SOCIAL MEDIA AND PUBLIC HEALTH: PERSPECTIVES ON IMPLEMENTING A SOCIAL MEDIA PRESENCE FOR A PUBLIC HEALTH ORGANIZATION

By

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To my wife, Amy, and three amazing and talented boys for their support and allowing me to continue on this wild endeavor

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Using the theoretical framework of Rogers' Diffusion on Innovation Model, the purpose of this study was to capture and describe the decision-making process of a start-up public health organization determining whether to implement a social media presence through the perspective of various stakeholders. Using Rogers' model allowed for an examination of the elements of social media as an innovation as well as examining the decision making process, the process of diffusion of social media in public health, and understanding the different characteristics of adopters of this innovation. The five designated decision-makers for a new public health training center, supported by two large public universities, were interviewed on three occasions to gauge their personal experience with social media, their thoughts on social media and public health, as well as their perceived positive and negative outcomes implementation could bring to their center. Documenting this process allows other public health organizations, and perhaps organizations outside of public health, the opportunity to see which factors caused the most deliberation by the stakeholders in their efforts towards a decision. The results of this study, guided by the experience and knowledge of successful public health educators and administrators gives an accurate description of

the issues related to using social media more within the field of public health. In conclusion an action plan for the center was shared and suggestions for future research are provided.

CHAPTER 1
INTRODUCTION

Since starting my doctoral program at the University of Florida, I have been fortunate to experience growth and new opportunities in my professional career. At the start of my formal studies in educational technology I was a practicing teacher of social studies at the high school level, as well as an adjunct instructor at a local college. My experience in educational technology related to my own practice within my classroom, as well as a few opportunities to design online courses at the college. One of my first projects in my courses at the University of Florida related to formal usage of social media in academic courses. I proceeded to create a project based on using an official Facebook page as a supplemental communication tool for my Advanced Placement (AP) history courses. This was an extraordinary experience for me as a teacher and for my students who responded with highly engaged academic participation. I enjoyed this application of a tool many students were already incorporating in their lives, as well as the coding and data analysis of the posts themselves. In early 2012, however, I took on a new position with the College of Public Health job as an Online Course Coordinator at the University of Florida. Subsequently, I began to apply and question the applications of my previous Facebook study within the context of Public Health. Soon I began learning more about the similarities and differences of how educators and public health workers approach social media.

After starting my new position, now responsible for the creation, distribution, and facilitation of new professional development courses for public health workers I attended a presentation by Jay Bernhardt, Ph.D. on the usage of social media within public health. During his presentation Dr. Bernhardt noted that the network for state's public

health workers was filtered during the work day which blocked many of the new innovations matching social media and public health. Originally, I approached my potential work from the perspective of the public health worker, and the access to social media in the work environment. Over time, as my investigation deepened, I became more interested in the entirety of the issue. Interestingly, I heard conflicting comments from both sides. The public health workers were not requesting access to public health social media sites because they did not see a lot of quantity and quality options, at the same time organizations were reluctant to create sites due to the lack of access by the workers. Ultimately, due to my unique opportunity to analyze a start-up operation, I became most interested in capturing the decision-making process of whether or not to implement a social media presence for the training center.

Purpose of the Study

The purpose of this study was to capture and describe the decision-making process of a start-up public health organization determining whether to implement a social media presence through the perspective of various stakeholders. Documenting this process allows other public health organizations, and perhaps organizations outside of public health, the opportunity to see which factors caused the most deliberation by the stakeholders in their efforts towards a decision. Furthermore, the interviews with these stakeholders also showed the context of their opinions and personal experience with social media, allowing one to see how these factors related to their recommendations for the center. Paired with the literature review, highlighting new applications of social media as well as effectiveness of usage, one can also see how current research on public health and social networking sites relates with the factors discussed by the decision makers.

The Research Question

What are the perspectives of varying stakeholders within a public health training center regarding potentially adopting and using social media to advance its goals and mission?

Background

This capstone study was conducted within a case-study model focusing on the Rural South Public Health Training Center (RSPHTC), a collaborative effort between the University of Florida and the Florida Agricultural and Mechanical University. The training center's charge is to train public health workers with special emphasis on rural settings and HIV/AIDS (Rural South Public Health Training Center Grant Application, 2011). A review of this training center's website and 37 others nationwide reveals 20 currently have a social media presence using Facebook; five of those maintain a Twitter page. Currently, these centers use these social media platforms for advertisement of center and community events, as well as offering links to other resources and research for specific area of specialty.

This study provides a thorough presentation of many factors common to many organizations related to the implementation of social media. Focusing on public health specifically, however, allows the investigation to center on a field of immense global importance. Considering the vast amount of individuals working in public health, and our society protected by public health initiatives, it would be difficult to determine an examination of social media in a more significant context. The decision to focus on social media within this field also illuminates several key issues within public health.

To start, many current public health workers did not go to college to study within a public health field. Recent budget cuts have halted opportunities for conferences and

travel for further educational opportunities (Gebbie & Turnock, 2006). Budget cuts, as well as staff reduction of some county departments in Florida places stress on the system and communities (Rural South Public Health Training Center Grant Application, 2011). Employees are now taking on more responsibilities, tasks beyond their scope of expertise, and are now further reducing their time for training or collaborating with others in the field.

In my new position as Coordinator of Online Learning for the RSPHTC at the University of Florida, I strive to assess all of the available options to better educate the state's public health workforce. The center has a charge to offer educational opportunities related to HIV/AIDS, as well as to direct its attention to counties which are medically underserved. When working within a start-up public health training center, there are simultaneous efforts to build a strong long-term foundation while also working on quickly creating a working infrastructure with educational content. Since its creation the center has worked with the following mission statement:

> to address the looming public health work force crisis by providing two levels of advanced training for public health professionals with the goal of improving the skills of current public health workers. The center will focus on the needs of medically underserved areas of the state. This aim will be achieved by assessing the needs of medically underserved areas in the state, establishing and carrying out community based projects in collaboration with state and community partners, and providing field placements for Master of Public Health students in medically underserved areas (Rural South Public Health Training Center Grant Application, 2011).

All of the center's online courses and sessions, however, expand beyond these topics and are available for continuing education credits to all of the state's public health workers and to workers nationwide. To facilitate this training the center, through the University of Florida, offers a new one-to-two hour continuing education course available online monthly, in addition to formal academic courses and certificate

programs. The center has traditionally used its website, mailings, and live sessions throughout the state aiming to educate and market to the public health workforce. To date, the training center has chosen not to use social media in favor of hiring staff, building a website, and constructing formal continuing education and academic courses. As the first year of the center's existence has been completed, the management team is considering ways to grow its course participation, as well as engage in dialogue with public health workers in rural settings. Although competition is strong from the other 37 training centers, as well as various webinars and materials posted online, the RSPHTC wants to surpass its mandated goals within its grant to train 175 public health workers per year (Rural South Public Health Training Center Grant Application, 2011).

The Health Resources and Services Administration (HRSA), the main funding source for the center, stipulated that a goal of 175 unique trainees for each year of the four year grant (Health Resources Services Administration, 2011). Unique trainees refer to each individual who completes training, regardless if the/she takes only one course or multiple sessions. In its first year, the center came close to its goal, with 173 trainees; however management feels enrollment needs to be higher to surpass benchmarks and excel in a crowded field offering services. The RSPHTC's management also feels that its method of providing formal academic courses and monthly continuing education sessions has only allowed for information to be disseminated from the center, however, dialogue with rural county public health workers is lacking (Rural South Public Health Training Center Grant Application, 2011). Social media is being considered as a tool to help facilitate a solution to this challenge, which

is also driven by its ability to eliminate distances of the counties from the center and from one another.

Since its January 2012 online launch, there continues to be debate on the overall goals of the grant, how to achieve those goals, and what ultimately defines success. Currently, the center works to push out new public health information in formal and informal means through its website, academic courses, and live sessions. While many other centers use some social media tools, the RSPHTC center does not. With the exponential growth of social media globally, including more usage in educational settings, the question was raised as to whether the center should use social media, and how it should be used. To capture this decision making process towards possible implementation, a case study model was used to evaluate a snapshot of the center's important stakeholders' perceptions as they began considering a social media presence. Using face-to-face interviews, information was gathered highlighting the spectrum of those involved with the project's wishes and concerns for the possible inclusion of social media for the center. Ultimately, the purpose of this study, guided by the research question, is to capture the decision-making process of a start-up public health organization through the perspective of various stakeholders as they consider the potential of social media as a communication tool for public health workers.

Significance of the Study

Like many states, Florida's Department of Health maintains a Facebook page and Twitter feed. These sites, packed with announcements and guides for healthy living, are unavailable to public health workers while at work. At this point, considering so much is driven in public health by state and county governmental agencies, the usage and promotion of social media for public health workers is ambiguous (Paul &

Dredze, 2012). Similar to the technology policies of various school districts, county public health departments vary on what technology tools they make available for their employees.

In Florida, each county health department is linked to the state's Department of Health computer infrastructure. According to Russell Norvell, IT Director for the Alachua County Health Department, this Internet filter allows general access to sites like Facebook and Twitter within his county's department, There is, however, a warning message that pops up reminding employees that they are being monitored and the sites can only be used for professional purposes (R. Norvell, personal communication, June 15, 2012). Other counties in Florida, however, have restricted these sites altogether with additional filters. With public health worker's access to social media at work potentially restricted, and usage at home still being researched, public health organizations need to consider their potential investment in social media as an education tool before creating online platforms. Additionally, with budgets, staffing, and resources often stretched thin, it is necessary for health organizations and managers to fully assess their desire and ability to participate and maintain an active social media presence.

According to Christie Goss, the Director of Communication for the State of Florida Department of Health, the usage of social media has been used and found to be helpful for the state (C. Goss, personal communication, January 15, 2013). Specifically, Ms. Goss highlighted the state's partnering with local health departments to use all means necessary, including social media, to spread the word for being prepared when Tropical Storm Debbie approached Florida (C. Goss, 2013). Furthermore, the state has

found announcements related to accessibility of flu shots have been very popular on its Facebook page (C. Goss, 2013). While the state does maintain its own Facebook page, Mrs. Goss acknowledges that various concerns have halted the department from allowing access by public health workers while at work (C. Goss, 2013). Ms. Goss acknowledges social media can be powerful for marketing a message, but feels misinformation or a breach of privacy can quickly destroy people's faith in communicating through these tools (C. Goss, 2013). Ms. Goss also stated the lack of training for acceptable usage by state workers, and the concern for viruses coming through the network, are also slowing the state's implementation policies (C. Goss, 2013). In the end of our discussion, however, Ms. Goss stated that she was interested in reading my study to learn more about potential usage in public health, as well as learn how another large scale organization approached social media decisions.

One of the key goals for this study is to investigate the usage of social media paired with the field of public health. In the field of public health, still defined by its 1920s label, as the "science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals" there is more access to health related social media than ever before, but many barriers for usage remain (Frieden, 2010, p. 590). Considering personal participation in social networking continues to grow throughout the United States, some researchers have begun examining the effects social media has for our nation's public health (Chou, 2009).

To date, there have been a few studies, including the work of Chou (2009), that show the quantifiable usage of social media sites used by public health workers. These

studies help to paint a picture of the potential of social media with public health, while addressing factors which need to be considered when debating implementation. In Chou's study (2009) there was a statistical breakdown of how many state health departments are using social media sites, which sites they are using, and a survey of public health workers determining which social media sites they were aware of and had used. Further research continues, including a new meta-analysis, to compile how public health workers are using social media (Thackery et al., 2012). This study is determining which fields of public health are being examined the most within social media, whether public health workers are using the sites for personal or professional use, what effects the usage is having with treatment and outreach in the community, as well as social media's ability to get messages out to the public during emergency situations (Thackery et al., 2009).

In considering whether public health workers should increase the usage of social media, as a professional tool, one must consider the potential risks and rewards. Current research has shown both positive and negative implications between social media and those working in public health (Chou, 2009). One positive consideration is the ability of social media to connect professionals who have similar interests and situations. Using specific Facebook groups, or Twitter hash tags which enables searches by specific word choices within tweets, allows public health workers from around the world to come together and communicate on health resources, care, and support. Another aspect of social media which can also benefit public health workers is the amount of information shared by patients. Often, doctors and public health workers are bound by confidentiality so they are unable to exchange specific aspects of cases;

however, on social media sites the patients are often contributing a lot of information related to their cases which allows for more common knowledge for professionals (Chou, 2009).

Social media has its drawbacks as people can post information which is untrue or unverifiable. A recent online investigation related to whether children should receive a certain vaccine, which scientific research advocates, showed that more than half of MySpace comments on the subject were against getting the vaccine and nearly a third of YouTube videos advocated against, promoted distrust, or emphasized risk (Hanson et al., 2012). Furthermore, several research projects to date have also shown dependence on the Internet to pass along public health messages often causes a divide between those who have Internet and those who are living in low socio-economic conditions who do not (Chou, 2009). Providing information and professional development online, including social media, might cause a further divide between areas with unequal access to technology tools.

In conclusion, this study specifically set out to document a behind the scenes decision-making process of a public health organization determining if they want to allocate the resources to implement a social media presence. Having access to a large grant-funded project, managed by two state universities, still in its start-up phase provided a unique opportunity to witness and document very experienced health and university administrators discuss possible implementation of SNS for their center. With an accompanying literature review, showing the history of public health and possible applications of social media, one also gets an overview of potential usage in the field. With interviews focusing on the stakeholders experience, attitudes, thoughts on usage,

and potential issues with implementation, this study can help other public health training centers guide their own related decisions. Considering many of the elements discussed, and uncovered, are universal issues many organizations face when considering the use of various technology tools, this study can also be applied to many organizations outside of public health. In the end, this study provides a contemporary look at the usage of social media in public health, examines the positive and negative aspects of various technology tools, and offers a rare unfiltered look at the factors which go into making decisions for technology implementation.

Summary

This Introduction outlines the issues related to potential social media implementation within public health, as well as background information on the RSPHTC as it embarks on its decision-making process as to whether to provide a social media outlet to healthcare workers. This study was designed to incorporate current research on the applications, and highlight considerations for using social media as an educational and professional development tool in the field of public health. Furthermore, the study more deeply examines the characteristics of the RSPHTC, while illuminating the thought process of the center's stakeholders and decision. Results of this study compare the center's stakeholders' perceptions with academic research on the topic. Further, the results of this study allow others in public health organizations, as well as those in other fields, to see how another organization approached the implementation of social media.

This study develops throughout the next four chapters, including chapters on; Literature Review, Methodology, Results, and Discussion. Chapter 2, Literature Review, highlights foundational works relating to public health, social media,

educational technology as well as examples of social networking usage within public health. Chapter 3, Methodology, outlines the theoretical framework, how the study was constructed, and the data analysis and collection. Chapter 4, the Results section, presents the outcomes of the data analysis. Finally, Chapter 5, the Discussion, examines the results as they pertain to new practice, implementation, limitations, and future research.

Operational Definitions

- CONSTRUCTIVISM **–** A learning theory, and approach to education, which allows students to experience an environment first-hand, allowing the student to act upon the environment to acquire and test new knowledge in context with previous knowledge.
- HASHTAG **-** Short messages on microblogging social networking services such as Twitter or Google+ may be tagged by including one or more with multiple words concatenated. Hashtags provide a means of grouping such messages, since one can search for the hashtag and get the set of messages that contain the specific word or phrase
- FACEBOOK **-** Is a social networking site where users must register before using the site, after which they may create a personal profile, add other users as friends, and exchange messages, including automatic notifications when they update their profile.
- PUBLIC HEALTH **–** The science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals.

- SOCIAL MEDIA **–** The means of interactions between people, in which they create, share and exchange information in virtual communities and networks.
- SOCIAL NETWORK SITES (SNS) – An online service that facilitates the building of social relations among people who share interests, activities, and backgrounds as told through their profiles.
- TWITTER **-** An online social networking service and microblogging service that enables its users to send and read text-based messages of up to 140 characters, known as "tweets".

CHAPTER 2
LITERATURE REVIEW

Theory

Since the early 1900's sociologists have been researching the diffusion of new ideas and practices throughout society. While many claim Tarde's 1903 book, *The Laws of Imitation,* as the beginning of the study in diffusion of innovations, contemporary research relates better with Ryan and Gross' 1943 agricultural study (Wejnert, 2002). In the early 1940s a small group of farmers in Iowa were successful with the first hybridization of different corn variations, so Ryan and Gomes set out to track the spread of usage from this initial group of farmers (Wejnert, 2002). Over the next 60 years, over 4,000 publications appeared on the diffusion of various innovations including work on technologies, fertility-control methods, policy innovations, and political reforms (Wejnert, 2002). As diffusion research continued to build, the field was hindered by the fact that analysis of the respective sets of variables in different studies was being conducted in isolation using different methods. The work of Everett Rogers (1983) set out to correct this situation by integrating concepts, variables, and processes into a conceptual framework focused on what influenced diffusion of innovations. Ultimately, the focus shifted to the nature of each variable and its importance to the process of adoption, and not on every detail of its effects.

The Diffusion of Innovations theory is one which seeks to explain how, why, and at what rate new technology and ideas spread through a culture (Rogers, 1983). In essence, diffusion can be defined as a process in which a new innovation is communicated through a certain period of time, through various channels, among a social system (Rogers, 1983). Rogers work has various layers including determining

what elements are involved with the diffusion investigation, decision making classifications, as well as examining a process for identifying the mechanism of adopting new innovations (Rogers, 1983). This project specifically related to the element of innovation, which Rogers himself defines as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (Rogers, 1983, p. 11).

The case study into the RSPHTC’s potential implementation of a social media presence followed the work of Everett Rogers (1983) and his model of diffusion. Rogers’ diffusion model has numerous aspects and perspectives, many of which provided the theoretical framework for this study. Primarily, the diffusion model looks at four characteristics related to the diffusion of an innovation; elements of the innovation, types of decisions, the adoption process, and characteristics of adopters. To start, the diffusion model examines the elements of diffusion (see Table 2-1), through; innovation, communication channels, time, and social system (Rogers, 1983). A second component of the diffusion model is to focus on types of decisions. Rogers states that two factors help determine the type of decision, including whether the decision is made freely as well as who makes the decision (Rogers, 1983). From there, Rogers classifies three types of decisions (see Table 2-2); optional innovation, collective innovation, and authority innovation (Rogers, 1983). Optional innovation decisions are ones made by an individual who is in some way distinguished from others in the social system (Rogers, 1983). Collective decisions relate to ones which are truly made by the collection of all individuals in the social system (Rogers, 1983). Finally, Rogers defines authority innovation decisions as one where the decision for the system is made by an individual, or individuals, who have positions of power (Rogers, 1983). These three

types of decisions were important in understanding the process for how the RSPHTC would decide on SNS implementation. While the interviews were conducted in equal time with each designated decision maker, it was important to uncover if the collective voice would come to a consensus on the issue, or if the decision ultimately would come from one person within the group.

In addition to examining the elements and decisions of an innovation, two other major aspects of Rogers' diffusion model were to define the adoption process and characterize different levels of adopters. Rogers lists five stages for the adoption process (see Table 2-3) of an innovation, including; knowledge, persuasion, the decision, implementation, and confirmation (Rogers, 1983). In the knowledge phase a potential adopter becomes aware of an innovation, but is not yet inspired to learn more, as that potentially occurs in the persuasion phase (Rogers, 1983). After weighing the pros and cons of the innovation, an individual works to decide on the innovation and if it is adopted the implementation phase would begin. If the initial implementation is successful, then the adoption is confirmed. In the final major component of the diffusion model, Rogers applies characteristics to five categories of adopters related to when they chose to adopt an innovation (see Table 2-4). Innovators are the first people to take on an adoption and often incorporate the most risks and rewards (Rogers, 1983). Early adopters are the second fastest adopters and tend to be younger people with high social status (Rogers, 1983). The majority of society is then grouped into two categories, the early and late majority (Rogers, 1983). Finally, Rogers classifies those who are the last to adopt an innovation as laggards (Rogers, 1983).

In applying Rogers' diffusion model to the RSPHTC social media study, the interview questions were grounded thoroughly. The researcher asked questions related to all aspects of the innovation which could be considered by the stakeholders. For a complete examination, and narrative, of the RSPHTC's decision making process on implementing a potential social networking presence, the researcher considered the innovation itself, the type of decision which can be made, the process of making the decision, and the personal experience and motivation of the potential adopters. In considering Roger's work on elements, decisions, processes, and rate of adoption the diffusion model best captures all aspects of the potential adoption for others to read and apply to their environment. Rogers' elements of defining innovation and the characteristics of adopters guided the questionnaire; other aspects of the theory helped frame an understanding of how this innovation has spread throughout the field of public health.

Beyond the four major components of the diffusion model, Rogers' work also takes into consideration the factors of the innovation which influence decisions of adopters. These intrinsic characteristics of the innovations (see Table 2-5), include: relative advantage, comparability, complexity, "trialability", and "observability" (Rogers, 1983). An innovation has a better chance for adoption if there is a perceived relative advantage, or is an improvement over a previous generation (Rogers, 1983). Likewise, adopters must consider how compatible the innovation is to be assimilated into an individual's life; usually dependent on how complex or simple the innovation is perceived (Rogers, 1983). Furthermore, many adopters want to have easy, low cost, access to an innovation on a trial basis before committing to incorporating the adoption

on a full-time basis. Finally, Rogers explained how innovations which are easily observable use their visibility to drive communication throughout social systems and ultimately result in greater adoption (Rogers, 1983).

According to Rogers, it does not matter to the individual if an innovation has actually been recently created or enhanced, as human behavior will be the same if the idea seems new (Rogers, 1995). For example, social networking sites have been adopted by millions of users over the last few years; however, if a RSPHTC stakeholder was not currently using one of these tools, the interview was able to capture some initial reactions to their implementation as if the tools were brand new tools. Another important research question for diffusion scholars to consider is how earlier adopters are different from later adopters of an innovation (Rogers, 1995). Baseline questions for the RSPHTC stakeholders examine each person's familiarity with social networking tools, and how long they have been potentially using their tools. Thus opinions on adoption can be weighed with these data.

Rogers also points out that the words innovation and technology are not synonymous. There are numerous innovations which do not involve technology; likewise innovation which involves new technology often has various perspectives beyond the tools themselves (Rogers, 1995). As Rogers examines elements of innovations he highlights how diffusion involves communication channels. He describes a communication channel can be described as the way one person unfamiliar with the innovation learns about it from an informed person or entity (Rogers, 1995). The most common forms of communication include mass media and interpersonal channels (Rogers, 1995). Those who can best market new innovations often are good at

identifying communication channels and change agents which create awareness at high levels.

While various forms of behavioral science research are timeless, time cannot be ignored as a variable as it becomes a crucial element in the diffusion process. When considering diffusion, time is often deliberated in three ways; a) total amount of time elapsed between knowledge of an innovation, b)total amount of time elapsed between knowledge of innovation and adoption, and c) total amount of time elapsed between knowledge of innovation and rejection (Rogers, 1995). Rogers explains that these innovation-decision processes usually follow a time-ordered sequence of knowledge, persuasion, decision, implementation, and confirmation (Rogers, 1995).

Another way to gauge time of diffusion is by how early or late one adopts an innovation after it has been introduced, relative to others in the same system (Rogers, 1995). If an innovation is adopted within a system, time can also be used to measure how quickly it is picked up by the majority of members within a system. In addition to examining the time of innovation implementation, one also needs to consider the social system with which diffusion occurs. The social system constitutes a boundary where diffusion occurs, ultimately affecting an innovation's diffusion in several ways (Rogers, 1995). Different social systems have different variables, such as norms on diffusion, roles of leaders and change agents, different types of innovation-decisions, ultimately all affecting the spread and time of diffusion (Rogers, 1995).

While sociology has long been interested in determining how innovations spread across groups, changes in technology and globalization have pushed for more formal modeling processes. The Diffusion of Innovation conceptual framework is derived by

grouping diffusion variables into three components (see Table 2-6): characteristics of innovation, characteristics of innovators, and environmental context (Wejnert, 2002). The first category, characteristics of innovations, relates to consequences and benefits of the change. Whether it is a person, a school, or a business contemplating a new innovation, the public and private consequences need to be considered (Wejnert, 2002). Likewise, one needs to calculate the cost and benefits of implementing change versus the potential costs of choosing to not accept the innovation. Woven into consideration of the innovation's characteristics are the perceptions of those potentially choosing the innovation. Decision makers often come from different socioeconomic backgrounds and environments, as well as having vastly unique personal characteristics (Wejnert, 2002). These perspectives need to be considered by researchers, in addition to understanding how much background information one possesses in the field of the innovation (Wejnert, 2002).

In addition to understanding the unique aspects of the innovation, and those potentially deciding on implementation, one needs to also consider environmental context. One fundamental element seen when examining numerous innovation adoptions is that the success of innovations is not independent of environmental context, but rather the adoptions evolve in specific ecological and cultural context (Wejnert, 2002). Environmental context variables fall into four sub-categories: geographical settings, societal culture, political conditions, and globalization and uniformity (Wejnert, 2002). Geographical setting variables could be represented by climate, weather, or soil conditions for an agricultural study. Relating to many technology based diffusion models, geography can include how close individual actors

are to others with knowledge of new innovations. Often one sees quicker diffusion, relating to new technology tools, in urban versus rural settings (Wejnert, 2002). Societal culture variables include belief systems, such as values, norms, language, religion, and ideology within an environment (Wejnert, 2002). The levels of traditionalism, homogeneity, and socialization within an environment can also impact the speed and effectiveness of diffusion (Wejnert, 2002). For example, Japan tends to still use faxes more than email as the country's belief is that a fax is more personal fits into their traditionalism and culture, the reverse of the United States (Wejnert, 2002).

In addition to geography and social culture, politics and globalization also impact diffusion studies. Political situations can often inhibit adoption of innovation, as policies, structure of government and bureaucracies can postpone opportunity (Wejnert, 2002). Often technology innovation spreads quickly through small private organizations, versus inter-connected government agencies which need to use collaborative policies agreed to by many (Wejnert, 2002). Considering the RSPHTC is a federally funded grant, with benchmarks, that is managed by two large public universities it is important to consider the effects of bureaucracy. Decisions made by the center often need to be considered by the management team, the advisory board, and the regulations of each individual university represented. Finally, some variables reflect the view that the contemporary world in modern countries is one cultural community, and global uniformity makes for a cohesive process of evolution (Wejnert, 2002). For example, many feel the adoption of global technology is uniform as it is facilitated by multinational corporations (Wejnert, 2002). Furthermore, many diffusion models of new technical innovations often demonstrate the push in all directions by media of the Western world (Wejnert, 2002).

Public Health

The foundation of this investigation centers on the cross-section between educational theory and public health services while the specific focus of this research project is to capture viewpoints within the decision-making process of a public health entity choosing whether or not to implement social media. Public health is still defined by its long-standing label by Winslow from 1920 as the "science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals" (as cited in Frieden, 2010, p. 590). Today the term public health covers modern fields such as general medical practice, epidemiology, speech pathology, audiology, nursing, and pharmaceutical efforts (Frieden, 2010). Public health is a commonly used word by lawmakers, health care providers, and academicians when discussing how to keep their nation or the world healthy (Ahmed, 2011).

To monitor, and further, public health initiatives, a network of local, regional, state, and federal agencies must coordinate to proactively share information and resources. On a global level, each country often monitors their internal public health indicators while also collaborating with other nations. The organization most active in disseminating new public health information, as well as setting benchmarks, is the World Health Organization (WHO) (Ahmed, 2011). The WHO advocates nations to share their information with the global scientific community, and to base their practices on scientific evidence (Ahmed, 2011). Furthermore, academicians are urged to define the knowledge and skills needed within a country to properly train a health work force. With an often used definition created in the 1920s many new initiatives have been made to make a better working, modern version.

Various nations have strived to create new working definitions of public health for themselves, but an aggregate examination of these new models show many similar concepts. In addition to the conventional concepts of promoting environmental sanitation and the control of epidemic diseases, there are newer domains being considered in public health (Ahmed, 2011). New ways of thinking within public health often center on developing community activities, often to empower people to help themselves and one another. Specific areas often targeted within collaborative community campaigns include: nutrition, how to determine early diagnosis of common ailments, proactive protection, overcoming addictions, and educating citizens on how to access resources (Ahmed, 2011). With the growth of the Internet, and its access, more attention is now being spent on building resources online and building awareness on where people can get information and support through public health agencies.

History of Public Health

While most literature on the history of public health focuses on the early 1900s, a period of strong sanitation reforms and modern efforts to curb infectious diseases, public health practices were around well before this time period and have further evolved since. History texts are filled with descriptions of purposeful efforts by various societies to preserve common health. Ancient Greek and Roman city-states often provided for public physicians, a practice which continued in Byzantine institutions after their fall (Porter, 1999). The Roman empire also went as far to provide public bath houses and to build a large aqueduct system to bring water in for its citizens (Porter, 1999). During the time of late antiquity, Pagan and Christian charities provided hospitals specifically for slaves and soldiers (Porter, 1999). Major advancements also occurred in science and sanitation during efforts to halt the Bubonic Plague. Efforts are

also documented throughout history of, not just disease fighting, but also prevention. Many Asian cultures have for centuries advocated exercise, meditation, deep breathing, and temperance (Porter, 1999). These similar practices, in India, were supplemented with herbal and natural remedies to fight illness and sustain general wellness. While numerous examples embedded in history texts, the majority of documented literature on public health starts in the 20th century.

Perhaps one of the most famous, and tangible, events in the history of public health is the efforts of John Snow fighting cholera. This pursuit of fighting a disease, while looking for specific communal and environmental origins was the birth of modern epidemiology. Cholera had a long history of being an epidemic in India, with its frightening symptoms of often killing its victims within hours through massive dehydration, vomiting, and fever (Morabia, 2006). In the early 19th century, as travel increased throughout Europe and Asia, cholera began surfacing more in London. With its outbreaks occurring within populations close to one another, Snow was convinced the disease was contagious (Morabia, 2006). During a specific outbreak in 1854 Snow worked to find the epicenter of the disease by tracking areas which had the highest mortality rate (Morabia, 2006). By following the pattern of the disease, Snow surprisingly discovered that the commonality shared by all of the victims was usage of a local water pump, which he plotted on a dot map to show cholera clusters (Morabia, 2006). When Snow shared his work with the local waterworks company, their further research showed some water entering homes was contaminated by sewage being dumped in the Thames (Morabia, 2006). The eradication of this local outbreak earned

Snow the nickname of “the Father of Epidemiology” and brought public health into the modern age of science.

With the massive environmental and societal changes brought forth by the Industrial Revolution, public health became a major source of discussion and focus during the early 1900s. In addition to the natural expansion of science, based on the developing of new instruments and techniques, several specific incidents in the early 20th century accelerated the discussion of individual issues into a public forum. In the early 1920’s, several countries around the world passed laws allowing for abortions to be performed in hospitals (Davis, 1992). This new legislative approach, to a previously sensitive and often hidden decision, opened the discussion on a public level with new information being shared and supported. Navigating this decision with patients, and balancing government regulations, religious, and societal constraints showcases the often difficult balance public health and its workers must maintain.

Another early 20th century scare in America which demonstrated how new technical advancements can lead to negative outcomes for people was the increased usage of leaded gasoline during the 1920s. As Ford and General Motors expanded during this time, and many American families were purchasing their first car, the usage of gasoline was growing exponentially. Research, of the time period, showed spikes in blood-lead levels, especially within children (Rosner & Markowitz, 1985). With business booming, and Americans becoming more reliant on their cars, public health workers again showed their importance in advocating for changes and in coordinating efforts between automobile makers, government officials, oil companies, and scientists.

The effects of World War II created many new societal needs, fueling advancements in public health. Population booms, changes in gender roles, and advancements in science, spurred public health to evolve into its contemporary state. Key factors in modern public health, created by changes in the second half of the 20th century, were the balance and issues formed by people living in large cities (Rosen, 1993). To better understand and promote public health, the United States opened numerous institutions and organizations, such as the Centers for Disease Control (CDC) and the National Institutes of Health (Rosen, 1993). These centers continue to foster perhaps the richest area of scholarship in the field, which is the history and spread of disease (Rosen, 1993). Major efforts have been made in public health focusing on tuberculosis, syphilis, influenza, cancer, and more recently HIV/AIDS. For many in the field of public health, HIV has been seen as a modern epidemic which can be studied, and concern for the virus has funneled large financial contributions to the field (Rosen, 1993). As populations and government agencies examine this epidemic, the political, ethical and legal questions continue to give public health renewed relevance (Rosen, 1993).

The Public Health Essential Services

Similar to educational research being grounded in seminal works and theories, related to behaviorism, cognitivism, and constructivism, the field of public health is also built on foundational principles. Ten essential public health services are commonly referenced in searches of literature related to public health. Current public health campaigns and programs consistently reference these ten concepts as benchmarks to guide services and public health workers. A more specific investigation into essential services for public health results in literature describing coordinated effort in 1994 led by

the Centers for Disease Control (Harrell & Baker, 1994). This collaborative effort, with national and state agencies, was related to efforts made by President Clinton pushing for health care reforms. As the "Clinton Plan" progressed, it was determined that the public health field needed one unifying set of guiding principles (Harrell & Baker, 1994). The end result was a list of services known as the "practice of public health" in addition to a six-point statement explaining the purpose of public health.

Prior to outlining the ten essential services of public health, the CDC led committee set forth a consensus statement on clarifying the purpose of public health by specifying six purpose statements (see Table 2-7). First, due its long-standing image, the committee outlined that one of the obligations of public health is to prevent epidemics and the spread of disease (Turnock, 2011). According to the report, public health agencies should also work to protect people from environmental hazards and to help people protect themselves from injuries. Public health workers are also advised to promote and encourage healthy behaviors, as well as specifically support good mental health. The one obligation of public health often most visible to communities is the responsibility for responding to disasters and assisting areas in need of recovery. Finally, the last fundamental aspect of public health is to assure the quality and accessibility of health services for all people. This list of six purpose statements lays the foundation for the corresponding ten essential services of public health and public health workers.

While the public usually becomes aware of their need for public health when there is a crisis, public health workers continually serve communities with a variety of services. The services public health organizations were generally providing became the

basis of the now guiding “Ten Essential Services” of public health (see Table 2-8). The first essential service is “monitor health status to identify and solve community health problems” (Harrell & Baker, 1994, p. 28). Within this service public health workers are encouraged to continually gauge the status of their community, while also identifying potential threats. To best fulfill this obligation those in public health need to often conduct timely collection of samples, provide accurate analysis of those samples, and publicize information when needed (Harrell & Baker, 1994, p. 28). Furthermore, it is encouraged for specific targeting of known population sub-groups which may be at risk for certain ailments (Harrell & Baker, 1994, p. 28). This essential service is often related to the work of epidemiologists.

In addition to monitoring a community’s health, public health workers and organizations are encouraged to be proactive and investigate when needed. The second essential public health service is to “diagnose and investigate health problems and health hazards in the community” (Harrell & Baker, 1994, p. 29). To help facilitate proper implementation of this service, public health organizations are encouraged to have mobile components and be connected to laboratories with modern technology that can conduct rapid and high volume testing (Harrell & Baker, 1994, p. 29). While the first two essential services focusing on the investigation of potential health concerns, the third service relates to how data gathered is transmitted to the public. Effective public health organizations are expected to offer the service of “informing, educating, and empowering people about health issues” (Harrell & Baker, 1994, p. 29). To properly communicate health issues, public health entities are expected to use social marketing, and targeted public campaigns. Once specific campaigns and promotional messages

are created, the message local leaders deliver should also be incorporated for collaborative efforts so that everyone is speaking in the same voice (Harrell & Baker, 1994, p. 29). These local leaders often come from churches, schools, and worksites throughout the community.

While it can be very effective to make key partnerships with specific community leaders, some public health efforts require the work of all members of an area. Another essential service, "to mobilize community partnerships and action to identify and solve health problems" actually stresses that often non-health related entities can often be helpful sources of information and support (Harrell & Baker, 1994, p. 30). Working with retail stores, recreation leagues, and in many communities the barber shop or beauty salon allows public health workers the ability to train a larger skilled coalition to be on the lookout for potential problems (Harrell & Baker, 1994, p. 30). Recent efforts with tattoo parlors and barber shops have worked to reduce transmission of hepatitis, and further campaigns within barber shops and beauty salons have been created for showing clients proper condom use, and to promote getting tested for HIV as well as getting screened for prostate and breast cancer (Browne, 2007). In engaging people who are not affiliated with public health to join specific campaigns, public health organizations are better able to draw on the full potential in a community, and increase their network of resources.

The fifth essential service of public health relates to being prepared and organized, as many public health responses can occur within chaotic environments. This service is outlined as the need to "develop policies and plans that support individual and community health efforts" (Harrell & Baker, 1994, p. 30). To best create

these plans, systematic leadership needs to be focused on all levels of public health efforts being coordinated and having a voice. Long-range planning needs to be created, often at the top levels, but then disseminated in systematic ways where each community is getting the aspects they need in ways which set them up to be successful (Harrell & Baker, 1994). To create these measurable objectives, input needs to come from community, state and regional levels, with the same groups participating in the evaluation process (Harrell & Baker, 1994). Often the results of these efforts are seen in the development of codes, regulations, and legislation which helps guide public health practices.

While good public health practices need to be officially created into codes and laws in modern society, they are not effective unless these rules are properly enforced. The essential service outlined as “enforcing laws and regulations that protect health and ensure safety” helps to highlight best practices for public health and law enforcement officials. This specific obligation also covers several areas of public health which are important, but not usually publicized unless there is a need. The enforcement of codes includes sanitation efforts, regulating the food industry, as well as monitoring drinking water and clean air standards (Harrell & Baker, 1994, p. 30). Other communal areas which are regularly checked include laboratories, hospitals, nursing homes, and home health care (Harrell & Baker, 1994, p. 30). These inspections can include reviews of staff, trainings, and medical devices. While maintaining safe facilities and devices are important responsibilities for public health officials, making sure citizens know where to locate these resources is another important role.

One of the largest growing areas of public health relates to a concept entitled "linkage of care". Efforts made to connect people with the best resources related to the essential service "to link people to needed personal health services and assure the provision of health care when otherwise unavailable" (Harrell & Baker, 1994, p. 30). This service, more recently labeled outreach, has many related components to consider. In essence, with so many community and online resources available, it often becomes a public health worker's main purpose to help clients evaluate the vast amount of options and be connected to the best fit for their specific needs. Linkage of care also focuses on helping those who are socially, physically, and mentally disadvantaged gain effective entry to the system and networks of care (Harrell & Baker, 1994, p. 30). Further attention is given to patients who require culturally and linguistic materials and support, as well as continual monitoring of people who are considered to belong to high risk population groups (Harrell & Baker, 1994, p. 30). This monitoring and support can include; visiting clients in their homes, providing transportation for medical services, and coordinating services between different providers.

With many different fields within public health, and considering recent budget cuts often forcing health departments to have workers cover several different jobs or departments, properly training employees is a needed aspect for making essential public health services come to fruition. The service "assuring a competent public and personal health care workforce" relies on a partnership between educational institutions matching the needs of public health agencies (Harrell & Baker, 1994, p. 30). To help improve proper education in the workforce, this needed service, also calls for efficient training to facilitate workers obtaining their necessary licenses and credentials (Harrell &

Baker, 1994, p. 30). For those who wish to make public health a vocation, there needs to be an understanding that environments and technology are constantly changing, so there should be a corresponding commitment to life-long learning. Beyond helping public health workers become better trained and prepared for the expectations of their position, there also needs to be a focus on developing promising employees for potential leadership positions (Harrell & Baker, 1994, p. 30). Specific management and leadership development programs need to be offered, so there is no void in qualified candidates to fill these positions moving forward.

The final two essential services, shows the committee's interest in both reviewing past services, while also pushing innovation to offer better resources for the future. The ninth essential service calls for public health officials to "evaluate effectiveness, accessibility, and quality of personal and population-based health services (Harrell & Baker, 1994, p. 30). Like many effective programs, constant evaluation is needed to best know how to allocate resources and reshape programs. To best review public health organizations, the CDC encourages evaluation be focused on analysis of health status and service utilization data as a means to best assess program effectiveness (Harrell & Baker, 1994, p. 30). The final service, "to research for new insights and innovative solutions to health problems" furthers the linkage between health organizations and institutions of higher learning (Harrell & Baker, 1994, p. 30). While some health organizations have research components, the majority of local health departments are more centered on care and providing services to their community population. Partnering with researchers at universities, and around the world, best helps coordinate new methods and best practices. As public health looks to the future

there are also now more efforts than ever to use the Internet and social media to share information faster.

Social Media

While the term social media is often generally used in reference to sites such as Twitter and Facebook, a more specific term for this communication category is social network sites (SNSs). Social network sites are defined as Web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and transverse their list of connections and those made by others within the system (Ellison, 2007). What makes these sites unique is not only can users meet people they do not personally know, but that they are able to see and show their network (Ellison, 2007). With users being able to see one another's network and connections, they are often meeting new friends online who are already a part of their extended social network (Ellison, 2007). While SNSs have various and increasing features, one of their consistent elements is profiles and articulated lists of "Friends" (Sunden, 2003, p. 3).

While the general term social media can relate to mass media historically, inventions like the telephone and radio which brought society closer together, SNSs first started in 1997. The first credited, recognizable, social network site was SixDegrees.com which allowed users to create profiles, list Friends, and examine one another's list of Friends (Ellison, 2007). SixDegrees promoted the site as a tool for people to connect by sending messages to one another. After 2000, however, the service closed as their audience felt there was not much to do after making their network of Friends (Ellison, 2007). Over the next few years various social networking

sites started, often with specific target audiences like those looking for dates or people wanting to share their professional work or qualifications (Ellison, 2007).

After sites like Match.com and Ryze launched, the next popular site which gained traction was Friendster which reached 300,000 users before problems with servers and databases ruined organic growth (Ellison, 2007). With attention towards Friendster and numerous other start-ups, not many noticed MySpace which launched in 2003 and gained popularity after several of its competitors experimented with incorporating charging for services (Thelwall, 2008). MySpace started to also make helpful connections in the Indi-rock band scene, as bands started making pages to post music and information (Thelwall, 2008). MySpace also began to differentiate itself by allowing users to customize their pages. In 2004 the site saw a large spike in teenagers creating their own profiles and encouraging their friends to join (Thelwall, 2008). After its sale to News Corporation, MySpace, worked through refining safety features which caused stunted growth (Thelwall, 2008). As MySpace began to grow, and then stall, a Harvard-only SNS named Facebook began its own expansion in the marketplace.

For the purpose of this study the focus on SNS centered on Facebook and Twitter, due to their popularity. Beginning in 2005, Facebook expanded its push for new users to high school students, professionals and eventually to everyone (Ellison, 2007). Facebook grew exponentially, in large part to its ability for outside developers to build applications which allowed users to personalize their profiles as well as connect to other tools and technology (Ellison, 2007). As of 2012, Facebook grew to over one billion users (Hampton et al., 2012). Individuals who wish to use Facebook must register online and create a profile using a valid e-mail address.

Like various SNSs, Facebook requires individual accounts; users have the ability to modify these accounts, ultimately affecting their potential contacts based on how they create their profile. The elements of a Facebook profile are classified into four different categories: control elements (fields such as the gender of the user, length of membership in Facebook, and institutional status), referents elements (profile fields related to common points of reference among users such as hometown, high school, residence, and concentration), preference elements (based on profile fields that express personal interest and self-descriptive information like favorite movies, TV shows, books, political views), and contact elements (profile fields that include offline mailing address, e-mail address, instant messenger screen name, relationship status, and birthday) (Lampe, Ellison & Steinfield, 2007). Users can also upload and change their profile pictures and status (Lewis et al., 2008). The information placed into these different profile categories, ultimately determines who sees one's information, as well as the information he or she would see themselves.

Twitter is a micro-blogging SNS which has gained popularity in limiting users to write messages in 140 characters or less. Twitter, by allowing users to place a hashtag before a term creating a new searchable topic, has become valuable for professionals who want to network with people in their field and see specific topics regularly updated (Paul & Dredze, 2012). Twitter, as of late 2012, passed over 500 million users, with over half of those users residing outside of the United States (Takhteyev, Gruzd, & Wellman, 2012). Much of the literature related to Twitter focuses on how and why people use this online communication tool (Java et al., 2007). Understanding the intention of why people post is different than determining why and how people search

specific topics. In a research survey Twitter users determined that their top uses of the site is to share their experiences, commentary, and form communities (Java et al., 2007). A user's retention and interest in Twitter can often be predicted by comments received and interest shown in their posts (Java et al., 2007). Those who quickly garner followers, and who have their comments favorite and re-tweeted are more likely to stay with the service longer.

In summary several themes on social media and SNSs emerged in review of literature. The predominant SNS topics found in academic research includes: usage, profiles, motives for use, time spent on SNS, what influences the number of friends on, information disclosed, privacy settings, effects of using SNS, effects of SNS use on social presence, effects of self-disclosure on credibility, attitudes toward SNS and satisfaction and dissatisfaction of using SNS's (Stern & Taylor, 2007). These identified research topics appeared to ultimately cluster into three main groups: (a) SNS usage profile, (b) the effects of using SNS, and (c) attitudes toward SNS. In addition to examining how researchers have examined SNS and potential applications, including education, many studies have also been conducted relating to motivation for using SNS. In the end, seven top motives for SNS use were identified. These motivators for using SNS include: (a) to maintain existing friendships, (b) to meet new people, (c) to feel using SNS is cool and fun, (d) to make one more popular, (e) to pass time, (f) to express or present oneself and (g) for learning purposes (Stern & Taylor, 2007).

Social Media and Public Health

As social media usage increases, quadrupling from 2005-2009, the applications to public health escalate along with the need to determine how often social media is being used, by whom, and in what capacities (Chou, 2009). To start, research has

been conducted to determine how patients use social media, often to examine their diagnosis and medications as well as to form support groups (Chou, 2009). Another perspective can be seen in the upcoming meta-analysis study started in 2009 by Thackery, Neiger, Smith and Van Wagenen (2013) which records how public health departments are using social media as well as how patients access information through social media outlets. This study is determining which fields of public health are being examined the most, what effects the usage is having with treatment and outreach in the community, as well as social media's ability to get messages out to the public during emergency situations (Thackery et al., 2009).

By examining Chou's (2009) initial comprehensive study one can derive how research has been conducted regarding the usage of social media tools with public health. Chou's (2009) study focused on three social media tools: message boards, blogs, and Facebook, built on previous studies which had shown conflicting reports on the effectiveness of social media tools. Some reports showed the increased power of patients, as they are becoming more assertive in their care. These new attitudes are pushing health care towards allowing patients to be partners with their care providers in terms of making care decisions (Chou, 2009). Some health organizations had also promoted successful programs in joining patients online to help quit smoking or lose weight (Chou, 2009). Other reports, however, have illustrated that social media has had negative impact for overall care with non-credible patient care on message boards and lack of access to public health information due to the digital divide (Chou, 2009).

In 2007, the National Cancer Institute conducted a data collection of the United States civilian non-institutionalized adult population designed to assess the American

public's use of health- and cancer-related information and to assess other cancer-related knowledge, attitudes, and behaviors (Chou, 2009). The survey's primary goal was to inform social scientists and program planners about current health communication usage across populations and to assist in developing effective health communication strategies in an age of rapid communication changes. It was determined that supplemental questions posed to the large survey population related to social media and had not been fully developed. Pairing new questions about socio-economic variables with original data through random phone calls allowed new perspectives on who was using what forms of social media in connection with public health to surface (Chou, 2009).

Chou's work (2009), built off an original study from the National Cancer Institute focusing on message boards, blogging and Facebook usage in public health yielded interesting data broken down by age, ethnic group, and socio-economic groupings. Some of Chou's key findings included that use of social media was not uniformly distributed across the age strata among Internet users The largest proportion of social media use occurred among Internet users between the ages of 18 and 24 (65%) and decreased thereafter with each subsequent age group (Chou, 2009). In addition, patterns of social media use varied by race with non-white Americans accessing the Internet more likely to use social media than white Americans (Chou, 2009).

The three forms of social media included in Chou's survey included social networking, blogging, and message boards. The study results showed social networking, specifically Facebook, received the most utilization related to public health (23% of Internet users), followed by blogging (7%) and participation in online support

groups (5%) (Chou, 2009). Blogging and Facebook usage indicated decreased usage as age increased; however, the youngest age groups rarely accessed online support groups (Chou, 2009). Patients who self-reported as being in generally poor health or being in psychological distress more frequently used online message boards and support groups compared to Facebook and blogs (Chou, 2009). When other variables were examined, such as non-college graduates, it was found that this population was also more likely to use support groups; however, the inverse was true for Facebook and blogging. Further delineation by racial factors showed the ratio of non-Hispanic whites using blogging and support group message board platforms more than African-Americans, with the inverse true for social networking on Facebook (Chou, 2009). As a result, Chou laid the foundation for future studies connecting social media tools with public health, including specific use of certain tools.

Twitter is a micro-blogging tool which has seen great growth as a public health communication and data research tool. While Twitter has only been online since 2006, there is already growing research on its use in public health and by public health organizations (Rice & Atkin, 2012). Twitter users have demonstrated use by following health conferences, a developing health story, or to learn new sources and Web links for future research (McNabb, 2009). Twitter has an internal system, using a hashtag, where users can highlight specific words in their post which allows for grouping of posts. Thus, users can sort through all posts related to these words which can help point them in new, related directions of searching. The World Health Organization (WHO) used Twitter during a recent health scare, as the hashtag “H1N1” had near 12,000 followers (McNabb, 2009). This allowed WHO to update 12,000 people in addition to those to

whom the information was forwarded every time there was news to report. Currently, through a May 2013 search, the Center for Disease Control has over 162,000 Twitter followers, and a sub-group at one point had over 400,000 tweets.

The use of Twitter, along with other online tools, allows for the innovative sharing of public health information. To start, Twitter, like other social media tools, create a forum for global collaboration. Various Web-based translation services allows for people who speak different languages to communicate on different social media sites like Twitter. Another result of public health organizations using sites like Twitter is the ability to by-pass traditional media buffers which often slow down the dissemination of critical information. Researchers, who are often working on the front line of public health emergencies and laboratories, can now directly share their observations without having to wait for a journalist to write their story (McNabb, 2009). To post real-time information to infinite users for free makes Twitter a tool many people in public health are excited to more freely incorporate in their communication strategies.

According to McNabb's study (2009), social media sites like Twitter now have the power to spread information about outbreaks and emergencies as fast as the disease can spread itself. For example, if an area had a small outbreak, or mysterious symptoms, people could be informed immediately and stay up-to-date with new information. Twitter also has the ability to connect with other tools such as Google Maps, to create data mash-ups within social media online. People can report public health occurrences on Twitter that can be plotted on Google Maps for better visualization (Bernhardt, 2012). Twitter information can not only be passed along quickly and visually, but this tool also allows for people to process the information and

collaborate together on the topic. Projecting a potential outbreak, reports could surface real time, experts could investigate, warnings to stay away from an area could be plotted on a map, and residents, doctors and researchers could begin facilitating next steps. Twitter's speed, ability to sort information, and concise reporting can be a powerful tool for patients and public health workers to keep up with ever changing research.

Recent studies into Twitter, related to public health, have illustrated how researchers can effectively mine information in real time to obtain an accurate viewpoint of disease transmission. Twitter users often publicly express personal information, with messages like "I got the flu", or "getting medicine for my allergies" which contain key words or phrases which can be tracked as they are posted (Paul & Dredze, 2012). While people are posting these comments personally, when aggregated with millions of other tweets, researchers can start to plot virus hot spots, the amount of time people are infected, as well as which direction the illness is spreading (Paul & Dredze, 2012). A new research tracking model, the Ailment Topic Aspect Model (ATAM) allows for improved data sets. ATAM adds the ability to track multiple ailments at once, track illness over longer periods of time, compares behavioral risk factors with ailments, and analyzes correlations of symptoms with ailments (Paul & Dredze, 2012). Although a recent study on ATAM processed over two billion tweets indicated issues in reviewing data, ultimately positive indicators surfaced that public health researchers could process. Differentiating between someone using the word "sick" in the post such as "I am sick" is different than a post saying "I am sick of this" (Paul & Dredze, 2012). Setting the filters to differentiate this usage is an ongoing process; however, the study ultimately

concluded that Twitter is helpful in syndrome surveillance, plotting geographical behavior risks, and analyzing symptoms in relation to medication usage (Paul & Dredze, 2012). As one of the main expectations of public health is in protecting citizens, having real-time information on the spread of disease can be critical in coordinating care.

Another important theme for one to consider, related to public health workers using SNS, is access. While a lot of research highlights potential applications of SNSs in public health, the subject is diminished when considering the access to, or lack thereof, of this information to public health workers (Chou, 2009). Public health, like many other fields, labors diligently to protect individual confidentiality. With numerous rules and regulations, such as the Health Insurance Portability and Accountability Act (HIPPA), already in place protecting patient information, the use of social media as a tool for public health workers would need to match other regulated forums for communication. Further examining privacy in SNS applications within public health needs to relate to the posters themselves who do not want to be identified, as well as when public health workers discuss certain patients (Chou, 2009). Worries and concern over Internet safety, such as identity theft, might also limit people's desire to participate in online chats and discussions (Chou, 2009). Moving forward, creating and refining policy guidelines for privacy of users are needed for further adoption of SNS as a professional tool for public health workers.

Summary

The literature which helped ground this study reflects the foundations of educational technology, educational theory, and public health essential services. Extensive literature is available on educational theory, and applications of SNS tools. Likewise, there are many articles reflecting the origins and development of public health

essential services. Much smaller in scope are available articles overlapping the fields of public health and educational technology. The articles that reflect research connecting public health with SNSs exhibit similar themes occurring in investigations solely on social media and SNSs in other fields. Many studies focus on best practices, usage of social media by public health workers, choices in SNS networks, number of followers, and privacy specific to public health. A void, however, found in this literature search was the lack of addressing the effectiveness of social media tools, not only their application in regard to public health. When SNS tools are added or replace previous methods of communication for public health workers, or entities, there is little data in the literature that confirms or questions effectiveness.

Table 2-1. Elements Criteria from Rogers' Diffusion of Innovations

Element	Definition
Innovation	An idea, practice, or object that is perceived as new by the individual or other unit of adoption
Communication Channels	The means by which messages are channeled from one individual to another
Time	The length of time required to pass through the decision making process
Social System	A set of interrelated units that are engaged in joint problem solving to accomplish a common goal

Rogers, E. M. (1983). *Diffusion of Innovations*. New York: Free Press

Table 2-2. Decisions Criteria from Rogers' Diffusion of Innovations

Type	Definition
Optional Innovation Decisions	A decision made by an individual who is in some way distinguished from others in a social system
Collective Innovation Decisions	A decision made collectively by all individuals in a social system
Authority Innovation Decisions	A decision made for the entire social system by individuals with designated positions of power

Rogers, E. M. (1983). *Diffusion of Innovations*. New York: Free Press.

Table 2-3. Process Criteria from Rogers' Diffusion of Innovations

Type	Definition
Knowledge	In this stage the individual is first exposed to an innovation but lacks information about the innovation. The individual has not been inspired to find more information about the innovation.
Persuasion	In this stage the individual is interested in the innovation and actively seeks information/detail about the innovation.
Decision	In this stage the individual takes the concept of the change and weighs the advantages/disadvantages of using the innovation and decides whether to adopt or reject the innovation.
Implementation	In this stage the individual employs the innovation to a varying degree depending on the situation. During this stage the individual determines the usefulness of the innovation and may search for further information about it.
Confirmation	In this stage the individual finalizes his/her decision to continue using the innovation.

Rogers, E. M. (1983). *Diffusion of Innovations*. New York: Free Press.

Table 2-4. Adopters Criteria from Rogers' Diffusion of Innovations

Category	Definition
Innovators	The first to adopt (risk takers, usually youthful with high social class and financial liquidity)
Early Adopters	This is the second fastest category of individuals who adopt an innovation. These individuals have the highest degree of opinion leadership among the other adopter categories. They are more discrete in adoption choices than innovators. Realize judicious choice of adoption will help them maintain central communication position.
Early Majority	Individuals in this category adopt an innovation after a varying degree of time. This time of adoption is significantly longer than the innovators and early adopters.
Late Majority	Individuals in this category will adopt an innovation after the average member of the society. These individuals approach an innovation with a high degree of skepticism and after the majority of society has adopted the innovation.
Laggards	Individuals in this category are the last to adopt an innovation. These individuals typically have an aversion to change-agents and tend to be advanced in age. Laggards typically tend to be focused on "traditions".

Rogers, E. M. (1983). *Diffusion of Innovations*. New York: Free Press.

Table 2-5. Five Factors that Influence Adoption of an Innovation

Factor	Definition
Relative Advantage	How improved an innovation is over the previous generation?
Compatibility	The level of compatibility that an innovation has to be assimilated into an individual's life.
Complexity	If the innovation is perceived as complicated or difficult to use, an individual is unlikely to adopt it.
Trialability	How easily an innovation may be experimented. If a user is able to test an innovation, the individual will be more likely to adopt it.
Observability	The extent that an innovation is visible to others. An innovation that is more visible will drive communication among the individual's peers and personal networks and will in turn create more positive or negative reactions.

Rogers, E. M. (1983). *Diffusion of Innovations*. New York: Free Press.

Table 2-6. Conceptual Framework Major Components

Category	Definition
Characteristics of Innovations	Public versus private consequences Benefits versus costs
Characteristics of Innovators	Societal entity Familiarity with the innovation Status characteristics Socioeconomic Characteristics Position in social networks Personal characteristics
Environmental Context	Geographical settings Societal culture Political conditions Global uniformity

Rogers, E. M. (1983). *Diffusion of Innovations*. New York: Free Press.

Table 2-7. Six Public Health Purpose Statements

The Framework of Responsibilities of Local Public Health Systems
1. Prevents epidemics and the spread of disease
2. Protects against environmental hazards
3. Prevents injuries
4. Promotes and encourages health behaviors
5. Responds to disasters and assists communities in recovery
6. Assures the quality and accessibility of health services

Table 2-8. Ten Essential Public Health Services

The Framework of Responsibilities of Local Public Health Systems
1. Monitor health status to identify and solve community health problems
2. Diagnose and investigate health problems and health hazards in the community
3. Inform, educate, and empower people about health issues
4. Mobilize community partnerships and action to identify and solve health problems
5. Develop policies and plans that support individual and community health efforts
6. Enforce laws and regulations that protect health and ensure safety
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable
8. Assure competent public and personal health care workforce
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services
10. Research for new insights and innovative solutions to health problems

CHAPTER 3
METHODOLOGY

This section, outlining the methodology of this research, describes the theory involved, as well as explains the systems used to collect and analyze data. In addition to highlighting the theory and methods used for data collection and analysis, additional information is given on the case study model used to frame the research as well as Rogers' Diffusion of Innovation model. Rogers' work is highlighted for its explanations on how new technology spreads through a culture or environment, as well as its specific breakdown of the characteristics of innovations which should be considered by those potentially adopting. The purpose of this study again was to record the decision-making process for a public health organization as it considered the implementation of social media, as described in the research question:

- What are the perspectives of varying stakeholders within a public health training center about potentially adopting and using social media to advance center goals and mission?

The research question helped guide the theory and methods, as it pertains to examining a singular organization, and its stakeholders, in an in-depth manner to gauge their reality and feelings towards social media. To best understand the scope of the decision making process, five training center employees were interviewed to document their individual perspectives and thoughts on how the decision would be reached. In sharing their perspective in the interview process, as well as identifying the potential strengths and weaknesses associated with social networking usage within public health, an overview of this innovation emerged along with the revelation of unique decision-making factors.

Study Design

This project focused on the potential implementation of social media by the RSPHTC. Interviews of various stakeholders were culled to provide an account of the variables considered throughout the process.. The interview questions were set in an interview guide created through instruments highlighted in the *Interview Guide Approach (*Patton, 1990). The interview guide was created to more fully understand the knowledge, perceptions, and processes used by the RSPHTC regarding SNS implementation, in accordance with the framework of Rogers' Diffusion of Innovations as outlined in Chapter Two. The interview guide was followed for uniformity; however the interviewer had freedom to ask follow-up questions. These interviews were formulated to keep the focus on the specific innovation and created to allow for free, open discourse without placing leading terms into the questions (Patton, 1990). Three interviews were set-up with the individuals, recorded, and later transcribed verbatim. The focus of these questions with stakeholders included their definition and perceptions on social media, determining social media's usage in public health, consideration of how social media can affect those within public health, and gauging perceived positive and negative implications for the implementation of social media for the center. With this interview focus, questions were created by being paired with specific frameworks listed in Rogers' Diffusion of Innovation Theory.

Connecting Rogers' unique definitions of elements, design, process, and adopters with the interview questions helped create a questionnaire which covered all elements of the RSPHTC. Using this framework ensured the questions were not too limited to only the RSPHTC center, so information could be gathered which may be applicable to other environments. While Rogers' total research on diffusion goes into

more detail, and includes areas beyond these four categories, these four categories were critical in shaping the full narrative. In creating the interview instrument I first set out to consider all aspects of the diffusion model as it related to the RSPHTC. Asking questions grounded in Rogers' explanation of elements allowed me to probe on the SNS innovation characteristics, as well as how usage of these tools have spread throughout public health from the perspective of these seasoned public health educators. While gathering the thoughts of everyone interviewed was important, it was also critical for readers to understand the decision-making process of the center for the data to make sense relative to any final decisions for the center. For example, to an outsider a presentation which mostly supports SNS implementation might seem incorrectly portrayed if the ultimate decision is an authority innovation decision made by one individual who did not agree with its usage.

While Rogers' examination of the process of diffusion has five stages which actually go beyond making the decision, it was still important to use the first three elements (knowledge, persuasion, and decision) when designing the interview instrument. The interview protocols were designed with baseline questions assessing the knowledge of the innovation, the person's motivation towards the innovation, as well as the most important considerations that led to a decision. Finally, to understand how the decision for the center would be made, in relation to timeframes of similar organizations, it was important to understand the adoption models of the individual members. Questions in the interview protocol were asked relating to what category participants usually adopt new technology in their personal and professional lives. This

information helped shape an understanding of the risk versus reward considerations of the group's members.

With Rogers' diffusion model as a framework for this study, I set out to create an interview instrument which covered all of these areas, worded specifically for public health, SNS, and the RSPHTC. Questions, created and reviewed by peers, were initially split into three basic categories, personal and professional background, use of SNS in public health, and potential use of SNS for the RSPHTC. Questions were further refined with the guidelines set out by Patton (1990) as well as by feedback from my dissertation committee. At the conclusion of my writing the first version of the interview protocol, I tested the instrument with two members of the RSPHTC management team, not tasked with making day-to-day decisions for the center. Out of those trial occurrences, changes were made in the word choices of the instrument to make them more open-ended, allowing participants to take the question more in any direction they wanted to address. Other changes included question order, as well as new considerations for follow-up questioning. In the trial interviews, I found the questions related to the Ten Essential Public Health Services to be repetitive, but further probing provided more information. A final change to the instrument related to asking more questions on the decision making process itself, allowing the participants more opportunities to better explain how they felt the decision would be made.

Using the RSPHTC as a unique environment to study and interview its stakeholders for their specific perspective on SNS implementation also reflects a case study model for this investigation. Unlike traditional approaches, a case study approach was more appropriate for answering questions related to how or why something

happened, or potentially will happen, as well as situations when the investigator has little or no control over events and outcomes (Spirer, 1980). While many single cases have unique complexities, a case is studied only when it is of very special interest representing contemporary events. For the purpose of this research a case study is defined as the investigation of one singular case in the efforts to understand its activity within important circumstances (Starke, 1995). For the most part case studies focus on people or paradigms as readers want to hear individual stories and try to understand them (Starke, 1995).

Using a case study allows a reader the opportunity to enter a scene and follow along with a subject(s), as they encounter different environments and scenarios. Specific to this study, the environment of the RSPHTC is described in detail so that readers are able to understand the background of the collaborative stakeholders and correlate the interview answers with the stakeholders' experience and mindset on social networking sites and public health. Considering the group of day-to-day decision makers was small, extra effort was made to protect the identity of those RSPHTC members. Since this is a singular bound case, however, all interviews added to the singular viewpoint of the RSPHTC and did not require singular identifying descriptions. In summary, the case study method allows investigators the ability to retain holistic characteristics of real-life events, such as small group behavior, decision making, and the maturation of industries and change (Yin, 2008).

According to Starke (1995), one uses the case method when given access to document an instance of a class or phenomena that provides an analytical frame. This study provided a unique research environment when considering the small amount of

federally funded public health training centers, and having access to the RSPHTC and the very distinguished administrators from two universities who manage the center. Furthermore, the results of this study will be far reaching when recognizing all of the public health organizations at the local, county, and state level, in addition to related private organizations, who are also considering social media and networking implementation. Whether or not to implement social media or social networking sites is an issue many organizations are monitoring. The unique perspective of the leaders in the fields of public health and higher education field might provide discussion on topics heretofore not considered by other organizations.

While case studies are often documented instances in specific environments, following protocol allows for positioning theory building from case studies into larger context of social science research. While planning a case study one needs to maintain theoretical flexibility when considering what makes a specific case unique (Eisenhardt, 1989). This focus should culminate in the definition of potential research questions. In designing a case study, investigators need to consider their specific population, while finding ways to sharpen their external validity (Eisenhardt, 1989). A study design also needs to consider the sampling of participants as well as foundational theoretical cases which are relevant to the case. Ideally, a proper case would extend this theory, or fill in conceptual categories. Continuing with design into case preparation, one needs to consider the qualitative, quantitative, or mixed applications of data to be analyzed (Eisenhardt, 1989). As one enters the field it is also important to overlap data collection with analysis, primarily by including field notes (Eisenhardt, 1989). For the interviews of the RSPHTC key stakeholders, I wrote comments on the questionnaire sheet, as the

speakers were giving their answers and the tape recorder was documenting the session. These comments noted included; perceptions on how the person was answering the question, thoughts on follow-up questions, and connections with previous interviews. Having this breakdown of the data, as it occurs, ultimately speeds up the final analysis while also allowing the investigator the opportunity to consider adjustments to the data collection process as it is happening rather than once it has been accumulated.

Participants

This study followed the experiences of five stakeholders in the RSPHTC's decision making process of considering social media implementation. These participants were sampled by their matching a set of specific criteria, including:

1. Being members of the RSPHTC's management team or advisory board.
2. Representing the two universities represented on the training center grant.
3. Being members who were given the responsibility to control day-to-day operations, or consult those making day-to-day decisions for the center

The five subjects in the study were recruited (see Appendix B) to participate in this investigation by personal requests I extended after a November, 2012 Advisory Board Meeting. Following an initial acceptance of interest, I followed up with each participant via email outlining the purpose of my study, and the time required for the interviews. All stakeholders were informed their interviews would be taped, and their names would not be used. In the end five members of the RSPHTC were identified as being key voices in the decision of whether to implement SNS for the center or not.

As the RSPHTC is a smaller organization, with easily identifiable members prominent in the field of public health and university administration, extra effort was

made to hide the specific identities of the participants in this study. In using a singular bound case, however, all thoughts of the SNS decision makers for the center were contained and reflective of the group. Collecting the final responses and sharing them without identifiers, allowed the participants to speak more freely on the questions related to SNS implementation, its place within public health, and potential technology blocks imposed at the state and county level. The results section of this study examined the replies of the stakeholders as a whole and separated the interview responses by themes, not by participant.

Collectively, out of the day-to-day staff, management team, and advisory board, the five participants in this study held a wide range of experience within public health, university settings, and with new technologies. Again these stakeholders chosen to participate in this study were selected due to their being the members of the RSPHTC who will ultimately decide on SNS implementation for the center. Collectively, the group who participated in this study held four doctoral degrees, with one member holding a master's degree. All decision makers were female, ranging from mid-thirties to mid-sixties in age. The following descriptions help reflect the experience of the group, while also sharing some initial thoughts on SNS and participating in the study.

One participant with nursing and public health administrative experience, when asked to participate in the study, expressed her skepticism related to the need of social media implementation. While recognizing that younger people tend to use these platforms and efforts should be made to incorporate younger public health workers and students, she also felt many of the applications of social media can be replicated with methods the center is already using such as the website. She further described that

she has used social media minimally to stay in contact with her family, but her usage for formal public health education has been non-existent. This participant has, however, used other computer applications like webinars and discussion boards in classes and for professional development.

Another participant with experience in interdisciplinary care within public health seemed enthusiastic about the project when approached to participate. She uses Facebook to stay in touch with family and friends, as well as to stay connected to student and alumni groups from her school. She shared that a public health program she also works with uses Facebook in a formal capacity, and the experience to-date has been positive. She stated that her school has really not had any formal discussions on usage of social media, nor have there been any attempts to regulate participation by staff. At this point the few examples of implementation of social media, by her university program, were done through the efforts of a few volunteers who created the pages which now are self-regulating.

A third participant with experience in public health outreach efforts expressed interest in this study and advocacy for a social media presence for the center. Her initial comments demonstrated a general understanding of social media, but offered no specific preference of a direction the center should engage regarding implementation. Similar to others she uses social media for minimal personal use, but does not often use these tools for formal public health activities. She considers herself proactive in learning more about technology and is open to technology experimentation for the center and within her own teaching strategies.

Another RSPHTC stakeholder currently teaches several online courses, in addition to face-to-face courses, and is innovative in using online synchronous learning tools and Smartphone applications in class. Recently she started hosting live, video and audio book discussion groups for her students online, in addition to incorporating live polling in her lectures. In a preliminary discussion with this RSPHTC stakeholder she declared that she uses social media fairly often for personal use, but not as much for professional development or with her formal academic classes.

A final stakeholder who was assigned to the group of stakeholders addressing the SNS implementation question has experiences with developing online courses. She works to stay current with several different technology platforms, specific to education programs. To date, however, her school has not made any efforts to incorporate official social media platforms, nor use them officially with any academic courses. Personally she enjoys social media, and often uses many webinars and discussion boards for professional development. At this time, she has not used Facebook or Twitter in a professional capacity.

Data Collection

The collection of data for this study was through interviews using the *Interview Guide Approach* as outlined by Patton (1990). These interviews were conducted with the topics and issues covered in advance, as the questionnaires were emailed 24 hours prior to the interview. The interviewer created an outline for the discussion, and ultimately created an instrument which allowed for the specific sequence and wording of questions to occur during the session (Patton, 1990). Using an outline increases the comprehensiveness of the data, compared to purely an informal conversational interview (Patton, 1990). While the interviews remained fairly conversational and

situational, the inclusion of the outline also made data collection more systematic (Patton 1990). *The Interview Guide Approach* also allows the interviewer more flexibility in the sequence and working of the questions, ultimately reducing the comparability of responses (Patton, 1990). In interviewing five different stakeholders on three separate occasions, there were many opportunities for the researcher to pause and re-evaluate the interview instrument.

While there are various other ways to collect data for qualitative research, interviews hold unique advantages. Using interviews allows participants to describe what is meaningful or important to him or her, in his or her own words (Patton, 1990). The absence of predetermined categories can allow for participants to feel more candid on the subject matter (Patton, 1990). Using interviews also allows evaluators the ability to probe for more details or opinions, while ensuring those who are being interviewed are interpreting the questions correctly (Kvale & Brinkmann, 2008). In certain situations, using interviews, as a qualitative data collection tool, can allow the interviewer the flexibility to use their own knowledge and expertise to explore interesting or unintended themes raised by participants (Kvale & Brinkmann, 2008).

The use of interviews in qualitative research can be used either as a primary strategy for data collection, or in conjunction with observation or document analysis. Qualitative interviews allow for individual variations by using open-ended questions (Patton, 1990). Interviews can follow three types: informal conversational interviews, semi-structured interviews, or standard open-ended interviews (Patton, 1990). It is recommended that researchers use a schedule, or a list of questions which the interviewer wants to explore. As interviews proceed, it is allowable for the interview

guides to change, or be modified, depending on the responses of those being questioned. To properly document interviews, Patton describes tape recorders as "indispensable", allowing the researcher to take field notes while the subject answers questions (Patton, 1990, p.348). A final step to ensure validity, after interviews, is to review findings back with participants to ensure their agreement on accuracy.

For this study, three, one-on-one interviews were conducted with the selected RSPHTC stakeholders to gauge their personal knowledge and opinions on the possibility of the RSPHTC implementing a social networking site presence. Each question asked in the interview instrument related to one of the four aspects of Rogers' diffusion model. The choice to conduct three interviews was based on Seidman's (1991) research, where he suggested a sequence of three interviews with a participant was more likely to produce accounts of sufficient depth and breadth. He outlined that the focus of the first interview be on getting acquainted, developing rapport, laying out the area that the researcher would like the interviewee to explore (Seidman, 1991). Between the first and second interview, the participant will have had time to think more deeply about the experience, and, thus, the second interview should be more focused and should allow time to explore the experience in depth (Seidman, 1991). Before the third interview, the researcher should also review the transcript of the first two interviews. In the third interview, the researcher asks follow-up questions to fill in and to clarify the account of the first two interviews, and the participant can add newly remembered information prior to moving on to new information (Seidman, 1991).

In this study with the RSPHTC, the first interview started with the stakeholders sharing their work responsibilities and their history within public health. Further

questions allowed for participants to expand on their personal experience and opinions of technology tools, more specifically social networking sites. These questions acting as a frame of reference related to their personal feelings and history with social networking tools, which align with Rogers' work on understanding the adopter's background with the innovation. Questions in the first interview included: How would you define social media?; do you use SNS personally?; and what are your opinions on how social media affects personal relationships?

The second interview focused on the stakeholder's experience with using technology tools at work, for professional development, or generally within public health. Questions included in this second interview included: What technology training have you received from your employer?; have you used technology tools for your own professional development?; are you allowed to access social networking tools at your work computer?; how do you communicate with other public health professionals?; and in what ways could you envision public health workers using social networking sites at their work? Specific attention was also drawn in this section as to how SNS may, or may not, affect the center's ability to provide education related to the Ten Essential Services of Public Health.

The third interview focused on technology tools and RSPHTC social media implementation specifically. The questions for this interview were designed to identify the educational mission, its current structure, effectiveness, and finally considerations on how social networking sites could alter the delivery and facilitation of information for public health workers. Questions in interview number three included: Please explain in your own words how the RSPHTC is engaging and educating today's public health

worker.; what feedback have you received from public health workers about the RSPHTC's educational efforts and courses?; in what ways could you envision the RSPHTC using social networking sites?; what positive and negative outcomes could you foresee in the RSPHTC using social networking sites?; and what resources do you feel would need to be allocated for the RSPHTC to implement a social networking presence?

All three of the interviews were conducted in a face-to-face environment, over the course of one month. Prior to the first session, the interview guide was tested with other RSPHTC stakeholders who were not recorded for this research. The test interviews ensured that all test questions were clearly understood, and that question order and follow-up questions were appropriate. Using face-to-face interviews were effective as they allow the interviewer greater ability to account for reflections and body movements within field notes (Patton, 1990). Field notes were written during the session; while a tape recorder captured the conversation. For example, while the person being interviewed was answering questions, I worked on the questionnaire form to write notes based on my impressions of how they were answering the questions, what points they were emphasizing, as well as notes to myself regarding prompts I could ask and connections being made to previous interviews. Field notes also accounted for final impressions at the conclusion of each interview. Each interview was allocated for an hour; however, extra time was allowed if participants were still answering questions. If a participant did not have much to say on a specific question, or topic, it was revisited again at the end of the session and, if warranted in the next session. After the interviews were concluded, each audio file was saved and transcribed verbatim.

Data Analysis

Data analysis can be explained as the systematic process of arranging all information obtained through interview transcripts and field notes to increase one's understanding of the data (Bogdan & Biklen, 2006). While there are various methods within qualitative research to analyze data, the format used in this study is the constant comparison method. Researchers need to constantly consider their approach to data and categories when using the constant comparison method. As Patton describes, "To categorize is to render different things equivalent, to group objects, events, and people into classes, and to view to them in terms of their class membership and not their uniqueness (Patton, 1990, p. 406). Patton also explains that inductive analysis hinges on researchers' ability to allow patterns, themes and categories to emerge out of the data rather than being imposed on them prior to analysis (Patton, 1990). Categories, while related analytically, must also be rooted in relevant empirical material (Patton, 1990). During the course of analysis, the criteria for including and excluding observations, which is vague in the beginning, becomes more precise (Patton, 1990). With this in mind, researchers must continually attempt to define and redefine categories, by specifically changing the criteria used for assigning them to the data.

By using the constant comparison method of analysis, data can be reduced into manageable units and coded information. This method of analysis starts with examining the raw data, looking for key words across all interviews and grouping segments of the responses into categories. From there, this method can be described in four states: comparing incidents applicable to each category, integrate categories and their properties, delimiting theory, and finally writing the theory or narrative (Glaser, 1965). What makes this method unique is that it is a continuous growth process, as each stage

transforms itself into the next, while previous stages remain in operation throughout the analysis. This process of reducing the data involves selection, simplification, abstraction, and transformation of raw data (Bogdan & Biklen, 2006). By using data reduction, pieces of raw data can be coded into pieces of information called categories (Bogdan & Biklen, 2006). As Corbin and Strauss (2008) described, the act of coding involves three levels of analysis: open coding, axial coding, and selective coding.

During open coding, or a line by line examination of the transcripts, I worked to examine the data and first determined what was understood. Immediately, after my initial examination of the data I worked to exclude any commentary which was not related to the material. If, for example, a tangential discussion began on the weather outside, I worked to eliminate this from the data set. Returning to the beginning of the data set, I began to look at the first response and underlined all specific elements. These elements included identifying, naming, and categorizing different phenomena found in the text (Corbin & Strauss, 2008). The nouns and verbs in the text started to help form labels, and the adjectives and adverbs helped establish the properties of the categories which were beginning to form (Corbin & Strauss, 2008). In the margins, I worked to continue making notations of my thought process similar to field notes, to help when I revisited the material. As properties began to appear in the participants' responses, I worked to formulate similar response aspects into categories. As categories began to appear, each new set of data was compared to the previous categories. If a new data chunk was similar to a previously created category, then it was added; if not, a new category was created.

After the initial examination of the data was complete, the axial coding procedure began. Axial coding in the constant comparison method is the process of relating categories with one another, through inductive and deductive thinking (Corbin & Strauss, 2008). This constant comparison of each new category, and the adding it to a larger category, soon started to generate substantial properties for each one with various examples. I also started thinking in terms of the full range of the category, its limits, and relationships to other categories (Glaser, 1965). As comments were constantly compared with previous comments, new dimensions, as well as new relationships, were discovered. By exploring the conditions, context, and strategies mentioned I was able to make connections among categories and subcategories. At first, I looked at each category code, and then another round of comparison allowed for categories to be combined. Once all of the larger categories were formed, I looked internally to see if the large amount of data samples could be grouped into sub-categories. As additional data was collected and examined, I continually moved back and forth among the data collection using open coding and axial coding methods, refining categories, interconnections, and sub-categories.

The final process of analysis is referred to as selective coding. Selective coding is the choosing of one category to be the core category, and relating all other categories to that category(Corbin & Strauss, 2008). By creating core categories, the researcher can allow for one final evaluation as the systematic approach of connecting these categories with one theme validates defined relationships, or pushes data for further refinement (Corbin & Strauss, 2008). By pushing all of the major categories into one

core category, a narrative is developed and an understanding of what has occurred begins to emerge (Corbin & Strauss, 2008).

Subjectivity Statement

Over the years there have been debates related to the validity of qualitative research in relation to quantitative inquiry. While quantitative research uses quantitative measures, qualitative research uses naturalistic approaches that seek to understand phenomena in context-specific settings, like the RSPHTC (Patton, 1990). This ability to observe within research environments allows qualitative reports to be rich in detail and insight into a participant's experience in the world (Patton, 1990). One of the characteristics of this research, to allow for the direct observation, is the fact that the researcher acts as the human instrument of data collection (Patton, 1990). Before conducting a qualitative study a researcher must do three things: adopt the stance suggested by the characteristics of the natural paradigm, develop their skill as a human instrument, and design a study that utilizes accepted strategies (Patton, 1990). Theoretical sensitivity, and development of the researcher as a human instrument, comes from the inclusion of professional literature, as well as an evaluation of professional and personal experiences (Strauss & Corbin, 1994).

As a student of educational technology working in the field of public health, one might assume that I would support the inclusion of various technology tools and platforms. I have leveraged this new job experience as a learning opportunity and found how other fields outside of education communicate. Being a teacher, department head, and administrator in education for the last 16 years, I have seen the evolution of technology tools. I have seen technology tools used properly, but also instances of abuse. Personally, I feel that technology tools can often succeed in one environment,

but fail in another with or without proper support. Examining social media within public health is an entirely new environment for me so I felt as though I entered the study with no preconceived notions on how, or if, social media should be implemented.

Prior to my job with the Rural South Public Health Training Center, I was a K-12 educator in various disciplines. For the most part, I taught social studies courses and never taught any health or science classes. In my short time with the center, I have seen communication used by public health professionals differ from K-12 educators. Public health professionals are often on the front lines of issues and are intimately speaking with those in the community, as well as their peers to stay current. K-12 educators are often isolated for much of their day in the classroom, and spend a lot of time at home lesson planning and grading papers. Professional development for K-12 teachers can be more individualized, making online learning and communication platforms ideal. Even with more common core standards, teachers often want to be unique in their lessons, while public health workers want to be uniform in their message. With that in mind, I feel educators seek out what is new more rigorously, versus public health workers who often wait from larger agencies to give them their specific talking points. A similarity I have found in public health and education, however, is how paramount privacy is in record keeping and the sharing of information. Public health workers have many protocols in place to protect the identity of patients and those seeking help. Similarly, educators need to keep records private, often more so as they are dealing with minors.

In the past year, my first with the RSPTC, our team's efforts have allowed those in the public health field to learn of our existence through traditional methods of

marketing and communication. For the most part, we have participated at board meetings, held live events, created promotional flyers and emails, but primarily we have relied on the development of our website to be central to all of our courses and efforts. While I can periodically observe the number of people participating in our trainings, I cannot at this point deduce demographic information. Likewise, I have not had the opportunity to spend time investigating offerings at other training centers. My personal use of a Facebook page has focused exclusively on personal friends while my recently opened Twitter account has focused on educational technology. I have not investigated or followed anyone knowingly who is associated with public health on any social networking sites.

To further promote my validity as an investigator in this study, I feel it is important to note that my K-12 administration experience is vastly different than the concerns facing those in higher education. Participating in staff meetings at the University of Florida has demonstrated a focus on issues very different than K-12. The fact the RSPHTC is also part of a grant project, and a partnership with FAMU also adds levels to the bureaucracy, making this working environment dissimilar to past work experiences. With a myriad of policies and stakeholders involved in the decision-making process, many considerations are new and for which I do not have preconceived opinions.

While I have strong interest in social media, and use these sites personally, I relied on my experience in conducting qualitative research learned through my degree program to keep the design valid. While I have taken courses in quantitative methods, all of my projects, publications, and presentations have relied on qualitative methods. In

several recent projects I have used coding and the constant comparison methods to formulate findings. Using these methods, and by recoding the interviews, I was able to integrate field notes during the questioning as well as commentary during the coding process. In stating these observations, and personal beliefs, I was able to examine them and work to exclude personal bias from my work so that I could focus on the statements of those being studied.

Validity

The concept of validity can be described using vast terms in qualitative studies. In general, validity can be defined as whether the research truly measures what it was intended to measure, or how truthful the research results are for the study (Golafshani, 2003). This concept is often not a singular one, but rather a "contingent construct, inescapably grounded in the processes and intentions of particular research methodologies and projects" (Winter, 2000, p.1). While some have argued validity is not as applicable to qualitative research as it is for quantitative, there is still a need for some qualifying checks and measures for research (Golafshani, 2003). For many the concepts of vigor in qualitative research reflect quality, rigor, and trustworthiness (Golafshani, 2003). In this study, the researcher is the data collector, so documenting methods is important to ensure dependable data collection and analysis (Patton, 2002). To help increase credibility it is also important the participants and the researchers agree on interpretations of the data (Patton, 2002). To ensure these interviews were valid in this way, member checking occurred as the stakeholders were given copies of transcripts, coding examples, and conclusions.

After considering the validity of the study internally, researchers must also work to ensure the study can be understood and replicated outside the study environment.

To best help those who read the study, and contemplate its relevance, researchers must work to provide sufficient background on the environment and participants (Patton, 2002). In this study, a detailed description of the RSPHTC and its efforts has been added as well as a composite examination of the participants. Researchers must also work to describe the events and phenomenon of the data in rich, deep descriptions (Patton, 2002). The more evidence and circumstances presented, the more readers of the study will understand which aspects specifically relate to their environment.

The focus of qualitative research is to form unique impressions and understandings of events rather than to generalize the findings (Kolb, 2012). When considering other's ability to replicate the study in other environments, it is important that researchers work to detail their protocols, note their potential research bias, as well as anticipate their individual perspectives (Cresswell, 2008). For this study into the decision-making process of the RSPHTC, the protocol creation was explained in detail, with special attention to how following the diffusion of innovations framework will allow readers the opportunity to understand the environment of the center, the collective thoughts of the decision makers, and the process for ultimate implementation.

Another measure to strengthen the research is for the researcher to constantly be reflexive during the entire study (Kolb, 2012). In addition to the bias of the researcher potentially affecting the validity of a study, researchers also need to consider the effects they have on the study environment (Kolb, 2012). To avoid researcher bias on the study, one should be reflexive, in that he/she should incorporate continuous awareness of his/her relationships throughout the entire study (Kolb, 2012). For this study, the researcher relied on field notes to track potential bias, as well as using the

time in-between interviews to reflect on the course of the interviews. As an employee of the center it was important that the protocols were created with the help of others, followed the elements of the diffusion model, and tested prior to use.

The aim of protecting validity in qualitative studies ensures congruence between the research question and the components of the method. As a whole this project used basic set-up procedures to help build validity, including the selection of the participants. All participants had a broad history of success in public health, public health administration, and education. These stakeholders had the knowledge and experience that best represented key points in a dialogue on implementing social networking tools for the RSPHTC Center. Another step to verify data properly is to collect and analyze the data concurrently (Morse, et al., 2008). In addition to the field notes taken during, and immediately after sessions, the coding process began soon after each interview ended versus having the data sit unexamined before analysis.

To further ensure the validity of this study several safeguards were implemented. To start, peer evaluation was used during the construction and evaluation of this study. In creating the questions for the interviews and the methods used to collect data, a group of three peers within my cohort were enlisted to read my work and offer suggestions. Suggestions on how to ask follow-up questions, as well as protocols in providing the subjects information on the study and questions prior to their interviews were proffered. Furthermore, my peers provided assistance in the construction of rich descriptions. Rich descriptions can be defined in the ability of readers to see the data transparent enough to correlate to their own situation or context (Patton, 2002). As my study progressed, my peers alerted me when descriptions required clarification, as

public health and the RSPHTC may use verbiage not easily understood by those outside the environment.

Two other strategies to help protect against validity errors used during the duration of this study were audit trails and member checking. Audit trails help a researcher keep a running account of their work and choices throughout a study. All forms of raw data, field notes, reduced data, and analyzed data for record keeping purposes were kept in a secured file at my home. . Member checking, allowing those who were interviewed the opportunity to check and verify the accuracy of data collected and analyzed, were also employed during this study (Moustakas, 1994). After interviews were conducted, I made myself available for further dialogue and then allowed for review of transcripts. Each participant was given a copy of her transcript to offer clarification, strike a section, or add more information. After the coding of the data, information was again shared with the participants for their feedback and to ensure my processes kept the data true to their experience (Moustakas, 1994).

Limitations

This study was conducted through one of the 38 public health training centers located throughout the United States. Each center had its own mission, for example the RSPHTC's charge is to offer training for those who work in rural settings and/or people who work with HIV/AIDS populations. Staff sizes, scope of educational offerings, and different budgets differed among the centers. Most issues at the RSPHTC were similar to those in other centers, and public health organizations in general, however, some were unique as a start-up organization. Due to the specific aspects of the center's themes, as well as its limited history, there can be limits of transferability with the results of this study.

In reviewing the choices made to collect data for this study, several aspects could be considered limitations. Regarding sampling limitations, the sample of those interviewed, out of the total RSPHTC employees, was determined by the proximity to the implementation of a social media presence decision-making process. Many of the stakeholders not interviewed were part-time employees or members of the advisory board that met only a few times a year. Five people closest to the day-to-day operations of the center and ultimately responsible for the choices related to social networking sites were chosen to participate in this study. This small number created an opportunity for time spent with each stakeholder. This personal attention fostered more in-depth interviews and a greater forum to extract all personal considerations on the subject.

As a personal user of social media, as well as being an employee of the RSPHTC, my perspectives may have affected some of the choices and analysis of data in this study. To eliminate, or minimize, this potential bias I worked in tandem with my advisory professors to identify how many stakeholders I should interview, as well as working with peers and non-interviewed members of the RSPHTC to create an interview protocol. Further, I constantly sought feedback from peer members of my educational cohort on my documenting of the study as well as their debriefing. As previously stated, I also worked to include field notes during my interviews and analysis, so I could determine any limitations based on my own bias. Finally, to ensure the accuracy and perceptions of those being interviewed, I provided my transcripts and analysis for review and comments. I offer this statement to readers in an effort to explain how my position

and experience could have altered this study, as well as demonstrate the safeguards I used to present that occurrence.

CHAPTER 4
RESULTS

This chapter presents the results of the study capturing and describing the decision-making process of a start-up public health organization determining whether to implement a social media presence through the perspective of various stakeholders. These results include the collaborative comments of the stakeholders interviewed, as well as insight from the field notes of the researcher. This chapter is organized in accordance with the order and categories determined through the interview instrument, resulting in a compilation of composite descriptions of the main topics addressed by the stakeholders. The interview results specifically focus on five areas which grew into major categories from the raw data and initial codes. These core categories include: personal experience with social networking tools, use of SNS in public health, use of SNS in work environments, ways the RSPHTC could use SNS, and finally potential outcomes projected of SNS usage by the RSPHTC. Since each interview was unique, a section entitled “other issues” captured interesting data collected outside of the core categories.

Descriptions

In going through the data sets and codes from the interviews the researcher worked to extract textural descriptions from the participants which highlighted their experience and knowledge on SNS and the public health working environment. Attention was also given to retain as much of the original data as possible by including direct quotations, and further developed these descriptions with interviewer notes which allowed the participants’ full meaning to be conveyed. These descriptions helped describe the participants’ feelings and experience towards SNS in their personal life and

professional work within public health. The composite descriptions allowed for interpretation of the aggregate data, and what they mean in context, as the center heads towards a decision on this issue. While each stakeholder is involved with the day-to-day operations of the center, not all share the same decision making power. With this in mind the researcher worked to gather, within the environment of the RSPHTC, the individual comments and sentiment and point them towards a narrative describing the center's overall stances on social networking implementation and its ultimate decision.

Personal Experience with Technology and Social Networking Sites (SNS)

General Usage

In reviewing the interviews of the RSPHTC decision makers, there was a vast spectrum of personal SNS usage demonstrated. Prior to specifically discussing SNS usage and public health, various questions helped form a baseline of the stakeholders' collaborative knowledge and usage of technology in general. For the most part, many of the participants in Interview One, when asked about what technology they use on a daily basis listed the telephone, their desktop computer, and email as specific programs used. When asked about the technology they use in their job, two listed their phone, four listed their computer, and all five specifically mentioned email. One participant when asked what program she used most on her computer stated, "Just tons of email and some Word documents and that kind of stuff, I probably spend two hours a day just responding to emails." Another participant agreed and added "Each day it takes me until lunch time to respond to all of my emails and phone calls that is just how people communicate in public health." Another aspect of technology often mentioned in the

interviews related to specific programs used in teaching, as many of the RSPHTC stakeholders and administrators are also professors.

As the RSPHTC is co-sponsored by two universities, many of those interviewed had experience in, or are currently, teaching courses. In response to the general questions aimed towards gauging the basic understanding of technology use, many of the answers drifted towards the technology they have learned through teaching online courses. One participant spent a significant amount of time explaining her experiences in teaching courses online. When asked how she felt about her experience teaching online courses, she responded

> Not good, but the technology was totally under-developed at that time. Let me think of the timeframe so you can put it in context. I think it was maybe 2000, 2001. I taught two online courses, where I had worked before and basically, when I left, they didn't have anyone to replace me for the on-campus courses, so they wanted me to put my courses online. The thing was that really all we had … we didn't have voiceover Power Points. We … I could put Power Points together and then use the little notes section underneath to explain what it was. I did some of those and I had to write out a bunch of introductory things. There was no live voice involved and then there were no discussion rooms. There were no such things as Blackboard or Sakai or any of those, and so communication with the students was via email.

Other participants, who taught, had different opinions about using online platforms for formal education. One stakeholder expressed that she "enjoys teaching online courses, but it takes a while to understand how to communicate with students." That same instructor, however, expressed concern when stating, "It does get frustrating when the programs and technology programs change every year." A third participant who commented on teaching courses online said that she "spends more time preparing and grading her online courses than face-to-face, but rarely receives any feedback on how she is doing."

SNS Usage

More specific to SNS, many participants' responses in Interview One demonstrated varying definitions of these sites and social media in general. When asked "How would you define social media?" one responder stated "I consider anything that reaches out beyond yourself to other people as social media." She continued by listing newspapers and television as forms of social media as well. She further expanded by specifying that a definition used by many today as "technology and electronic communications with the public: Wikis, blogs, Facebook." Another RSPHTC stakeholder offered "a website that provides an opportunity for a lot of people to connect with each other, based on different types of characteristics" as her working definition of social media. While a third person stated "I would say that social media is a way for people to maintain personal ties with other people through electronic means."

As the interviews continued, one stakeholder offered a unique perspective as she had spent some of her life living outside the United States. In her interview she said "I think social media is a relatively novel way of communicating with a variety of audiences." She continued with "I grew up in a country where we didn't have access to a lot of computers, but I use social media to communicate with not only friends but also colleagues who are all over the world." The final participant, when asked to define social media started with "I was going to ask you to define it for me for your research, but I should know that was going to be one of your questions." Later she did, however, add "right away, we think about Facebook and Twitter, and things like that, but I think it can be any type of blog or website to where you can actually give feedback to some of the things on there." This comment reflected a common confusion, mentioned by several of the participants, as to their not knowing if the discussion boards they often

use in conjunction with the continuing education webinars they watch classifies as SNS or not.

After having the participants define the general term social media, the researcher offered a brief explanation of SNS verbatim from the operational definition at the end of chapter one. With this in mind, the next set of questions in Interview One asked the RSPHTC decision makers to expand on their personal usage of SNS. One participant offered, “I use Facebook mainly as my social media. I’ll sometimes read Twitter feeds as I have a Twitter account, but I don’t tweet.” She continued by clarifying that she uses the SNS to “keep in touch with friends mainly, so just seeing what they’re up to, seeing what people are doing without commenting.” Another person interviewed added LinkedIn as a site she uses, when she shared “I do have a Facebook account and a LinkedIn account, though I will have to say I am not what I would consider an active participant.” She also went on to explain that she often gets out of touch with these tools, due to lack of motivation, as she feels too often people are just sharing the mundane aspects of their lives.

Another participant was very excited to share the way she incorporates SNS into her life, namely Facebook. She stated that a lot of her friends and family live outside of the United States, so “frequent communication with those people via Facebook, which is probably the least expensive way to do so these days, has been great.” Centering on how SNS can be an inexpensive form of communication was unique to this participant, but understandable with her sharing of the large percentage of her family who live outside of the United States. This same participant also stated that “it has really

reconnected me with a lot of people from my past", so that was another perceived advantage towards incorporating SNS into her daily life.

One stakeholder interviewed seemed to be very passive about SNS in general, and made numerous comments about the time needed to maintain a regular presence. Different than others interviewed, who often spoke on how using SNS helped them make connections and allow them to communicate with others on their schedule, this stakeholder expressed that participating in SNS can be work and almost feel like "an obligation." This participant, when asked about personal SNS usage, stated "well, that's an interesting question because everybody around me uses them and they friend me, or they link me." She continued by clarifying her usage as, "I'm like 90% passive in my use because I just don't have the time to be active. It also does not really fit my personality to be actively, putting things out there about myself." Ultimately this public health professional seemed content with the status of her friendships, and how she communicates with the people in her life and primarily saw SNS as a barrier to friendships and not as a tool to make them connections stronger or more convenient.

In summation, the questions from Interview One which probed how the RSPHTC stakeholders use SNS in their personal life resulted in a varied mix of responses showing their collaborative commitment and indifference. Several people interviewed seemed to rely on SNS as a way to stay in touch with friends, past and present. Other people who were interviewed did not seem to be motivated to try and keep up with this growing social medium, content with how they currently communicate with others. Another set of comments, which revealed itself within this theme, related to the participant's questions on what exactly quantifies participation. Several of the

stakeholders offered that they sometimes go onto SNS to look at pictures, see what friends and relatives were doing, but often not posting themselves or accepting the friend requests proposed. It can be said, however, that the RSPHTC decision makers all seemed familiar with SNS, and their features. Furthermore, most were able to identify specific SNS by name, most citing Facebook, Twitter, and LinkedIn.

In placing the comments of the individuals in context with Rogers' descriptions of adopters in the diffusion model, the majority of those interviewed would fall within the middle categories of "Early Majority" and "Late Majority". No one interviewed expressed any choices, or behaviors, related to SNS and technology in general which would label them "Innovators". Likewise, often due to the basic technology requirements and training in their job, no one exhibited behaviors consistent with "Laggards". In considering the remaining choices: "Early Adopters", "Early Majority" and "Late Majority", most would fall between the early and late majority of adopters. Three people interviewed would most accurately be labeled as early majority, as they seemed to have been using SNS for several years. The remaining two RSPHTC stakeholders would best be described as in the late majority category. These two stakeholders were certainly familiar with SNS usage, had experimented with the sites on occasion, but generally tried to avoid usage personally and professionally.

Use of SNS in Public Health

In examining the responses of the RSPHTC workers from Interview Two, in regards to how they use SNS at work and within the field of public health, the answers were often difficult to distinguish between general public health and their personal work advancement. For the most part, many of the responses aligned to the stakeholders sharing how they make connections in the public health or their field of academia with

SNS versus how to use, or teach how to use, the tools to directly help public health initiatives. The majority of answers described usage as participating in alumni groups, networking with known others who have similar sub-interests in public health, and overall professional development. There also seemed to be a connection of usage in professional context, with personal usage, as those who incorporated SNS use into their daily lives with friends and family tended to be more determined to implement SNS for the center. The need to keep up with professional development, however, seemed to be a motivator for all, even for those who had previously answered personal use questions with responses indicating their natural tendency to be passive or indifferent to SNS usage. Primarily responses from Interview Two could be broken down into people describing how they use SNS in the field, how it relates to the Ten Essential Services, and ultimately how it compares to the current methods of public health worker's professional development.

Again considering the RSPHTC is managed by two large public universities, answers reflected that the schools and individual academic departments were not pushing for formal use with students; however, SNS were very helpful in keeping up with alumni. For the most part, it seemed that alumni themselves were creating, or joining, Facebook groups after graduating and several of the RSPHTC stakeholders mentioned that they joined these groups to stay in touch with these members now that they were no longer official students. One stakeholder explained that "a lot of our alumni are on Facebook." She stated that she uses the tool to "know who has a family, who's going to have a baby, who's getting married." In the end she stated "We've been able to actually use it to outreach and find some of our alumni." When asked to clarify

who made the group, the school employee explained “some of our alumni did it.” A follow-up question clarified that the alumni student groups, while giving the group names that reflected the college graduated, created their own logos for the Facebook pages.

During Interview Two a stakeholder at the other RSPHTC managed university also confirmed Facebook usage by alumni. This stakeholder did share, however, that the group membership was “really low.” She also added that many current students also create their own pages, though they were not sanctioned officially by the school. Mostly the students created pages based on their major and start or graduation dates. This school employee also interestingly added that while she is a member of several of these groups, to know what is going on, that often people who work for her post on her behalf. In addition to RSPHTC stakeholders participating in groups populated by current and past students, several people mentioned usage among peers specific to projects or grants they have worked on with others.

Considering all of those interviewed, in addition to their administrative and teaching duties, work as scholars in public universities they are often members on research or grant committees. One participant described how Facebook, in particular, was helpful on a project she worked on with a cancer center. She stated “We actually had a Facebook page, which was used to communicate with our community partners.” She further explained that “We communicated everything from updates on our research projects to advertising outreach events.” With a Facebook page, “We were able to communicate with them back and forth through this site, which was a really nice tool for them because it was very accessible for our community partners as well as for us.”

When further asked if the project's use of Facebook had any negative aspects, she stated "no, there were no negative occurrences I can recall." She furthered clarified that the project's supervisor, who was originally not enthusiastic for the Facebook usage, made sure a member was constantly monitoring the board to remove posts if needed.

In addition to using SNS as a means to communicate with students and known colleagues, the RSPHTC stakeholders also addressed how they perceive these tools as a forum to interact with others in the field. All five members interviewed expressed they have never followed or tried to connect with someone in the field of public health that they did not already know personally. When wanting to see the work of another professional in the field, for the most part, they would just research their efforts on Google, read about new ideas in academic journals, and some have watched YouTube and webinar presentations. None of the participants have used a microblogging site, like Twitter, to follow an unknown person in public health. The concept of "following" an unknown person, on a professional or personal level, seemed to be a large deterrent for using a site like Twitter by everyone interviewed. Only one person questioned actually uses Twitter, but she purposefully tries to avoid public health discussions and professionals, and only follows personal friends. She clarified by stating "When I'm on Twitter, that's kind of like my time. I'm really not focused on work or public health issues so to speak." She went on to share that "I mean public health is part of my life all day long, but when I'm on Twitter at night I'm trying to kind of relax."

The questionnaire for Interview Two dedicated a series of questions on how SNS could be used specific to the Ten Essential Services of Public Health. This series of prompts solicited some of the most detailed responses on the potential of SNS for

public health workers, as the repetitive series of questions allowed those being interviewed to continually build their depth of responses. Interestingly, most of the responses had a tone of future tense, though the technology to do many of the tasks described currently exists. This series of questions also allowed many of those interviewed to express their thoughts on the reality of how public health workers can use SNS in regards to network blocks at work locations, especially for employees of county health departments in the state of Florida.

One stakeholder interviewed had a unique perspective on SNS and the Ten Essential Services, as she was currently researching a related grant proposal. When she had an exploratory discussion with a member of the organization providing the grant funding she asked him "How much research is there out there, with regard to the effectiveness of using social media in health departments to carry out the 10 essential services?" His response, according to her, was "virtually nothing." This perspective led her to summarize her thoughts as "Right now we are at a point where there is a lot of potential, but it hasn't gotten that next step of detailed attention it needs in order to move into an implementation stage."

In public health, most workers often need to access and complete a certain amount of continuing education credits (CEUs) to maintain their license. In describing this model of professional development, specific to the public health field, a composite began to form on how most workers use technology and potentially SNS. One stakeholder interviewed stressed that "unlike other fields, many public health workers did not even go to college for the job there are currently doing." Furthermore, with "recent budget cuts, many employees are now doing what was once the job of three or

more people." Another person interviewed also shared similar responses and added "many of these public health workers are so overwhelmed at work that the last thing they want to do is collaborate about public health when they get home." With this growing mindset many public health workers were described as wanting to "get in, get their continuing education credits and be done with it." When asked how they find their CEUs, another person interviewed explained that "the average public health worker gets emails daily on new webinars and online programs." She furthered explained that "budget cuts have also basically killed funding for conferences and travel, so it is all online now." When asked how SNS fit in this model, one person explained "they don't really, public health is all about emails and webinars, some use message boards, is that a SNS?" Another stakeholder added, in regards to webinars and message boards, "I think there are some workers looking for engagement and discussion, especially the younger ones." For the most part, according to these public health professionals, the concept of merging SNS with formal CEU training has not taken hold.

In summation, many of those interviewed seemed familiar with the concept of how SNS could possibly be used in public health and at their universities. On the campuses where they work, an informal policy emerged where creating formal SNS for programs and schools within the college would need clearance from various levels of bureaucracy, but use among students and alumni was not regulated. The RSPHTC stakeholders also seemed to offer ways SNS could be used to stay in contact with people they knew in the field of public health. There was, however, a barrier for many of them related to following or contacting people they did not know already. In pressing them to express how public health workers could use SNS for professional

development, many seemed to feel that currently public health, as a field, does not really incorporate SNS into professional development. While many specifically cited the information generated by the Centers for Disease Control (CDC) as a good start for information, not many could offer any other places within SNS to visit for public health workers. While public health workers do need CEUs, and often fulfill these obligations online, SNS did not seem to be central to the process of finding or completing these courses. When asked specifically, beyond just professional development, ways public health workers could use a SNS to perform their job most interviewed were unable to offer any specific answers, usually citing the network block most SNS receive at work, as well as privacy concerns as hindering exploration on the Internet.

Use of SNS in Work Environment

As the discussion turned from describing the general role of SNS in the field of public health, towards how the RSPHTC could specifically use these sites to help public health workers, a theme of general work environment usage of SNS emerged. Most of the stakeholders interviewed, prior to considering how the RSPHTC could use these tools, shared their thoughts on the access, or lack of access, public health workers have to SNS. Many discussed the imposed block of SNS sites through the state public health network, which provides Internet access to county health departments, as a way to flush out their thoughts on how the RSPHTC might approach SNS implementation. Having limited access to the intended target audience during their work time seemed to cause a wide spectrum of thoughts on the value of creating a SNS presence. This discussion also, for several interviewed, touched on the subject of Smartphones and their role during the workday for public health employees.

SNS Access

While some interviewed commented on how they did not want to discuss the state's ban of SNS sites, often because they did not know enough of why the ban was there to begin with, others were willing to talk about it directly. One stakeholder interviewed made her opinions clear by saying "I think it should be lifted because I do think, more and more, there's a lot of good information that's out there on social media." She went on to elaborate that the ban "makes it tough on public health workers to stay up-to-date, as many do not want to look at these sites once they get home." This comment continued an on-going theme others had mentioned in various ways, on questioning the interest level of public health workers to use their own time to use SNS in a professional way. Another person interviewed, explained "public health workers are not like teachers, where their classroom is their domain, they just do what the state or county tells them." Several others interviewed also alluded to the fact that many public health workers do not have the freedom to do things "their way", but rather need to stick with a scripted response so the public is often hearing one universal message.

As the discussion on whether state, or county, public health workers should have access to SNS during the work day continued, the perceived pros and cons began to surface. One person interviewed stressed that getting information through SNS is in line with what people use every day. She stated "I think it's good technology, technology people are used to, and so it's really important they should be able to access information in that way." This comment parallels much of the research advocating SNS for educational purposes, outlined in the Literature Review, in that it is a platform people enjoy using and are already trained. This same participant continued with her thoughts on potentially using SNS as a message board by public health

workers willing to collaborate, or internally for a public health organization as a whole. She explained “these sites save time in the day so if you can just use them, go back and forth and have that collaboration, it makes it easier than trying to get a meeting together.”

While the question of how public health workers could potentially use SNS while at work was asked in various ways, the only theme which surfaced from the responses was for professional development. While there are documented examples of progressive ways some public health workers are using the tools to do their jobs, like monitoring and keeping in contact with the community as a whole, the RSPHTC employees interviewed primarily focused on ways the tool can be used internally to connect public health workers themselves. To start, many of those interviewed commented that SNS access during the work day would allow for public health workers to connect to information from the CDC, as well as from the state’s own SNS pages. One person interviewed expressed “It’s so interesting that the state pumps out this information on their pages, but the people working in the building can’t see it.” Another person interviewed explained her thoughts on how many public health workers often do not have others in the building to talk with in regards to their specific specialty. She explains “With how thin staffs are stretched, there might be just one person assigned to the HIV patients, where can they go to discuss issues with others like them?”

As stated, the possibility of public health workers using SNS to help fulfill their day-to-day responsibilities was rarely covered by those interviewed. For the most part, SNS were usually advocated in a manner where a public health worker could gain access to new information and educate themselves, but not in a way to do daily work.

Only one person interviewed even broached this subject when she added "Professionally, they could use social media to find information about public health, in particular, information about let's say, what activities may be going on in their communities." She continued by adding "They can also use the social media to actually disseminate information about the public health work they're doing so I think it's kind of a dual approach, where they can take in and push out information." This use of SNS, directly talking with members in the community, has been used recently in many counties who shared information on where to get flu shots. Allowing community members to talk back to health department employees, to ask questions and collaborate with others seems to be a rare occurrence as the fear of privacy is prevalent. One person interviewed did share a story they had heard where "There was one worker who went into message boards at night under a fake name and tried to gain trust on where to best distribute condoms for those who wanted them." For the most part, she explained many people on the board asked if she was a government employee and stopped contact, and ultimately this person was asked to stop this practice from her supervisors.

Another aspect of the SNS block, at work, for public health workers often discussed was the balance between monitoring employees' online activity versus trusting them as an adult. In reviewing all of the data, there was no comment made from anyone at the RSPHTC which supported the ban blocking SNS from public health workers during the work day. Some employees offered reasons they though the ban existed, but did not come to an ultimate conclusion that these reasons should stop access. One RSPHTC employee stated, when asked if state workers should have

access to these sites, “My personal feeling is that the state shouldn’t be blocking anything. These are professional adult workers and it’s a very Big Brother approach.” Another employee of the center took time to show that she could see both sides of the debate. To start she commented, “I would think that we’re at a point where if there’s a need to monitor what public health workers are doing with social media that we should be able to do that.” This viewpoint brings into question the technical tools and resources needed to monitor an employee’s SNS usage while at work. The belief that the state does not want to lift the ban because they are afraid they do not have the way to properly monitor usage was common among those interviewed from the RSPHTC. One person added, however, “While I am sure they do not want an issue at midnight that can spiral out of control, people have been saying stupid things in print, on radio, and in TV interviews for years.”

Smartphones

A tangential issue to access of SNS sites while at work which was repeated by the majority of RSPHTC stakeholders interviewed was the use of Smartphones by employees. To start, considering the work environment, many of the employees addressed the use of Smartphones in the classroom as well as within the office space. As many schools continue to work to find the appropriate line between allowing students to use their devices, with continuing traditional teaching methods, the comments of the RSPHTC reflected this debate at their respective schools. One person interviewed was very direct in that she has a strict policy not allowing Smartphones in her classroom. She stated students are not to use them and she “calls them out in class when they use them.” Another RSPHTC employee who also teaches a course made the comment that she usually does not “fight the students on them.” She also added, however, “I would

like to use them in class more, but I do not feel that I have figured out how to best do so." The only other stakeholder, who mentioned Smartphone usage in class, had actually worked to incorporate the devices into her lessons. She shared that "I found a site to do instant polling through texting, so usually during class I embed a few questions in my lesson and we watch instant results." These three responses show a wide spectrum of acceptance for Smartphone usage in the classroom, similar to how all five people interviewed explained their thoughts on usage in the work environment.

As those interviewed work to share how SNS could be used, or utilized in a work environment, the issue of availability and Internet blocks continued to be raised. Similarly, opinions on the usage of Smartphones by employees, often to circumvent the blocks on their work stations, were also expressed. For many, the net outcome of this way of using the SNS blocked computer for work and a Smartphone for personal usage resulted in not allowing for the positive aspects of SNS usage while also not removing the potential negative aspects to SNS employee use. One person explained that she used her Smartphone at work in a "limited basis." She said that she used the phone "sometimes for work, where I text people, or look up something in a meeting." She also added, however, that "sometimes I use it to check my Facebook, personal email." When asked how proportionate the times are between personal and professional usage, she laughed and said "oh, probably 80 percent personal." When asked another follow-up question for her opinion of this usage related to work efficiency, she said "Yeah, I do not know if I would like it for the people who work for me, to do the same but I guess they do." She continued by adding "it is just the way it is, we now all have supercomputers in our pockets."

In other responses through Interview Two, participants shared the sentiment that Smartphones are often used for personal use, which might distract from work. Another stakeholder mentioned that “I think it is all about the amount of usage, but in the end this is college and we are adults.” She went on to clarify that she found it difficult to use her own work place as a way to gauge other work environments. “Here, you have a bunch of people with a doctorate degree in a room, so when someone uses their phone in a meeting you give them the benefit of the doubt.” She further added that she felt often college employees were “intrinsically motivated” and did not need to be monitored as much. She feels that so many people who “work at this college have worked so hard to get here, they are not going to mess that up.” Another woman interviewed shared some of these same thoughts and incorporated the role of the manager. “In the end, it comes down to your output, are you getting things done, and can your supervisor see that?”

While similar in tone to these interviews, others added more detail on how the use of Smartphones at the work place comes down to different work environments. One person interviewed felt that public health workers are often not treated like adults. They wondered “How can these people be on the front lines of protecting all of our collective health, and they are not allowed to use Facebook?” She did, however, say “look there are some places where people just surf the Web all day, but a good manager gives people things to do, if they check their email and can keep up, who cares.” Furthermore, “I would think some businesses might want to not block sites so they can actually see what their employees are doing, versus what they can’t see on their phones.” A final person interviewed felt conflicted on how public health workers

use their Smartphones in the workplace. She concurred with other interviewed when sharing, “Look the way it is now, I doubt they get their phones out to use Facebook or Twitter to do their job or do professional development.” She questioned, however, “If we open these sites up on their desktop, will they start using Twitter to learn more public health? I don’t know, that is the question.”

As many interviewed felt employees who use their Smartphone at work ultimately take time away from completing professional tasks, there were some positives attributed to its availability. One person pointed out, “Look I use my phone at work, but sometimes I am fixing a problem on contacting someone that would have previously made me leave work.” This person also justified that “My work day is not 40 hours a week anymore, eight in the morning to five at night.” She added “I work all of the time, so if I am doing work at eight at night, then what is wrong if I use my phone during the day to do an errand when businesses are open.” This theme was applied to public health workers, however, when one stakeholder said “I am not sure how committed public health workers are beyond their forty hours, not sure if they see it as just a job or a total career.”

In conclusion there seems to be conflicted thoughts, based on their own experiences, on how public health workers could use SNS in the workplace. Considering the state of Florida currently bans SNS from most county health departments, several interviewed did not have a sense of urgency in pursuing SNS for the center. Others, however, felt that ultimately the ban would be lifted and the center could position itself to be a leader in SNS information for public health workers. For the most part, those interviewed felt that public health workers, like workers of all fields are

already using their Smartphones to potentially access SNS and other programs for personal usage. Due to the perceived lack of sites and demand, many interviewed assumed that while public health workers were accessing SNS at work, many had not found it as a tool to do their job or to get new public health information. Most interviewed seemed unsure, if the Internet block were removed, that public health workers would use SNS at work. Some mentioned that they felt these workers might still perceive their usage would be monitored so they might not use SNS for personal use, but if they like using these tools then they might try it at work for their job.

Ways the Rural South Public Health Training Center (RSPHTC) could use SNS

When compiling the interview responses answering questions Interview Three, which directly paired SNS and the RSPHTC, the vast majority of comments reflected that the RSPHTC stakeholders see this tool as a means for marketing and showcasing center activities. Currently the website displays announcements of new educational sessions, courses, deadlines and upcoming events. This website, however, does not have the ability to pop-up new information on a stream like Facebook or Twitter, where people get newly updated information. To currently obtain the center's announcements and marketing efforts, public health workers and community members would have to actively choose to check the website. The website does, however, have a feature allowing for people to sign-up for email messages when new posts are made, however, to-date no one has signed up for this feature.

Prior to describing perceived positive and negative outcomes for SNS usage, many also touched on logistical issues related to resources needed to properly manage a SNS. When considering how the RSPHTC could set-up a SNS for long tern success, a great disparity arose between the two sites most referenced, Facebook and Twitter.

Facebook, for many, was a tool which could be more controlled and would allow for attention given to a smaller group of people who are more closely affiliated with the center. Twitter, however, was seen as a tool which could potentially introduce the center to a larger audience, but required a much more active participation and commitment. The difference of opinion for these two sites also reflected differences within the group on whether the mission of the center was to primarily focus on the regional aspect of training Florida public health workers with HIV/AIDS education or in its larger role as a national training center available to anyone online.

Currently, the RSPHTC has an employee dedicated as the online learning coordinator who is responsible for creating the website, doing the technical production of the monthly CEU, as well as for their formal academic courses. Most people interviewed, felt this person would be able to incorporate updating SNS, similar to making new announcements on the center's website. One person interviewed explained this could be beneficial direct marketing as they felt in "the future people can find our page and like it, getting the updates they want, versus the blast of emails we get from places I do not even know."

While many felt creating a Facebook page could be easy for the staff and beneficial for the center, others worried about the resources needed if the pages proved successful. One person started by explaining, "We have the people and time, I think, to launch a Facebook page, and make routine announcements." She continued, however, "I think the problem comes if we get a lot of followers, or encourage community posting which would need to be frequently monitored." This commentary reflected many comments about SNS usage, which showed the forward thinking of projecting

potentially large followings. Another cause for concern, related to time devoted to the initiative by current employees, was specific to Twitter. One interviewee showed concern that the current staffing could make high volume posting difficult. "We are somewhat split by public health and technology people, and the public health people don't know Twitter and the tech people don't know enough public health to make 10 posts a day." As the questions progressed beyond staff resources, the majority of comments segmented into perceived positive and negative ways (see Table 4-1) the RSPHTC could use and be affected by SNS.

Perceived Positive Outcomes of SNS for the RSPHTC

As RSPHTC stakeholders considered the positive impact of SNS usage, through Interview Three, the majority of responses continued to reflect the themes of marketing opportunities as well as using those efforts to reach certain demographics. A third and fourth sub-theme which surfaced reflected the stakeholders' positive impressions of the cost and ease of use aspects of these sites. Finally, and usually only when asked specifically, some people interviewed considered the SNS the RSPHTC could construct as a platform for public health workers to collaborate with one another in a formal and informal way.

Marketing and Announcements

For many stakeholders interviewed the concept of using a SNS was considered as an additional tool to what the center is already using, a comprehensive website, and a way to direct public health workers there to take part in their offerings. Again, the RSPHTC website currently operates as the central portal to all center activities and is the location public health workers visit to take CEU sessions, as well as to get information for formal academic courses. Unlike CEU sessions, which are primarily

self-contained, when a student signs up for a for-credit academic course at the University of Florida, they do have to take courses through their learning management system, Sakai. No one interviewed felt a page like Facebook would act as a replacement location for offering these formal CEUs and academic courses for credit. As one stakeholder mentioned, “Facebook could be a way, or an opportunity, to broadly advertise the program and showcase our educational components.” She continued “People could get updates through their Facebook page when we are launching a new session, or of deadlines for signing up for a course.” This model of using Facebook was repeated my many others interviewed.

While continuing with using Facebook, in particular as a tool for announcements and networking, one person interviewed also expressed its role in connecting with the general community. She stated “I think there is certainly room for the center to use Facebook, especially because we are not only trying to reach public health workers but also the general community.” She clarified that “Not all that we do is just for professionals, but we also have live events where if people or community partners wanted to come that would be a great way to spread the message of our center.” Another person, while using the website as context, also expressed her thoughts on the speed of SNS. “I feel sometimes it is a chore, or a large act, to update the website, but to add a new announcement on Facebook or Twitter is easy.” She continued with “I think sometimes when we just want to pass something along quickly, like hey look at this, Facebook would be a good supplement to our website.” Continuing with the connection of how the RSHTC engages with the community, this one stakeholder also added “a Facebook page does not have to be a one way street; I think people in the

community would be thankful if we also used our site to promote some of the things they are doing as well."

Usage by Age

Another potential positive outcome of SNS usage by the center is to create another outlet to garner potential clients for the center's programs, especially younger public health workers. One person interviewed was very direct in their assessment of the center's role within the network of 38 total training centers. She stated "Look we are one of 38 centers, and if you watch the budget dramas of late, we need to use every opportunity to increase our enrollments to stand out if there are cuts." She continued by focusing in on potential younger users

> These sites [SNS] are just the language of younger people; it is what they are on all day. I worry they won't find us with a Google search, but if we can connect with them and send them updates on sites they are on they might find us.

This same stakeholder continued by clarifying, in her opinion, the method public health workers use to obtain their CEUs. "Basically some people try to do a lot of CEUs right when their year is up, while others take things as they go when interesting classes pass by." She feels, especially for younger people that "using Facebook might make us stand out and seem innovative, as all of the CEUs bombarding people's email inbox becomes white noise."

As an organization, within higher education, several people interviewed continued to make connections with SNS and younger public health workers, specific to the training or lack thereof they receive. One person, speaking on behalf of their own school, stated that "Our public health students get no specific course in social media or technology for public health workers." She explained that there is another major at her

school called “health education” which offers courses like these, but not for people who are set to be future public health workers. She felt that “really when they get a new job they just get a computer, a phone, and email, so we don’t feel compelled to equip them to take on more.” She did state, “Young people, however, are explorers online and I am sure some of the younger public health workers are not going to go to a formal academic journal to get their answers.” Her feeling was that “if we could position ourselves now as a social media source we could get ahead of this and be the go to place for information for the next generation of workers.” This statement, in context with others throughout the interview, displayed a collective disagreement by the stakeholders on whether using a SNS in public health in 2013 is being innovative or actually being behind what others are providing. In essence, some felt that there is a large void in SNS usage in public health compared to other fields, while others felt that the demand is low and there is already enough coverage. One person made the comment, reflective of this mindset, by stating “maybe we should just skip Facebook and Twitter and try and be ready for whatever is next.”

Cost and Other Usage

Two features of SNS universally impressed the RSPHTC stakeholders, its cost and its ease of use. To create a Twitter feed, or a Facebook page, there would be no cost beyond allocating the manpower to update the sites. One person commented, “Well I do not know why we would not use it, it is free.” Another person was more specific to the context of the staffing of the center when she added “I think we need to understand how much time it takes for someone to update these sites, but the sites themselves are free so they feel like better options than a lot of marketing things we pay money for.” The fact that there are already a lot of people who are registered and

trained for SNS is equally attractive to many members of the RSPHTC management committee. One person noted, “We work so hard to get people to come to our website and classes and then they have to learn our systems, let’s just go to them.” Another added that “Some of those sites to get CEUs are hard to figure out and no one likes another password to remember, so putting information on a Facebook page could remove a barrier.”

While the majority of those interviewed focused their comments on how SNS could be another tool to send RSPHTC messages to the masses, there were two segments of interviews which highlighted other potential uses. When asked what outcomes which could result from SNS usage, one person interviewed described using a SNS as a forum for public health workers to collaborate. She explained

> Well, I could see, for example, setting up a private group of people who are HIV positive and maybe we share some kind of characteristics, like maybe they're single African-American women or something, so that they could talk about their trials and tribulations, and give each other advice and maybe you can have a professional involved in the conversations.

This usage, not of posting on a main center page like Facebook but rather using small self-contained SNS groups, allowed in her words

> something meaningful that people feel that is going to have an impact, a real impact on their lives in a way that they're interested in, not in a way that we're imposing "you need to do this" kind of messages

In this model, of giving access to either public health workers, or patients, specific forums based on shared interests, the center could foster productive collaborative efforts, but might require more time and resources to monitor.

Another concept which was offered during the interviews, beyond just using a SNS to direct public health workers to the center’s website offerings, was to blend the

functions of the SNS and website into one overlapping tool. This vision was described as

> It'd be great if a Twitter feed or your Facebook was a 'go to' place for them [public health workers] for the latest news in public health. Like what's going on at the state level, what's going at the federal level, someone explain to me exactly how my job is affected by this Healthcare Act that just was passed. If done right these sites could potentially replace your [the center's] website, and you could actually make them interfaced so they were almost seamless where you were going back and forth from websites to the Facebook page, back and forth. They click on a link for a new video session off of Facebook or Twitter and it just takes you to the new session, versus going to the website to then access the session. It's sort of like having your own television station through the Internet essentially is what it is. If you do it effectively and market it effectively and you have the staff to keep it as you promised, it could be great. Of course if you going to make that promise you have got to make that delivery.

This version of a way to combine the interfaces of the website and a potential SNS page, however, was also addressed in another stakeholder's comment. This person, while discussing another perspective added

> it would be nice to just use a Facebook page for everything as the website can be difficult to navigate and update, but we do have to offer formal assessments for credit and I do not see how to do that with just Facebook.

Balancing the formal and informal aspects of the center's outreach, while also trying to accommodate regulations, seems to be a challenge facing many of the decision makers.

Perceived Negative Outcomes of SNS for the RSPHTC

While the RSPHTC decision makers were able to list several potential positive outcomes for tangible SNS usage now, or in the future, the responses for possible negative outcomes often reflected the fear of the unknown. Answers which reflected a specific negative condition created by SNS usage were rare; however, many of those interviewed seemed very concerned that perhaps they were missing an angle they had

not considered. Supporting this mindset, many people during their responses to these questions, made mention of wanting to educate themselves more on how other training centers are using this model. Furthermore, there seemed to be a cost analysis for many in considering how many positive occurrences there needs to be to balance out a potential negative occurrence which would reflect badly on the center or the two sponsoring universities. In the end, the set of questions from Interview Three asking the RSPHTC decision makers to differentiate between the positive and negative outcomes resulted in more tangible responses for positive outcomes and a smaller sample of often fear-based answers for possible negative ones. This is not to say, however, there were no identifiable negative outcomes, as some mentioned concerns related to time, resources, inappropriate comments, and privacy.

Resources Needed

While many people questioned felt the RSPHTC had the time to maintain a frequently updated Facebook page, but perhaps not an often updated Twitter feed, there were still general concerns over time and resources. One person mentioned, “It does not seem there will be any increases in budget in the future, so any extra work is extra work.” This person added “It is not like we do not have a lot to do, and from my perspective this would be a thing we would be adding, not replacing something we currently do.” One person further clarified her concerns, especially for Twitter where she labeled using the site as “labor intensive.” She said that she felt Twitter creates an environment where people “expect it to be constant, unlike Facebook or email where inactivity can go a few days.” Another comment made specific to Twitter, regarding staff resources, was “Using Twitter creates a culture of being up-to-the minute, as you need

to be pumping out things that are new, not repetitive, and I am not sure we want or need that pressure right now."

In the course of all the interviews the majority of comments reflected that most stakeholders thought of the center as a smaller, regional group working within a larger network. Crossing into social media, however, had a few of the stakeholders concerned that demands on these sites could change that environment. One person stated, "If you can get in on the ground floor and be seen as a leader in public health perhaps you could attract thousands of people." She continued by questioning, "I am not sure if we are ready for that, as the day-to-day operational staff for this center is small." Furthermore, she added "It is not like if we get thousands of followers that we will be bringing in more revenue for us to keep up with the demand." Considering, if the center were to be very successful with social media, how that could help justify more funding or create opportunities for new revenue streams would also be another area for the center to investigate. More specific to staff resources, the qualities and expertise needed to properly maintain a SNS were also addressed by several interviewed.

In addition to the quantity of messages which might need to be generated by the smaller staff of the RSPHTC, a question of the quality of those posts relates back to the size of the staff itself. One person interviewed described a past position she held, in a large organization, which trained younger staff members and interns to make posts. She shared, in relation to the specific to the Twitter feed she witnessed at her previous job

> You have to be prepared and that person needs to know pretty much everything, or have access to people, who know pretty much everything about the subject matter. You don't want someone doing your Twitter feed responses giving out inaccurate information. It couldn't just be like a student

> that you hire in rotating fashion every semester to do that unless those students were very well trained in how to respond. Things can spiral out of control quickly on Twitter and a mistake now, even if deleted, can last forever.

Similarly, another person interviewed made comments regarding the level of discourse distributed by the center. "I think it is important that we remember that we are a group designed to work with public health professionals and even the academic courses we offer are only offered at the graduate level." She continued by stating "I think if we are going to use a page like this [SNS] then it needs to not be just where we are cranking out things, but rather it is calculated and at a high level." With this point in mind, the center should consider crafting several posts to get a consensus if everyone is in agreement with the standards required for implementation.

Inappropriate Usage

One aspect which seemed to unnerve several of those making the SNS decision for the center was the possibility of inappropriate comments being posted on an official center page. Three of the five people interviewed were able to describe situations they had heard of where someone had used these forums as a way to make negative comments public. Compounding this problem, for some, was the potential for this to occur after hours, requiring a system needing 24 hour monitoring. One person stated "The problem with these sites are the many links to places outside of its origination which can get connected to your page." She continued, "You have a Facebook page for the center and someone posts something that is inappropriate, or a link to a site that's inappropriate, so again it's labor intensive to make sure you are always represented correctly. Another person interviewed stated she recently went to a conference for public health where they were addressing social media and she felt it was "a series of

these isolated horror stories being presented", but added "maybe they were just trying to scare us." She continued by sharing

> It seems a number of universities, schools of public health, have had to deal with problems where someone became disgruntled and used social media as a venue for conveying false information or essentially bullying people, embarrassing people, so that's a downside and I don't know if there are ways to control that.

In an attempt to put these instances in context of the RSPHTC this person did clarify that "We, however, are often not in direct contact with users like a student and professor relationship. I am not sure why anyone would just come on [a SNS] and blast us."

While the majority of comments, projecting SNS usage by the RSPHTC, reflected a mindset that the center would more frequently be pushing out information, versus allowing for collaborative back and forth discussion, the issue of privacy was a constant concern. More specific to the general privacy issues of clients, and potentially patients, two of the stakeholders wondered how the center's charge to educate specific to HIV/AIDS would affect membership. Regarding general privacy matters, most interviewed felt that this was also another area where they would welcome more information prior to making decisions. One person shared "I am not sure social media can protect privacy in the way we would need for some of the more advanced applications we are discussing." She continued by saying "I think we would need to learn more about how people identify themselves and the settings on the page prior to implementation." For example, she continued "what is someone comes in and says well, I'm HIV positive and this was my experience at this x [blank] health department and they did this kind of thing to me." In this scenario she stated "One person, who may or may not be telling the truth, can do a lot of damage to us and another organization we do not represent."

The singular aspect of representing HIV/AIDS education, and often using related logos, curtailed certain RSPHTC stakeholder's expectations of SNS usage. One person remarked, "I am not sure with all of our red ribbons [AIDS logo] that we would even get a lot of followers, that would in a way be telling those people's followers something." Another person also made a related comment "I see where sites like the CDC gets lots of followers, but people might think you are just tracking the flu, with us everyone knows it is HIV/AIDS." Having such a specific charge towards public health education could allow the RSPHTC opportunities, as previously mentioned, to create small groups on SNS which could be very impactful. The subject matter of these groups, however, relates to a much stigmatized condition in our society and would potentially require an even more commitment to privacy efforts than other training centers. Future research on stigma, related to people choosing public health SNS to follow, could also represent an area for future study.

In summary, the decision makers of the RSPHTC were able to identify several areas of SNS usage which caused concern. Primarily, the stakeholders were concerned with time and resources to be effective as well as avoiding inappropriate material, comments, and links. Embedded with many of the concerns, and potential applications of SNS for the center, was the overall issue of privacy similar to most public health endeavors. According to the researcher, many of these collective concerns seemed to be areas where the decision makers wanted more information, to find ways to overcome, versus being roadblocks to implementation. In fact one member even mentioned, in regards to potential negative outcomes of SNS usage for the center, that negative experiences could have positive results when she shared

> I feel like productive discourse means that you're going to get positive feedback and you're going to get negative feedback. I think negative feedback, as long as it's constructive, can actually provide suggestions for future directions. Whether there are concerns about people posting things negatively on your Facebook page and that kind of thing, I think there is a need for some of that, especially within academic projects for us to really see what the community or what other people think about the work we're doing.

Other Issues

At the conclusion of the open coding of the data, and identifying the major themes found within the responses of the RSPHTC stakeholders, two significant issues appeared outside of these previously listed topics. These topics, the creation of a message board in lieu of an SNS, like Facebook, and an overview of the RSPHTC decision-making process itself were mentioned by several committee members, warranting their further discussion. To start, as several of the committee members worked to express what they would like to see in a potential SNS for the center, they began considering a message board as a better fit for their needs. While they stated that a message board loses some of the convenience integrated in the SNS, they thought it might provide a better forum for patients and public health workers to safely express themselves as they collaborate. One person explained, "We always have to do these posts on message boards for all of the webinars we do, and they are great, but after the session is over they disappear." This person continued, "I think it would be great if we just had one open all of the time for people to come in and meet and discuss based on their interests." This concept was repeated in different variations by others, as one said "I think with some of the more formal educating we do, and since we have required assessments for credit, maybe we should use a message board more." Similarly another stakeholder added "I think public health workers are just used to

message boards, with all of the times we use them for conferences and CEUs, so that should be something we should consider in place of or in addition to maybe a Facebook page." In context of the positive and negative thoughts of SNS, message boards could potentially offer more security, but would still require staff resources to monitor. Furthermore, the center should consider if there are ways to provide public health workers with incentives, or possible CEUs for participating in their message boards, versus taking the time to create them for only intrinsically-motivated posters.

Considering the framework, and purpose, of this study was to track the decision making process of the center through Rogers' diffusion model, several questions In Interview Three were asked to the members to respond on how they thought the process would occur. This line of questioning, however, quickly revealed a very similar response throughout all members questioned. Ultimately, the responses for these questions did not produce a deep theme of varied opinions. In summation, as described by one RSPHTC stakeholder "in the end this will just be decided upon by the Primary Investigator (PI) of the grant." Continuing, she added

> I am sure this will be like many of our other decisions, we will put it on the agenda and we will try to find a way to educate ourselves. I could see that we have an information gathering presentation, perhaps start at the large advisory board level, and from there we would take all of those ideas and have deeper discussions at the smaller management team level. Everyone will be given a chance to share their thoughts and then the P.I. [Primary Investigator] will decide how to proceed. I could see it being given a pilot chance of implementation, to do it for a few months and then review what has occurred.

This environment of decision making, labeled an authority innovation decision by Rogers, was confirmed by all stakeholders interviewed. While, aspects of a collective innovation decision were represented, in that everyone would have a chance to offer their thoughts and perhaps sway the decision, all four of the people interviewed, who

were not the PI of the grant, believed she would have the ultimate decision. After removing the data and answers from the easily identifiable PI of the program, all of the other four participants ended their final interview with a recommendation that the center should proceed in educating themselves further and discussing possible methods of SNS implementation.

Summary

In context of Roger's diffusion model the RSPHTC five major decision makers represent early and late majority adopters of the SNS innovation studied. When examining the collective 15 hours of interviews of these stakeholders, five major themes emerged; personal SNS usage, use of SNS in public health, SNS in work environments, ways the RSPHTC could use SNS, and potential outcomes for SNS usage by the RSPHTC. When considering personal usage, all five people interviewed were familiar with SNS and on some level had, or were currently participating in SNS. This usage, however, dropped significantly when paired with public health. Questions regarding specific applications to public health, revealed this field as one which still primarily relies on email, webinars and discussion boards for professional development. Most of those questioned had encountered SNS usage in public health periodically, primarily through student or alumni groups at their schools or in direct connection with the CDC. Everyone interviewed had refrained from using a SNS to connect with others in the field they did not already know personally.

Due to the large number of comments specific to the Internet block of SNS for most state of Florida public health workers, the theme of SNS usage within the work environment was robust. The lack of access for public health workers created a difficult environment for the stakeholders to fully grasp whether their efforts in creating a SNS

presence would position themselves in a way to garner followers if the block were lifted, or if all efforts in making a Facebook page or Twitter feed would be wasted staff resources. There seemed to be a consensus from those interviewed that Smartphones in the workplace are allowing, right or wrong, for SNS usage during the work day. This uniform mindset, however, did not carry over to questions asking if public health workers would use these Smartphones to access public health information if more readily available. When considering public health workers might visit a potential RSPHTC site, through SNS, the majority of those envisioned a platform which pushed out marketing and educational opportunities information. There were a few isolated comments which considered more in-depth usage of a SNS, like allowing public health workers a forum to collaborate on identified topics.

The final theme which emerged from the data represented the RSPHTC stakeholder's thoughts on what the outcomes would be for the center if SNS was implemented. These comments were further segmented into perceived positive and negative outcomes. From a positive perspective, the RSPHTC decision makers felt a SNS presence would be a cheap way, minus staff resources, to get out their message and academic offerings. Likewise, most had an inclination that using SNS would help make better connections with younger public health workers. Finally, RSPHTC members felt confident that using SNS would minimize the obligations of those interested in their programs to find them on their own, and learn how to sign-up and use properly. In regards to potential negative outcomes, the resources to properly secure appropriate commentary 24 hours a day worried some members. This, similar to basic public health communication, also demanded proper protection of poster's privacy

From reviewing the 15 hours of interviews with five RSPHTC stakeholders, on the possibility of implementing a SNS presence for the center, two aspects of the environment seemed consistent in the majority of interviews. To start, most everyone interviewed seemed excited and interested to discuss the possibilities of SNS usage. Most people questioned had some experience with these sites on a personal level, but had not really incorporated them into their professional life, or academic teaching. Often, in reviewing the transcripts, when a certain feature or application of the innovation was discussed, they would ask the interviewer probing questions to learn more. On several occasions, after the interview has ended, RSPTC staff continued speaking with the interviewer on possible application in their work, and some even requested future meetings to explore.

The excitement for potential SNS use, led to the second observation of most interviews, which was that most stakeholders felt SNS usage was inevitable. While several of the people interviewed made mention of the difficulties of adding responsibilities to the center at this point, as well as a common questioning of the need of SNS with the state's block of SNS for public health workers, time and again people used the word inevitable when describing SNS implementation. For the most part, whether it is Facebook, Twitter, or a future tool, the RSPHTC stakeholders collectively believed these sites are a part of our society now and the long-term question is more how to properly implement versus whether to implement. This belief was summed up when one stakeholder added "it is just what you do these days when you open a business, or start an organization, you create a Facebook page."

Table 4-1. Most Frequently Mentioned Positive and Negative Outcomes of SNS Implementation Perceived by RSPHTC Stakeholders Positive

Positive	Negative
Marketing opportunities – for both Public Health Workers and Community Members	Privacy
Reaching Younger Demographics	Dedicated Resources for Managing
Low Cost	Stigma
Ease of Use	Level of Discourse
Act as Website Portal	
Facilitate Collaboration Between Public Health workers or Patient Groups	

CHAPTER 5
DISCUSSION

The purpose of this study was to capture and describe the decision-making process of a start-up public health organization determining whether to implement a social media presence through the perspective of various stakeholders. This purpose was based on a void found through the literature review, of the perspective of the public health organizations themselves as they consider using social media to advance their work towards providing essential services to their communities. As noted, two major studies have been concluded relating social media and the field of public health. The first study by Chou (2009) presented a survey of social media use by public health workers, but focusing on any usage including personal. This study, primarily, gave an overview of demographic information pairing social media and workers in public health. A more recent collection of studies by Thackery, Crookston, & West (2013) examines SNS more specifically. One of their recent publications examines the perspective of patients using SNS for support groups and to supplement their health knowledge related to their own medical conditions. Another upcoming study does reflect usage of SNS by public health departments, in a few states, but not Florida. This study will primarily offer a snapshot of usage by several health departments, across several SNS platforms as well as an analysis of what is being posted.

While more work is being done linking research in SNS and public health, no major study has truly focused on the perspective of the public health organizations themselves, as well as how public health workers can use SNS to help complete their professional job responsibilities. There are isolated articles highlighting a singular pairing of a public health worker using a specific SNS tool in a particular way, but

beyond these case studies there is no overview guiding the workers and organizational leaders. This study worked to describe the thoughts of key decision makers in the field of public health and provide a snapshot of major considerations for implementation. This study helped fill a void in the area of public health, which does not have as much SNS-related research comparative to other fields, by showing current perspectives of key decision-makers as they consider social media and more specifically SNS.

The main five decision makers for the RSPHTC, who are all acclaimed public health educators were interviewed on three separate occasions to discuss their thoughts and experiences leading towards a decision. All of the center's stakeholders could be classified as early and late majority adopters, according to Rogers, for SNS usage. This study was guided by the following research question:

> What are the perspectives of varying stakeholders within a public health training center regarding potentially adopting and using social media to advance its goals and mission?

While the origins of specific public health efforts could be traced back thousands of years, the modern criteria for the field is still grounded in Winslow's 1920 definition as the "science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals" (as cited in Frieden, 2010, p. 590). Led by the CDC, in an effort to clarify and create a common mission for modern public health, the field is now guided by the Ten Essential Services of Public Health (Harrell & Baker, 1994). These essential services provide a guide for all public health organizations at the federal, state, and local level. Over the last ten years, the ongoing efforts in the field to update and offer continuing education to its public health workers has primarily been focused on attending conferences, in-service opportunities, and more recently participating in online

courses and webinar series to cut down on health department expenditures (Chou, 2009).

While the RSPHTC has a larger advisory board, and management team, five employees were identified as being integral to the day-to-day decision making, and specifically would be involved with any SNS adoption choices. Two of these employees work for the center full-time, the other three are employed by RSPHTC part-time and maintain other responsibilities for the University of Florida and the Florida Agricultural and Mechanical University who sponsor the center. While there were only five people interviewed, they each have distinguished careers and experiences in public health and administration. Collectively these five participants, all female, hold five masters degrees and four doctoral degrees. Four of the participants were also classified as faculty members, and have responsibilities in teaching courses either face-to-face or online. The designated RSPHTC decision makers were interviewed on three separate occasions, as recommended by Seidman (1991), in May, 2103. The interview instrument followed Patton's (1990) *Interview Guide Approach,* and was grounded in Roger's Diffusion of Innovations framework. Pairing the interview questions with Rogers' diffusion model allowed for guided discussion on the; elements of the innovation, the decision making models, the decision making process, as well as understanding the background of the potential adopters themselves. In the end, over 15 hours of interviews were transcribed and open coded.

The interview data was analyzed using the constant comparative method, as outlined by Glaser (1965) and Patton (1990). Using this method, which allows for codes to grow into categories ultimately resulting in overall themes, produced a narrative of the

collective thoughts in the case of the RSPHTC. The themes which were most represented in the data were, as outlined in Chapter 4, were; personal usage of SNS, use of SNS in public health, SNS in work environments, ways the RSPHTC could use SNS, and potential outcomes of SNS implementation for the RSPHTC. These themes, and the accompanying sub-categories, represented the stakeholders' collective experience with SNS in their day-to-day living and within public health ultimately leading to their perceived benefits or potential worries for the center's SNS usage. More specifically, the majority of stakeholders found; new marketing opportunities, cost, ease of use, and potentially connecting with a younger audience as potential benefits of using a SNS. The most frequently commented issues labeled as potential negative outcomes for the center were; resources needed, the danger of inappropriate material, and privacy concerns.

RSPHTC Implementation of SNS and Rogers' Diffusion of Innovation Model

Through Rogers' Diffusion of Innovations model, this study of the RSPHTC's potential SNS adoption focused on the elements of the innovation, the types of decisions, the process of the decision, and the adopters themselves. While SNS were not perceived as new to many of those interviewed, its applications for the field of public health and as a tool for public health workers seemed innovative to many of the RSPHTC stakeholders. To date, the diffusion of SNS in public health seems to be stagnant, done by several innovators, but often impeded on a large-scale by lack of access in the work environment. As stated prior, while the opinions vary and examination of the innovation has proven difficult for many of those charged with helping make the decision, the center itself appears to be governed in a manner where

everyone's opinions are heard and considered with a designated person of authority given the ultimate power for deciding on implementation.

Relating back to the Rogers' criteria for examining diffusion, many of the decision makers again represent Early and Late-Majority adopters, while as a whole the team falls between the Knowledge and Persuasion categories in regards to the process of reaching a decision. As innovation adopters, many of them have waited to see SNS evolve over time, they have watched it from a far, and have begun some experimentation. A few people interviewed made comments representing skepticism, indicating Rogers' Late-Majority title, but for the most part as adopters they seem willing to consider moving forward with a potential adoption. At no point during any interview did anyone express a sentiment that the decision making process should be halted or delayed. As for tracking the process, many in the group did not consider the implementation as a pressing need, but are working towards obtaining more information on the topic. While many are content on letting things develop slowly and over time, others seemed more proactive and indicated they would start actively seek more information on the topic.

While the main foundation of this study was to examine the elements, decisions, process, and adopters of SNS in public health, Rogers also outlined major components and influences to consider with innovation diffusion. When examining an innovation, Rogers outlined three components to consider; characteristics of the innovation, characteristics of the innovators, and environmental context (Rogers, 1983). This study, described through the RSPHTC case, showed that the innovation itself has vastly important characteristics to consider for public health. To start, while the use of a

website operates in a public domain, the use of SNS often allows for back and forth interaction in a public forum. Determining how much the center wants to allow for feedback and commentary, while protecting privacy continues to be a concern for many. The environment for SNS, within the field of public health, revealed a culture which did not rely on this model. Currently a uniform system of webinars, quizzes, and emails dictates how many public health workers perform professional development and communicate. For many this system is working and to change could add more problems than better applications.

While many viewpoints and experiences with SNS will shape the RSPHTC stakeholders during their decision making, an examination of Rogers' Five Factors that Influence Adoption of an Innovation provides a foundation for projecting a final decision. These factors, including Relative Advantage, Compatibility, Complexity, Trialability, and Observability show SNS as an innovation which could be simple to implement on a trial basis (Rogers, 1983). Within public health it will need to be further debated if SNS provides a relative advantage to their current systems of communication, but considering how integrated SNS is in many people's personal life it could prove to be highly compatible with professional public health work. SNS also, outside of some concerns for privacy issues, was generally not considered complex by the RSPHTC staff. Even during the interviews with RSPHTC stakeholders who were Late-Majority adopters the issue of SNS being too complex was rarely raised, as people were more often deterred by lack of interest. As a simple Internet-based application that can be set-up quickly, SNS projects as a tool which could be easy to try and see if people use it and how they enjoy their participation. Finally, due to its ability to easily see all

communication, a SNS tool would allow for decision makers to observe progress or complications as they continued shaping their long-term policies and adoption models of SNS use in public health.

Personal Experience with Technology and SNS

Through investigating the decision making process of the RSPHTC, related to SNS implementation, several interesting relationships were demonstrated between personal and professional usage. Using Rogers' criteria for adopters, questions were posed to the RSPHTC stakeholders to gauge their experience with SNS, their responses however made certain aspects difficult to match with Rogers' listed definitions for adopters. To start, several factors used to help determine a person's expertise, or frequency of use, proved difficult to quantify during the questioning. For example, the simple description of "participation" is hard to clarify as various people described themselves as being "active participants" of SNS, yet they used different criteria to support these labels. When considering someone as a participant of SNS it is important to consider that some mentioned they actively went on the sites daily, wrote messages, made posts, and interacted with other people online. Others, however, stated their active participation was the result of their going on the sites, but just looking at other people's posts and not doing any proactive posting or interaction themselves. Determining what constitutes participation on SNS, related to logging on, frequency of use, adding content, and engaging with others, will need to be further clarified as further research into SNS usage evolves. Another aspect of this study, to be considered, is all RSPHTC decision makers were female. Researching the differences between male and female SNS usage, and putting in context with this study could give further depth of context.

By using Rogers' diffusion model (1983) as the framework for this study, it was necessary to determine the personal adoption models and habits of the decision makers in regards to using new technologies, specifically SNS. While it might be assumed that one who uses SNS frequently in their personal life would be more apt to use this innovation professionally, the relationship did not, in this study, prove to be a direct one. Interestingly the participants who most frequently used SNS in their personal life often commented that they enjoyed only that aspect of the innovation. Through their descriptions, they labeled their SNS usage as something personal, a way to just have fun and interact with friends. This mindset, through their frequent personal use of SNS, was actually creating a barrier for them in wanting to bring public health information or professionals into their networks. Conversely, several people who described themselves as non-active SNS users seemed to be more motivated to try and experiment with SNS usage while at work. In one interview, a RSPHTC stakeholder commented that she felt that "everyone is doing it, so when at work I need to really push myself to try." While a recent publication showed that near 40% of American adults do not have an active SNS profile, this study showed that there is a feeling from some non-SNS users that they are in a larger minority (Harris, Snider, Mueller, 2013).

A reoccurring theme found within this study, consistently mentioned by those being interviewed, was the believed connection between the age of the user and total SNS usage. According to Rogers (1983), younger people are more apt to be risk takers and fall in the categories of Innovators and Early Adopters. Specific to this study, the collective feedback benefitted from the stakeholders of the RSPHTC being experienced and distinguished educators within public health, however, no one interviewed was in

their 20's or early 30's. Supporting this belief, a recent Pew Research Center poll showed that while 83 percent of Americans between the ages of 18-29 actively use SNS, while only 32 percent over the age of 65 use these sites (Yang & Brown, 2013). This mindset fueled many interviewed to continue to see SNS implementation as a way to connect better with younger public health workers, as well as ultimately leading to these same stakeholders ultimately seeing SNS adoption as inevitable. The perception of SNS as a younger person's tool also factored into the personal adoption beliefs of a few RSPHTC stakeholders. On a few occasions some of the older members interviewed commented that at the point they were in their careers, relative to upcoming retirements, they did not have much interest or motivation in learning yet another new computer application. These same decision makers, however, seemed to be able to differentiate their personal desire to use SNS, or not, with making the decision for the center going forward.

As many of the RSPHTC stakeholders contemplated the connections between their personal SNS usage, or lack thereof, and professional use, some began to question which sites would specifically work best for the center. Through the discussions, several people made mention of trying to investigate more future trends related to which sites will potentially be more popular moving forward. One person interviewed made mention that she felt Facebook was a site on the "decline", and depending on what specific applications the center wanted to use SNS for, that other sites might be better choices. Furthermore, there seemed to be a consensus building among those interviewed that between the two most popular referenced choices, Facebook and Twitter, more people are making Facebook a forum to interact solely with

friends and Twitter was seen more as a site to interact with unknown people who share similar interests. Investigating further the future projections for SNS sites, as well as specific features for each site, seemed to be an area many in the RSPHTC decision-making team was interested in pursuing. In context, a recent, June 2013, Google search showed through U.S. Web Traffic Rankings that the top five SNS sites, in order, include; Facebook, Twitter, LinkedIn, Pinterest, and MySpace. These sites were frequently referenced by the stakeholders, most specifically Facebook and Twitter, with only Google Plus+ and Ning being specifically mentioned as SNS sites outside of the top five current rankings.

Use of SNS in Public Health

Similar to the difficulties of trying to quantify what constitutes as active SNS participation, working to define and label public health related sites as SNS proved equally difficult. Using the operational definition of SNS defined in Chapter 1, as "an online service that facilitates the building of social relations among people who share interests, activities, and backgrounds as told through their profiles" worked well when those being interviewed referenced Facebook and Twitter. The common practice, within public health, of using webinars and accompanying message boards to obtain continuing education credits, however, caused several people being interviewed to be confused as to whether these examples should be considered SNS usage. Through examination of a few continuing education courses offered by other public health training centers, specifically those using message boards, it could be said that those who participate do share common interests, activities, and backgrounds as public health workers and graduates. What is more difficult to label, relating to the working SNS definition, is how much of this is offered in the participant's profile. Many of these

message boards require a user to offer just a few pieces of identifying information when creating an account, often only a username is provided to the rest of the people on the board. These other site's message boards, unlike a Facebook page where people over time build a history of pictures and information which can identify their school's attended, work, and other affiliations, do not offer nearly the same ability to highlight a user's profile.

In addition to classifying SNS, within public health, a larger question relates to accurately quantifying the real demand for more SNS content within this field. As stated, the overall field of public health and the related departments servicing communities have faced recent budget cuts, often first eliminating travel for conferences and other professional development opportunities. In an effort to continue to offer opportunities for public health workers to obtain their needed credits, many professional development courses have moved online. This model has been prevalent for the past few years, and when asked about the effectiveness of this system most interviewed seemed to consider it as acceptable. Through the questioning it seemed that many of the RSPHTC stakeholders felt public health workers are very busy, so the ability on their own time and place to go watch a video, take a quiz, and perhaps make a few posts on a message board seems very convenient. Many RSPHTC decision makers fear the act of enrolling in these courses is more a necessity for public health workers to keep their certification, versus real opportunities for professional development. With this in mind, it continues to be difficult to determine how many public health workers are so intrinsically motivated to take it upon themselves to demand alternatives to a simple and

working model for professional development and desire collaboration with other public health workers.

Unlike other fields, the field of public health as noted during the literature review lacks abundant studies on SNS usage for students and workers. As this study came to its conclusion, however, early results from the previously mentioned meta-analysis by Thackery, Crookston, & West (2013) became available. While all of the information, specifically the data examining the social media use by public health departments has not yet been made available, a short article highlighting health-related social media use by adults was released in February 2013. This study, while not specific to training for public health workers, can guide the RSPHTC with updated information on SNS use in the field, as well as for certain applications the center was potentially considering for patients and communities. In particular this study highlighted that nearly 60 percent of American adults are using the Internet to look up health information, mostly pertaining to their own personal health issues (Thackery, Crookston, & West, 2013). Since the investigators hypothesized that social media sites were emerging as a potential source for this online health information, they set out to learn more about how people are using these sites for such purposes.

The new study monitoring potential SNS usage, related to obtaining health information, was conducted by a telephone survey of over 1,700 adults. This study, while admitting that the use and involvement with social media varied by individual, helped clarify some aspects of the RSPHTC study. The researchers classified individuals, though not mutually exclusive, who use social media for obtaining health information as belonging to six different classifications of user; creators,

conversationalists, critics, collectors, joiners, and spectators (Thackery, Crookston, & West, 2013). Furthermore, they also identified four goals for those using health-related social media as to; create, connect, consume, and control information (Thackery, Crookston, & West, 2013). While exact percentages were not determined, related to the health-related goals of the users, the researchers felt confident in stating that rarely would the adults interviewed be labeled as contributors (Thackery, Crookston, & West, 2013). Those conducting the study hypothesized people are still reluctant to share personal conditions on the Internet, as well as a feeling of incompetence related to complex health topics (Thackery, Crookston, & West, 2013). Overall, the study stated there is a need for more research to understand the motivations and perceived benefits of contributing to health-related online forums, discussion boards, rating sites, and other social media venues.

While the study investigating adult use of health related Internet resources was helpful in clarifying various reasons for using, and types of users, the data presented also provided beneficial and updated demographic information which can help guide RSPHTC decisions. To start, the study reaffirmed other research efforts into social media in general, showing that people with more formal education and income have more frequent usage (Thackery, Crookston, & West, 2013). Likewise the study concluded that people who live in urban areas use social media more than those who live in rural areas (Thackery, Crookston, & West, 2013). This research is of particular interest to the RSPHTC as one of their two specific charges, along with providing HIV/AIDS education, is to target rural public health workers with their educational offerings. More specific to health-related factors, the study showed that people who

have health insurance use social media for health issues 15 percent more than those who do not (Thackery, Crookston, & West, 2013). Similarly, those who have a chronic health related condition also used social media 15 percent more than those who do not (Thackery, Crookston & West, 2013).

While the new information provided in the study by Thackery, Crookston, & West (2013) can help guide future RSPHTC discussions on SNS usage, there are still other aspects reveled in the interviews potentially blocking successful implementation. As one stakeholder mentioned, there is not a "social media culture in public health." As stated previously, many public health workers are currently not being formally taught social media skills while in their college courses. The lack of SNS usage, therefore, might not be the result of lack of motivation by public health workers, but rather the absence of training. As mentioned on several occasions throughout the interviews, the act of following or friending a professional in the field, who was not already personally known, seemed to be a major usage block for several of the RSPHTC stakeholders. Perhaps, and possibly an area of future research to examine, formal training on SNS usage and resources might increase usage and varied applications of SNS in the field of public health.

Use of SNS in Work Environment

As questions probed RSPHTC stakeholders on their thoughts related to SNS usage in the field of public health, as well as ways the center could use these sites specifically, a general theme of SNS usage in the work environment surfaced. More specifically, many interviewed wanted to discuss Internet filters often blocking access to SNS sites in work environments. As stated throughout the interviews and in this study,

the state of Florida, where the RSPHTC is physically located, blocks the Internet network of county health departments to not allow SNS through their filter.

The state of Florida's filter block on SNS sites has been viewed by some as a deterrent to investing time and recourses into creating a new online presence. Others, however, feel the ban will be lifted in the near future and the center could work in the meantime to create a presence which is seen nationally and be ready for a local audience when given the opportunity. From the state's perspective, through an interview with their Assistant Communications Director, they too hope to allow public health professionals access to these tools, but fear they do not have adequate resources to halt inappropriate commentary or to block potential viruses coming through SNS. Considering the difficulties facing the field of public health, and state and local health departments in accessing SNS resources, one could examine how other fields have handled their implementation for ideas and possible solutions to various challenges impeding the adoption of these sites as a tool for public health workers.

Implementation

As the field of public health continues to debate opening access of SNS to public health workers, simultaneous conversations of adoption models could also help overcome various obstacles. While new SNS pose challenges for implementation in large organizations, or networks, the basic concept of adopting new technologies has a long documented history in fields beyond public health. For example, over the past 30 years the federal government has witnessed many new information and communication technologies be introduced (Mergel & Bretschneider, 2013). Each new wave, whether it is the introduction of time-sharing systems, personal computers, or now social media, is often viewed as a game changer (Mergel & Bretschneider, 2013). While some work to

resist the change ushered in by new technologies, many accept that technology enables new potential. With each new adaption of technology, organizations are faced with a number of choices, many of which begin with the decision of whether to adopt and implement the technology. Social science has several well-established theories to explain this general process, like diffusion theory. Because the diffusion process unfolds over time, it is often organized into stages reflecting different points in the process. Throughout the history of technology innovation, staged models have been used to describe, predict, and control the process for practicing managers. A critical review of several such staged models applied to new e-government reveals a repeated three step process for innovation adoption demonstrated in many government agencies (Mergel & Bretschneider, 2013).

In considering the possibility of removing the Internet filter blocking SNS usage for public health workers, researching plans and adoption models by other government agencies could perhaps eliminate barriers and worry for SNS use. An often used, three-step adoption model, outlined by Mergel & Bretschneider (2013), which has benefitted many federal government agencies starts with stage one called "intrapreneurhsip and experimentation." In this phase, certain workers who have been identified as having successful experience with a technology tool, either in their personal time or working for other organizations, are allowed a monitored trial period to allow all to see the possibilities of incorporation (Mergel & Bretschneider, 2013). These specific workers begin to act as change agents, showing those pessimistic about the innovation ways it can be used properly, while also getting other employees not yet using the tool excited about the possibility. Furthermore, in having various people in

different departments using the tool allows for various models and applications of the same innovation begin to surface, allowing debate to occur with many different options.

Moving from pre-selected employees who had demonstrated skills, or responsibility, which allowed for the probability of a successful implementation of a technology tool to opening access to all employees still requires various sub-steps. According to Mergel & Bretschneider's government innovation adoption model (2013), the nest step after stage one is labeled "constructive chaos." Stage two, or nicknamed order from chaos, allows for one singular department to have access to the new innovation for all employees (Mergel & Bretschneider, 2013). Instead of allowing for organization-wide access to a new innovation, Stage two allows for use by employees not pre-screened, but on a smaller scale. While stage one allowed for a probably successful implementation of a new tool, it is still important for a company to observe how all employees will fair with the new technology. This expansion of implementation into only one singular department, however, still allows for protection and learning prior to full-scale adoption. This stage also encourages a final production of rules and regulations for the innovation prior to moving on to stage three.

After a period of decentralized, informal, innovation use by experienced employees and another successful period of use on a smaller-scale within one department, full implementation can begin within an organization. According to Mergel & Bretschneider adoption model research (2013), the third stage where an organization allows for innovation use by all is entitled "institutionalization." This final stage should start with a clear presentation of the guidelines for the, in this case, social media use for employees (Mergel & Bretschneider, 2013). These rules of use should be made public,

distributed, and easily accessed by employees. Furthermore, an organization needs to ensure that they have the resources to enforce these guidelines and that employees are aware of enforcement. Successful guidelines, as advocated beyond Mergel and Bretschneider should go beyond just formal regulations and should allow for modeling of appropriate use. As implementation develops, the policies should continually be updated and examples of successful usage should be shared with employees. If an organization encounters difficulties with wide-scale use, or unexpected results, it is also suggested for the innovation to be removed and policies and methods revert back to the pre-implementation period while a review is conducted (Mergel & Bretschneider, 2013).

Beyond considerations for successful innovation adoption, the interviews with the RSPHTC stakeholders also revealed a need for further discussion and research on Smartphone usage by employees. Many of those interviewed felt that most public health workers already had access to SNS during the day, on their phones, whether their work computers had Internet filers or not. What was unknown to those interviewed was how much public health workers were accessing SNS for public health-related information on their Smartphones, and whether their habits of SNS use would change if given the ability to use SNS officially at their desk. Most people stated, from their perspective, that public health-oriented use was mostly rare and sporadic when workers operated their Smartphones on the job. While further research could examine how public health workers are using their Smartphones at work, there is increasing research on how people use their Smartphones in general.

Smartphone Discussion

A common theme for research into Smartphone use in America centers on the increased frequency of usage and potential addictions developing. A recent

examination into average Smartphone use, by Leslie Perlow (2012), revealed an almost 24 hour-a-day habit for many Americans. Many people interviewed in this study revealed that they use their Smartphones when waiting for something, while driving, while eating meals, while watching television, and often while at work. The people who demonstrated the most frequency of Smartphone use also averaged the highest number of hours worked in a week (Perlow, 2012). For these people they had trouble differentiating when they were really on work-time, or when they were on their own personal time as they were often checking emails or doing work at night and on the weekends. All of this pressure to be connected, through their phones, is also creating physical stress and medical concerns as people feel the need to always be available and to respond to be successful. Interestingly, related to RSPHTC stakeholder concerns, while many of those interviewed in this study stated they used their phone for work they primarily cited that they were often only using email and texting functions (Perlow, 2012).

As research has shown a greater connection between workers and their Smartphones, the implications need to be further considered by the RSPHTC stakeholders. In addition to just the general increase in usage by people throughout the day, the specific applications of SNS sites related to mobile technology needs to be further considered. No longer should people, when choosing between SNS options, only examine how the website looks and functions, but rather experimentation of how the sites operate on mobile platforms also needs to be studied. As research, like Perlow's study (2012), quantifies the increased usage of Smartphones and Tablets, further decision making considerations need to be given to mobile technology and not

just how SNS work on a desktop computer. With the number of people increasing their mobile technology usage, perhaps the RSPHTC does not need to be as concerned with the Internet filter on public health worker's computers at their desk, but rather find ways to draw people to just incorporate more public health-related usage on the devices they are already using during the day.

Ways the RSPHTC could use SNS

While a lot of time was spent with the RSPHTC decision makers specifically asking questions about potential ways SNS could be used by the center, the responses continually reflected a vision of primarily using these sites as a means for marketing and communicating academic opportunities. For many, this one-way direction of communication, from the center out to the public health community, would best control the message and minimize motivation for people to post potentially inappropriate material. Furthermore, with a mindset vigilant on protecting privacy, the concept of having frank public health discussions in such an open forum was difficult for many stakeholders to imagine. While many specific ways were offered in how the center could market on SNS, like posting about; new session announcements, live events, as well as information on new research and current events, there was no mention of an official marketing strategy. Moving forward the center, as they have committed to investigating SNS usage more, could benefit from researching or consulting with those who professionally brand organizations online as well as learning more about how others who are using SNS in more proactive ways while still protecting privacy.

Perceived Positive Outcomes of SNS for the RSPHTC

Regardless of the intended use of SNS, many of the RSPHTC decision makers felt communicating through this innovation would help the center reach a potentially

younger audience, the investment would be relatively inexpensive, and the adoption of SNS was ultimately inevitable. As stated at various points throughout this study, the average user of SNS is younger in age, and the relationship shown in research is the older a person is the less statistically apt there are to be an active SNS user. An interesting connection to these research conclusions are other studies within public health showing a workforce shortage, specifically a lack of younger people wanting to enter the field (Beck & Boulton, 2012). Research into this specific workforce shortage reveals that budget cuts have thinned many public health department staffs and usually those who have the longest seniority have kept their jobs while younger workers have lost theirs. The result of these staff realignments has created a field full of older workers with not many younger ones in positions to be promoted behind them. Furthermore, this field which has faced many staff reductions, extra work loads, and hiring freezes has created a perception among college students that it is not a promising potential career choice (Beck & Boulton, 2012). Engaging those students, who might be interested in the field, through the SNS sites they frequently visit might be a positive way to share opportunities and impact in the field at the local, national, and global level.

As the RSPHTC decision makers consider SNS to be a cheap marketing tool, and one which is potentially inevitable, the center needs to continue to develop a more specific plan on the resources needed to manage these sites. While the sites themselves, like Facebook and Twitter, are free they do still need to be maintained and monitored by staff. Whether the updates would come from full-time staff members, requiring time away from other projects, or part-time staff or interns who would need to be trained, an investment of resources is needed. The center could work to contact the

other public health training centers to determine the amount of time and resources needed by their staffs to run the SNS aspects of their organizations. Another service the center could consider is to contract professional marketing and branding strategists, to ensure the efforts make on SNS will have the intended and maximized results.

Two of the more unique comments made by the RSPHTC employees related to SNS implementation related to new applications beyond just marketing and for making community announcements. One person commented that they would like to see the SNS replace the traditional website as the main interface for public health workers and consumers. For example, instead of only sending out an announcement on SNS about a new session with a link on how to access through the website, according to this stakeholder, one could just download the video through the initial post. In this scenario the main website could still exist, be the location where content is housed, but the linking to content could directly be given out through SNS. In proposing this model, according to the person interviewed, “we are using the SNS to bring our content directly to the consumer and not putting another barrier between them and our content.” As the center does require personal information to be given by the person trying to obtain credits, as well as needing those session attendees to take formal assessment, the RSPHTC should further investigate the feasibility of offering their sessions safely through this suggested model.

In addition to merging the interface of the website with a SNS, another interesting concept offered was to not build these sites as a marketing tool, but rather as a home for public health worker and patient collaboration. As the RSPHTC stakeholder described, “This model would help that public health worker who is all alone in their

building and can't talk with someone in their specific field." She continued by adding, "Not all education and professional development needs to be so formal, there are many fields where people develop by just having conversations in the hallway." Through her descriptions, a SNS created by the RSPHTC could be home to this informal learning, representing a constructivist model for public health workers to educate one another in a potential community of practice

A Community of Practice (CoP), as described by Jean Lave and Etienne Wenger in 1991 and further developed in 1998, is summarized as "groups of people who share a concern or passion for something they do and learn how to it better as they interact regularly" (Lave & Wenger, 1998, p. 7). While the learning which takes place does not necessarily need to be intentional, there are three components required for a CoP: (1) the domain, (2) the community, (3) the practice (Lave & Wenger, 1998). In relation to this research, the domain would be considered public health, or a subsection of public health like epidemiology or speech and language pathology. Another required element is community, as members of the domain need to interact and engage with one another (Lave & Wenger, 1998). Members can share activities, help one another, and pass along information as they work to build relationships that allow each member the ability to learn from one another. In this case, the community could convene on social media sites, but the participation cannot be static as people need to interact with one another regularly for it to be considered a CoP. Finally, the community's domain must be developed by those who are active practitioners (Lave & Wenger, 1998). There are various places online where people can get public health information, but most CoP's are occurring in message boards and Twitter networks where professionals are

interacting with another. These public health workers are sharing stories, helpful hints or tools, and ways to handle typical problems. This interaction also needs to be developed over time as a one-time discussion with an expert in the field would not be considered a CoP. By creating an opportunity, or a location for a CoP to develop, the RSPHTC's use of SNS could create a progressive environment where learning is self-directed and ongoing.

Perceived Negative Outcomes of SNS for the RSPHTC

As this study progressed, it became apparent that several of the RSPHTC stakeholders were most concerned about the security, privacy, and resources needed to properly manage a SNS presence. This worry was also heightened by a perceived fear that a SNS page could become very popular. While a review of other public health training centers showed an average following of near 200 people on Twitter feeds and near 150 on Facebook, most RSPHTC stakeholders continually considered possible implementation resulting in larger followings.

When RSPHTC stakeholders were asked specifically about what outcomes they feared most, many were unable to give specific examples beyond stating a general worry for someone posting something inappropriate. When further asked about their knowledge of privacy settings, and mechanisms to view comments prior to public posting, many expressed they were unaware of various options. The majority of stakeholders from the RSPHTC did, however, express their desire to further educate themselves on SNS security to potentially ease these concerns. As one person stated, "I feel all we hear are the horror stories, I want to see how to be secure, and actually I want to see more of how people are using it in positive ways." The formal training, or

lack thereof, in the field of public health regarding new technologies and social media in particular was a commonly expressed theme among those interviewed for this study.

While SNS usage is increasing, and more organizations are willing to create a presence through these sites, the concerns of those in the RSPHTC for potentially negative outcomes have validity. A recent study by Hanson, Barrett, West, & Barnes (2012) worked to create an inventory of social media threats for public health managers. The list of potential concerns, and incidents which have occurred, included the spread of misinformation and online bullying. As medical information, and treatments, change quickly in our modern world there can be a potential danger in giving people who are not currently educated on a topic a forum to share information publically. Furthermore, a collaborative forum envisioned by some of the RSPHTC stakeholders as a place for patients themselves to speak freely in a safe environment is not guaranteed. There have been unfortunate examples, even in designated online forums, where patients have shared information about themselves or their condition and have been ridiculed and bullied (Hanson, Barrett, West, & Barnes, 2012). To extend the access for SNS sites to the open public, going beyond just allowing registered public health workers to participate, would create a need for various policies and provisions as well as a greater need for monitoring the site.

For many of the RSPHTC stakeholders to move forward and feel comfortable about a successful SNS presence, they want to further educate themselves about matching SNS usage with industry regulations as well as privacy features. In the public health field, as for any organization potentially housing patient records, the need for the RSPHTC to properly protect themselves and those they might host on a SNS is

paramount. Furthermore, while there are many features to enhance security on a SNS page beyond what many of the stakeholders are aware of, privacy on a public Web can often not be guaranteed. Social networking does come with certain risks and the potential for public relation problems is real. To adopt a SNS page, either internally for the RSPHTC or on a larger-scale throughout the public health department network, there would need to be an acceptance of the risks for the gain of the positive attributes and applications.

Action Plan

This study worked to offer a background on the history of public health and potential SNS applications in the field. The research focused on offering a case study of the RSPHTC, allowing for a composite report on the major stakeholders thoughts and concerns on SNS implementation paired with their backgrounds and experience with this innovation. The study itself revealed there was limited objection to moving forward with possible SNS adoption within the RSPHTC. The center, however, needs to take a step back from discussing tools and decide further what voids they currently have in communicating with public health workers and what new models they might want to pursue. Using SNS for purely marketing and announcement purposes leads to straight forward discussions and minimal risks. If the center, however, wants to facilitate dialogue and collaboration for public health workers and patients then further research and investigating need to occur.

From the observations, and review of the interviews, it could be suggested that the center evaluate their current communication and technology tools and determine what they need to replace or supplement. From there the center and its stakeholders could benefit from an educational session allowing all members to possess equal

knowledge about SNS options. After discussing their needs and pairings with SNS options, the center should work to make policies for potential usage. After all of these steps have been taken, and with no objections, a trial period of use would allow the members the opportunity to become more familiar with SNS potential while also gauging demand and potential risks.

Beyond the suggestions from the study and the researcher, a recent discussion with the person charged with the ultimate responsibility of the center further indicated the path moving forward for SNS implementation. After numerous interviews which allowed the RSPHTC stakeholder's time to develop their thoughts on this issue, the enthusiasm for potential SNS seemed to grow. These educators, however, collectively did not feel comfortable with quickly making a yes or no decision. Moving forward, the center has scheduled an informative presentation on SNS use in public health for their upcoming summer 2013 full advisory board meeting.

At the upcoming RSPHTC advisory board meeting, attended by up to 15 members, a discussion will follow the presentation to allow for even more opinions on the issue. Following the full advisory board meeting, the experience and thoughts gathered will be reviewed by the smaller management team leading to a decision. At this time, which platform and how it will be used cannot be determined. The interviews, however, revealed a strong affirmation of Facebook, and more of a fear of Twitter. One could also project, from the comments made by the stakeholders that an initial use for marketing and announcements could be expected with more proactive features like collaborative chats for public health workers and patients being further discussed. From specific conversations with the final decision making member, a small trial period

of SNS could be expected to occur after a final review of university policy is also considered, resulting in an approved set of guidelines for usage.

Implications

As stated throughout this study, the opportunity to research a decision-making process as it was occurring, of very accomplished and distinguished public health professionals, is one many people within and outside the field of public health can learn from. Organizations which are not as well staffed, or do not have the experience of these professionals interviewed can be given a head start on the background of this innovation, as well as a long list of potential positive and negative ramifications to consider. For those who are advocates of social media, and SNS usage, understanding the worries of those who have not chosen to implement this for their organization can also be helpful as they can see perceived barriers even if they are accurate or not. This study, whether read from the perspective of the public health worker, administrator, or someone at the state health department level, illuminates issues which have not often been discussed beyond personal conversations.

From the researcher's experience through all of their conversations with those in public health, from the; RSPHTC stakeholders, managers from counties throughout Florida, and to those in the state health department most gracious to give their time and official comments, there seems to be a lack of motivation and forum to properly have an open discussion on SNS implementation in the field of public health. Blocking aspects of the Internet for professional working adults, charged with protecting the public well-being of our entire society, is a large philosophical issue. While removing the filter could potentially allow for computer viruses through the network, or employees making comments which reflect poorly on an organization, the fact is many other fields and

organizations have found ways to deal with these similar obstacles. Pushing for ways to incorporate SNS more in the field of public health would not be as needed if the majority of those in the field did not see a need or did want implementation. The majority of people interviewed, however, seemed to be excited about the potential applications and often characterized the use of SNS inevitable, making the lack of motivation for discussions moving the process along unclear. While there seems to be an environment of people discussing the Internet block amongst themselves, there seems to be a lack of open discussion with those at the state level. At this point the potential implementation of more SNS use in public health stands at a tipping point, full of possible ways of application, further collaboration, and marketing and educational opportunities, but lacks a singular voice with the ability to move the debate towards new policy. In the end, hopefully this study can create a foundation for many in the field to understand the current state of SNS in the field, as well as a composite overview of many of the varied mindsets on this innovation.

Suggestions for Future Research

Currently there is a limited amount of studies specific to the use of SNS for public health workers. As stated, with public health departments often blocking access there is a perceived lack of need. This study was designed to look further into the disconnect between public health and SNS found within many organizations. As the use of these sites increases in other field, the research questions for this project probed the mindset of prominent decision makers in the field to gauge the reasons for their lack of incorporation of SNS in work settings. This research pulled from a wealth of studies on numerous aspects of the general field of public health, as well as the growing research in SNS. Through many of the questions generated from the RSPHTC decision makers

themselves, several interesting areas void in research would make for future research opportunities.

Building off of the work of Chou (2009) which worked to give an overview of public health and social media, and the newer research of Thackery, Crookston, & West (2013) more work could be done to focus on ways public health workers can use SNS to fulfill and enhance their day-to-day job responsibilities. There are sporadic reports on a specific health worker using SNS in a unique way; however, these are usually very isolated. As not every health department in America blocks SNS usage for public health workers, more work could be done for those who are frequent users at work, and highlight more of their best practices.

Beyond research at the individual level, there could also be more case analysis of public health departments which have allowed for SNS usage and reports on the effects of this adoption. Specifically, more research could be done capturing the implementation process of SNS for public health organizations itself as it seems through the example of the RSPHTC that there is a stage of indecisiveness which can be difficult to overcome considering all of the SNS choices and possibilities. Showing how SNS was started, and the specific resources which were allocated and ultimately needed, will help guide other organizations especially in the continuing time of budget cuts. Finally, many of the RSPHTC stakeholders also used future tense when discussing possible SNS applications, so a more accurate analysis of what is currently occurring would be helpful for the field.

Considering the primary worries of the RSPHTC stakeholders related to privacy for potential users, as well as securing the sites from inappropriate content, more

research could be focused in these areas. As a few of the decision makers discussed more advanced uses of these sites, beyond posting announcements, the need for enhanced security grows. For years the field of public health, for professional development, has used message boards in the past for collaborating on sensitive issues. These boards often rely on inviting pre-selected members in, as well as lengthy registration requirements to help secure the content, the possibility of inappropriate material posted by anonymous sources increases through SNS usage. Future studies could focus more on the few public health organizations who are allowing for open discussions about health issues on SNS. Their methods, guidelines, and resources needed to monitor the boards could be helpful for other organizations to examine.

Another aspect of note for potential SNS usage by the RSPHTC is the issue of stigma, connected to their educational offerings centered on HIV/AIDS. As noted, the center works to rotate their academic courses between HIV/AIDS topics and general professional development in public health for workers in the field. The logo of the center reflects an outline of the state of Florida, and an inter-woven computer field reflecting their online format. While the logo does not imply any connections to HIV/AIDs, nor does the official name Rural South Public Health Training Center, it could be expected that many of their SNS content would be HIV/AIDS related. A review of the literature shows insufficient, or no research, related to stigma and SNS public health usage. While many of the competing public health training centers, each with their own separate specialty, do not have large followings it would be interesting to track a potential RSPHTC page on SNS for comparison.

APPENDIX A
INTERVIEW GUIDES

Interview One

Note: Relation to Rogers Diffusion Model Noted in Italics

I would like to discuss your experiences with technology tools.

I have several questions here to help guide the discussion, however, I would like you to elaborate. If you feel there is an aspect to this topic which is not being covered, feel free to expand your answers to cover all of your related experiences.

1. Could you please share your work title and day-to-day responsibilities? – *Process: Knowledge (trying to establish a baseline)*

2. Could you share your work experiences within public health? – *Process: Knowledge (trying to establish a baseline)*

3. How do you use technology in your personal life? – *Process: Knowledge (trying to establish a baseline and understand familiarity with the innovation)*

4. How do you use technology at work? – *Process: Knowledge (trying to establish a baseline and understand familiarity with the innovation)*

5. When a new technology tool is introduced, would you consider yourself to be "one of the first to have it, in the majority of when people get the tool, or one of the last to get the tool" (Probes: Why?, what considerations help you decide whether to purchase or use a new technology tool?) – *Adopters*

6. How have you seen technology used to help educate public health workers, or to get out public health messages? – *Elements: Communication Channels and Process – Knowledge*

7. How has technology usage changed over the course of your working in public health? – *Elements: Innovations. Communication Channels, Time, Social System and Process – Knowledge*

8. What do you think when you hear the term social media? – *Process: Knowledge (trying to establish a baseline and understand familiarity with the innovation)*

9. Are there SNS you use personally? (Probes: in what ways?, how often?, what have been your positive experiences?, what have been your negative experiences?, when did you adopt these innovations?, etc.) – *Process: Knowledge (trying to establish a baseline and understand familiarity with the innovation) and in the probes - Adopters*

10. Have you personally used any other forms of social media? (Probes: When did you adopt these?) – *Process: Knowledge (trying to establish a baseline and understand familiarity with the innovation) and in the probes – Adopters*

11. How do you feel social media affects people's personal relationships? - *Process: Knowledge (trying to establish a baseline and understand familiarity with the innovation) and in the probes – Adopters*

12. Do you actively try to learn more about social media, personally or professionally? – *Process: Persuasion*

Is there anything else you would like to add? Do you have any questions or additional comments at this time?

Thanks you for your participation, in preparation for our next meeting I will email you the questions ahead of time.

Interview Two

Note: Relation to Rogers Diffusion Model Noted in Italics

I would like to discuss your experiences with technology tools in public health and at your work.

I have several questions here to help guide the discussion, however, I would like you to elaborate. If you feel there is an aspect to this topic which is not being covered, feel free to expand your answers to cover all of your related experiences.

1. What technology training have you received from your employer? – *Process: Knowledge and Elements: Innovation, Social System*

2. Have you used technology tools for your own professional development? (Probes: which ones, for what purposes, positives, negatives) – *Process: Knowledge and Elements: Innovation, Social System*

3. Have you used social media, or social networking tools, for professional development? (Probes: which ones, for what purposes, positives, negatives, how did you learn of them?) – *Process: Knowledge and Elements: Innovation, Communication Channels, and Social System*

4. Are you allowed to access social networking tools at your work computer? (probes: Do you feel public health workers should have access to social networking sites while at work, why) – *Elements: Social System*

5. Are you aware of others at work using Smartphones to access social networking sites? (Probes: is this allowed, has this been an issue) – *Elements: Social System*

6. How do you communicate with other public health professionals? – *Elements: Communication Channels*

7. How does your employer communicate with your region and local community? – *Elements: Communication Channels*

8. In what ways could you envision public health workers using social networking sites at their work? – *Elements: Innovation*

9. Do you feel there is a demand from public health workers for more access, and options, to social networking sites? – *Elements: Innovation and Process: Persuasion*

10. In what ways could technology, or SNS, be used in conjunction with Public Health Essential Service number one: Monitor health status to identify community health problems? – *Elements: Innovation, and Social System*

11. In what ways could technology, or SNS, be used in conjunction with Public Health Essential Service number two: Diagnose and investigate health problems and health hazards in the community? – *Elements: Innovation, and Social System*

12. In what ways could technology, or SNS, be used in conjunction with Public Health Essential Service number three: Inform, educate, and empower people about health issues? – *Elements: Innovation, and Social System*

13. In what ways could technology, or SNS, be used in conjunction with Public Health Essential Service number four: Mobilize community partnerships to identify and solve health problems? – *Elements: Innovation, and Social System*

14. In what ways could technology, or SNS, be used in conjunction with Public Health Essential Service number five: Develop policies and plans that support individual and community health efforts? – *Elements: Innovation, and Social System*

15. In what ways could technology, or SNS, be used in conjunction with Public Health Essential Service number six: Enforce laws and regulations that protect health and ensure safety? – *Elements: Innovation, and Social System*

16. In what ways could technology, or SNS, be used in conjunction with Public Health Essential Service number seven: Link people to needed personal health services and assure the provision of health care when otherwise unavailable? – *Elements: Innovation, and Social System*

17. In what ways could technology, or SNS, be used in conjunction with Public Health Essential Service number eight: Assure a competent public health and personal healthcare workforce? – *Elements: Innovation, and Social System*

18. In what ways could technology, or SNS, be used in conjunction with Public Health Essential Service number nine: Evaluate effectiveness, accessibility, and quality of personal and population-based health services? – *Elements: Innovation, and Social System*

19. In what ways could technology, or SNS, be used in conjunction with Public Health Essential Service number ten: Research for new insights and innovative solutions to health problems? – *Elements: Innovation, and Social System*

20. Does your employer have a social media presence? (Probes: used in what capacity, positive and negative aspects) – *Process: Knowledge*

Is there anything else you would like to add? Do you have any questions or additional comments at this time?

Thanks you for your participation, in preparation for our next meeting I will email you the questions ahead of time.

Interview Three

Note: Relation to Rogers Diffusion Model Noted in Italics

I would like to discuss your thoughts regarding potential social networking site implementation for the RSPHTC

I have several questions here to help guide the discussion, however, I would like you to elaborate. If you feel there is an aspect to this topic which is not being covered, feel free to expand your answers to cover all of your related experiences.

1. The mission of the RSPHTC are to *provide competency-based training for the public health workforce, especially those workers in under-served areas of the state, and to enhance public health services and decrease disparities in access to services in medically under-served areas*, in what ways do you feel this can or cannot be accomplished with technology? – *Elements: Innovation and Social System*

2. In what ways, specifically, could the mission of the center be represented through SNS? – *Elements: Innovation and Social System*

3. Do you consider the RSPHTC to be progressive in its field of public health education, and why? – *Elements: Innovation and Social System*

4. What role do you feel the RSPHTC should be playing in the total effort of training today's public health worker? – *Elements: Innovation and Social System*

5. Please explain in your own words how the RSPHTC is engaging and educating today's public health worker. – *Elements: Innovation and Social System*

6. Please describe the current educational offerings, and their format, for the RSPHTC? – *Process: Knowledge*

7. Are the educational offerings of the RSPHTC being implemented as intended? – *Process: Knowledge*

8. What feedback have you received from public health workers about the RSPHTC's educational efforts and courses? – *Process: Knowledge*

9. In what ways could you envision the RSPHTC using social networking sites? – *Elements: Innovation*

10. Do you think there is pressure for you personally, or for the RSPHTC, to use more social media or SNS? – *Process: Persuasion*

11. What positive outcomes could you foresee in the RSPHTC using social networking sites? *Elements: Innovation*

12. What negative outcomes could you foresee in the RSPHTC using social networking sites? *Elements: Innovation*

13. What resources do you feel would need to be allocated for the RSPHTC to implement a social networking presence? – *Process: Knowledge…*understanding *benefits versus cost*

14. Would you envision social networking sites replacing any current aspects of the center? (Probes: which ones, in which ways, why) - – *Process: Knowledge*

15. Would you recommend the RSPHTC to implement a social networking site presence, and if so, in what capacity? *Process: Decision*

16. How would you describe in your own words how the decision for this implementation will occur within the RSPHTC? - *Decisions*

Is there anything else you would like to add? Do you have any questions or additional comments at this time?

APPENDIX B
INFORMED CONSENT FORM

Informed Consent

Protocol Title: Social Media and Public Health: Perspectives of Stakeholders on Potentially Adopting and Using Social Media to Advance Center's Goals and Mission

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study:

The purpose of this study is to examine, and make transparent, the decision making process of a public health organization determining whether to implement a social media presence.

What you will be asked to do in the study:

You will be asked a series of questions, which will be audio taped regarding your personal background and opinions on social media, as it relates to the field of public health. Specific focus will be on the mission of the Rural South Public Health Training Center (RSPHTC), and how social media could, or could not, advance those goals. There will be three, one hour interviews scheduled per participant.

Time required:

3 interviews X 1 hour, scheduled at the convenience of those being interviewed from April 29th–May 24th, 2013

Compensation:

You will not be paid compensation for participating in this research.

Confidentiality:

This study will focus on the collective views of the stakeholders of the RSPHTC and will never identify any comments made as specific to any member of the group. All descriptions of the participants will not include identifiers. Participant's identity will be kept confidential to the extent provided by law. All tapes, transcripts and files will work to exclude names and only be stored on researcher's personal computer. Once the research is complete the recordings will be destroyed. Participants will be given access to verbatim transcripts of the interview and be given the opportunity to have any responses excluded from the research. Researcher will also provide opportunities to examine the analysis and results prior to the end of the study.

Voluntary participation:

Your participation in this study is completely voluntary. There is no penalty for not participating.

Risks and Benefits:

There are no direct benefits or risks to you for participating in the study.

Right to withdraw from the study:

You have the right to withdraw from the study at any time without consequence.

Whom to contact if you have questions about the study:

Mark Hart (Online Coordinator for the Rural South Public Health Training Center - UF

Kara Dawson, PhD – Supervisor – College of Education)

Whom to contact about your rights as a research participant in the study:

IRB02 Office

Agreement:

I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

Participant: _____ Date: _____

Principal Investigator: _____ Date: _____

EXECUTIVE SUMMARY OF THE DOCTORAL DISSERTATION ENTITLED:

SOCIAL MEDIA AND PUBLIC HEALTH: PERSPECTIVES ON IMPLEMENTING A SOCIAL MEDIA PRESENCE FOR A PUBLIC HEALTH ORGANIZATION

by:
Mark Hart
History and Education, Bachelor of Arts, Indiana University, 1997
Liberal Studies, Loyola College, 2006
Doctoral Degree, Curriculum and Instruction-Educational Technology, 2013

(Coordinator of Online Learning – Rural South Public Health Training Center)

Purpose

The purpose of this study was to capture and describe the decision-making process of a start-up public health organization, the Rural South Public Health training Center (RSPHTC) determining whether to implement a social media presence through the perspective of various stakeholders. Documenting this process, through a series of interviews of the RSPHTC's distinguished decision makers, allows other public health organizations, and perhaps organizations outside of public health, the opportunity to see which factors caused the most deliberation by the stakeholders in their efforts towards a decision. Furthermore, the interviews with these stakeholders also showed the context of their opinions and personal experience with social media, allowing one to see how these factors related to their recommendations for the center. Paired with the literature review, highlighting new applications of social media as well as effectiveness of usage, one can also see how current research on public health and social networking sites relates with the factors discussed by the decision makers.

Conclusions

The culmination of fifteen interviews with the RSPHTC stakeholders yielded five core areas of discussion:

- **Personal Experience with SNS Tools**
  - According to Rogers' Diffusion of Innovation Model, three stakeholders were "Early Majority" Adopters and two were "Late Majority" Adopters (those who are not the first or last to typically try a new innovation or technology tool)
  - Stakeholders had varied definitions of SNS
  - Many stakeholders used SNS tools, but passively
  - Many stakeholders used tools primarily for personal usage

    - Many stakeholders associated Facebook with personal use and Twitter with professional use
- **Use of SNS in Public Health**
    - Public health workers primarily use the telephone and email
    - No stakeholder had a personally bad experience with using SNS in public health, but all had heard of negative occurrences
    - Many considered the concept of “following” an unknown person to be a barrier for professional usage
    - Many continuing education opportunities use message boards, but not SNS
- **Use of SNS in Work Environment**
    - The state of Florida blocks SNS usage for public health workers through their work computers. This block made some stakeholders feel a SNS presence was unneeded, while others felt the block would be lifted and the center could be poised to take advantage of the opportunity by having sites ready for work usage
    - Many felt workers were circumventing Internet blocks by using Smartphones for personal usage

- **Ways the RSPHTC Could Use SNS**
    - Marketing
    - Making announcements
    - Connecting with the community
- **Potential Positive and Negative Outcomes of SNS use for the RSPHTC**
    - Positive – Marketing
    - Positive – Connecting with younger public health workers
    - Positive – Low cost
    - Positive – Ease of use
    - Positive – Place for public health workers to collaborate
    - Negative – Fear of inappropriate material being posted
    - Negative – Privacy concerns

- Negative – Resources needed to manage and monitor site
- Negative – Lack of use
- Negative – not forum for sensitive topics

The interview process also worked to pair questions with the Ten Essential Services of Public Health, the guiding foundations of the field. The study revealed that the RSPHTC stakeholders found applications for usage with many of the essential services, with only a few not mentioned.

1. **Monitor health status to identify and solve community health problems.**
    - Applications to track health issues (flu, etc.) in real-time
2. **Diagnose and investigate health problems and health hazards in the community.**
    - Allow for a forum for people to discuss issues in their community, or what they notice in their environment
3. **Inform, educate, and empower people about health issues.**
    - Allow for announcements or demonstrations for health issues (flu tracking, where to get condoms, who to connect with on certain issues, etc.)
4. **Mobilize community partnerships and action to identify and solve health problems.**
    - Connect concerned citizens with appropriate agencies of experts
5. **Develop policies and plans that support individual and community health efforts.**
    - Allow for citizen input or review of community policies

6. **Enforce laws and regulations that protect health and ensure safety.**
    - Stakeholders did not provide examples for this service in their interviews
7. **Link people to needed personal health services and assure the provision of health care when otherwise unavailable.**
    - Connect those in need of assistance with an expert in the field, or a public health worker who can follow-up with the issue. Public health workers can also directly connect with their patients and case load in between appointments (making sure they got their medicine, etc.)
8. **Assure competent public and personal health care workforce.**
    - Offer trainings, the advertisement and marketing of trainings online or in the community, forums for collaboration, etc.
9. **Evaluate effectiveness, accessibility, and quality of personal and population-based health services.**
    - Stakeholders did not provide examples for this service in their interviews
10. **Research for new insights and innovative solutions to health problems.**
    - Allow for the sharing or collaboration of articles and advancements in the field, soliciting of community ideas, sharing best practices, etc.

Recommendations

Through the information learned from the RSPHTC stakeholders, along with following the adoption models from Rogers' Diffusion of Innovations, the following action plan can be recommended for the center:

ACTION PLAN

- A review of all current communication and technology efforts
- An educational session, led by me (the Online Learning Coordinator), giving an overview of SNS tools and their associated positive and negative features
- Discussion of voids in offerings and future goals
- If applicable, select a tool to implement
- Make guidelines for tool implementation and use
- Trial period
- Evaluation.

As the technology expert for the center, this study has given me great insight on the field of public health and potential SNS applications, as well as barriers to successful use. At an upcoming advisory board meeting I have been given an hour to present an overview of SNS tools, and how they apply to the field of public health. The agenda of the session is as follows:

MEETING AGENDA

- Review of current RSPHTC technology efforts and tools
- Overview of Web 2.0
- Web 2.0 demographics (age, rural usage, etc.,)
- 21st Century Public Health
- Overview of Top Ten SNS tools (each site will be introduced, with positive and negative aspects explained)
- Pairing of tools with the Ten Essential Services (best practices, and examples of usage)
- My Suggestions
- Questions and Answers

A key component of this meeting, after conducting all of the interviews and compiling this study, is to remove myself from the role of researcher and use what I learned to help shape future steps for the program. Considering the majority of stakeholders wanted a SNS presence for marketing and announcements, while concerned about privacy and inappropriate comments, I would suggest the following for the center.

PHASE ONE

Through my research, I would recommend an immediate construction of a Facebook page for the center. This page will be easy to construct and update. The use of this page for announcements and sharing of information will not elicit strong emotions and will minimize any motivations for inappropriate postings. This page will be a good first step for the center to experiment, while also learning more on how public health workers and the community respond to posts. This page, even if not frequently used, will create a presence and be a cheap, easy way to market the center and perhaps connect with younger public health workers looking for resources in the field. If demand grows, or collaboration occurs, then the center can evaluate other options. If there is a perceived need to provide more information and resources, another step beyond a Facebook page would be to create a Twitter feed. This SNS application could promote the center as well as new research and considerations related to rural public health and HIV/AIDS research. As a safety precaution for the Facebook page, or potential Twitter feed, the site would be monitored by me and if any problems or issues occurred, the center could easily deactivate the page and evaluate what occurred. To further protect the center certain privacy settings, like approving posts before they are made public, could be implemented.

PHASE TWO

If the center is accepting of the results of Phase One, then a more involved approach could be considered to address some of the suggestions of the group to be more active in facilitating discussions between public health workers or even patients in the community. Further research would need to occur to gauge the demand for such a

platform, which could be a message board or a private Facebook page, as well as how to protect identities and content. The center could work to investigate and connect with other agencies who offer these services to learn how they implemented and monitor these programs, as well as creating a survey to be distributed to determine potential use before allocating resources to create these sites.

LIST OF REFERENCES

Ahmed, F. U. (2011). Defining public health. *Indian Journal of Public Health*, *55*(4), 241.

Beck, A. J., & Boulton, M. L. (2012). Building an effective workforce: a systematic review of public health workforce literature. *American journal of preventive medicine*, *42*(5), S6-S16.

Bernhardt, J. Leveraging social media and technology for better health [video lecture]. Retrieved from Rural South Public Health Training Center Web site: http://ruralsouthphtc.phhp.ufl.edu/continuous-education/sessions/archived/search-by-month/april-2012-leveraging-social-media-and-technology-for-better-health/view-session-april2012/

Bogdan, R. C. Biklen. S. K (2006). *Qualitative research in education: An introduction to theory and methods* London, Allyn & Bacon.

Boyd, D. M. and Ellison, N. B. (2007), Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13, 210-230.

Browne, M. (2007). Practice notes: Strategies in health education program,"full service": Talking about fighting prostate cancer—in the barber shop!. *Health Education & Behavior*, *34*(4), 557-561.

Chou, W. S. (2009). Social media use in the united states: Implications for health communication. *Journal of Medical Internet Research*, 11(4).

Corbin, J., & Strauss, A. (2008). Basics of qualitative research: Techniques and procedures for developing grounded theory. *Sage, Thousand Oaks, CA*.

Creswell, J. W. (2008). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage Publications, Incorporated.

David, H. P. (1992). Abortion in Europe, 1920-91: A public health perspective. *Studies in Family Planning*, *23*(1), 1-22.

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of management review*, 532-550.

Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, *13*(1), 210-230.

Frieden, T. R. (2010). A framework for public health action: the health impact pyramid. *Journal Information*, *100*(4), 590-595.

Gebbie, K., & Turnock, B. (2006) The public health workforce, 2006: New challenges. *Health Affairs*, (25), 923-933.

Glaser, B. G. (1965). The constant comparative method of qualitative analysis. *Social problems*, 436-445.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report*, *8*(4), 597-607.

Hampton, K. N., Goulet, L. S., Marlow, C., & Rainie, L. (2012). Why most Facebook users get more than they give. *Pew Internet Report (Feb. 3., 2012)*.

Hanson, C. L., Barrett, J., West, J. H., & Barnes, M. D. (2012). Protecting Public Health in a Social Media World: Policy Responses to Online Threats. *The Internet Journal of Public Health*, *2*(1).

Harrell, J. A., & Baker, E. L. (1994). The essential services of public health. *Leadership in Public Health*, *3*(3), 27-31.

Harris, J. K., Snider, D., & Mueller, N. (2013). Social media adoption in health departments nationwide: The state of the states. *Frontiers in Public Health Services and Systems Research*, *2*(1), 5.

Health Resources and Services Administration. (2011). *Rural South Public Health Training Center Grant Application*. Washington DC: U.S. Government Printing Office

Java, A., Song, X., Finin, T., & Tseng, B. (2007, August). Why we twitter: understanding microblogging usage and communities. In *Proceedings of the 9th WebKDD and 1st SNA-KDD 2007 workshop on Web mining and social network analysis* (pp. 56-65). ACM.

Lampe, C., Ellison, N., & Steinfield, C. (2007). A familiar Face(book): Profile elements a signals in an online social network*. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, *USA,* 435-444.

Lave, J., & Wenger, E. (1998). Communities of Practice: Learning, Meaning, and Identity: Cambridge University Press.

Larochelle, M., Bednarz, N., Garrison, J. W., & Garrison, J. (1998). Constructivism and education, Cambridge University Press.

Kolb, S. M. (2012). Grounded Theory and the Constant Comparative Method: Valid Research Strategies for Educators. *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)*, *3*(1), 83-86.

Kvale, S., & Brinkmann, S. (2008). *Interviews: Learning the craft of qualitative research interviewing*. Sage Publications, Incorporated.

Mergel, I., & Bretschneider, S. I. (2013). A three-stage adoption process for social media use in government. *Public Administration Review*.

Morabia, A. (Ed.). (2006). *A history of epidemiologic methods and concepts*. Birkhäuser Basel.

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2008). Verification strategies for establishing reliability and validity in qualitative research. *International journal of qualitative methods*, *1*(2), 13-22.

Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.

Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.

Patton, M. Q. (2002). Qualitative research and education methods. *Qualitative Research & Education Methods*.

Paul, M. J., & Dredze, M. (2011, July). You are what you tweet: Analyzing Twitter for public health. In *Fifth International AAAI Conference on Weblogs and Social Media (ICWSM 2011)*.

Paul, M. J., & Dredze, M. (2012). A model for mining public health topics from Twitter. *HEALTH*, *11*, 16-6.

Perlow, L. A. (2012). *Sleeping with your smartphone: How to break the 24/7 habit and change the way you work*. Harvard Business School Press.

Porter, D. (1999). *Health, civilization and the state: a history of public health from ancient to modern times*. Routledge.

Rice, R. E., & Atkin, C. K. (Eds.). (2012). *Public communication campaigns*. Sage Publications, Incorporated.

Rogers, E. M. (1983). *Diffusion of Innovations*. New York: Free Press.

Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: Free Press.

Rosen, G. (1993). *A history of public health*. Johns Hopkins University Press.

Rosner, D., & Markowitz, G. (1985). A'gift of God'?: The public health controversy over leaded gasoline during the 1920s. *American Journal of Public Health*, *75*(4), 344-352.

Seidman, I. E. (1991). *Interviewing as qualitative research.* New York: Teachers College Press.

Spirer, J. (1980). *The case study method guidelines, practices, and applications for vocational education.* Columbus, OH: National Center for Research in Vocational Education

Stake, R. E. (1995). *The art of case study research*. Sage Publications, Incorporated.

Stern, L., & Taylor K., (2007). Social networking on Facebook. *Journal of the Communication, Speech & Theatre Association of North Dakota* 20(1), 9-20.

Strauss, A., & Corbin, J. (1994). Grounded theory methodology. *Handbook of qualitative research*, 273-285.

Sunden, J. (2003). *Material virtualities*. New York: Peter Lang.

Takhteyev, Y., Gruzd, A., & Wellman, B. (2012). Geography of Twitter networks. *Social Networks*, *34*(1), 73-81.

Thackeray, R., Crookston, B. T., & West, J. H. (2013). Correlates of health-related social media use among adults. *Journal of medical Internet research*, *15*(1), e21.

Thackeray, R., Neiger, B. L., Smith, A. K., & Van Wagenen, S. B. (2013). Adoption and use of social media among public health. *BMC Public Health*, *12*, 242.

Thelwall, M. (2008). Social networks, gender, and friending: An analysis of MySpace member profiles. *Journal of the American Society for Information Science and Technology*, *59*(8), 1321-1330.

Turnock, B. J. (2001). *Public health: What it is and how it works*. Aspen Publishers.

Wejnert, B. (2002). Integrating models of diffusion of innovations: a conceptual framework. *Annual review of sociology*, 297-326.

Winter, G. (2000). A comparative discussion of the notion of validity in qualitative and quantitative research. *The Qualitative Report*, *4*(3&4).

Yang, C. C., & Brown, B. B. (2013). Motives for using facebook, patterns of facebook activities, and late adolescents' social adjustment to college. *Journal of youth and adolescence*, *42*(3), 403-416.

Yin, R. K. (2008). *Case study research: Design and methods* (Vol. 5). Sage Publications, Incorporated.

BIOGRAPHICAL SKETCH

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