnered information on whether or not changes were instituted within the facilities where participants attended. These qualtrics evaluations identified whether or not goals were met and changes occurred. Responses were expected to have a 10% attrition rate, and a potential 25% rate of nonresponses, and hoped to yield an expected 35% response rate. Follow-up evaluation questions reviewed changes that were set by participants in the trainings, and asked the questions: (a)What changes would you make in your facility? (b)Since the training, were you able to make any changes in your work/in TB as a result of this program?" (a yes or no), and a qualitative question of (c) If you were unable to make changes, what barriers or challenges occurred? (see Appendix C) . Add summary to fully conclude and synthesize the section.

Conceptual Framework

The conceptual framework was through the use of the Gagne-Briggs theory along with the use of the tripod model for the training audience. By garnering the attention of the custody staff (the policy-makers) (Hammett, 2001), and informing the trainees of the goals for the program, this research was able to assess whether or not the training and the use of the Gagne Briggs theory aided in stimulating recall of prior knowledge of lessons about TB within each

participant. By presenting culturally appropriate corrections material, providing guidance and feedback, participants were able to assess performance and enhance retention, had greater transfer of knowledge from their own peers, which aids in sustaining change within their own facilities. Through the use of the steps in the Gagne-Briggs theory when educating correctional staff on TB, not only can the attention be gained and the goals of the training informed, but also TB is discussed in the corrections element. This provides guidance for learning, elicitation of their performance, and provides feedback that is not only informative, but also aids the staff in opening up and assessing what they themselves do in their own facilities. This allows information to be retained and transferred into a sustainable change within the facility.

Nature of the study

This retrospective evaluative study was completed to investigate whether the training for corrections and public health using the Gagne-Briggs Theory and the tripod method for targeting audiences that included custody and medical staff working in corrections and public health staff who train them was enough to elicit social change within this environment. In this retrospective evaluative study, a mixed method review of secondary historical data was used from the 1-day training by the SNTC This training is done using both a public health corrections liaison and a public health TB program nurse consultant or epidemiologist (TB program staff). Data was collected from the SNTC evaluations of the program and was analyzed using qualitative and quantitative methodologies. This training looked at particpants' knowledge, such as was done by Rutz et al. (2008), a study on the evaluation of information exchange and the identification of discordant results after training was conducted. Additionally, this study sought to determine the effectiveness of a team concept for training; using public health corrections liaisons and public

health TB nurse consultants with little or no correctional knowledge, but with knowledge of tuberculosis.

The effectiveness of the 1-day training for corrections and public health TB program staff was weighed as to consistency according to the Gagne-Briggs and the tripod theory, and the knowledge base of the speakers. The effectiveness of the training and the potential for sustainability within the challenging environment of corrections was also identified. The TB public health staff person discussed the epidemiology of TB in local and national communities, including TB diagnosed in correctional facilities, and used statistics and explanations as to why corrections needs this information. The corrections liaisons discussed throughout the day the importance of the need for this information through case study and discussions of TB information directly related to the custody and medical staff. Using this team concept is an important consideration when reviewing the evaluations. This evaluative study demonstrated the importance of discovering a successful combination for training correctional and medical staff together, and the ability to identify a sustainable solution for the positive social change that is needed for corrections and the community where inmates with infectious diseases are released.

Both the quantitative and qualitative data was gathered in this study from the evaluations previously collected by SNTC. The evaluative method of inquiry assisted in determining if the Gagne-Briggs Theory of Instructional Design, along with the tripod method of instructional design, sustained a change within the corrections environment (Bouchard, 2009). Training was evaluated on methodology, content, and delivery, and was included throughout different aspects of the Gagne-Briggs training model. A systematic evaluation was conducted of 12 separate

trainings that included a TB public health staff person as one of the trainers, and two corrections liaisons. This will be discussed more in Chapter 3.

Definitions

Training and education related to tuberculosis (TB) is needed regularly, and in culture specific terminology, to enhance recognition of this and other infectious diseases in correctional facilities (Blanchard, 2010). The following is a list of terms specific to this training and the correctional facility culture.

Administrative staff: This term refers to both correctional facility administrative staff and public health program staff.

Corrections: This includes all types of facilities, i.e., federal and state prisons, federal and county detention, juvenile facilities, including work camps and intake facilities.

Correctional staff: Correctional staff includes custody and medical staff working in correctional facilities.

Corrections liaisons: For the purpose of this paper, a corrections liaison is a public health worker who is trained specifically on corrections terminology, nuances, policies and procedures, and includes environment and culture of corrections.

Public health TB Program Staff: This refers to all employees working for county, regional and state public health units and state health offices. Specifically for the trainers it will refer to a TB nurse consultant and/or epidemiologist working in TB programs in local or state health departments.

Assumptions

Some of the assumptions that were made during this study are that (a) the corrections staff attending the training will effect and sustain the changes that they claim to recognize as necessary, (b) that custody staff are, in general, of a military mindset with a hierarchy governed by policies and procedures training that are most easily assimilated through case-based education, and (c) all three parties, custody, medical staff in correctional facilities, and public health staff, see safety as a main priority for the community. Definitions and terminology may not be congruent. Additional assumptions include the premise that the responses to evaluation questions are genuine, that data was valid and adequately analyzed without bias, and that the attrition rate between the initial and follow-up evaluations did not affect the validity of the data.

Scope and Delimitations

In this study, delimitations included the study data itself. The data is historical and was chosen from already accomplished trainings. The study data was accessed using the permission of the SNTC administrative staff. They gave their permission and were willing to contract with Walden for this study. The use of the internet allowed for ease in collection of data by SNTC, and this study included only the participants of the 12 trainings who completed an evaluation, which was important to ensure validity of the data. The exclusion of those evaluations that were not complete was essential to ensure that the extent of the assumptions were negligible during data analysis.

Limitations

Limitations for the review of trainings include challenges with staff turnover after several months or years, and recognition of training after a lengthy time period. Further, computer access

within correctional facilities is challenging and is not always available, along with the need for acceptance from administrative staff to follow-up with policy change. Other challenges included the culture itself. Within the corrections setting, staff were reticent to air differences and demonstrate a need for change. This was apparent at some of the earlier trainings. Due to the military-style attitudes and behaviors, change is difficult, as corrections has a mind-set where medical staff are "only a guest" in the facility and therefore, medical staff do not understand "security's" underlying principles (Wildes, 2008).

Identifying limitations for all participants was challenging, as they did not agree or even recognize that a lack of funding for staff to attend or facilitate training and follow-up with correctional staff who are trained as liaisons were some of the barriers to working with corrections. One final limitation was the obvious bias of the study researcher as a corrections liaison and as one of the presenters of material in the training.

Significance

This evaluative research identified this training as an effective tool for guiding public health on the use of a corrections liaison when delivering training for correctional staff working in correctional facilities. Enhanced TB training using specific corrections terminology and situations assures that staff can identify symptoms, isolate, treat, and release inmates with TB or latent TB in or from the corrections setting. Communication and collaboration between public health TB programs and the corrections staff benefits both teams and the importance of safe release of inmates into the community or when transferring to other facilities can be achieved.

In a study done by Dumont et al, it was stated "An unprecedented number of Americans have been incarcerated in the past generation."(Dumont, 2012, pg. 325). This statement helps

summarize the enormity of problem of public health and the incarcerated. In this study, the health disparities and inequality among blacks and drug use and the comorbidities that also abound were reviewed by the researcher. Noted in the study is the need for more studies in the incarcerated population, along with a need for greater training within the corrections environment, not only for new practitioners coming into the workforce; but also for existing public health practitioners to understand the corrections systems and provide understanding and advocacy for the issues that abound within this venue (Dumont, 2012).Add summary to fully synthesize the section.

Summary

The purpose, need, and research questions for this evaluative study were discussed in Chapter 1.The introduction of the use of the Gagne Briggs theory and the tripod model for audience inclusion aids in describing the essential components of the training, including the nature of the study, definitions, assumptions, the scope, and significance of the training.

In the literature review of Chapter 2 challenges to recognizing TB in correctional facilities will be described and the need for training medical and correctional staff regarding TB and other infectious diseases will be presented. Although some training has been done by public health for corrections, there is little to no evaluation of such training that this researcher could locate in the literature. This evaluative research could become an important part of the literature, not only for corrections, but for public health use as well.

Chapter 2: Literature Review

Introduction

The purpose of this research was to evaluate the effectiveness of a training to control TB in correctional facilities. The evaluation of the training determines whether the training enhanced the education for the participants and the probability that public health can make strides and sustain change when working with local and state correctional facilities around infectious diseases, once the culture of corrections is understood.

After exhaustive research of the literature, no studies identified TB training by public health for corrections as effective or followed through to identify that change actually occurred within the environment. Throughout this chapter, literature relevance was reviewed by sections, including TB and public health, risk factors of inmates, incarceration statistics, inmate and staff characteristics, TB prevalence among inmates, Gagne Briggs and tripod theory, and a summary of the literature found.

Literature Search Strategy

When completing the literature review for this study, an in-depth search of four major databases and two major libraries were conducted to locate articles and studies related to training for corrections and public health. This included articles identified between the years of 1970 and 2015. The four major databases included Academic Search Premier, PubMed, Medline and Google Scholar, and included key words such as: *corrections, jail, prison, training, public health, custody, tuberculosis, TB, discharge planning, release of inmates, evaluation of public health training, infectious diseases in corrections,* and *education*. The two major libraries were the University of Florida in Gainesville, and Walden University EBSCO Host Research. Of the

124 articles that were retrieved and reviewed, almost half were cited in this dissertation. The literature was then organized into specific titles according to the research identified.

Literature Review of the Key Concepts of the Study

Tuberculosis and Public Health

According to the CDC, the infectiousness of TB is determined by several factors, including the body's ability to contain the bacteria and the "extent of the disease", such as the disease site, pulmonary or nonpulmonary, time duration (how long the source case and the contact person have spent time together), and environmental factors such as the circulation of the air (CDC, 2005). The transmission of this disease, however, is by one route, airborne. Breathing the air from someone who has active disease, with exhaled tiny particles of "droplet nuclei" containing *Mycobacterium tuberculosis* is the mechanism to transmit the bacterium. Depending upon whether the person inhaling is immune-competent or immune-suppressed, the bacteria will either progress to active disease, or can lie dormant in the body. The body's immune system keeps it contained until something happens to make the immune system break down, and then the disease can progress to an active state (CDC, 2005). This is an important factor when dealing with congregate settings, as well as communities where inmates are released.

Contact investigation is the identification of people who may have been infected by a patient with active tuberculosis (CDC, 2005). With congregate settings such as correctional facilities, overcrowding, and recirculated air become major challenges when identifying contacts. In many prisons and jails, inmate incarceration has declined (BOJS, 2012); however, TB remains a problem. According to the World Health Organization, "TB is not an unavoidable consequence of incarceration."(WHO, 2013). Despite the decline in inmate population, there remains a

disparity and "A disproportionately high percentage of TB cases . . . among persons incarcerated in correctional facilities." (MacNeil, Lobato & Moore, 2005, pg. 1800). Add summary to fully synthesize the section.

Tuberculosis and missed diagnosis among inmates

MacNeil et al. described missed opportunities and the importance of screening in jails and prisons (2005). In this study, TB cases in Arizona were cross-matched with the large Jail Management System to identify those who had a history of incarceration. Of the 300 cases reported in a 2-year period from "1999 – 2000, 73 (24.3%) had a history of incarceration in the county jail," and those with a jail history had a greater incarceration rate and only "nine of the 73 cases . . . presented with active TB while incarcerated" (MacNeil et al, 2005, pg. 226 Of those not identified as having TB symptoms, only 11 (17%) had any record of screening for TB during their incarceration. MacNeil et al.'s study demonstrated the first major challenge for corrections, which is the importance of screening for tuberculosis.

Sosa et al. (2008) discussed an outbreak of TB in corrections, also identifying missed opportunities; such as missed diagnosis of TB in inmates and staff, infection in staff, and continuity of care for safe release of infected inmates to the community. Sosa et al. further discussed how inmates "not diagnosed while incarcerated" can lead to newly infected inmates (5.8%), and staff conversions (2.1%), and unknown community members being exposed. While the authors discussed education and recommendations for improvement, no follow-up was given regarding policy change.

MacNeil, Lobato, and Moore (2005) looked at the attributes between inmates and those who were not inmates regarding tuberculosis and found that state and federal prisons (those

sentenced) overall had a much higher case rate of TB than in the community (29.4 and 24.2 per 100,000 – federal and state inmates respectively vs. 6.7/100,000 population noninmates). They also identified trends such as higher incidence of pulmonary cases than noninmates, and inmates were less possible to finish therapy (MacNeil et al2005). According to the results of a study investigating screening in 20 large jail systems, jails were not following their own basic TB control policies and critical data was either missing or not known from a review of the medical charts. This information was important to the medical care of the patients, and did not lend itself to the ability to prevent TB from either spreading throughout the facility or into the community when inmates were released (Roberts, 2006).

In direct relation to policy and public health, Rutz et al. identified discordances between policy in the correctional setting and what really occurred (2008). Rutz et al. (2008) identified a difference between what was written during the screening for active tuberculosis and what was actually done when doing a qualitative analysis in a large urban jail. They noted that even after reviewing jail policies with staff, staff asked the “cough” questions correctly "during 6 of 97 observed interviews" (Rutz et al., 2008, p.444), which can result in missed or delayed diagnosis. Additionally, it was also noted there were impediments to further TB evaluations and policies for contact investigations were not always followed (Rutz et al., 2008). Once inmates became infected with TB, the higher prevalence for risk factors for progression to active disease in the inmate population (once infected) makes inmate release very important to the community.

Risk Factors of Inmates

The risk factors identified for progression from infection to active disease for inmates is higher than noninmates (Kim, 2005). Many risk factors for developing active TB have been

identified; such as alcohol or substance abuse, non-injecting and injecting drugs, poor nutrition, co-morbidities such as HIV disease and diabetes, taking immune-suppression medications, silicosis, and certain cancers of the head and neck (CDC, 2005) (Jeon and Murray, 2008). Kim and Crittenden identified three categories of risk factors for those incarcerated. (Kim, 2005). These risk factors were categorized as behavioral, demographic and incarceration factors. One very important incarceration risk factor would be sharing air in a close environment with poor ventilation. Add to that the manipulative factors of inmates and express-like nature of inmate turnover, detection and continuity of care become an enormous challenge.

In another study by Coker et al., people with TB in a large city in Russia were investigated using a case-control study to determine "risk factors before and during the development of pulmonary tuberculosis" (Coker et al., 2006, p.85). The risk for incarceration was noted as "substantially higher among those with a prison or detention centre history . . . or those who used illicit drugs." (Coker, 2006, p. 86). This supports the theory that incarceration is among the risk factors for becoming infected with TB.

Another risk factor for progressing to active TB once infected is diabetes mellitus, according to Jeon and Murray (Jeon & Murray, 2008). They found that the increased risk for those with diabetes mellitus was three-fold, and diabetes was a risk factor for progression from latent TB infection to active disease. This is an important factor as inmate characteristics and their lack of health care are identified.

Risk factors for healthcare workers in a correctional setting did not result in similar findings, according to Mitchell et al (2005). Looking at tuberculin skin tests among healthcare workers in a prison settings in three states, Texas, Maryland, and Rhode Island, place of birth

was the one significant risk factor was drawn from the conclusion of this study. Those born in countries with a higher prevalence of TB prevails were found at greater risk to develop active TB disease than those born in the U.S. There were no other risk factors identified that could be deemed significant to working in a correctional healthcare setting.

In a guest editorial given by Fenton from CDC, he states there is “an important intersection between public health and correctional health.” (Fenton, 2009). If correctional facilities are to be identified as part of a community, they must be ever present and work as part of that community. Safety is the number one priority for correctional settings, and as well for public health. There is an opportunity in correctional facilities to educate inmates in infectious diseases and the importance of safety in the community Public health staff can recognize this opportunity and build upon it and expand the programs that are already being accomplished (Hammett 2006).

However, safety can mean different things to different people, and that is where terminology becomes a very important factor in the training. Safety for a custody staffer may mean safety from guns, knives, abuse, etc. (Wildes, 2008). However, for public health, safety for the community means safety from infectious diseases, chronic illnesses, and similar issues, as noted in a testimony to Health and Human Services by Bell (Health and Human Services, 2011). Incarceration can even mean a higher risk of death for inmates released to the community (Binswanger, 2007). In a retrospective cohort study conducted on "all inmates released from the Washington State Department of Corrections from July 1999 through December 2003" (p.1), Binswanger et al found a higher incidence of death in the months immediately following release, 12.7 times that among other state residents (Binswanger, 2009).

Incarceration statistics

With over 2 million people incarcerated in the United States, infectious diseases become an important issue for all communities according to the Bureau of Justice Statistics (BOJS) (2012). The BOJS notes that “3 in 10 were incarcerated (2,266,800) in local jails or in the custody of state or federal prisons.” (Bureau of Justice Statistics, 2012). This number is important to public health as these are the same people who live and work in communities across the U.S. Once released, they return to those communities. In a study the “epidemic of incarceration” is discussed, along with incarceration as a health risk and an opportunity (Dumont et al., 2012). This manuscript details health disparity within corrections and the challenges faced when public health and correctional staff do not work together. Of important note is the statement by the author, who notes that 10 years after Freudenberg published on the need for action for public health and communities, there are still disparities. He states that “despite admirable research in the intervening decade, we stand in a discouragingly similar place, one rife, moreover, with ethical pitfalls for the public health practitioner;” (Dumont, 2012, pg. 332), which continues to beg the importance of identifying ways to work with corrections.

Inmate characteristics

Inmates in general have increased health disparities and an increase in risks for poor health. Wilper et al. (2009) surveyed not only prisons and jails, but also inmates within those jails and prison, to evaluate the healthcare and the health of U.S. prisonsers. The authors concluded that "Many inmates with a serious chronic physical illness fail to receive care while incarcerated." (Wilper et al., 2009, p. 666). Although there were limitations between jail and prison, jails were worse than prisons when dealing with inmates receiving a medical examination

(13.9% for federal inmates, 20.1% for state inmates, and 68.4% of local jail inmates); however, chronic illnesses remained similar across all groups. Mental health issues abounded, with jails again overshadowing prisons and federal facilities when diagnosed with a mental health condition, with inmates not taking medication prior to arrest (25.5% federal, 29.6% state, and 38.5% local jails) (Wilper et al., 2009).

Inmates had a higher amount of chronic illnesses when compared with those in the community, according to a study by Binswanger et al (2009). In jails and prisons in Texas, similar findings were identified, with " crude prevalence estimates" higher than the general population in some chronic diseases (Harzke et al., 2010, pg. 490). Hypertension, diabetes, heart disease, chronic obstructive pulmonary disease and cerebrovascular disease were all identified as higher prevalence and increased according to age. In a recent study by Restrepo et al., diabetes was found to be a significant factor in TB cases from the Texas-Mexico border, with a prevalence of 29% identified from Texas, and 36% identified from Mexico (2011). Add summary to fully sythesize.

Staff characteristics

Staff in a correctional facility can mean custody, medical, civilian, and volunteers. In this study, staff are identfied as custody and medical staff working in any type of correctional facility. Custody staff in particular can become hardened to their surroundings when dealing with inmates, and it becomes a challenge educating when terminology is not similar. Terminology must be defined carefully when educating not only medical but custody staff on infectious diseases. In a paper defining Epidemiological Criminology, Akers & Lanier (2009) stated that public health systems determine process of epidemiological disease. There is a distinct difference

between these two paradigms that public health must recognize to effectively bridge the gap between corrections and public health.

Staff can become hardened as they work with inmates due to inmate manipulation, as well as the strict military-style of hierarchy that is their culture (National Minority Aids Council, 2002). Staff is advancing, and according to the United States Department of Justice National Institute for Corrections (USDOJ NIC), work is being done to build capacity within the custody staff to bridge gaps between corrections and public health (USDOJ NIC, 2007).

Tuberculosis prevalence among inmates

In a study by Dumont et al., a review of Bureau of Justice Statistics showed a significant decrease in screening for infectious diseases such as tuberculosis in the incarcerated Hispanic population than compared to the white population (Dumont et al., 2013)Magee & Murray (2008) discussed the increased prevalence (46%) of Black or African Americans, largely males, incarcerated in the U.S. penal system with TB between 1993 and 2006. This disparity has been identified by the surveillance team from the CDC, and continues to be prevalent today, especially in the southeast.

According to the 2011 surveillance information slideset from the Division of Tuberculosis Elimination at the CDC, males with TB are more prevalent (9:1) in correctional facilities (Centers for Disease Control and Prevention, 2014). The surveillance information also notes that in 2011, 4.3% of all TB cases were diagnosed in correctional facilities (CDC, 2014), which is similar to the percentage of TB cases identified since 1993.

Baussano et al. (2010) compared the incidence of active and latent TB infection between the incarcerated population and the general community. In this study looking at both U.S.

correctional facilities and foreign facilities, analysis of primary studies to determine incidence in both community and incarcerated populations were used, and results indicated from "peer-reviewed data from both high- and middle/low income countries, that the risk for TB is at least one order of magnitude greater in prisons than in the general population" (Baussano et al., p.5).

Gagne-Briggs and Tripod Theory

One theory that systematically informs the training being evaluated is the Gagne-Briggs Theory (Blanchard, 2010). It is important to understand the training chosen for this evaluation, to better understand the mind set of this training. This theory is relevant to the correctional setting as it allows instructions that fit the military mindset of the custody staff, as well as providing a learning mechanism for change in behavior and cognitive thinking. The “nine events of instruction” (Blanchard, 2010) follow a systematic structure which allows not only attention to detail, but also retention and reinforcement of information and behaviors that can be reproduced and evaluated for efficacy, an important component to effect change in this environment.

The tripod theory uses the *three-legged stool* method to identify the audience (Bouchard, 2009). One portion of the stool cannot stand without the other two legs. In this instance, hypothetically the three legs include the mix of custody, medical staff within corrections, and public health professionals all attending the training. As described earlier, public health staff is needed as they are the experts in diseases. Custody is necessary, as they are the experts in this environment and hold the keys to the system and any changes that are discussed. Medical staff within corrections is important to help bind the two together, as the medical staff work with corrections daily to aid them in maintaining a safe environment, including one free from disease.

Public health is the tie that binds all together as they continue the care from the corrections environment to the community, maintaining safety all around.

Summary

In reviewing the literature, it is clear that more studies are needed for determining effects on training between public health and corrections. Studies clearly demonstrate the disparities in the inmate population, and the challenges that abound when educating this population. However, there is a lack of evidence to determine which training paradigms work best when dealing with public health and corrections. As there is no literature documenting the effectiveness of training for this population, greater evidence is needed to aid public health's awareness of the challenges and successes when working with the custody and medical staff in corrections. In chapter 3, both qualitative and quantitative methods to analyze the data from the evaluations, research design, data analysis plan and ethical considerations will be discribed in detail.

Chapter 3: Research Method

Research design and rationale.

This is a retrospective quantitative and qualitative analysis of the evaluations provided by the participants who received a TB training program in correctional facilities. This analysis also includes a review of the use of the teaching method using the Gagne-Briggs theory of training and the use of a tripod method and its effects on the target audience, which is predominantly custody and medical staff working in both prisons and jails, including detention centers, and public health staff from local and state TB programs. The following are the research questions used in the exploration of the effectiveness of the training using the Gagne Briggs theory:

1. Which proportion of participants perceived the usefulness of the training as excellent or very good?
2. Which proportion of participants believe that the training helped them demonstrate the importance of recognizing discordant results when reviewing statistics & quality improvement (QI) documents for TB in corrections?
3. What changes do the participants intend to make to their programs as a result of this training?
4. What are the challenges associated with the implementation of the desired change?

Each evaluation included both qualitative data (comments noted on the evaluations already collected from the training), and quantitative data (yes or no or likert scale). These two methods were used to assess the impact of the training received and identify what change would occur in the daily practice of the participants regarding TB disease, including any barriers to

change that might also occur. Appendix B is a copy of the initial evaluation done by SNTC. Qualitative information included historical narrative data from follow-up surveys sent by SNTC approximately 4 months to 1 year after the initial evaluation. Quantitative data included correlational research from evaluations gathered from the different trainings and included information garnered from the follow-up survey already sent. Review of presentations by trainers was evaluated to determine the perception of the audience regarding whether or not the training met listed goals and objectives.

Included in this retrospective evaluation is an assessment of the training itself while using the Gagne Briggs theory. Appendix A shows the agenda and content of the 1-day training *Arresting TB: Best Practices for Controlling TB in Corrections*.

Role of the researcher

The SNTC employs this researcher as a trainer and nurse consultant. As one of the instructors in this 1-day training, the relationship is a personal and professional one. Although this study is taken from the hands-on training, care was taken to de-identify the data as much as possible prior to receiving the data however, it still included comments in the qualitative data referencing the instructors. To further remove myself from the data, all comments were carefully cleaned and wherever a name existed, the word *speaker* was inserted. As this is secondary data, informed consent was not required, and there were no potential risks to the participants, as no treatment or intervention occurred (see Ethical Concerns section for details).

Methodology

The methodology for this study was to evaluate all of the completed prior evaluations collected by the SNTC for this 1-day course. Additionally, the training was evaluated using the Gagne Briggs theory to determine applicability to this audience.

Participant Selection Logic

The population selected included any participant of the trainings that completed an evaluation. Participants were identified through voluntary registrations prior to the trainings, and their evaluation posttraining. Participants met the criteria based on their completion of the evaluations. Original contact was made with participants from their registration through SNTC's website when registering for this training, and their participation when showing up for the training.

Instrumentation

The evaluations were developed by SNTC and questions were pilot tested prior to their use in 2010. Appendix B shows the questions used and Appendix C shows the follow-up questions used. Neither evaluation has ever been published but continue to be used regularly for evaluations of other trainings conducted by SNTC and establish a basis for instrumentation to answer each research question.

An agreement to evaluate the data was established by this researcher to gain access to the data and the letter of cooperation is included in Appendix D which was submitted with the IRB application. Permission was obtained prior to receiving the data. Data was completely archived at the time of collection and as no treatment or interventions are involved, there was no need for informed consent. All information included is completely free of identifying data.

A written letter of support was obtained from the SNTC Principal Investigator (Appendix D), who agreed to the analyses of the evaluation data. Evaluations had already been collected using an evaluation instrument developed through Qualtrics by the SNTC in 2010, a copy of which is attached in Appendix B. The evaluation document was compiled by SNTC and validated through an evaluation specialist on staff many years ago, and includes a follow-up evaluation that was also developed by the SNTC (See Appendix C). The SNTC modified and adjusted the evaluation question since 2010 and finalized them in 2012.. The evaluations were stored in the SNTC Qualtrics database and untouched until this researcher requested to evaluate them. Upon approval, the data was distributed to this researcher. Using the evaluation instruments, the collection of secondary data were evaluated through the use of SPSS, Version 17.0 and Excel. All information was input into SPSS from the evaluations from Qualtrics and Excel and was analyzed.

Sample Population

The sample population included all participants who completed an evaluation after attending any of the 12 trainings that took place between 2011-2014. The four states where training occurred were North Carolina, Kentucky, Florida, and Arkansas. The evaluations were collected electronically via the internet through the use of Qualtrics, a survey software available through the SNTC. All of the trainings included a public health staff person knowledgeable in public health and TB but uninformed in the ways of corrections, along with corrections liaisons as the other speakers. Each individual speaker was evaluated using the same criteria (see Appendix B – Initial Evaluation).

Sample size

The sample size included all participants who attended the trainings conducted by SNTC staff and the TB public health program staff. Trainers included corrections liaisons who had expertise in both correctional health and public health and noncorrectional liaison public health staff members who had expertise in public health only, but may not have fully understood corrections and its culture. An absolute sample size of 291 participants was calculated using the MaCorr Research Solutions online Sample Size Calculator (MaCorr , 2003-2013). The parameters included a total sample size of 442 evaluations, with a confidence level of 95%, and a confidence interval of 3.37%. This absolute number of 291 was increased by a minimum of 5% to account for flaws in the design of the evaluation instrument, and lack of response in the postevaluation. Based on this information, a minimum sample size of 315 evaluations was needed for this study.

Data collection

These trainings occurred from 2011 through 2014, and used the evaluations already collected from each training program. Questions included potential changes identified by participants (see Appendix B). The target audience was the one taking the training; i.e., staff working in correctional facilities and in public health TB programs, and I used already identified evaluative data collected by the SNTC. Data was gathered from an evaluative questionnaire in Qualtrics, an online tool SNTC used to gather survey information.

Questionnaires were administered at the end of each of the twelve SNTC trainings and were gathered into one database using Excel and SPSS. A follow-up questionnaire several months after the trainings sought to identify whether goals that were identified during the

trainings were accomplished. An added benefit to this study was to identify whether or not participants have encouraged or acted upon policy change (if needed) within their correctional facility TB programs where they worked. The follow-up evaluation would identify if those goals were achieved and if not, what barriers exist that may need to be overcome to achieve those goals.

Quantitative data were collected using a Likert scale and analyzed through SPSS, using descriptive statistics. Qualitative data from written comments were analyzed by coding the similar responses in each of the comment sections and evaluating those using descriptive statistics. Additionally, qualitative data was collected from open-ended comments made on the evaluations and themed accordingly, along with information from the follow-up evaluations, again. Themes were identified and developed from the qualitative information through manual coding.

Goals were identified through the responses in the evaluation of these trainings, and are essential toward educating public health staff when dealing with correctional staff. Staff that did not list goals identified during the training were counted only if they completed their evaluation. Reduction of the sample size would have been reduced significantly otherwise. Whether goals were met or not met was also a factor in the analysis.

Demographic information about study participants, as well as study participants' goals and applicability to their situations in corrections was identified in the initial evaluation instrument, and all identifiers are removed for this evaluation. Additional information includes the delivery of the content, the applicability of the presentations, exercises and their applicability, and the usefulness of the materials.

Inclusion criteria

All participants who completed an evaluation after attending the one-day *Arresting TB: Best Practices for Controlling TB in Corrections* were included in this study. Additionally, information on each of the sessions will be included as discussed previously.

Exclusion criteria

All participants who did not complete evaluations, or those who only completed partial evaluations were excluded from this study.

Data analysis plan

Data analysis includes both quantitative and qualitative analysis. Quantitative analysis was conducted through descriptive statistics including frequencies, to assess whether the study participants' determined usefulness of the course materials and applicability of the presentations (Table 1).

Table 1.

Statistical Procedures per Research Question and Hypothesis

Research Question	**Hypothesis (H_a)**	**Variables**	**Statistical procedures/analysis**
RQ1: Quantitative: Which proportion of participants perceived the usefulness of the training as excellent or very good?	There is a larger proportion of participants who perceived the usefulness of the training as excellent or very good.	No inferential statistics; no independent or dependent variables; descriptive statistics only	Univariate analysis using descriptive statistics; frequencies for categorical variables
RQ2: Quantitative: Which proportion of participants believe that the training helped them demonstrate the importance of recognizing discordant results when reviewing statistics & quality improvement (QI) documents for TB in corrections?	There is a larger proportion of participants who believe that the training helped them demonstrate the importance of recognizing discordant results when reviewing statistics & QI documents for TB in corrections.	No inferential statistics; no independent or dependent variables; descriptive statistics only	Univariate analysis using descriptive statistics; frequencies for categorical variables
RQ3: Qualitative: What changes do the participants intend to make to their programs as a result of this training?	Participants intend to make changes to their programs as a result of this training.	N/A	Thematic analysis
RQ4: Qualitative: What are the challenges associated with the implementation of the desired change?	Challenges are associated with the implementation of the desired change.	N/A	Thematic analysis

For the qualitative analysis, data was compiled from comments extrapolated from the completed evaluations, and were manually coded according to identified themes. Information was compiled into one analysis and documented. Information was analyzed on the target audience (see Table 1) and included public health, custody and medical staff.

Issues of Trustworthiness

To confirm as much as possible the internal validity of the quantitative and qualitative data, all complete evaluations were used, and the only evaluations that were removed were those that did not completely answer all questions. Also, the evaluation document was compiled by SNTC and previously pilot tested and validated through an evaluation specialist on staff. There was no contact with any of the participants, nor peer reviews after the collection of secondary data. Also, the data were de-identified to avoid any personal bias by the researcher.

Ethical procedures

As this study only deals with secondary data, the quantitative and qualitative components are impacted only by the findings of the information. This researcher has access to the original archived data; however, there is no supervisory issue or link to any of the participants who attended these trainings, therefore, there are no ethical concerns identified. This study received Walden IRB approval number 05-26-15-0151332.

Summary

This retrospective research study used archived data from evaluations already collected by SNTC to determine the effectiveness of the overall trainings, and whether or not there was any difference in each of the sessions presented. Data analysis and a systematic review on the training curriculum using the Gagne Briggs theory were essential to the findings of this research,

and determined the effectiveness of this educational program on future trainings. Descriptive statistics for the quantitative univariate analyses are presented in Chapter 4, along with the themed comments from each session and the follow-up questionnaire.

Chapter 4: Results

Introduction

In this study the evaluation of TB training for custody and medical staff working in correctional facilities using secondary data from the SNTC was investigated. Mixed method analysis was conducted through SPSS using frequencies to investigate the quantitative data, and themed coding using comments from qualitative data on both the initial and follow-up evaluations.

Review of the training material confirmed the Gagne-Briggs Theory of Design for instructional sessions, and the use of a tripod method for audience participation in all but one training. After compilation of all evaluations, it was determined that the results matched what was needed for sufficient evaluation of this material and trainings. The analysis consists of the settings, demographics of the participants, with the quantitative evaluation explored, and then qualitative evaluations were examined using separate categories and themes. Results are discussed, including credibility and conformity issues that were accounted for.

Training to be evaluated. The agenda and content of the training course is outlined in Appendix A. For all trainings, a welcome and introduction by a jail administrator or warden and the hosting state's TB controller or other administrator began each training, and emphasized the importance of the collaboration between public health and corrections. This set the stage for the rest of the day, as each key partner in corrections (the jail administrator or warden) described the importance of communication and collaboration around this infectious disease to the audience.

Goals or what the participant hopes to achieve were identified in each of the 12 1-day trainings, and secondary data looked at those achievements and whether or not they were accomplished.

According to the Gagne Briggs theory, the information correlated with the development and demonstration throughout the training. A step by step review of the training showed:

Stimulate Recall of Prior Relevant Knowledge: This was evaluated through comments identified on evaluations, discussions noted from groups during exercises and postevaluative information from a follow-up evaluation.

Present Material: Evaluation of this data includes both quantitative and qualitative data identified from evaluations collected at each training asking about speakers and content provided, and includes a follow-up evaluation asking about change as a result of the training.

Providing Guidance on Exercises: This data was collected from objectives and comments noted on evaluations collected at each training on the exercises and discussions at the trainings.

Elicit Performance: Performance was determined through pictures taken at the trainings to identify engagement of participants and qualitative data taken from the evaluations of each exercise.

Provide Informative Feedback: Feedback as noted on the evaluations took the form of comments and discussions, and so was determined through qualitative data and comments from the follow-up evaluations. Additionally, Likert-scale data collected from the evaluations was included in the quantitative data.

Assess Performance: Performance was evaluated through qualitative information from group participation, along with comments noted from the evaluations. Additionally, information

received during the follow-up evaluation further assesses performance from goals identified during the trainings.

Enhance Retention and Transfer: The follow-up evaluation (Appendix C) seeking information on goal achievement or barriers identified at the training and knowledge of changes that have occurred as a result of the training was important in determining retention and transfer of information from training to policy or procedure change, thereby identifying positive social change between the corrections and public health environment, which is the foundation for this paper.

Twelve trainings were done between 2011 and 2014 by the SNTC, which were assessed using the evaluative questionnaire that was provided directly after each one. These seminars/trainings were conducted in the following states, North Carolina, Florida, Kentucky, and Arkansas. They were offered by the SNTC and promoted on their website, through printed publications, and participants were selected from among those who registered on the website and completed an evaluation. Those who attended included doctors, nurses, public health professionals, and corrections facility personnel ranging from nurses to custodial staff, including administration staff and will be further discussed in the demographic portion.

The meetings were conducted by public health personnel trained in bridging the gap between public health and corrections, not only in the understanding of the cultural differences between them, but also in the language barriers that present during the trainings.

Walden IRB approval number 05-26-15-0151332 was obtained prior to data collection and analysis in 2015 of the evaluations obtained from SNTC. Initially, SNTC sent out a total of 512 initial evaluations to participants directly after the trainings in 2010 through 2014, and 459

(90%) of those sent out responded, with 442 (96%) of the 459 initial evaluations completed. There were 17 (4%) who began the evaluation but did not complete it, accounting for the final total. For follow-up evaluations, a total of 386 evaluations were sent to participants, with a total of 101 (26%) completing the evaluation.

Demographics

There were 442 (100%) participants who evaluated the trainings, with 343 (77.1%) from the correctional facilities, 99 (22%) employed in local health departments (HD) or state health office, 4 (0.9%) attendees from a hospital, and 1 (0.2%) each from a private practice, industry, school and other (not named). Participants included 291 (65.8%) nurses, 24 (5.4%) administrators, 24 (5.4%) physicians, 6 (1.4%) PAs, 11 (2.4%) ARNPs, 33 (8%) custody staff, 22 (5%) administrative staff, 6 (1.4%) epidemiologists, 6 (1.4%) outreach or disease investigators, 3 (0.7%) social workers, 2 (0.5%) each from five categories; including laboratorian, patient care technician, x-ray technician, health educator, and regulatory staff; and finally 1 (0.1%) each who were either an infectious disease coordinator, a case manager, a safety representative, a human resource staff member, a data analyst (all public health), and other (unknown) (see Table 2). After reviewing the participants in the audience, all but one training (92%) had the recommended three-fold target audience, which included custody and medical administration and public health. Only one training (8%) did not meet the complete audience; but instead had only medical and public health.

Table 2.

Demographics and characteristics of audiences

	Corrections Medical	Corrections Administration/	Corrections Custody	Public Health	Other	Total
Site 1	46(81%)	1(2%)	8(14%)	2(3%)	-	57(100)
Site 2	89(65.4%)	2(1.5%)	-	44(32.4%)	1(0.7%)	136(100%)
Site 3	25(42.4%)	16(27%)	10(17%)	6(10.2%)	2(3.4%)	59(100%)
Site 4	9(39.2%)	3(13%)	3(13%)	7(30.4%)	1(4.4%)	23(100%)
Site 5	17(51.5%)	7(21.2%)	4(12.1%)	5(15.2%)	-	33(100%)
Site 6	24(75%)	2(6.2%)	-	6(18.8%)	-	32(100%)
Site 7	11(47.8%)	2(8.7%)	2(8.7%)	8(34.8%)	-	23(100%)
Site 8	12(85.7%)	-	-	2(14.3%)	-	14(100%)
Site 9	8(33.3%)	4(16.7%)	5(20.8%)	7(29.2%)	-	24(100%)
Site 10	3(42.9%)	3(42.9%)	-	1(14.2%)	-	7(100%)
Site 11	3(27.3%)	2(18.2%)	-	5(45.5%)	1(9%)	11(100%)
Site 12	8(34.8%)	5(21.7%)	4(17.4%)	6(26.1%)	-	23(100%)
Total	255(57.7%)	47(10.6%)	36(8.2%)	99(22.4%)	5(1.1%)	442(100%)

Note: One training did not meet the recommended target audience (Site 8).

Data Collection

There was a total sample size of 442 completed evaluations from participants who attended one of the 12 trainings conducted between 2011 and 2014. The evaluations were gathered and reviewed in 2015 after IRB approval number 05-26-15-0151332. Data was collected from Microsoft Excel spreadsheets and input into SPSS. No variations were identified from the previous plan.

Results

To answer the first two quantitative research questions, descriptive statistics were used. Frequencies were used to describe if the overall goals and objectives of the training were met in Sites 1 and 2. In Site 1 (2011) and Site 2 (2012), the sessions were evaluated; however, goals and objectives were evaluated as a whole. For Sites 1 and 2, the evaluations were very simplistic and asked if the overall goals and objectives were met. Usefulness was not evaluated in the first two trainings; however, in the other 10 sites, usefulness was a consideration.

Research Question 1 (Quantitative). "Which proportion of participants perceived the usefulness of the training as excellent or very good?" A Likert scale was used to evaluate each participants' response using the evaluation already collected. The question on the evaluation is stated above each frequency and collected through a Likert Scale, with 1 = Poor, 2 = Fair, 3 = Good, 4 = Very Good, and 5 = Excellent. An explanation can be found beneath each table. Overwhelmingly the participants perceived the training as useful and excellent or very good in all of the trainings, as noted below in each of the sites 1 through 12 (Table 3-19). A value of 55 was assigned to those who did not answer.

Sites 1 and 2. In sites 1 and 2, 85.9% and 74.2% respectively of the participants perceive the overall goals and objectives as being good, very good or excellent as shown in Tables 3 and 4.

Table 3.

Site 1 (2011) – Were the Overall Goals and Objectives met?

	Likert Score	Frequency	Percent	Valid Percent
Good	3	8	14.0	14.0
Very Good	4	21	36.8	36.8
Excellent	5	28	49.1	49.1
Total		57	100.0	100.0

Note: The larger portion (85.9%) perceived the overall goals and objectives as being very good or excellent.

Table 4.

Site 2 (2012) – Were the Overall Goals and Objectives met?

	Likert Score	Frequency	Percent	Valid Percent
Fair	2	1	.7	.7
Good	3	25	18.4	18.4
Very Good	4	38	27.9	27.9
Excellent	5	63	46.3	46.3
Not Applicable	55	9	6.6	6.6
Total		136	100.0	100.0

Note: The larger portion of 74.2% perceived the overall goals and objectives as being very good or excellent.

Sites 3 – 12. In Site 3 (2013), frequencies describe the proportion of participants who perceived the usefulness of the training as excellent or very good, as noted in Table 4. However, the Site 3 evaluation did not ask about the exercises for usefulness, only the presentations.

Results in Site 3 show that in the area of a case presentation of when a contact becomes an outbreak, 91.5% perceive the usefulness of the training as good or excellent; in the area of

TB epidemiology and concerns for correctional facilities, 89.8% perceived the usefulness as very good or excellent; in the area of what you need to know about TB in corrections 91.5% perceive the usefulness as very good or excellent; in the area of case management/contact investigation/release planning, 88.2% perceive the usefulness as very good or excellent and in the area of assuring the effective evaluation of TB control programs in corrections, 93.2% perceive the usefulness as very good or excellent. These results are shown in Table 5.

Table 5.

Case Presentation: When a Contact Investigation Becomes an Outbreak!	Likert Score	Frequency	Percent	Valid Percent
Fair	2	1	1.7	1.7
Good	3	4	6.8	6.8
Very Good	4	18	30.5	30.5
Excellent	5	36	61	61
Total		59	100	100
TB Epidemiology and Concerns for Correctional Facilities	Likert Score	Frequency	Percent	Valid Percent
Fair	2	1	1.7	1.7
Good	3	5	8.5	8.5
Very Good	4	23	39	39
Excellent	5	30	50.8	50.8
Total		59	100	100
What You Need to Know about TB in Corrections	Likert Score	Frequency	Percent	Valid Percent
Good	3	5	8.5	8.5
Very Good	4	18	30.5	30.5
Excellent	5	36	61	61
Total		59	100	100
Effective TB Infection Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Fair	2	1	1.7	1.7
Good	3	5	8.5	8.5
Very Good	4	25	42.4	42.4
Excellent	5	28	47.5	47.5
Total		59	100	100
Case Management/Contact Investigation/Release Planning	Likert Score	Frequency	Percent	Valid Percent
Fair	2	1	1.7	1.7
Good	3	6	10.2	10.2
Very Good	4	24	40.7	40.7
Excellent	5	28	47.5	47.5
Total		59	100	100
Assuring Effective Evaluation of TB Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Good	3	4	6.8	6.8
Very Good	4	22	37.3	37.3
Excellent	5	33	55.9	55.9
Total		59	100	100

Site 3 (2013) - perception of the usefulness of each of the sessions by participants

In Site 4 (2014), frequencies describe the proportion of participants who perceived the usefulness of the training as excellent or very good, as noted in Table 5. Results in Site 4 show that in the area of a case presentation of when a contact becomes an outbreak, 100% perceive the usefulness of the training as very good or excellent; in the area of TB epidemiology and concerns for correctional facilities, 91.3% perceive the usefulness as very good or excellent; in the area of what you need to know about TB in corrections 100% perceive the usefulness as very good or excellent; in the area of effective infection control programs in corrections, 95.7% perceive the usefulness as very good or excellent; in Exercise 1, 100% perceive the usefulness as very good or excellent; in the area of case management/contact investigation/release planning, 100% perceive the usefulness as very good or excellent, and the corresponding Exercise 2, 95.6% perceive the usefulness as very good or excellent; and in the area of assuring the effective evaluation of TB control programs in corrections, 95.7% perceive the usefulness as very good or excellent. These results are shown through Tables 6.

Table 6.

Site 4 (2014) - perception of the usefulness of each session as noted by participants.

Case Presentation: When a Contact Investigation Becomes an Outbreak!	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	9	39.1	39.1
Excellent	5	14	60.9	60.9
Total		23	100	100
TB Epidemiology and Concerns for Correctional Facilities	Likert Score	Frequency	Percent	Valid Percent
Good	3	2	8.7	8.7
Very Good	4	6	26.1	26.1
Excellent	5	15	65.2	65.2
Total		23	100	100
What You Need to Know about TB in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	7	30.4	30.4
Excellent	5	16	69.6	69.6
Total		23	100	100
Effective TB Infection Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	4.3	4.3
Very Good	4	8	34.8	34.8
Excellent	5	14	60.9	60.9
Total		23	100	100
Exercise 1 – TB or Not TB	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	7	30.4	30.4
Excellent	5	16	69.6	69.6
Total		23	100	100
Case Management/Contact Investigation/Release Planning	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	8	34.8	34.8
Excellent	5	15	65.2	65.2
Total		23	100	100
Exercise 2 – Intake to Isolation	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	4.3	4.3
Very Good	4	7	30.4	30.4
Excellent	5	15	65.2	65.2
Total		23	100	100
Assuring Effective Evaluation of TB Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	4.3	4.3
Very Good	4	6	26.1	26.1
Excellent	5	16	69.6	69.6
Total		23	100	100

In Site 5 (2014), frequencies describe the proportion of participants who perceived the usefulness of the training as excellent or very good, as noted in Table 6. Results in Site 5 show that in the area of a case presentation of when a contact becomes an outbreak, 100% perceive the usefulness of the training as very good or excellent; in the area of TB epidemiology and concerns for correctional facilities, 100% perceive the usefulness as very good or excellent; in the area of what you need to know about TB in corrections 100% perceive the usefulness as very good or excellent; in the area of effective infection control programs in corrections, 100% perceive the usefulness as very good or excellent; in exercise one, 97% perceive the usefulness as very good or excellent; in the area of case management/contact investigation/release planning, 100% perceive the usefulness as very good or excellent, and the corresponding exercise two, 96.9% perceive the usefulness as very good or excellent; and in the area of assuring the effective evaluation of TB control programs in corrections, 100% perceive the usefulness as very good or excellent. These results are shown in table 7.

Table 7.

Site 5 (2014) - perception of the usefulness of each session as noted by participants.

Case Presentation: When a Contact Investigation Becomes an Outbreak!	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	7	21.2	21.2
Excellent	5	26	78.8	78.8
Total		33	100	100
TB Epidemiology and Concerns for Correctional Facilities	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	8	24.2	24.2
Excellent	5	25	75.8	75.8
Total		33	100	100
What You Need to Know about TB in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	8	24.2	24.2
Excellent	5	25	75.8	75.8
Total		33	100	100
Effective TB Infection Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	7	21.2	21.2
Excellent	5	26	78.8	78.8
	Total	33	100	100
Exercise 1 – TB or Not TB	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	3	3
Very Good	4	7	21.2	21.2
Excellent	5	25	75.8	75.8
Total		33	100	100
Case Management/Contact Investigation/Release Planning	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	8	24.2	24.2
Excellent	5	25	75.8	75.8
Total		33	100	100
Exercise 2 – Intake to Isolation	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	3	3
Very Good	4	8	24.2	24.2
Excellent	5	24	72.7	72.7
Total		33	100	100
Assuring Effective Evaluation of TB Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	8	24.2	24.2
Excellent	5	25	75.8	75.8
Total		33	100	100

In Site 6 (2014), frequencies describe the proportion of participants who perceived the usefulness of the training as excellent or very good, as noted in Table 7. Results in Site 6 show that in the area of a case presentation of when a contact becomes an outbreak, 96.9% perceive the usefulness of the training as very good or excellent; in the area of TB epidemiology and concerns for correctional facilities, 100% perceive the usefulness as very good or excellent; in the area of what you need to know about TB in corrections 100% perceive the usefulness as very good or excellent; in the area of effective infection control programs in corrections, 96.9% perceive the usefulness as very good or excellent; in exercise one, 100% perceive the usefulness as very good or excellent; in the area of case management/contact investigation/release planning, 100% perceive the usefulness as very good or excellent, and the corresponding exercise two, 96.9% perceive the usefulness as very good or excellent; and in the area of assuring the effective evaluation of TB control programs in corrections, 96.9% perceive the usefulness as very good or excellent. These results are shown in table 8.

Table 8.

Site 6 (2014) – Perception of the usefulness of each of the sessions by participants.

Case Presentation: When a Contact Investigation Becomes an Outbreak!	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	3.1	3.1
Very Good	4	10	31.3	31.3
Excellent	5	21	65.6	65.6
Total		32	100	100
TB Epidemiology and Concerns for Correctional Facilities	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	10	31.3	31.3
Excellent	5	22	68.8	68.8
Total		32	100	100
What You Need to Know About TB in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	9	28.1	28.1
Excellent	5	23	71.9	71.9
Total		32	100	100
Effective TB Infection Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	3.1	3.1
Very Good	4	11	34.4	34.4
Excellent	5	20	62.5	62.5
Total		32	100	100
Exercise 1 – TB or Not TB	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	9	28.1	28.1
Excellent	5	23	71.9	71.9
Total		32	100	100
Case Management/Contact Investigation/Release Planning	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	11	34.4	34.4
Excellent	5	21	65.6	65.6
Total		32	100	100
Exercise 2 – Intake to Isolation	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	3.1	3.1
Very Good	4	9	28.1	28.1
Excellent	5	22	68.8	68.8
Total		32	100	100
Assuring Effective Evaluation of TB Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	3.1	3.1
Very Good	4	11	34.4	34.4
Excellent	5	20	62.5	62.5
Total		32	100	100

In Site 7 (2014), frequencies describe the proportion of participants who perceived the usefulness of the training as excellent or very good, as noted in Table 8. Results in Site 7 show that in the area of a case presentation of when a contact becomes an outbreak, 95.7% perceive the usefulness of the training as very good or excellent; in the area of TB epidemiology and concerns for correctional facilities, 95.6% perceive the usefulness as very good or excellent; in the area of what you need to know about TB in corrections 95.7% perceive the usefulness as very good or excellent; in the area of effective infection control programs in corrections, 95.7% perceive the usefulness as very good or excellent; in exercise one, 82.6% perceive the usefulness as very good or excellent; in the area of case management/contact investigation/release planning, 95.7% perceive the usefulness as very good or excellent, and the corresponding exercise two, 95.7% perceive the usefulness as very good or excellent; and in the area of assuring the effective evaluation of TB control programs in corrections, 95.6% perceive the usefulness as very good or excellent. These results are shown in table 9.

Table 9.

Site 7 (2014) – Perception of the usefulness of each of the sessions by participants.

Case Presentation: When a Contact Investigation Becomes an Outbreak!	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	4.3	4.3
Very Good	4	8	34.8	34.8
Excellent	5	14	60.9	60.9
Total		23	100	100
TB Epidemiology and Concerns for Correctional Facilities	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	4.3	4.3
Very Good	4	9	39.1	39.1
Excellent	5	13	56.5	56.5
Total		23	100	100
What You Need to Know About TB in Corrections	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	4.3	4.3
Very Good	4	8	34.8	34.8
Excellent	5	14	60.9	60.9
Total		23	100	100
Effective TB Infection Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	4.3	4.3
Very Good	4	8	34.8	34.8
Excellent	5	14	60.9	60.9
Total		23	100	100
Exercise 1 – TB or Not TB	Likert Score	Frequency	Percent	Valid Percent
Fair	2	1	4.3	4.3
Good	3	3	13	13
Very Good	4	6	26.1	26.1
Excellent	5	13	56.5	56.5
Total		23	100	100
Case Management/Contact Investigation/Release Planning	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	4.3	4.3
Very Good	4	10	43.5	43.5
Excellent	5	12	52.2	52.2
Total		23	100	100
Exercise 2 – Intake to Isolation	Likert Score	Frequency	Percent	Valid Percent
Good	3	1	4.3	4.3
Very Good	4	8	34.8	34.8
Excellent	5	14	60.9	60.9
Total		23	100	100
Assuring Effective Evaluation of TB Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent

Good	3	1	4.3	4.3
Very Good	4	9	39.1	39.1
Excellent	5	13	56.5	56.5
Total		23	100	100

In Site 8 (2014), frequencies describe the proportion of participants who perceived the usefulness of the training as excellent or very good, as noted in Table 9. Results in Site 8 show that in the area of a case presentation of when a contact becomes an outbreak, 100% perceive the usefulness of the training as very good or excellent; in the area of TB epidemiology and concerns for correctional facilities, 100% perceive the usefulness as very good or excellent; in the area of what you need to know about TB in corrections 100% perceive the usefulness as very good or excellent; in the area of effective infection control programs in corrections, 100% perceive the usefulness as very good or excellent; in exercise one, 100% perceive the usefulness as very good or excellent; in the area of case management/contact investigation/release planning, 100% perceive the usefulness as very good or excellent, and the corresponding exercise two, 100% perceive the usefulness as very good or excellent; and in the area of assuring the effective evaluation of TB control programs in corrections, 100% perceive the usefulness as very good or excellent. Of note, this site only had medical and TB program staff in attendance, no custody staff attended. These results are shown in Table 10.

Table 10.

Site 8 (2014) – Perception of the usefulness of the sessions by participants as very good or excellent.

Case Presentation: When a Contact Investigation Becomes an Outbreak!	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	2	14.3	14.3
Excellent	5	12	85.7	85.7
Total		14	100	100
TB Epidemiology and Concerns for Correctional Facilities	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	3	21.4	21.4
Excellent	5	11	78.6	78.6
Total		14	100	100
What You Need to Know About TB in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	7.1	7.1
Excellent	5	13	92.9	92.9
Total		14	100	100
Effective TB Infection Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	2	14.3	14.3
Excellent	5	12	85.7	85.7
Total		14	100	100
Exercise 1 – TB or Not TB	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	2	14.3	14.3
Excellent	5	12	85.7	85.7
Total		14	100	100
Case Management/Contact Investigation/Release Planning	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	7.1	7.1
Excellent	5	13	92.9	92.9
Total		14	100	100
Exercise 2 – Intake to Isolation	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	2	14.3	14.3
Excellent	5	12	85.7	85.7
Total		14	100	100
Assuring Effective Evaluation of TB Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	7.1	7.1
Excellent	5	13	92.9	92.9
Total		14	100	100

In Site 9 (2014), frequencies describe the proportion of participants who perceived the usefulness of the training as excellent or very good, as noted in Table 10. Results in Site 9 show

that in the area of a case presentation of when a contact becomes an outbreak, 100% perceive the usefulness of the training as very good or excellent; in the area of TB epidemiology and concerns for correctional facilities, 100% perceive the usefulness as very good or excellent; in the area of what you need to know about TB in corrections 100% perceive the usefulness as very good or excellent; in the area of effective infection control programs in corrections, 100% perceive the usefulness as very good or excellent; in exercise one, 100% perceive the usefulness as very good or excellent; in the area of case management/contact investigation/release planning, 100% perceive the usefulness as very good or excellent, and the corresponding exercise two, 100% perceive the usefulness as very good or excellent; and in the area of assuring the effective evaluation of TB control programs in corrections, 100% perceive the usefulness as very good or excellent. These results are shown in table 11.

Table 11.

Site 9 (2014) - Perception of the usefulness of each of the sessions by participants as very good or excellent.

Case Presentation: When a Contact Investigation Becomes an Outbreak!	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	2	8.3	8.3
Excellent	5	22	91.7	91.7
Total		24	100	100
TB Epidemiology and Concerns for Correctional Facilities	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	5	20.8	20.8
Excellent	5	19	79.2	79.2
Total		24	100	100
What You Need to Know About TB in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	3	12.5	12.5
Excellent	5	21	87.5	87.5
Total		24	100	100
Effective TB Infection Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	3	12.5	12.5
Excellent	5	21	87.5	87.5
Total		24	100	100
Exercise 1 – TB or Not TB	Likert Score	Frequency	Percent	Valid Percent

Very Good	4	3	12.5	12.5
Excellent	5	21	87.5	87.5
Total		24	100	100
Case Management/Contact Investigation/Release Planning	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	4	16.7	16.7
Excellent	5	20	83.3	83.3
Total		24	100	100
Exercise 2 – Intake to Isolation	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	4	16.7	16.7
Excellent	5	20	83.3	83.3
Total		24	100	100
Assuring Effective Evaluation of TB Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	3	12.5	12.5
Excellent	5	21	87.5	87.5
Total		24	100	100

In Site 10 (2014), frequencies describe the proportion of participants who perceived the usefulness of the training as excellent or very good, as noted in Table 11. Results in Site 10 show that in the area of a case presentation of when a contact becomes an outbreak, 100% perceive the usefulness of the training as very good or excellent; in the area of TB epidemiology and concerns for correctional facilities, 100% perceive the usefulness as very good or excellent; in the area of what you need to know about TB in corrections 100% perceive the usefulness as very good or excellent; in the area of effective infection control programs in corrections, 100% perceive the usefulness as very good or excellent; in exercise one, 100% perceive the usefulness as very good or excellent; in the area of case management/contact investigation/release planning, 100% perceive the usefulness as very good or excellent, and the corresponding exercise two, 100% perceive the usefulness as very good or excellent; and in the area of assuring the effective evaluation of TB control programs in corrections, 100% perceive the usefulness as very good or excellent. These results are shown in table 12.

Table 12.

Site 10 (2014) - Perception of the usefulness of each of the sessions by participants.

Case Presentation: When a Contact Investigation Becomes an Outbreak!	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	14.3	14.3
Excellent	5	6	85.7	85.7
Total		7	100	100
TB Epidemiology and Concerns for Correctional Facilities	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	14.3	14.3
Excellent	5	6	85.7	85.7
Total		7	100	100
What You Need to Know About TB in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	14.3	14.3
Excellent	5	6	85.7	85.7
Total		7	100	100
Effective TB Infection Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	14.3	14.3
Excellent	5	6	85.7	85.7
Total		7	100	100
Exercise 1 – TB or Not TB	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	14.3	14.3
Excellent	5	6	85.7	85.7
Total		7	100	100
Case Management/Contact Investigation/Release Planning	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	14.3	14.3
Excellent	5	6	85.7	85.7
Total		7	100	100
Exercise 2 – Intake to Isolation	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	14.3	14.3
Excellent	5	6	85.7	85.7
Total		7	100	100
Assuring Effective Evaluation of TB Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	14.3	14.3
Excellent	5	6	85.7	85.7
Total		7	100	100

In Site 11 (2014), frequencies describe the proportion of participants who perceived the usefulness of the training as excellent or very good, as noted in Table 12. Results in Site 11 show that in the area of a case presentation of when a contact becomes an outbreak, 100% perceive the usefulness of the training as very good or excellent; in the area of TB epidemiology and concerns for correctional facilities, 100% perceive the usefulness as very good or excellent; in the area of what you need to know about TB in corrections 100% perceive the usefulness as very good or excellent; in the area of effective infection control programs in corrections, 100% perceive the usefulness as very good or excellent; in exercise one, 100% perceive the usefulness as very good or excellent; in the area of case management/contact investigation/release planning, 100% perceive the usefulness as very good or excellent, and the corresponding exercise two, 100% perceive the usefulness as very good or excellent; and in the area of assuring the effective evaluation of TB control programs in corrections, 100% perceive the usefulness as very good or excellent. These results are shown in table 13.

Table 13.

Site 11 (2014) - perception of the usefulness of each of the sessions by participants

Case Presentation: When a Contact Investigation Becomes an Outbreak!		Likert Score	Frequency	Percent	Valid Percent
Excellent		5	11	100	100
	Total		11	100	100
TB Epidemiology and Concerns for Correctional Facilities		Likert Score	Frequency	Percent	Valid Percent
Excellent		5	11	100	100
	Total		11	100	100
What You Need to Know About TB in Corrections		Likert Score	Frequency	Percent	Valid Percent
Excellent		5	11	100	100
	Total		11	100	100
Effective TB Infection Control Programs in Corrections		Likert Score	Frequency	Percent	Valid Percent
Very Good		4	1	9.1	9.1
Excellent		5	10	90.9	90.9
	Total		11	100	100

Exercise 1 – TB or Not TB	Likert Score	Frequency	Percent	Valid Percent
Excellent	5	11	100	100
Total		11	100	100
Case Management/Contact Investigation/Release Planning	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	9.1	9.1
Excellent	5	10	90.9	90.9
Total		11	100	100
Exercise 2 – Intake to Isolation	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	9.1	9.1
Excellent	5	10	90.9	90.9
Total		11	100	100
Assuring Effective Evaluation of TB Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Excellent	5	11	100	100
Total		11	100	100

In Site 12 (2014), frequencies describe the proportion of participants who perceived the usefulness of the training as excellent or very good, as noted in Table 13. Results in Site 12 show that in the area of a case presentation of when a contact becomes an outbreak, 100% perceive the usefulness of the training as very good or excellent; in the area of TB epidemiology and concerns for correctional facilities, 100% perceive the usefulness as very good or excellent; in the area of what you need to know about TB in corrections 100% perceive the usefulness as very good or excellent; in the area of effective infection control programs in corrections, 100% perceive the usefulness as very good or excellent; in exercise one, 100% perceive the usefulness as very good or excellent; in the area of case management/contact investigation/release planning, 100% perceive the usefulness as very good or excellent, and the corresponding exercise two, 100% perceive the usefulness as very good or excellent; and in the area of assuring the effective evaluation of TB control programs in corrections, 100% perceive the usefulness as very good or excellent. These results are shown in table 14.

Table 14.

Site 12 (2014) - perception of the usefulness of each of the sessions by participants.

Case Presentation: When a Contact Investigation Becomes an Outbreak!	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	4.3	4.3
Excellent	5	22	95.7	95.7
Total		23	100	100
TB Epidemiology and Concerns for Correctional Facilities	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	4	17.4	17.4
Excellent	5	19	82.6	82.6
Total		23	100	100
What You Need to Know About TB in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	4.3	4.3
Excellent	5	22	95.7	95.7
Total		23	100	100
Effective TB Infection Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	2	8.7	8.7
Excellent	5	21	91.3	91.3
Total		23	100	100
Exercise 1 – TB or Not TB	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	3	13	13
Excellent	5	20	87	87
Total		23	100	100
Case Management/Contact Investigation/Release Planning	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	4.3	4.3
Excellent	5	22	95.7	95.7
Total		23	100	100
Exercise 2 – Intake to Isolation	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	3	13	13
Excellent	5	20	87	87
Total		23	100	100
Assuring Effective Evaluation of TB Control Programs in Corrections	Likert Score	Frequency	Percent	Valid Percent
Very Good	4	1	4.3	4.3
Excellent	5	22	95.7	95.7
Total		23	100	100

Research Question 2 (Quantitative). Which proportion of participants believe that the training helped them demonstrate the importance of recognizing discordant results when reviewing statistics & quality improvement (QI) documents for TB in corrections?" Using the question on the evaluation "Did the instructor meet the objectives?", the third objective asked that at the end of the presentation, the participant was able to "Demonstrate through exercises the importance of recognizing discordant results when reviewing statistics and quality improvement documents for TB in Corrections." Overwhelmingly, all of the participants (100%) checked "yes" for a response (Table 15). Sites 1 and 2 did not ask the question regarding discordant results and was omitted from this table.

Table 15.

Assuring Effective Evaluation of TB Programs in Corrections – Objective 3

Site	Frequency	Percent	Valid Percent
Site 3	59	100.0	100.0
Site 4	23	100.0	100.0
Site 5	33	100.0	100.0
Site 6	32	100.0	100.0
Site 7	23	100.0	100.0
Site 8	14	100.0	100.0
Site 9	24	100.0	100.0
Site 10	7	100.0	100.0
Site 11	11	100.0	100.0
Site 12	23	100.0	100.0

Note: All participants who evaluated the objective checked "yes"

Research Question 3 (Qualitative). "What changes do the participants intend to make to their programs as a result of this training?" This was evaluated by using the follow-up

evaluation question “Since the training, were you able to make any changes to your work in TB as a result of this program?” with “yes” or “no” answers, and “If yes, what were those changes?” (See Appendix C). A total of 291 follow-up evaluations from 11 sites were sent out to participants, and of those, 100 (34%) returned completed responses. The first site in 2011 did not have a follow-up question sent to participants, as there was no ability to receive email in that facility.

Of the 100 (34%) respondents from the follow-up evaluation, 75 (75%) responded that “yes”, they were able to make changes in their work in TB as a result of the program. After reviewing the comments, and scrutinizing them according to identified techniques by Ryan and Bernard (Ryan, 2003), three positive themes emerged from the analysis of the qualitative data that was collected. Emerging themes were 1) facility changes implemented; 2) self-awareness changes; and 3) exchange of education to additional staff. A fourth, a belief that no changes were needed, was also present (see Table 17).

To analyze the qualitative data, a line by line comparison was used by this researcher, and an impartial researcher was also asked to code each to ascertain if any themes were developing. These two different analyses were then compared; and the result is listed in the table below (see Table 16).

Table 16.

Themes developed.

Site No.	# of No Changes Needed	# of Self-Awareness	# of Facility Changes	# of Unknown Changes	Total
2	7(26%)	15(56%)	5(18%)	0	27
3	5(71%)	2(29%)	0	0	7
4	4(40%)	2(20%)	1(10%)	3(30%)	10
5	0(0%)	7(70%)	3(30%)	0(0%)	10
6	0(0%)	4(57%)	3(43%)	0(0%)	7
7	2(29%)	2(29%)	3(42%)	0	7
8	2(33%)	4(67%)	0	0	6
9	2(25%)	4(50%)	1(12.5%)	1(12.5%)	8
10	1(20%)	2(40%)	2(40%)	0	5
11	1(16.5%)	4(67%)	1(16.5%)	0	6
12	0	4(57%)	2(29%)	1(14%)	7
Total	**24**	**50**	**21**	**5**	**100**

Table 17.

Main categories of exploration of topics and selected extracts on identified themes according to participants

Theme/Category	Selected extract
Facility changes implemented	"In the process of making revisions to having our AFB Cells checked every shift instead of daily." "All of my nurses will receive the ruler to more accurately chart the size of the induration." "Better tracking for use if there is an outbreak." "Working on evaluation studies using an IGRA within corrections." "Better bed tracking, and if necessary ensure medical hold is placed on subjects Jail Booking Record." "Better communication and systematic adjustments on management in the correctional facilities." "Improve training"

	“Changes on how to handle inmates” “Screening for HIV+ so that we may better evaluate for false positives versus true positive PPDs.” “In the process of making revisions to having our AFB Cells checked every shift instead of daily.”
Self-awareness changes	"We are more aware of the possibility of TB that presents as cold symptoms, we are paying closer attention to the questionnaire part of screening." "I have a better understanding of the importance of good communication between health departments and corrections in the care of TB patients." “Better follow up on positive TST, more awareness of TB symptoms in conjunction with positive TST.” "Think outside the box." “Apply what I learned at the training to my job.” “To be more proactive in stopping the spread of TB by quickly identifying signs and symptoms.” “Just having a better understanding of the risks and how to protect my staff and myself.” "Knowledge of managing TB has increased. I will be more likely to identify possible TB cases earlier." “I have to help Corrections develop a stronger system in controlling TB in the correctional facility. I have a lot of work ahead for me to do.” “Better understanding on what my job consists of.” “Making certain that a distance is maintained during an initial interview.” “We are more aware of the possibility of TB that presents as cold symptoms, we are paying closer attention to the questionnaire part of screening.” “Having this training has helped me to better understand, better organize, and better monitor our correctional cases.” “I am more aware of symptoms persistent with TB upon entering a correctional facility.” “Keeping inmates more than arm’s length” “I have a better understanding of the importance of good communication between health departments and corrections in the care of TB patients.” “Have more staff here at our CHD on board with working with correctional staff” “Paying more attention” “Better follow up on positive TST, more awareness of Tb symptoms in conjunction with positive TST”
Exchange of education to additional staff	"Things learned in this class were put to use the very next day in our clinical practice with a patient case that made the physician and I think TB as well in his presentation." “More education for employees and inmates. Better communication between security staff and medical.”

	"Take the information and place on training site the information for those that didn't attend this training." "Help nurses identify inmates I may recognize with possible symptoms." "The doors in our negative pressure rooms have food flaps that are not sealed so I have mentioned to the commander of the jail to have them sealed. Go into more details when asking our standard TB questions." "I was able to communicate with our local jail and provide education to their medical staff." "Retrained all nursing staff on proper reading of TST skin test." "Alerting nursing staff to be more aware of signs and symptoms of TB when evaluating the inmate population." "Informing staff of TB awareness, screening staff more closely" "Talking with nurses to let them know they need to pay attention to the diagnosis of the inmates they are administering the TB test to, and if the HIV inmates are having any of the symptoms they should be placed in isolation and sputums collected." "Proper teaching /education on administration of TST and how to properly read the result" "Have not made changes, but have provided some education to medical staff"
No changes needed	"No changes needed" "No changes needed at this time" "No need at this time" "Not Applicable to my job"

Research Question 4 (Qualitative). This question was weighed using comments at the end of the initial evaluation and the follow-up evaluation. Research question 4 is, "What are the challenges associated with the implementation of the desired change?" A total of 16 participants responded that they were not able to make changes to their facility; however, only twelve responded with specific information as to the challenges. The theme of the challenges are noted below:

- Too heavy a caseload (9%)
- Able to provide clarification and education to nurses, not able to make changes to facility (four participants noted this comment, 33%)
- Not in position to do so (three participants noted this comment, 25%)

- Unable to develop goals, but did education for nurses (four participants noted this comment, 33%).

Summary

The comments support the quantitative data regarding the training and the speakers. Analysis shows that the usefulness of the training overwhelmingly was very good to excellent in each of the trainings. The importance of recognizing "discordant results" when reviewing statistics as an exercise was demonstrated in the meeting of the objectives and comments noted in the section *Assuring Effective Evaluation of TB Control Programs in Corrections*.

The number of respondents to the follow-up survey was not enough to demonstrate that the training was adequate; however, it gave way to three themes; 1) Self Awareness; 2) Facility Improvement; and 3) No change needed. Many participants in the qualitative information stated that they were going to educate others as well, which will also facilitate change in the facility. Challenges and barriers were not clearly delineated, and although few responded to this question, a more in-depth qualitative study of interviews with participants several months after a training may show a better more comprehensive knowledge of what those barriers and challenges were.

The discussion and conclusions of these results, as well as the social change implications of this study will be described in chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This researcher's background consists of many years working in a short-term correctional facility and attending training by public health staff in many different aspects of infectious diseases. Currently, there are no evaluations documented regarding evaluation of training for corrections staff by public health. This study is a beginning toward evidence-based education for the corrections audience by public health. In reviewing articles and research papers discussing infectious diseases such as TB, it has been identified that although training is accomplished by public health, it is not always conducive to effecting a change within these facilities, nor is it concisely evaluated or documented. Many challenges are discussed throughout all the papers; however, very few address the staff and attitudes in these facilities, or the outcomes from the education given.

As the field develops more towards an evidence-based environment, one study has shown that corrections has also begun to look at the evidence for policy change (Crime and Justice Institute for Community Resources for Justice, 2009). Collaboration and education becomes a large part of how that evidence can be achieved. A greater number of studies that demonstrate change within staff and that look at current attitudes of custody and medical staff will be needed before long-term change can occur. Public health should make every effort to aid corrections' medical and custody staff to understand the importance of infectious diseases in these facilities, and the need for rapid identification and case management. Additionally, release planning is needed within these facilities that is effective for inmates not only being identified with infectious disease. Public health follow-up will also be needed to make communities safer as

infectious inmates transition into the community. To that end, the training forum that has been achieved since 2008 by the Southeastern National Tuberculosis Center has been effective as identified from preliminary evaluations. While this evaluative study does not show that the evidence is overwhelming, it does demonstrate that through collaboration and goal setting, small changes can be achieved. The evidence demonstrating the awareness being raised of this infectious disease is overwhelmingly positive, while there is minimal but some evidence to demonstrate long-term change within the corrections environment.

Interpretation of the Key findings of the Study

Although there is little in the literature regarding evaluation of training for corrections, the structure of this training follows the nine points in the Gagne-Briggs theory of instructional design as noted in Chapters 2 and 4. Having the tripod model of the three different disciplines in the target audience enhanced the learning through the sharing of information relevant to both the environment of corrections and the public health, as well as benefitting the community. This three-legged stool approach has long been used in many instances (DeWitt, 1996), and has important connotations for training of this type to be effective. Without one leg of the stool, it may topple and fall over. For this audience, this combination theory appeared to work and to be effective. As noted in one comment, information was used immediately upon returning to their facility and shared with the physician to quickly identify TB in an inmate. This is important information, as it demonstrates one of the most important points in the Gagne-Briggs theory, that of retention and transfer.

The snapshot of changes that were shown by participants' comments and the awareness that was raised about this disease was an important result of this training, and was shown in

additional qualitative comments from the participants. Quantitative data demonstrated that this training was relevant to this audience, effective in raising awareness, and that change was possible within the corrections environment, although greater change occurred within the medical staff over the custody staff within facilities. For policy change to occur, and long-term change to be determined, more data is needed. The challenges that staff faced working within the confines of corrections were not clearly articulated to understand fully the difficulties that may have been faced for change to occur. It will be important for follow-up with the facilities through the public health corrections liaisons if longer-term change is to happen.

Additional training for corrections liaisons will be needed to aid the process of follow-up and follow-through, and can be achieved through additional studies looking at the effectiveness of the liaison as a partner to the facility staff. Collaboration and communication are essential; however, training through case studies, the importance of how these diseases can impact this type of environment, and raising the awareness through training that is important to the facility staff will allow change to occur. Using terminology and exercises that officers and staff can relate to are important to enable this audience to understand the impact on what they do every day. Recognizing infectious disease before it becomes a problem is as important, necessary, and similar to releasing the wrong inmate. When you use examples that custody can relate to, the meaning becomes clearer, and they become more engaged in the need for change.

Initial evaluation data concluded that this training is effective in raising awareness and demonstrating small changes within facility staff. Increasing communication and collaboration between public health and medical staff working with inmates is essential for safe transition of inmates out into the community, especially when diagnosed with an infectious disease such as

tuberculosis. Custody staff and their role in ensuring safe transitions for inmates with infectious diseases can become clear to not only custody, but administration staff as well.

While this 1-day training was effective in making small changes, it will be essential to evaluate fully other courses, and demonstrate through evidence that a longer training similar to this one will be critical if real change is to occur in these facilities. There is strong evidence to support a longer training that is more specific to daily activities of custody and medical staff, and that through exercises, role-playing, and didactic demonstration, change can occur. More evaluation and research is needed; but in looking at the audience with the three different partners (custody, medical, and public health), it was clear that this was the best overall audience for allowing everyone to understand each other's roles and responsibilities, and for beginning the communication process.

Limitations of the Study

When reviewing the study, limitations included the challenge of using secondary data to ascertain change in correctional facilities. Data that has already been collected, while it was good data, it probably did not address to the fullest extent a policy change or change in recognition of TB within the facilities. Another limitation included the bias of the researcher, as she participated in the training process, but to some extent this bias was removed from this study by de-identifying the data. Additionally, the challenge of correctional facilities not having access to the internet may have impeded the follow-up evaluation response.

Recommendations

While this one-day training was important to raise awareness of infectious diseases in corrections, it is the recommendation of this researcher that more data is needed, including

follow-up studies to demonstrate if long-term change did occur. Many questions will need to be asked, including whether or not policy change occurred, or attitude change within the facility. Administrators will need to have input into additional studies to determine policy change. Public health will need to have input to determine smooth transitions for inmates released to their care. Additionally, longevity studies will need to be conducted to identify trends in communities with respect to decreases in transmission of infectious diseases. While we may never stop infectious diseases from entering correctional facilities due to the many risk factors for inmates, we can halt the transmission and increase the recognition of these diseases within the walls of these facilities, and the spread out to the community.

Additional studies must be done to establish the best training paradigm for this audience; however, one recommendation is to continue to research the three-legged stool approach for the audience. If transformation is to occur in these correctional facilities, administrative staff and others eager to effect change will be needed. The corrections liaison will be an important catalyst in identifying those willing to make modifications in existing policy and procedure, and use evidence-based data to help see those changes executed. Undertaking more studies to demonstrate effectiveness will begin that process.

Implications for Social Change

The implication for change for this study lies with the ability to demonstrate effectiveness within correctional facility staff to not only raise the awareness regarding TB, a critical infectious disease that has widespread applicability, but also to other infectious diseases within the corrections environment. For the individual, it has connotations of maintaining a safer community both within the walls of the facility, and also within the community where inmates

are released or staff work or reside. For society, this training can be applicable to any infectious disease anywhere in the world with minimal changes. As correctional facilities hold inmates or release them, it is the community that becomes a safer place from infectious diseases, or a place where diseases can be a challenge to control when not identified.

When using the Gagne-Briggs theory in developing and conducting training for this three-pronged audience (corrections custody and medical, and public health staff), the impact can be a stimulus for social change. However, the importance of having someone with knowledge in both corrections and public health is necessary for any change to be considered.

Conclusions

Using real-world benefits such as cost-benefit ratios, case studies, and making the case for raising the awareness within their own facility can begin the process of assimilation of change that is necessary when working with this environmental culture. This research has begun the process of evidence-based data to discuss the importance of recognizing infectious diseases within the corrections environment, but also to connect with public health when there is a need. As noted through the comments from this training, corrections staff does not have to be alone in this process, and when utilizing those experts in the community, such as public health staff familiar with infectious diseases, training not only becomes a win-win for staff and the community, but also for inmates who are either released or transferred, making a safer environment for all. Reviewing cases of TB in corrections is necessary to identify system failures and repair it before it becomes widespread into the community.

As stated before, we may never keep infectious diseases such as TB from entering correctional facilities due to the nature of the disease and the risk factors of inmates. We can,

however, halt the transmission of this disease through the awareness of staff and other inmates regarding the symptoms of the disease, and also the desire to make a change from complacency to action.

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Appendix A: Agenda for Arresting TB: Best Practices for Controlling TB in Corrections

Arresting TB: Best Practices for Controlling TB in Corrections

TIME	PRESENTATION	FACULTY
8:00 a.m. – 8:15 a.m.	Registration	
8:15 a.m. – 8:30 a.m.	Welcome and Introductions	Sheriff or Warden Local Health Department Administrator
8:30 a.m. – 8:45 a.m.	Overview of the Training	Trainer - RTMCC
8:45 a.m. – 9:30 a.m.	Case Presentation: When a Contact Investigation Becomes an Outbreak	Trainer - RTMCC
9:30 a.m. – 10:15 a.m.	TB Epidemiology and Concerns for Correctional Facilities	State Health Office Corrections Liaison
10:15 a.m. – 10:30 a.m.	Break	
10:30 a.m. – 11:15 a.m.	TB in Corrections: What You Need to Know!	Trainer – RTMCC or Corrections Liaison
10:45 a.m. – 11:45 a.m.	Exercise I: TB or Not TB	Facilitators - RTMCC
11:45 a.m. – 12:15 p.m.	Case Management, Contact Investigation and Discharge/Release Planning for TB in Corrections	Trainer – RTMCC or Corrections Liaison
12:45 p.m. – 1:30 p.m.	Lunch	
1:30 p.m. – 2:30 p.m.	Exercise II: Intake to Isolation	Trainers and Facilitators – RTMCC
2:30 p.m. – 3:30 p.m.	Assuring Effective Evaluation of TB Control Programs in Correctional Facilities	Trainers - RTMCC
3:30 p.m. – 3:45 p.m.	Break	
3:45 p.m. – 4:45 p.m.	Exercise III: Let's Talk TB	Facilitators - ALL
4:45 p.m. – 5:00 p.m.	Discussion and Questions	All
5:00 p.m.	Adjourn	

Appendix B

Initial Evaluation

Evaluation - Arresting TB: Best Practices for Controlling TB in Corrections

Arresting TB: Best Practices for Controlling TB in Corrections

Please enter your name and contact information below.

"All performance and satisfaction data collected during the training "Arresting TB: Best Practices for Controlling TB in Corrections" will be used to evaluate the program and will be used for research with the purpose of dissemination of generalizable knowledge about educational programs used at the SNTC. This data will remain confidential and will only be reported as a group. Our data collection process will not affect in any way your participation in this training."

Q1 SALUTATION

- ----
- Dr.
- Mr.
- Mrs.
- Ms.

Q2 This information will be used for your certificate.

- LAST NAME
- FIRST NAME
- MIDDLE NAME
- DEGREE(S)

Q3 Please enter the e-mail address you want your certificate to be e-mailed

- E-MAIL

Q4 CERTIFICATE TYPE

- Nursing CEU
- Medical CME
- Participation

If Participation Is Selected, Then Skip To ADDRESS TYPE

Q5 Please type your License Number for continuing education (CE) credits

_____

Q6 ADDRESS TYPE
- Work
- Home

Q7 Mailing Information
- STREET 1
- STREET 2
- CITY
- STATE
- ZIP
- COUNTRY
- WORK PHONE
- WORK PHONE EXTENSION

Q8 Choose the profession that best describes your role in TB:
- Administrator
- Administrative staff
- Epidemiologist
- Health Educator
- Laboratorian
- Mental Health Counselor
- Nurse
- Nutritionist
- Pharmacist
- Physician
- Physician Assistant
- Psychologist
- Social Worker
- Other, please specify _____

Q9 Which of the following most closely describes your primary work setting?

- Academic Health Center
- Correctional Facility
- Hospital
- Local Health Department
- Private Practice
- State health Department
- Other _____

Q10 How many years have you been working in the field of TB?

- Less than 1 year
- 1-5 years
- 6-10 years
- 11-20 years
- 21+ years
- Not Applicable

Q11 What percentage of your professional time is spent working on TB?

- 1-25%
- 26-50%
- 51-75%
- 76-100%

Q12 The next sets of questions are required for CE credit and are mandatory. Were you present for ALL lectures during this course?

- Yes
- No

Answer If The next sets of questions are required for CE credit and... No Is Selected

Q13 Were you present at Case Presentation?

- Yes
- No

If No Is Selected, Then Skip To End of Block

Q14 Case Presentation: Outbreak! What Happens When TB Goes Unrecognized in Correctional Facilities

	Excellent	Very Good	Average	Fair	Poor
Delivery	❍	❍	❍	❍	❍
Content	❍	❍	❍	❍	❍
Usefulness	❍	❍	❍	❍	❍

Q15 Did the instructor meet the objectives? By the end of the presentation, participants should be able to:

	Yes	No
Discuss the importance of recognizing TB symptoms in inmates to halt the spread of TB in congregate settings	❍	❍
Identify two challenges to the medical management of TB infected inmates	❍	❍
List the steps for follow-up of TB cases in the community or other facilities	❍	❍

Q16 Was the presentation free of commercial bias?

- Yes
- No

Q17 Do you feel that the time allotted to the presentation was appropriate?

- The time was appropriate.
- The time was longer than needed.
- The time was shorter than needed.

Q18 Please provide your comments and/or suggestions for improvement.

Answer If The next sets of questions are required for CE credit and... No Is Selected

Q19 Were you present at TB Epidemiology

- Yes
- No

If No Is Selected, Then Skip To End of Block

Q20 TB Epidemiology and Concerns for Public Health and Correctional Facilities

	Excellent	Very Good	Average	Fair	Poor
Delivery	❍	❍	❍	❍	❍
Content	❍	❍	❍	❍	❍
Usefulness	❍	❍	❍	❍	❍

Q21 Did the instructor meet the objectives? By the end of the presentation, participants should be able to:

	Yes	No
Describe two factors contributing to TB morbidity in the United States and in corrections	❍	❍
Identify and discuss current epidemiological challenges for tuberculosis in correctional facilities	❍	❍

Q22 Was the presentation free of commercial bias?

- Yes
- No

Q23 Do you feel that the time allotted to the presentation was appropriate?

- The time was appropriate.
- The time was longer than needed.
- The time was shorter than needed. (3)

Q24 Please provide your comments and/or suggestions for improvement.

Answer If The next sets of questions are required for CE credit and... No Is Selected

Q25 Were you present at What You Need to Know about TB in Corrections?

- Yes
- No

If No Is Selected, Then Skip To End of Block

Q26 What You Need to Know About TB in Corrections

	Excellent	Very Good	Average	Fair	Poor
Delivery	❍	❍	❍	❍	❍
Content	❍	❍	❍	❍	❍
Usefulness	❍	❍	❍	❍	❍

Q27 Did the instructor meet the objectives? By the end of the presentation, participants should be able to:

	Yes	No
Describe the pathogenesis of TB and recognize the difference between active TB disease and latent TB infection.	❍	❍
Identify the mechanism for transmission of TB and the need for isolation to prevent further spread within the corrections setting.	❍	❍

Q28 Was the presentation free of commercial bias?

- o Yes
- o No

Q29 Do you feel that the time allotted to the presentation was appropriate?

- o The time was appropriate.
- o The time was longer than needed.
- o The time was shorter than needed.

Q30 Please provide your comments and/or suggestions for improvement.

Answer If The next sets of questions are required for CE credit and... No Is Selected

Q31 Were you present at Effective TB Infection Control Programs in Corrections?

- Yes
- No

If No Is Selected, Then Skip To End of Block

Q32 Effective TB Infection Control Programs in Corrections

	Excellent	Very Good	Average	Fair	Poor
Delivery	❍	❍	❍	❍	❍
Content	❍	❍	❍	❍	❍
Usefulness	❍	❍	❍	❍	❍

Q33 Did the instructor meet the objectives? By the end of the presentation, participants should be able to:

	Yes	No
Illustrate the essential need for TB screening and testing of inmates and staff	❍	❍
Discuss an appropriate infection control measure when TB is suspected	❍	❍
Indicate two challenges when screening and transferring inmates in the corrections setting	❍	❍

Q34 Was the presentation free of commercial bias?

- Yes
- No

Q35 Do you feel that the time allotted to the presentation was appropriate?

- The time was appropriate.
- The time was longer than needed.
- The time was shorter than needed.

Q36 Please provide your comments and/or suggestions for improvement.

Answer If The next sets of questions are required for CE credit and... No Is Selected

Q37 Were you present at Exercise 1 - TB or Not TB?

- Yes
- No

If No Is Selected, Then Skip To End of Block

Q38 Exercise 1 - TB or Not TB?

	Excellent	Very Good	Average	Fair	Poor
Facilitation	❍	❍	❍	❍	❍
Applicability	❍	❍	❍	❍	❍
Usefulness	❍	❍	❍	❍	❍

Q39 Do you feel that the time allotted to the presentation was appropriate?

- The time was appropriate.
- The time was longer than needed.
- The time was shorter than needed.

Q40 Please provide your comments and/or suggestions for improvement.

Answer If The next sets of questions are required for CE credit and... No Is Selected

Q41 Were you present at TB Case Management, Contact Investigation, and Release Planning?

- Yes
- No

If No Is Selected, Then Skip To End of Block

Q42 TB Case Management, Contact Investigation, and Release Planning

	Excellent	Very Good	Average	Fair	Poor
Delivery	❍	❍	❍	❍	❍
Content	❍	❍	❍	❍	❍
Usefulness	❍	❍	❍	❍	❍

Q43 Did the instructor meet the objectives? By the end of the presentation, participants should be able to:

	Yes	No
Associate the roles of corrections and public health in TB case management and contact investigation	❍	❍
Identify two areas of need for TB case management when inmates return to correctional facilities from the community or other facilities	❍	❍
Discuss two opportunities for continuity of care through communication and collaboration for release planning for inmates with tuberculosis	❍	❍

Q44 Was the presentation free of commercial bias?

- Yes
- No

Q45 Do you feel that the time allotted to the presentation was appropriate?

- The time was appropriate.
- The time was longer than needed.
- The time was shorter than needed.

Q46 Please provide your comments and/or suggestions for improvement.

Answer If The next sets of questions are required for CE credit and... No Is Selected

Q47 Were you present at Exercise 2 - Intake to Isolation Skit.

- Yes
- No

If No Is Selected, Then Skip To End of Block

Q48 Exercise 2 - Intake to Isolation Skit.

	Excellent	Very Good	Average	Fair	Poor
Facilitation	❍	❍	❍	❍	❍
Applicability	❍	❍	❍	❍	❍
Usefulness	❍	❍	❍	❍	❍

Q49 Do you feel that the time allotted to the exercise was appropriate?

- The time was appropriate.
- The time was longer than needed.
- The time was shorter than needed.

Q50 Please provide your comments and/or suggestions for improvement.

Answer If The next sets of questions are required for CE credit and... No Is Selected

Q51 Were you present at Assuring Effective Evaluation of TB Control Programs in Correctional Facilities?

- ❍ Yes
- ❍ No

If No Is Selected, Then Skip To End of Block

Q52 Assuring Effective Evaluation of TB Control Programs in Correctional Facilities

	Excellent	Very Good	Average	Fair	Poor
Delivery	❍	❍	❍	❍	❍
Content	❍	❍	❍	❍	❍
Usefulness	❍	❍	❍	❍	❍

Q53 Did the instructor meet the objectives? By the end of the presentation, participants should be able to:

	Yes	No
Conduct and document evaluation of a correctional facility's TB program as part of a comprehensive quality improvement plan (1)	❍	❍
Interpret data to determine opportunities for change to support TB programs in correctional facilities (2)	❍	❍
Demonstrate through exercises the importance of recognizing discordant results when reviewing statistics and quality improvement documents for TB in Corrections (3)	❍	❍

Q54 Was the presentation free of commercial bias?

- o Yes
- o No

Q55 Do you feel that the time allotted to the presentation was appropriate?

- o The time was appropriate.
- o The time was longer than needed.
- o The time was shorter than needed.

Q56 Please provide your comments and/or suggestions for improvement.

Answer If The next sets of questions are required for CE credit and... No Is Selected

Q57 Were you present at Exercise 3 – Let's Talk TB.

- o Yes
- o No

If No Is Selected, Then Skip To End of Block

Q58 Exercise 3 - Let's Talk TB!

	Excellent	Very Good	Average	Fair	Poor
Facilitation	❍	❍	❍	❍	❍
Applicability	❍	❍	❍	❍	❍
Usefulness	❍	❍	❍	❍	❍

Q59 Do you feel that the time allotted to the exercise was appropriate?

- o The time was appropriate.
- o The time was longer than needed.
- o The time was shorter than needed.

Q60 Please provide your comments and/or suggestions for improvement.

Q61 General Comments:

Q62 Overall, how would you rate this training? KEY: 0 = not useful, 5 = fairly useful, 10 = extremely useful

0 Not Useful
1
2
3 Somewhat Useful
4
5 Fairly Useful
6
7 Very Useful
8
9
10 Extremely Useful

Q63 What changes will you make in your practice or program as a result of this training?

Q64 The training material was prepared specifically for this course. We would appreciate your feedback on the materials provided. Please rate the following:

	Excellent	Very Good	Average	Fair	Poor
Content of presentations	❍	❍	❍	❍	❍
Usefulness of presentations	❍	❍	❍	❍	❍
Comprehension of presentations	❍	❍	❍	❍	❍
Course materials	❍	❍	❍	❍	❍

Q65 Please rate these aspects of the training:

	Excellent	Very Good	Average	Fair	Poor
Audio quality of the training event	❍	❍	❍	❍	❍
Visual quality of the training event	❍	❍	❍	❍	❍

Q66 Do you have any additional comments and/or suggestions for how this training could be improved?

Q67 Do you have suggestions for topics/presentations for future programs?

Appendix C

Follow up Evaluation

Arresting TB: Best Practices for Controlling TB in Corrections - Follow-Up Evaluation

Thank you for participating in our follow-up evaluation for the December 2, 2014 Arresting TB: Best Practices for Controlling TB in Corrections Course. Your feedback is important to us.

All performance and satisfaction data collected during the Follow-up Evaluation will be used to evaluate the program and for research with the purpose of dissemination of generalizable knowledge about educational programs used at the SNTC. These data will remain confidential and will only be reported as a group. Our data collection process will not affect in any way your participation in this training.

Q1 Since the training, were you able to make any changes to your work in TB as a result of this program?

- ❍ Yes (1)
- ❍ No (2)

Answer If *Since the training were you able to make any changes to your work in TB as a result of this program* . . . **Yes** . . . Is Selected

Q2 What were those changes?

Answer *If Since the training were you able to make any changes to your work in TB as a result of this program* . . . **No** . . . Is Selected

Q3 Why not?

Answer If *What were those changes? . . .*Is **Not Empty**

Q4 In your original course evaluation you stated that you were planning to make the following changes . . .

Answer If *In the original evaluation you stated that you were planning to make the following changes . . .* **Is Displayed**

Q5 Were you able to make those changes?

- Yes (1)
- No (2)

Answer If *Were you able to make those changes?. . .* **Yes** Is Selected

Q6 Any comments you would like to share?

Answer If *Were you able to make those changes?. . .* **No** Is Selected

Q7 Why not?

Q8 Now that you've had some time to apply what you learned from the course to your work, what additional topics should be added to the course? Please list below.

Appendix D

Letter of Cooperation

March 30, 2015

Dear Ms. Murray,

Based on my review of your research proposal, I give permission for you to conduct the study entitled *Evaluating the effectiveness of training for custody and medical staff using a public health corrections liaison* within the Southeastern National Tuberculosis Center. As part of this study, I authorize you to use evaluation data from prior courses that have been conducted between 2010 and 2014. Individuals' participation has already been identified and was voluntary and at their own discretion through completion of the evaluation data.

We understand that our organization's responsibilities include: providing the data for evaluative purposes, analyzing the data, and disseminating the analysis once completed. We reserve the right to withdraw from the study at any time if our circumstances change.

The student researcher will be responsible for complying with our site's research policies and requirements, including submission of the proposed research to the University of Florida IRB.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,