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Pilot Texas Red Cross Virtual Disaster Health Services Model-Case Study

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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2017

Abstract

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MSN, University of Phoenix, 2011

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Project Submitted in Fulfillment

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Abstract

The Red Cross traditional method of Disaster Health System (DHS) response is 'boots on the ground.' Texas, the 2nd largest state by population and land mass, has only 15 DHS volunteer nurses who were not able to meet the needs of disaster victims in Texas with the traditional response method. The Texas Red Cross DHS volunteer nurses began piloting a virtual DHS model in 2014. The research question was how Texas Red Cross nurses designed, developed, implemented, and evaluated the Texas Red Cross virtual DHS Model. The purpose of this case study was to provide this information in a case study. The research approach followed a single investigator case study design that utilized Roger's diffusion of innovations theory and Lewin's change theory to identify how this virtual pilot was created and implemented in Texas. The processes developed and utilized are provided in detail in this case study. Data maintained by the Texas DHS team from March, 2016 to March, 2017 provided evidence that all 1,724 cases assigned to the DHS team were worked and closed by a Texas DHS volunteer. A qualitative summary of nurses' satisfaction with this model was uniformly positive. This provided support for the use of the virtual model for communication to meet the disaster-related health needs of disaster victims in Texas. The use of a virtual model for disaster management supports positive social change in addressing the disaster-related health needs of disaster victims in Texas and for possible use by other Red Cross DHS stakeholders.

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Dedication

This project is dedicated to my good friend and unwavering Red Cross mentor, Elizabeth Bispo. She is the inspiration behind this project content and is graciously allowing me to bring it full circle for her and with her guidance. She has spent tireless hours providing education, guidance, and mentoring to me on Red Cross processes while developing this virtual team concept for Texas. A special dedication is also due to her husband, Al Bispo, who has patiently let me 'borrow' her for the year it has taken to do this project.

A special dedicate goes to my father, Donald Patrick, who died in 2016 just as I started this project. He wanted very much to see me complete my DNP degree. A special dedication also to my mother, Mary Jane Patrick, the perfect model of a nurse, who is my cheerleader. Mom is anxiously awaiting me to complete this project so she can say her daughter rose above all the hardships and roadblocks in life to reach her goal of a DNP and provide inspiration to other nurses.

Acknowledgments

I would like to acknowledge my three adult children Kevin II, Michelle, and Angela, their spouses, Nicolle, Kelly, and Bill, and my five grandchildren, Lauren, Boyd, Lucas, Clara, and Caroline, for having patience with my absences from some family events while I worked on this DNP project. Mom/Grandma really is in school!

I would also like to acknowledge my chair, Dr. Catherine Garner, for all her patience and hard work assisting me to bring this this project to completion. Her support of my DNP project to produce social change for disaster victims is greatly appreciated.

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Introduction

The Red Cross responds to a disaster every 8 minutes (American Red Cross, 2017a). As virtual responders, nurses are an important part of the emergent groups that are potentially highly effective and quick to respond after a disaster (Wall, 2015). Texas is second in size to Alaska in land mass and second in size to California in population (United States Census Bureau, n.d.). Currently Texas has 15 Red Cross volunteer disaster health services (DHS) nurses to service the entire state for issues from single family fires to large disasters. Due to the size of the state, there is an insufficient number of Red Cross DHS nurses to cover the state and its population when utilizing the traditional Red Cross ground response method. While the ground response method creates a service delivery gap of Red Cross DHS services for the population of Texas, the need for immediate health related assistance after a disaster is critical. To fill this gap, virtual technologies are changing the way the disaster stakeholders communicate their disaster-related health service needs (Bjerge, Clark, Fisker, & Rayu, 2016).

To address this service delivery gap, the Texas Red Cross DHS nurses have been piloting a virtual DHS model for the past 3 years to manage Texas disasters. This pilot is an innovative change to the traditional ground delivery model. The purpose of this Doctor of Nursing Practice (DNP) project is to conduct a case study on the design, development, implementation, and evaluation of the Texas Red Cross virtual DHS model for Texas and for potential utilization by other states as well as the National Red Cross DHS division.

Problem Statement

Local Nursing Practice Problem

Texas has a land mass of 268,820 square miles and had an estimated population of 27,862,596 in 2016 (United States Census Bureau, n.d.). There are 15 volunteer Texas Red Cross DHS nurses to service this population base, which translates into one nurse per 1,857,506 individuals for potential disaster responses. This ratio could leave many Texas residents who have immediate disaster-related health care needs, such as medications, medical devices, and oxygen waiting for care with the traditional ground disaster response model.

Volunteer nurses are an essential element in meeting the everyday urgent needs for disaster responses while also performing a vital role in disaster surge capacity, which is the preparation for response to disasters (Veenema et al., 2016). Nurses, many preferring to stay close to their family and friends in time of disaster, shying away from volunteer positions that may require travel to a disaster. Due to these and other factors, availability for disaster response creates a servicing, recruiting, and retention challenge for Red Cross DHS nurses in Texas.

During large disasters, the ground mobilization of national Red Cross DHS staff can take days to weeks to arrive, depending on the disaster size and the transportation infrastructures affected. Furthermore, the training of each state's Red Cross DHS team in virtual DHS response to assist shelters and those disaster victims at home after any level of disaster can impact the overall health outcomes of those affected by disaster. The American Nurses Association (2017) encourages nurses to be prepared for any type of

disaster and to consider being disaster responders by selecting an organization that meets their desired level of response. Nursing practice is the most effective process to improve population outcomes across the disaster life cycle in disaster emergencies (Veenema et al., 2016). In this DNP project I seek to bolster efforts to increase the numbers of disaster prepared Red Cross volunteer nurses available virtually through the use of technology versus a reliance on spontaneous volunteers who arrive at disaster scenes and can impede response efforts (Hodge, Gable, & Cálves, 2005; Veenema et al., 2016).

Purpose Statement

Due to the uneven ratio of ground mass, population, and DHS nurses in Texas, the Texas Red Cross DHS nurse team has been piloting a virtual DHS model for over 3 years. This Texas Red Cross virtual DHS model, developed and piloted in Texas, is a nurse led, evidence-based practice (EBP) model for disaster nursing. Over 20,000 nurses make up the majority of health services members in the American Red Cross (American Red Cross, 2017b). There is significant evidence that nursing interventions during disasters, including leadership, system improvement, research, health policy, and EBP knowledge, improve patient outcomes (Dykes & Collins, 2013). Because many states have inadequate numbers of DHS nurses to cover the land mass and populations of their states, volunteer Red Cross nurse leaders in these other states are looking to Texas and this virtual DHS model as a potential answer to this issue. To better gauge the efficacy of the virtual pilot in Texas, I developed a case study on the design, development, implementation, and evaluation of the Texas Red Cross virtual DHS model for Texas.

This case study will include the study design, nursing theories, policies, workflows, communication procedures, and outcomes data to support the implementation process.

In addition to ground response the Red Cross has been using telephonic call centers for several years. These centers are staffed with nonclinical operators who take initial input on clients and build the cases in the computer system for those who are requesting emergency services. Red Cross client casework and mental health services have also been employing virtual communications methods via telephone, e-mail, or text with disaster victims for several years. The Texas Red Cross virtual DHS team has implemented this model, which the national Red Cross DHS division has yet to embrace.

To answer the practice-focused question of how Texas nurses designed, developed, implemented, and evaluated an innovative approach to Red Cross disaster nursing, I collected information regarding the value and benefits of the Texas Red Cross virtual DHS model as it addressed the disaster service delivery gap in Texas. The target population for this project was residents affected by disasters in Texas from March, 2016 to March, 2017. There is no typical disaster victim, as anyone can be impacted anywhere, at any time and in any country affected by any type of disaster. No one is exempt from the potential complications of a disaster, yet nurses are challenged to find ways to overcome all obstacles and meet the needs of those who require assistance. The Texas Red Cross virtual DHS model, staffed by volunteer nurses, helps fill this gap-in-service need.

Nature of the Doctoral Project

In order to conduct a case study, I used the program–based design suggested by Yin (2014) as a one-time data collection effort conducted by a single investigator. Data for the case study were extrapolated from reviewing meeting minutes, working papers, workflow models, process guides, and evaluation data provided by the Texas Red Cross. Data included interviews of key stakeholders who were instrumental in the development and implementation of this virtual DHS model. The survey interviews, utilizing a structured questionnaire, were done via telephone with expert volunteer Red Cross disaster health services nurses both in Texas and from around the country (Yin, 2014). In my questions, I focused on current and desired DHS processes, desired workflows, workflow contents, and the desired reporting and sharing of information in their specific work setting. I used the analytical technique of pattern matching, the desired method for case study analysis, to evaluate predicted versus actual outcomes (Yin, 2014). The process of pattern matching strengthened the internal validity of my findings as the outcomes matched the predictions (Yin, 2014). No client or nurse specific data were collected, only retrospective, quantitative data from the Texas Red Cross DHS team from March, 2016 to March, 2017. This case data were collected on a daily basis using an Excel spreadsheet. I did not collect or use data directly from the Red Cross national case database. In the Excel spreadsheet, the data I collected were the number of cases flagged for a nurse versus the number of cases assumed and completed by a nurse. This provided evidence of the success rate of the program in meeting the disaster-related health care needs of the disaster victims.

Utilizing Yin's (2014) case study design, the strategic planning included reviewing the vision, mission statement, and strategic goals of the parent organization, the national Red Cross, for inclusion in the virtual process (Yin, 2014). This case study program planning strategy focuses on developing virtual policies and workflows, based on national Red Cross DHS policy, for the virtual DHS model that allows any state and the national Red Cross to easily incorporate this virtual DHS model into their DHS policies and workflows.

Construction of data incorporates the diffusion of innovations theory to guide the use of EBP research in the development of the virtual DHS model for Texas (Lambooij, Engelfriet, & Westert, 2010). This diffusion theory provides insight into the adoption of EBP research to guide practice change while also assisting to explain the adoption of and potential for an innovation to be accept by an organization (Sanson-Fisher, 2004). The diffusion of innovations theory can be implemented more effectively with the use of a change theory. Lewin's change theory provided an understanding of the driving forces necessary to guide the change process for successful implementation of the Texas Red Cross virtual DHS model. Using a change theory increases my understanding of the innovative processes involved in moving to a virtual model (Mitchell, 2013).

Virtualization, the use of telephones and computers, is a rapidly developing technology in today's globalizing world. People demand faster and timelier responses to their social and medical needs. Rapid attention to health needs strengthens the long term sustainability of recovery operations (Lee, 2004). Organizational survival is based on adaptation to the cultural and social demands of the society it serves; Red Cross

volunteers must be ready to meet this challenge. For this project, I looked at the culture of both the Texas Red Cross DHS team and the national Red Cross DHS organization and how the rapid growth of virtualization in a global society will impact their respective need for change.

In *The Essentials of Doctoral Education for Advance Practice Nursing,* DNP Essential 1 states that transformation in nursing practice requires a strong underpinning of scientific evidence that will provide the foundational support for practice changes (American Association of Colleges of Nursing, 2006). This scientific underpinning is applicable to any nursing process and supports the need for change in nursing, which is inevitable and necessary for nursing to keep pace with the advancements in the medical field. My findings provide evidence of the Texas Red Cross DHS nurses involvement in daily disaster operations, thus meeting this DNP initiative.

The Red Cross advocates the implementation of the Institute of Medicine's (IOM) 2011 report, *The Future of Nursing: Leading Change, Advancing Health,* recommendation number eight: preparing and enabling nurses to lead change, advance health, and improve disaster services to disaster victims (American Red Cross, 2017b). Health risks include circumstances when the normal method of receiving health care and health care supplies, including medications and medical equipment, is disrupted. Any size or type of disaster can interfere with the normal self-health care that the client has with their health care providers, health insurance, caregivers, or government supported health agency. For this project, I address this gap in service in order to alleviate the threat to the health outcomes of disaster victims.

The 2011 IOM report, *The Future of Nursing*, calls for a focus on new functions in nursing that converge knowledge and quality in a cost-effective, patient-centered, delivery system (as cited in Stevens, 2013). Continual access and connection to health resources can improve health outcomes. Lack of access and having unmet health needs contributes to declines in both quality of life and health status (HealthyPeople.gov, 2017b). I address this IOM report by providing an analysis of a cost-effective, patient-centered virtual delivery system for the Red Cross for the state of Texas. The use of telecommunications and technology systems are important elements in the effectiveness of this process. Nursing leaders must be creative in overcoming challenges when utilizing technology and modern communication methods to ensure processes remain sensitive to the health needs of the client (Huston, 2013). Via this case study, I provide evidence of the creativity of the Texas DHS nurses in meeting disaster-related client health needs by utilizing telecommunications and virtual computer technology.

Significance

Before determining the needs or impact of the project on any specific stakeholders, it is important to evaluate if the project will meet any unmet established standards of the organization or community (Kettner, Moroney, & Martin, 2017). Health care delivery processes are changing to a virtual, patient-centered approach, and health care entities are being challenged to find creative ways to adapt to this social change (Amann, Zanini, & Rubinelli, 2016). Telehealth, the use of virtual means of communications in healthcare, is a rapidly growing concept in healthcare, primarily

driven by the public's desire for convenient in health care settings and delivery (Skiba, 2015). This telehealth concept is the key element in the Texas virtual DHS model.

While disaster victims are key stakeholders in the Texas virtual DHS model, additional stakeholders are Red Cross nurses, the Red Cross virtual DHS management team, Red Cross disaster caseworkers, and disaster call center operators. Additional stakeholders are national, state, and local disaster responders and agencies which the nurse interacts with to meet client specific needs.

And additional stakeholder is telecommunication providers. A major issue after a disaster is the potential for a rapid decline in the disaster victim's physical health if issues are not dealt with urgently. The Red Cross promotes health by utilizing the public health principle of addressing determinants of health and social issues caused by disaster as quickly as possible; the Texas virtual DHS model does this by using telecommunications methods (Tian, Zhao, Cao, Wang, & Wang, 2016). This makes public and Red Cross telecommunication providers important stakeholders in the process.

Delivery of care, regardless of delivery method, should always be culturally competent. People of any nationality or culture who live in overcrowded and poorly maintained housing can be affected the worst by a disaster (Danna & Bennett, 2013). The Texas Red Cross virtual DHS workflows incorporate referrals to Red Cross social workers, partnering with local and state government agencies, and using Red Cross language interpreters as additional stakeholders, when needed. In every virtual encounter, the social determinants of health and the needs of vulnerable populations must be

incorporated into potential stakeholder needs. Coroners, in death cases, and charity organizations are also important stakeholders to include in the process.

Registered nurses are frequently the largest group of responders in a disaster (Peterson, 2006). Expectations are that publishing the Texas Red Cross virtual DHS model will encourage the adoption of similar models in other states and increase the number of virtual DHS nurses working with the Red Cross. The virtual model provides new opportunities to assist in disaster nursing and volunteer work, especially to those nurses who cannot travel due to children, family obligations, illness, disability, or personal preference not to travel into disaster areas.

This innovative virtual process in Red Cross disaster health services unlocks a new level of foundational critical thinking that opens doors for other virtual nursing processes, which will improve disaster-related health responses in other disaster nursing fields, like emergency services and public health. As the occurrence of natural and manmade disasters increases, nursing is called upon as a profession to prepare on all levels to meet the health care needs of disaster victims. In a disaster, nurses must apply the nursing process and critical thinking to anticipate and solve problems in the most cost-effective and patient-centered manner possible.

Nursing was established during a manmade disaster, the Crimean War, when Florence Nightingale forged a new frontier to improve the sanitation and health conditions of injured soldiers (Courtney, Priest, & Root, 2012). Red Cross nursing was founded when Clara Barton provided support and supplies to Union soldiers during the Civil War (American Red Cross, 2017b). Nurses have been and continue to be an

effective tool in forging new avenues to meet the needs of disaster victims. Nursing in general, and Red Cross nursing specifically, is instrumental to the inspiration to think outside the box in developing the virtual DHS model for Texas.

Nurses are frequently expected during times of disaster to deviate from standards of care to meet the client's needs. This DNP project provides an innovative virtual method of delivering disaster-related health services, which also has the advantage of protecting the nurse from potential hazards to their own health from the disaster (Courtney et al., 2012). Care providers who are not directly affected by disaster are sometimes better able to focus on meeting the needs of those who need help.

The initial review of literature was void of any indication that any other entity involved in disaster response for health services performs the specific tasks of a Red Cross virtual DHS nurse. These tasks include assistance with replacement of medications, medical equipment, and eyeglasses lost in the disaster plus assistance with a burial benefit, if a death is disaster-related. The introduction of this DNP project data into the body of nursing knowledge will afford opportunities for other national, state, or charity organizations to adopt aspects of the Red Cross virtual concepts into their disaster preparedness.

Furthermore, nurses and nurse practitioners can use this DNP project information to develop a virtual nursing disaster response for their specific clinical site. The mental health division of the Red Cross disaster health services already uses this virtual concept for their Red Cross disaster work at local and national levels. This virtual DHS concept

can also be adapted for use by the International Red Cross for use during disasters in countries with a working telecommunication system.

The public desires health care on their terms in the environment of their choice at the time they chose (Skiba, 2015). The Red Cross is seen as a ground operation at large disasters where disaster victims can receive help. Many disaster victims may not need or desire in person assistance. They may not have been directly affected by disaster, but it may have affected their health care infrastructure. Through referrals from the Red Cross call centers, these disaster victims can receive assistance using a virtual DHS team to assist with their disaster-related health needs. The virtual concept to disaster health services provides the opportunity for choice in how they receive their disaster related health assistance (Cantrell, 2015).

A survey of nurses in Texas in 2011 identified that nurses do not feel confident in their abilities to respond in a disaster (Baack & Alfred, 2013). Motivation and willingness to assume the risk of involvement in a disaster were primary factors, which can be significant factors if lack of training and mentoring is not available during the disaster process (Baack & Alfred, 2013). This project provides an opportunity for nurses to do volunteer nursing with the Red Cross while creating an opportunity for social change within the organization and the profession. As global incidences of natural and manmade disasters increase, nurses of all ages, cultures, and abilities must be enticed and afforded numerous opportunities to get involved in disaster response (Baack & Alfred, 2013). This Texas Red Cross virtual DHS model provides an innovative opportunity for Red Cross

nurses. This new level of response provides a model for social change within communities and emergency support agencies at all levels of government.

Summary

Texas is the second largest state in land mass and population in the United States, but only has 15 Red Cross volunteer DHS nurses. The Texas DHS nurses developed a virtual process to bridge the service delivery gap of disaster-related health services in Texas. This is an innovative alternative to the traditional Red Cross boots on the ground delivery method. The purpose of this DNP project was to develop a case study on the design, development, implementation, and evaluation of the Texas Red Cross virtual DHS model for Texas and for potential utilization by other states and the National Red Cross DHS division. A single case study design was used as a one-time data collection program-based design conducted by a single investigator to address the purpose of the project in designing, developing, implementing, and evaluating the Texas Red Cross Virtual DHS Model.

Section 2 provides a discussion of the use of Yin's (2014) case study design for this project. This case study process incorporates the diffusion of innovations theory and Lewin's change theory. I provide additional information on the project's connection to current nursing practice, as well as a more detailed delineation of the target population, and how the project fulfills the needs of a DNP level project. Section two also includes my role as a pilot virtual DHS team co-leader.

Section 2: Background and Context

Introduction

Texas is the second largest state in land mass and population in the United States, but only has 15 Red Cross volunteer DHS nurses. In Texas, DHS nurses developed a virtual process to bridge the service delivery gap of disaster-related health services in Texas. I seek to help formalize this virtual Texas Red Cross DHS model for further use by Texas, and other states, as well as the national Red Cross. In order to do this, I asked the following question: How did Texas nurses design, develop, implement, and evaluate an innovative approach to Red Cross disaster nursing?

To address this question, I developed a case study on the design, development, implementation, and evaluation of the Texas Red Cross virtual DHS model for Texas. This included creating a study design, analyzing nursing theories, policies, workflows, communication procedures, and outcomes data, and including a cost/benefit analysis to support the implementation process. It is essential to the growth of the nursing profession that knowledge gained from clinical experience be shared with others to advance nursing knowledge (Happell, 2012). By developing and sharing of this DNP project, I facilitate the communication of knowledge and experience gained in the virtual DHS model used in Texas. This section provides information on the theories, concepts, and models used, the relevance to nursing practice, the local background and context, and the role of the DNP student.

Concepts, Models, and Theories

The theories I chose for this project reflect the overall problems and questions rooted in the project design. The theory or model should provide a blueprint while guiding the problem-solving process specific to the type of research appropriate for the project (Kettner et al., 2017). For that reason, I used a case study design to illustrate the Texas virtual DHS model development, which includes the structure, processes, and evaluation to support the project outcomes. I collected data from written documents, key stakeholder interviews, and used a retrospective review of outcome data from virtual DHS team data sheets from March, 2016 to March, 2017 (Hodges & Videto, 2011; Kettner et al., 2017). No patient or nurse identifiers were used.

According to Yin the essence of a case study is to illuminate a decision, including why that decision was made, how that decision was implemented, and the outcomes of that decision (2014, p.15). In order to support this case study method, I used historic quantitative data gathered from logs of daily Texas disasters where the virtual DHS team was utilized. The virtual team concept allows the nurse to deal with the health problems of the disaster victim and not the logistical problem of how to meet with them. The design of a case study deals with a logical problem, the how and why, and not a logistical problem (Yin, 2014). I used data over several months to achieve a greater confidence in the case study's findings (see Cope, 2015).

Roger's diffusions of innovations theory, an analytical framework, provides a structured format to design, implement, and evaluate an innovative EBP process (Giddens & Walsh, 2010). Roger's theory provides an avenue to implement this EBP

research into the use of this Texas virtual DHS model by other states and the national Red Cross DHS division (Lambooij et al., 2010). This diffusion theory provides insight into the adoption of EBP research to guide practice change while also assisting to explain the adoption of and potential for an innovation to be accept by an organization (Sanson-Fisher, 2004). Roger's theory describes how ideas are first trialed by small groups of innovators before spreading the concept via communication to early users, then late users, and then laggards (as cited in Giddens & Walsh, 2010). All four of these groups make their decision regarding this new idea based on the following stages: knowledge, persuasion, decision, implementation, and confirmation (Giddens & Walsh, 2010; Hodges & Videto, 2011).

The role of the diffusion of innovations theory can be understood more clearly with the addition of a second theory that addresses change. Lewin's change theory provides a potential explanation of the driving forces that guide the change processes, like the adoption of a virtual health services concept. Using a change theory increases the likelihood of the success of using an innovative process (Mitchell, 2013). Change, or exposure to new ideas, should be planned rather than allowed to occur incidentally (Strichler, 2011).

Lewin uses three stages in his change theory: unfreezing, change, and refreezing (as cited in Mitchell, 2013). During unfreezing, the motivation to change occurs by the exposure to the new idea and how it improves service delivery. This improvement leads to the actual change by adoption of the new idea (Strichler, 2011). During the change phase, the leader introduces the innovators, like mentors or change agents, which assist

with the rate of change and reinforcing positive outcomes of the model (Mitchell, 2013). The change phase continues until the new processes are engrained in everyday work processes, at which time refreezing occurs with the new processes reinforced and continued use encouraged through daily use (Strichler, 2011).

Literature Review

A systematic review of literature focuses on keywords relevant to the project (Im & Chang, 2012). Databases used were CINAHL, Pubmed's MEDLINE, OVID, ProQuest, and the Cochrane library with articles published since 2005 to ensure evidence was relevant when the increased use of virtual technology was occurring. The keywords and phrases I used were *disaster preparedness nursing, disaster health services, virtual disaster health services*, and *telehealth*. A review of literature provided the following information on these terms.

Disaster Preparedness

According to Shover (2007), preparedness for a disaster happens at the local level as each disaster begins at a local level and, depending on the disaster, can evolve into a state or federal disaster. Shover's focus is primarily on emergency response from an emergency medical services standpoint, which requires ground response for acute medical care and return of infrastructure such as electricity and emergency services.

Disaster Health Services

A literature search on disaster health services produced articles dealing with disaster mental health or the emergency infrastructure preparedness of a community,

which is not disaster health services. There were no articles specific to Red Cross disaster health services only Red Cross disaster mental health services.

Virtual Disaster Health Services

A literature search for virtual disaster health services resulted in numerous articles related to mental health disaster response or virtual training programs to prepare emergency medical responders for a disaster, such as emergency room nurses and paramedics. Several articles described using computer technology to track the location of disaster victims but none specifically discussed virtual disaster health services. Katz, Staiti, and McKenzie (2006) discussed the results of telephone interviews done with communities in regards to perspectives on disasters response. They found that many phone responders wanted a heightened preparedness of communities for bioterrorism and terrorism attacks, but nothing was mentioned by interviewees related to the use of virtual services to actually meet disaster-related health needs (Katz et al., 2006).

Telehealth

Virtual disaster health services is a telehealth method employed to assist clients in meeting their disaster-related health needs. Schwamm (2014) discussed strategies needed for successful telehealth -- effective, safe, timely, patient-centered, equitable, and efficient services. These strategies were incorporated into the workflow processes for this Texas Red Cross virtual DHS model. Furthermore, telehealth, or telemedicine, harnesses the use of existing communication structures to assist in supporting the disaster victims overall health infrastructure (Hall, Stellefson, & Bernhardt, 2012). A report by the Agency for Healthcare Research and Quality stated that telehealth has become a key

instrument to improve health care delivery in medically-needy and underserved areas and improves access to health care while decreasing cost (Agency for Healthcare Research and Quality, 2008). Telehealth, which involves the use of telecommunications (phones, computers, telegraph, or cable) outside of traditional health delivery methods, improves health care access and outcomes and is especially effective in remote field settings when utilized for health and disease surveillance (World Health Organization, 2017).

Clarification of Terms

Clarification of terms is essential in understanding their context in this presentation. Such terms as disaster, level or severity of disaster, surge capacity, virtual, and telehealth require explanation. A disaster is often thought of as a sudden extraordinary calamity of nature that requires an immediate response, such as an earthquake, flood, or outbreak of tornados (Shover, 2007). In current social terms, a disaster can also be manmade, such as a bombing or mass shooting in a public place. Bioterrorism attacks or an outbreak of a deadly infection, such as the Ebola virus, are other examples of disasters. The severity of a disaster usually determines the cost and level of response required to a disaster. Surge capacity is the measure of an organization or group of organizations ability to expand services to meet the needs of the disaster victims (Schwamm, 2014). Surge capacity is dependent on the number of people, supplies, and ability of the community infrastructure for capacity hold. Virtual refers to communication over a computer or network and can include phones, text, or e-mail (Schwamm, 2014). Telehealth is a bold and visionary use of electronic services, computers, and telephones to provide a remote health service such as education, patient

care, monitoring, and communication to clients (Schwamm, 2014). This is an innovative method to increase service delivery while reducing overall costs to an organization but it does not provide the same service as the Texas Red Cross DHS model.

Relevance to Nursing Practice

After an extensive review of nursing literature, I was unable to produce any studies on the topic of virtual disaster health services. Virtual healthcare delivery is discussed in numerous articles but none that match the delivery method and specific job tasks related to the Texas Red Cross Virtual DHS Model.

A review of literature provides evidence that many other areas of disaster nursing utilize virtual means to implement their programs, with the main use being for online education and virtual simulation for disaster training. In an article by Schaffer, Tiffany, Kantack, and Anderson (2016) virtual simulation programs were utilized in nursing education and public health programs to provide simulation of triage methods for utilization in ground disasters. Virtual classrooms also provide multi-media opportunities for the global nursing community to share input on ground disaster planning and response (Sternberger, Deal, & Fountain, 2011). Virtual reality technology provides opportunity for real life simulation of disaster response removing the cost and multi-agency ground response needed to provide the same disaster training (Farra, Miller, & Hodgson, 2015).

Nurses are called upon to be innovative and develop methods to advance the profession of nursing while improving care and outcomes for the client. Developing methods to improve care delivery approaches is a necessity in this rapidly changing world (Freed & McLaughlin, 2011). This Texas Red Cross Virtual DHS Model provides

an innovative approach to Red Cross nursing, which progresses disaster recovery nursing into the current virtual era. Technology is changing the way that health care is provided with virtual opportunities creating new prospects beyond the constraints of physical location (Cowan, 2014). Nursing in any role or organization plays an important role in the transformation of the delivery of healthcare, which includes the incorporation of virtual technology to meet the needs of the customer (Cowan, 2014). Organizations that utilizes nurses are called upon to embrace this evolving virtual opportunity for nurses to care for clients. The improvement recommendation is for nursing to realize that many nursing tasks can be done just as effectively by phone as in person, especially those tasks that do not involve the need for direct person to person contact like physical assessment and treatments.

Change is inevitable in nursing and opens organizations to new opportunities and challenges that can lead to advances in practice standards. The DNP Essential II, *Organizational and Systems Leadership for Quality Improvement and Systems Thinking,* states that the DNP nurse should develop practice initiatives that are not only cost-effective but take into account the risk and improvement of health outcomes for the target population (American Association of Colleges of Nursing, 2006). The Texas Red Cross Virtual DHS Model utilizes volunteer nurses who utilizes their own telecommunications methods, which adds no additional cost to the Red Cross budget. This model provides a comprehensive service that is low risk, cost-effective, and assists the client to achieve their desired disaster-related health outcomes.

Prior to 2013 the Red Cross service delivery plan focused on management centered at the national headquarters with trickle-down effect to the site of the disaster (Johnson, 2016). Since the 2013 organizational restructuring management starts at the local level for day-to-day disaster preparedness and response with financial and oversight support provided by the national office (Johnson, 2016). This allows the Red Cross to put management of day-to-day operations under each division and region to better prepare and respond to the disaster needs of their populations (Johnson, 2016). An organizational goal should be to support regions as they meet the emergency needs of their clients and provide an opportunity for the volunteers to have a satisfying volunteer experience (Johnson, 2016). Red Cross local chapters rely on their nurses for immediate disaster response; this response is dependent on the number of nurses available, which in Texas can cause a gap-in-service without the virtual Texas DHS team.

In this DNP project I provide relevance to the application of virtual disaster-related health services not only in emergency services but in emergency preparedness. The research from this project adds to that body of nursing knowledge and provides evidence that supports how the Texas Red Cross Virtual DHS Model bridges the service delivery gap in providing care to disaster victims.

A literature review provided evidence of the need for medical and emergency personnel to be prepared for face-to-face encounters with disaster victims. No evidence was found on meeting the needs of those who do not need direct emergency services related to a disaster but have an interruption to their self-health methods as a result of the disaster. Their health providers may have been affected by the disaster and these people

may just require assistance in reconnection with health care providers to fill the gap in their health care needs, such as pharmacies and medical equipment providers. This is a task that can be handled by the Texas Red Cross virtual DHS nurse team.

Many people return home after a disaster to find health-related items missing or damaged. Assistance to replace these items can be handled by the Texas Red Cross virtual DHS nurse team. The Texas Red Cross Virtual DHS Model is an innovative, cost-effective method to meet the needs of disaster victims. Innovative nursing processes should provide a scalable collaborative approach to coordination of disaster-related health care needs (Henderson, Carlisle Davis, Smith, & King, 2014).

Local Background and Context

An important element in disaster preparedness is that workflows for disaster operations are engrained in everyday disaster operation responses and meet the needs of disaster victims. As I developed the work processes for this project I reviewed the policies and workflows to ensure they addressed this issue. Since the national Red Cross DHS division workflows do not mention a virtual DHS concept this DNP project fills that workflow gap. This project includes policies and workflows to cover current virtual DHS work standards in the state of Texas and provide EBP for concepts that can be utilized by other states or the national Red Cross DHS division.

The Red Cross mission statement is to "prevent and alleviates suffering in the face of emergencies by mobilizing the power of volunteers and the generosity of donors" (American Red Cross, 2017b, para 1). The 2020 Red Cross strategic plan has three aims of (1) saving lives, protecting livelihoods, and strengthen recovery from disasters and

crisis, (2) enabling health and safe living, and (3) promoting social inclusion and a culture of non-violence and peace (International Federation of Red Cross and Red Crescent Societies, n.d.). The Red Cross partners with emergency management at national, state, and local levels to cover all levels of response in times of a disaster (American Red Cross, 2017b). The Federal Emergency Management Agency (FEMA) utilizes the National Disaster Recovery Framework to partner with federally coordinated disaster relief operation and recovery services, such as the Red Cross, to meet the needs of disaster victims (Federal Emergency Management Agency, 2011). The Red Cross also utilizes this framework as a strategic partner to FEMA.

Major health insurance companies, like Medicare, provide for coverage of medications, medical equipment, and supplies that are lost in a disaster and may also cover the rental of medical items until the replacement arrives (Medicare.gov, 2017). Medicare and Medicaid, overseen by the Centers for Medicare and Medicaid (CMS) utilize the § 1135 Waiver, which indicates that a state or federal disaster has been declared, allowing for replacement of disaster-related medications and medical equipment (Centers for Medicare & Medicaid, 2017). National Red Cross DHS guidelines include the use of insurances to replace disaster-related health items; the Texas Red Cross Virtual DHS Model workflows include the education and monitoring of compliance to this guideline.

Numerous state and federal disaster agencies utilized the virtual world for disaster predicting, disaster reporting, and disaster response (Federal Emergency Management Agency, 2011). Virtual encompasses anything from social media to weather satellites to

advance disaster warning systems. The public utilize numerous social media sites to provide relevant data in regards to disasters and where responses are needed. State and federal disaster agencies develop and adapt a structured virtual response so that proper planning and response can be given where and when needed (Federal Emergency Management Agency, 2011). Maintaining open channels of communications between relief agencies and those affected by disaster is a priority. It is essential to always maintain a structured network of Red Cross virtual nurses who are empowered with the right training, workflows, and leadership to meet the needs of the disaster clients in a cost and time-effective manner. The lead volunteer Red Cross nurses in the state become the management team who educate and mentor on workflow standards for the Texas Red Cross Virtual DHS Model.

Virtual disaster task forces are in place in agencies like the United Nations, the military, the government, and all major organizations. The virtual setting is a necessary reality in today's world. Disaster victims frequently post on social media during a disaster regarding what disaster services are needed and are not being provided. A Red Cross virtual DHS team located in each state could assist by connecting with these people as quickly as they are contacting the Red Cross for assistance.

Role of the DNP Student

I have been a registered nurse for over 38 years and have been in the medical field for over 49 years. I have worked immediate disaster responses as an emergency room and critical care nurse for years. I have been involved in direct ground disaster recovery efforts in disasters. For 20 years I have been a board certified complex case manager for

major insurance plans, especially senior plans. Many times I have taken care of the post disaster health needs of clients as a case manager. I assisted them to work with their insurance plan, their doctors, pharmacies, and medical providers to get medications and medical equipment replaced at most times no cost to them as the lost was disaster-related. This task is part of the workflows of any nurse on this Texas Red Cross virtual DHS team. By utilizing insurances and in-kind donations first Red Cross donor dollars can be utilized where needed to meet the needs of disaster victims.

I have been a Red Cross volunteer nurse for over 5 years and have assisted on or co-led the pilot virtual DHS team for the state of Texas. I mentor Red Cross virtual nurses in the state of Texas on Red Cross DHS processes. I developed the Excel data sheets currently utilized to do day to day tracking of DHS cases in Texas. I oversee and validate the collection of virtual DHS case data for this project. I will be the only person extrapolating data from the spreadsheets for this project. I will be designing the data points, processes, and workflows for this DNP project with collaboration with my mentor and co-lead on the virtual team process in Texas. The data was utilized in the project case study to provide evidence of the effectiveness of the pilot in guiding Red Cross volunteer nurses to meet the disaster-related health needs of disaster victims.

My motivation for this DNP project is to develop a virtual method for Red Cross nurses to meet or assist ground operations in meeting the disaster-related health services needs of disaster victims. Other Red Cross divisions, such as mental health and casework, are moving into virtual contact with clients during disasters – the DHS division is overdue in joining this process for financial, manpower, and customer service reasons.

Society functions on a virtual business premise. The client who is not in a disaster shelter but has disaster-related health needs should be given the same convenience offered by other businesses and organizations - the option for a virtual contact for their disaster-related health needs. Disaster health services logistically cannot be done in Texas without the use of the virtual process secondary to the ratio of land and population to number of Red Cross disaster nurses. The Texas Red Cross virtual DHS model gives nurses a viable option to volunteer their time to the Red Cross thus increasing the opportunity for volunteer work for nurses.

My initial and ongoing motivation for Red Cross disaster nursing initially was and remains Hurricane Katrina. I was not officially attached to any relief agency during Katrina and found it impossible to volunteer as a nurse as training and nursing license registration was (and is) required for disaster response nursing. The most I could do was non-nursing volunteer work. I was a nurse in San Antonio, Texas when thousands of Katrina evacuees came off the buses and were set up in aircraft hangers on the old military base. The Red Cross, at the time, did not have a method to rapidly register and train nurses for disaster response. I vow to this day to never be in the situation again where I cannot help the members of my community as a nurse in a disaster. Daily Red Cross work with disaster victims and working in leadership to assist my chapter to be prepared for a disaster prepares me to keep my vow to my community, wherever it may be.

My bias is I feel that Red Cross nurses should be able to assist in any logistic way possible to help meet the needs of the client. This includes a virtual concept. Not all

nurses are able to do ‘boots on the ground’ and neither do all disaster victims need ‘boots on the ground’ assistance. I believe that face to face is appropriate for most disaster health services shelter work but all other disaster-related health needs can be meet virtually. In large disasters ground nurses in shelters can be meeting the functional needs of a disaster victim while a virtual nurse is working with the client to get their medications and medical equipment replaced. To address this bias I have provided accurate Texas Red Cross DHS model data along with policies and workflows that provides evidence of the actual outcomes of this Texas Red Cross Virtual DHS Model. This data provides evidence to allow an unbiased opinion of the purpose and outcomes of this DNP project.

Summary

A case study design utilizing Roger’s diffusion of innovations theory and Lewin’s change theory are effective tools for the development of this DNP project on the design, development, implementation, and evaluation of the Texas Red Cross Virtual DHS Model. This is an innovative change from the traditional Red Cross ‘boots on the ground’ delivery concept. A systematic review of literature is void of evidence of any disaster relief agency that has a comparable virtual disaster-related health service prototype equal to this Texas Red Cross Virtual DHS Model. The evidence generated by this DNP project will add to the body of nursing knowledge concerning the value of a virtual Red Cross DHS team in addressing a gap in service delivery issue for Texas.

The information in Section 3: Collection and analysis of data provides an explanation of the case study method utilizing the diffusion of innovations and change

theories to develop the project and data collection tools. The application of EBP for this project was identified by a search for primary, peer-reviewed articles that provided relevant data on this subject.

Section 3: Collection and Analysis of Evidence

Introduction

Texas is second in size to Alaska and second in population to California (United States Census Bureau, n.d.). Currently, Texas has only 15 Red Cross volunteer DHS nurses to cover the entire state for single family fires to larger scale disasters. An issue is that there are not enough DHS nurses to cover this area and population using a traditional Red Cross ground response method. This small number of nurses for a state with a large population creates a service delivery gap of Red Cross DHS services to the population of Texas. The current national Red Cross policy is that disaster-related health needs of clients are primarily to be met using a 'boots on the ground' delivery method. However, 15 Red Cross nurses in Texas are unable to meet the daily and national disaster health needs of the disaster victims with the current national Red Cross ground delivery model.

Due to this uneven ratio of Texans to volunteer DHS nurses, the traditional ground deployment is not a viable working model for Texas. The Texas Red Cross DHS nurse team has been piloting a virtual DHS model for over 3 years. The practice problem relates to the need for formalization of this virtual Texas Red Cross DHS model for use by Texas, other states, and the national Red Cross, if desired. The purpose of this DNP project was to develop a case study on the design, development, implementation, and evaluation of the Texas Red Cross virtual DHS model for Texas and for potential utilization by other states and the National Red Cross DHS division. In 2016, FEMA declared four major disasters in the state of Texas, which is not inclusive of daily house fire disasters. The Texas Red Cross nurses are unable to physically meet the current Red

Cross preferred method of 'boots on the ground' for disaster response secondary to the ratio of Texans to Red Cross nurses. To meet the disaster-related health needs of Texas disaster victims, the Texas Red Cross nurses have been piloting a Texas Red Cross virtual DHS model for the last 3 years (2014-2017).

In this section, I provide an overview of how the practice-focused question relates to the gap-in-practice for DHS coverage of disaster-related health needs for disaster victims. My overview includes the goals, objectives, and actions for this DNP project and how supportive outcomes data were collected and recorded**.** Further, I show how I used the diffusion of innovations theory and Lewin's change theory to support infusion of this Texas Red Cross DHS model into the Red Cross DHS social culture. I also discuss the study design and how the collection and analysis of data was completed. A case study design, using a retrospective review of secondary data and key stakeholder interviews, guided the collection of identified data sets from virtual DHS spreadsheets on daily disasters in Texas from March, 2016 to March, 2017.

The Texas Red Cross nurse team developed an innovative virtual way to meet the disaster-related health needs of disaster victims as a method to address the service delivery gap in Texas. This piloting of the Texas Red Cross virtual DHS model began about 3 years ago. This virtual team concept fills the gap-in-practice for those affected by daily disasters in Texas. This virtual DHS model assists the Red Cross at a state level to meet the Health People 2020 Quality of Life health measure directive, which addresses the impact that health status has on quality of life (HealthyPeople.gov, 2017a, para 1).

Practice-Focused Question

The practice-focused question is: How did Texas nurses design, develop, implement, and evaluate an innovative approach to Red Cross disaster nursing?

Source of Evidence

I conducted original research in order to increase the validity of the outcomes data produced and allow its use in clinical research to be more reliable. The original data presented in this project demonstrates the impact of this virtual DHS model in improving the DHS nursing process while meeting disaster victim expectations (Van Achterberg, Schoonhoven, & Grol, 2008).

I applied a single investigator case study method, using a one-time data collection method for data retrieval from caseload spreadsheets, a review of meeting minutes, working papers, workflow models, process guides, and any evaluation data. I interviewed key stakeholders who were instrumental in the development and implementation of this virtual team. I engaged in the process of pattern matching to inform the overall presentation of the case study. No client or nurse-specific data was collected, only retrospective, quantitative data for the Texas Red Cross DHS team Excel spreadsheets collected daily from March, 2016 to March, 2017. No data were directly used from the Red Cross national database, and no permission for these data was required since they are not client or nurse specific.

In this case study, I describe the impact the program had on the outcome (case completion) ratio while also describing how the program is unique (see Yin, 2014). The data collected yields information on how the DHS team implemented and tracked the

data on a daily basis. This provided evidence of whether the DHS model is meeting the service delivery needs of the clients and filling the gap in service where a ground nurse response is not available.

Archival and Operational Data

Initial disaster cases are created in the Red Cross computer system when disaster victims call into the Red Cross and request casework assistance. Caseworkers, called a disaster action team (DAT), dispatch to the site of the disaster and create the case in the Red Cross computer system. If the disaster victim requests assistance for disaster-related health needs, then the DAT person flags (marks) the case to DHS. The DHS lead then gathers these flagged cases from the Red Cross computer system daily and places the data on an Excel spreadsheet. This list is dispersed via secure e-mail to the nurses on the state team on a daily basis for a quicker identification of open cases and who has taken them. Once the cases are closed by the nurse, they are placed on the discharge list on the same Excel spreadsheet.

For this DNP project, no client or nurse specific data were collected, only data specific to number of cases flagged and the number of cases completed per month in the identified study months. Data are only reliable if gathered from a reliable source, always in the same manner, if they provide sufficient evidence, and if they can be shown to be reliable and credible (Yin, 2014). The Virtual DHS team data were listed in chronological order by month providing comparative data of each month from March, 2016 to March, 2017, providing an orderly sequence design (Yin, 2014).

I employed a case study design to evaluate the effectiveness of the virtual DHS model and its observable impact on servicing disaster victims. This was done by studying the starting point (start date or point of intervention) and the end point (case completion date) of cases to provide evidence that a change occurred secondary to implementation of the program.

My mentor and I are the only ones who manage the virtual Texas DHS team and maintain these Excel spreadsheets for the virtual Texas DHS team. Data are counter-verified on a daily basis with the lists maintained in a secure site. The Red Cross computer system was not accessed for the purpose of gathering data numbers for this project; only the Excel spreadsheets were used. Respect for persons was maintained as no client or nurse identifies were used, thus protecting any potential vulnerable populations. The Walden Institutional Review Board (IRB), approval # 06-23-17-0413580, requested the use of a 14-question survey tool (Appendix A) to be used with the Red Cross volunteer nurse expert stakeholders, which included a mixture of quantitative and qualitative data questions. The Walden IRB requested that these surveys be done in person by phone by myself as the single investigator to increase the strength of the validity of the outcomes. I provided assurance to each expert stakeholder who agreed to participate in the phone survey that their input would remain anonymous and that no personal identification would be included in the project.

Analysis and Synthesis

The reliability of a case study increases if the same results can be achieved using the same data from the first study (Yin, 2014). Correct documentation of exact

procedures is needed in order to allow a reliability test, which is done by making as many steps operational as possible to allow for exact duplication of the process (Yin, 2014). The use of a single case study design is suited for the complex nature of nursing practice while allowing research to be conducted in the area of interest (Sangster-Gormley, 2013). According to Yin, the case study method is a three phase process: (a) development of prepositions and research question; (b) preparation, collection, and analysis of data; and (c) writing the final report with findings (as cited in Sangster-Gormley, 2013). Using the case study method inductively as a theoretical method and philosophy captures the research work from design of the study question to the finalization of outcomes findings (Cronin, 2014). The goal of data analysis in a case study is to let each individual piece of evidence be reviewed independently with a focus on describing the case (Cope, 2015).

A case study database was constructed and the data variables and outcomes were displayed in an Excel spreadsheet available in the case study analysis. Defined variables were the month, year, number of cases flagged to DHS, number of cases assumed by DHS, and number of cases completed (closed) by DHS. Policies and workflows were formalized that provided structure to these processes.

Besides reliability, ability to determine validity is an essential element of determining the quality of a research design (Yin, 2014). The construct validity was tested by defining the operational measures for the study concept – the target population and how they are consistently identified and serviced (Yin, 2014). External validity was tested by addressing the how and why questions in the study objectives (Yin, 2014). To ensure study rigor, I maintained a journal of my personal reaction to evidence and an

audit trail of my processes; I also ensured a secure data storage site was used. Of value in a case study is that the research is carried out in a real life situation, enhancing credibility (McGloin, 2008). By using a year's worth of data from a working pilot program, I fulfilled this function. With this single case study, I provide a synthesis of information and data previously inaccessible to research. Further, descriptive information can be used in future research that is relevant to the subject content (Yin, 2014). Of particular relevance would be future research on how the application of this project design impacts the service delivery design for DHS in other states or in a national disaster.

Summary

The use of the correct theory(s), data collection methods, data collection tools, and framework is essential to accurately portray the goals and objectives of the DNP project. The use of a case study model that includes a retrospective design coupled with the diffusion of innovations and Lewin's change theories easily displays the attributes and values of the Texas Red Cross DHS model. This DNP project elaborates on the ability of the Texas Red Cross virtual DHS model to act as a stand-alone or adjunct nursing model to meet the disaster-related health needs of disaster victims in Texas.

Section 4: Findings and Recommendations

Introduction

The local problem is the disproportion of Red Cross volunteer nurses to the population of Texas and the gap in service that is created when using the traditional Red Cross boots on the ground delivery process. Texas has a population of 27,862,596 people in 2016, which equates to 1,857,506 people for each of the 15 volunteer nurses in the Texas Red Cross for potential disaster responses (United States Census Bureau, n.d.). To address this gap-in-service issue, Texas Red Cross nurses developed a virtual DHS model, which incorporates national Red Cross policy and fills the gap of the current absence of virtual DHS policy at the national level. The practice-focused question is the following: How did Texas nurses design, develop, implement, and evaluate an innovative approach to Red Cross disaster nursing? The purpose of this DNP project was to develop a case study on the design, development, implementation, and evaluation of the Texas Red Cross Virtual DHS Model for Texas and for potential utilization by other states and the National Red Cross DHS division.

Texas developed this virtual DHS model out of necessity. A little over 3 years ago, the Red Cross transitioned from paper casework to computer generated casework. The computer caseload was steadily increasing and nurses were not familiar with how to find or address cases in their regions in the computer system. For example, the health services list in the Red Cross computer system, called the Client Assistance System (CAS), does not indicate which nurse is working the case. The case has to be opened in the system and the notes have to be accessed and read to determine which nurse is

assigned to the case. Some regional DHS managers maintained a list of case assignments, but the list was not shared with all the HS staff in their region, nor with the state. Nurses were expected to be on call and assume whatever cases were started on the days they were on call. They were also expected to remember which cases were theirs to work and to close them. Cases were not being tracked. Furthermore, the three regions in Texas did not cover or communicate with each other, nor did they employ the same method to assign and address the cases.

In early 2016, my practicum mentor and I developed an Excel tracking list and began an interregional daily communication of the list, which included which nurse had each case and which cases still needed a nurse to assume the case. We also began using national DHS policy to devise standardized workflows and documentation guidelines for consistency in DHS casework. The workflows were also used for mentoring new nurses and auditing cases to assure consistency with national policy. When regions become short staffed due to disasters or vacations, the other regions in the state were able to identify and step in to assist with those cases. A forum called "Educational Tidbits" is also provided in the daily communication to all DHS in the state that addressed common issues arising from case audits or the development of new national policies. The diffusions of innovations theory provided inspiration on the development of the virtual method to address the backlog of DHS cases in CAS. Lewin's change theory provided guidance on how to unfreeze the prior process of paper casework, introducing the change method to virtual, and refreezing once the virtual method was accepted and being used by all Texas DHS staff, which took about one year. The Texas Red Cross Virtual DHS

Model, which includes the policy and workflows for the model has been disseminated to all DHS in Texas and can be found in Appendix B.

The tracking and communication methods along with the workflows were successfully employed in several large disasters in Texas and Louisiana in 2016, in which nurses from other states deployed into those virtual DHS teams managed by my mentor and me. These nurses took the basic principles of this process back to their states for utilization and frequently request that the entire process be formalized and shared with all of DHS in the Red Cross. Thus, I developed this EBP DNP project to provide dissemination of this process for possible use by other states and national Red Cross DHS. An important part of this case study is how Texas and these expert Red Cross nurses from around the nation view the virtual process for DHS.

Sources of evidence applied in this project involved a single investigator, one time data collection method applied to data retrieval from reviewing meeting minutes, working papers, workflows models, process guides, interviews with key stakeholders, data tables, and existing evaluation data. Pattern-matching provided evidence regarding whether the anticipated outcomes matched the actual outcomes. Retrospective, quantitative data were obtained from a review of the working list of the Texas Red Cross DHS team regarding the number of cases flagged for DHS services versus the number of cases assumed by a nurse from March, 2016 to March, 2017. No individual nurse or client specific data were collected.

I analyzed the various forms of data to determine patterns, concepts, insights, or the discovery of unanticipated material (Yin, 2014, p. 135). I evaluated my journaling

done during the data discovery phase to determine if any evidence presented itself unrelated to specific topics of data collection. Pattern matching, evaluating data in categories, and working data in chronological order provided structure to the data collection. I used inductive and deductive reasoning to provide rationale and guidance on development of the outcomes data. The case study used both quantitative and qualitative data.

Findings and Implications

Employing a single-investigator case study model, with a one-time data collection method to retrieve retrospective, quantitative data on the DHS cases completed by nurses in Texas, I found support that the implementation of this virtual response program has filled a gap in service while also providing a solid program design usable by other states. I also gathered evidential qualitative data from phone surveys with Red Cross key expert nurse stakeholders regarding input on the virtual process. Inclusion criteria for these interviews was convenient and purposeful drawing from a pool of known English speaking Red Cross registered nurses with experience in using or working with a virtual DHS team. This convergence of quantitative and qualitative evidence as a data triangulation strengthens the construct validity of the case study findings and provides stronger evidence of accuracy (Yin, 2014).

I developed a quantitative survey instrument of 10 questions and four open-ended qualitative comment questions to use during my interviews (see Appendix A). The survey tool was developed taking into consideration the information relevant to processes used by the virtual Red Cross DHS team in Texas. My project mentor, and state colead of the

virtual DHS process in Texas, reviewed the questions to ensure they were articulating the specific data identified for the project. At the start of the phone interview, all volunteer participants were provided verbal instructions regarding the purpose of the study, at which time they provided verbal consent for the survey interview. They were given verbal answer choices for each category of questions prior to each question.

Results

An analysis of the quantitative data from the Excel spreadsheet shows that, except for one case in April 2016 and one case in January 2017, all cases in the Red Cross CAS system, which were flagged to Texas DHS, were assumed and worked by a DHS volunteer. In those two outlying cases, someone other than a DHS volunteer completed the case, which resulted in removal of the case from the working list for the nurse to see. An overall count of CAS cases flagged to DHS from March, 2016 to February, 2017 was 1,724 cases with all cases assigned to a DHS volunteer and all but two cases closed by a DHS volunteer. Table 1 is a visual display of this data.

Table 1

Texas Cases Flagged to HS 030116 – 022817

March 1, 2016- **February 28, 2017**	**Number of CAS cases flagged to HS**	**Number of CAS cases assumed and worked by HS**	**Number of cases closed by HS**
March 2016	120	120	120
April 2016	149	149	148 (Casework Turned off HS Flag and Closed Case)
May 2016	117	117	117
June 2016	118	118	118
July 2016	162	162	162
August 2016	130	130	130
September 2016	97	97	97
October 2016	103	103	103
November 2016	127	127	127
December 2016	233	233	233
January 2017	214	214	213 (Casework Turned off HS Flag and Closed Case)
February 2017	154	154	154
Total	1,724	1,724	1,722

With the exception of two cases closed by casework all 1,724 cases assumed by the Texas virtual DHS volunteers were successfully worked and closed in a timely fashion.

A purposive convenience sample of 22 nationwide expert Red Cross DHS nurse stakeholders, who had used or worked with disaster situations that incorporated the

virtual DHS process, were contacted via e-mail regarding potential participation in the survey. Five people did not respond and another three, who did respond, were not able to schedule an interview time in the designated time frame for the survey. 14 phone surveys were completed between July 10, 2017 and July 31, 2017 utilizing the survey tool *Survey Regarding Virtual Process for the Red Cross Health Services,* which can be found in Appendix A. The interviews were a single-investigator phone survey, per request of the Walden University IRB, with only hand written notes taken by myself on a blank phone survey during the interviews. No recordings were utilized. The Walden IRB felt this process would allow a free flow of qualitative data relative to the context of the question that would have not been captured in an online survey. This 14 question survey was completed with one question assessing their years of volunteer services with the Red Cross, six Yes or No questions, three strongly agree to strongly disagree questions, and four open-ended comment questions. The open-ended, qualitative questions allowed for free flow of ideas from the Red Cross expert nurse stakeholders to determine any input that would be relevant to the project and provide any insight into additional improvement concepts for the project. The questions and the responses are as follows:

Question #1: How long have you been a volunteer Red Cross nurse? Figure 1 provides a pictorial display of years of Red Cross nursing experience of the 14 expert nurse stakeholders who provided responses to this survey.

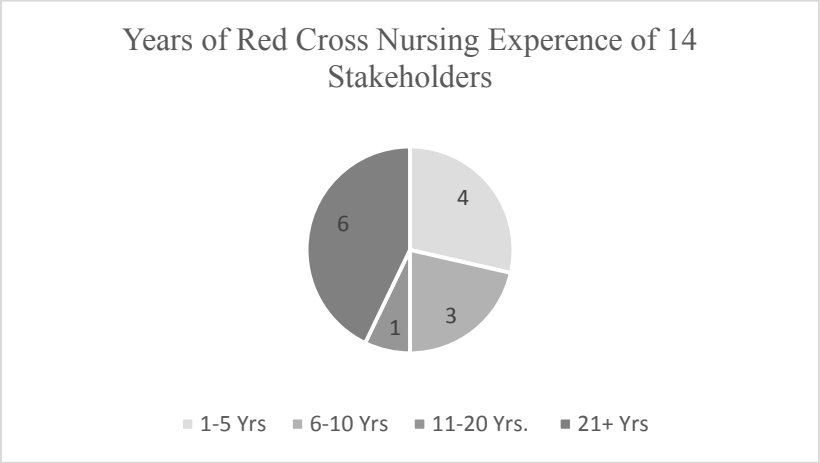

Figure 1. Years of Red Cross Nursing Experience of 14 Expert Stakeholders

Question # 2: Do you work daily disaster cases in your chapter/region/state using a face to face (ground) process?

Table 2 provides a breakdown of the number of nurse stakeholder who work their daily disaster cases in their chapters/regions/state in a face to face (ground) method. This table separates out the responses given by Texas nurses and non-Texas nurses (other). Only two non-Texas nurses use a face to face ground response for the initial interview of a HS case but do all the follow-up work of the same cases using a virtual method.

Table 2
Number of Expert Stakeholders Who Work Daily Disaster Cases Face to Face

Region	**YES**	**NO**
Texas Nurses	0	5
Other	2 – utilize virtual and face to face (ground)	7

Question # 3: Do you work daily disaster cases in your chapter/region/state using a virtual process? Table 3 discusses these responses:

Yes: 13

No: 1 (non-Texas nurse) uses both ground and virtual in their area.

Table 3
Number of Expert Stakeholders Who Work Daily Disaster Cases Virtually

Region	**YES**	**NO**
Texas Nurses	5	0
Other	8	1 (uses virtual & ground)

Question # 4: Do you believe the virtual HS process is/could be effective in meeting the disaster related- health needs of the clients?

Yes: 14

No: 0

Question # 5: Do you believe that working on a virtual HS team could provide knowledge of the application of national DHS processes?

Yes: 13

No: 1 (not a Texas nurse)

Question # 6: Does your state currently incorporate the virtual HS process in the transition phase of a large disaster back to the chapter level?

Yes: 1

No: 0

N/A: 3 (these three nurses have never had a national disaster in their area)

Question # 7: Does your state keep any database (spreadsheet) regarding HS cases flagged and completed by HS?

Yes: 5 (all Texas nurses)

No: 9

Questions 8, 9 and 10 utilized a 5-point Likert Scale of *strongly agree, agree, neither agree or disagree, disagree*, or *strongly disagree.* These questions and responses are discussed in Table 4.

Table 4
Likert Scale Responses to Questions 8-10 of Virtual HS Process Phone Survey

Question	**Strongly agree**	**Agree**	**Neither agree or disagree**	**Disagree**	**Strongly disagree**
# 8: Could your chapter benefit from written virtual HS workflows?	13		1 (didn't' understand the question)		
#9: Would it be beneficial for the virtual HS process to be incorporated into national DHS policy?	14				
# 10. Do you believe that the virtual DHS process is or could be an effective recruitment/retention tool for the Red Cross?	8	4	1	0	1

Since question # 10 was not an open comment question, reasons for their answers were left to be discussed in the open comments questions, if they desired.

Analysis of the qualitative open ended comments questions is done utilizing a grounded theory, inductive approach of assigning various codes to data of like content (Yin, 2014). This produces numbers of like comments that can be converted into additional logical data. Because the quantitative data provided relevance that all Texas

cases flagged to DHS in the Red Cross CAS computer system are assumed then this qualitative data tests this key proposition of the success of this process (Yin, 2014). This evidence is identified in the comments of those Red Cross expert nurse stakeholders who work or have worked with this Texas virtual model in use in Texas daily and national disasters.

The open-ended comment questions provided an abundance of valuable data, much of it more related to the virtual process in a national disaster response that use at a state daily disaster level, which is the focus of the project. The evidence related to large, national disasters will be saved and will be useful for further research on that subject. For the qualitative data the input relevant to this case study was coded by like responses for each question.

Question #11: How have you been involved in the virtual health service team process?

All 14 expert nurse stakeholders utilize the virtual DHS process in their states/regions with 11 stating they have also been on national disaster virtual DHS teams. Six manage the virtual DHS process in their regions and four have been ground disaster managers who interacted with the virtual DHS team manager on national ground disasters.

Question # 12: What do you see as strengths of the virtual process?

All 14 Red Cross expert nurse stakeholders had positive input statements about the virtual DHS process. These expert nurses felt it was a cost and time saver for the Red Cross and allowed for quicker responses to the disaster victim in a disaster. Twelve

expressed that the virtual DHS process was better organized, had good workflows, and was well managed. Two DHS nurses have taken the virtual process learned on Texas disasters back to their state to develop their own virtual process and two felt that the virtual DHS process improves recruitment and retention.

Question # 13: What are areas that could be improved in the virtual process and how? Suggestions for improving the virtual DHS process included the development of a worksheet to standardize virtual call questions, the development of resources lists for the virtual teams, and for the virtual DHS process to be incorporated into national DHS policy. They felt that as the DHS virtual process is developed nationally that conference calls should be held to educate DHS volunteers in other regions on the process.

Question # 14: Please provide any information that you feel would be beneficial, pro or con, to the virtual process in Red Cross DHS nursing.

Most comments were related to a large disaster processes or restated input already given in other questions. Two general comments were that current national DHS policy is not inclusive of how states can manage daily disaster cases processes and that the virtual DHS model is a wonderful idea and having standardization at the national DHS level that incorporates the virtual process will strengthen the overall DHS process.

Unanticipated limitations of the survey findings is that the majority of qualitative data is related to changes that expert stakeholders would like seen done at the national DHS level. This provides substantial evidential data for the need for additional research and development of protocols for virtual DHS use for larger national disasters. This project remains focused on the case study of formalizing the policies and workflows for

the Texas Red Cross Virtual DHS Model but this author was appreciative of their sharing of data regarding the virtual DHS process in any type of disaster setting.

Of value in the survey findings was data that nurses in other states are utilizing or interested in utilizing this Texas Red Cross Virtual DHS Model in their chapters, regions, or states. These nurses have prior been virtually deployed to national disasters in Texas or Louisiana in 2016 where this Texas Red Cross Virtual DHS Model was utilized. They were impressed with the standardization of documentation, workflows, daily communication with the team, and oversight. All stated they are developing or utilizing similar processes or would like the workflows to help them develop the process for their areas.

Recommendations

The lack of available evidence in research and the uniqueness of this topic provides an exclusive opportunity for participant-observation evidence collected in these phone surveys (Yin, 2014). This evidence would not have otherwise been available for expression by the participants or been available to assist in the advancement of health services workflows for the Red Cross in Texas or any state. The amount of responses that were related to the use of this Texas Red Cross Virtual DHS Model as a guide for national DHS virtual policy was overwhelmingly positive. But, certain important caveats were expressed by very seasoned ground disaster health services managers, chiefs, and advisors that the importance of the 'boots on the ground' element of Red Cross disaster health services not be over shadowed by the virtual concept presented in this project. They expressed that both concepts have their own distinct target populations in a disaster

and the use of both factions in any level of disaster operation should always be a part of the operational preparedness/response for a disaster. Not every disaster victim will present to a shelter or a Red Cross service center but will request assistance through a call center call for help. Just as every ground nurse cannot make house calls to address these needs every virtual nurse cannot meet the functional and sheltering needs of those affected by the disaster.

Strengths and Limitations of the Project

An important strength of this project is that it provides credible and validated quantitative data regarding the effectiveness of the Texas DHS nurses to meet the disaster-related health needs of disaster victims in Texas. A limitation of this project is that the primary purpose of the project is to formalize the Texas DHS process, which does not address the needs expressed by many for how this process is utilized at the national level in large disasters. The data is this case study excludes data related to several large disasters in Texas and Louisiana in 2016, of which this Texas DHS virtual team also responded. This was done while continuing to meet the daily disaster needs of daily fire cases in Texas, without a loss or delay in service to fill that service delivery need. The additional input given during the surveys will provide important baseline evidence for the development and dissemination of that critical evidence in the effectiveness of this virtual DHS team process for future research. The convergence evidence provided in this project brings together quantitative and qualitative data that provides positive evidence of the effectiveness of the Texas Red Cross Virtual DHS Model to provide a valuable method in meeting the service delivery needs of disaster

victims in Texas. An important element as part of the change process will be training and mentoring of other leadership in other states who wish to utilize this project.

Section 5: Dissemination Plan

Nursing knowledge and evidence aids in the improvement of care practices when shared with those who can be instrumental in effecting change. The plan of the project was to disseminate the findings of this project to the DHS nurses in Texas and to the DHS leadership of the American Red Cross. These project findings will also be made available to Red Cross DHS leadership around the country who have requested this information for use in their specific geographic areas. While this virtual process works well in Texas, it may need modification to the specific geographic area, population, and virtual capabilities of each specific area.

The case study question on how the Texas nurses put together this program along with the outcomes data is summarized in this paper. Appendix B of this paper is the policy and workflows for the Texas Red Cross Virtual DHS Model, which is inclusive of the process, protocols, pathways, and documentation guidelines. Additional documentation to guide the process has been developed and codified as part of this case study.

I plan to make this project available for presentation to nurses in the Red Cross by Webinar. I also plan to submit this project for a webinar presentation to the Walden Sigma Theta Tau Phi Nu Chapter.

Analysis of Self

Growth comes with opportunity; being open to modifications, praise, criticism, self-reflection, and direction are essential forward movements in life and nursing. Self-regulation in learning does not produce instant expertise, but rather allows the self-paced

acquisition of knowledge and skills in a more effective method (Toering, Elferink-Gemser, Jonker, Van Heuvelen, & Visscher, 2012). This project has provided me opportunity to grow personally, professionally, and intellectually while affording me the benefit of learning from humility, self-sacrifice, and service to humanity.

Summary

The substantial quantitative and qualitative data presented in this project provide ample evidence that the purpose of this DNP project has been addressed and the need for a Red Cross virtual DHS process has been substantiated. This project has addressed the purpose of developing a case study on the design, development, implementation, and evaluation of the Texas Red Cross Virtual DHS Model for Texas and for potential utilization by other states and the national Red Cross DHS division. This project formalizes the method implemented by the Texas Red Cross nurses to rectify the service delivery gap that was previously preventing the team from addressing the social implications caused by a disruption in the usual self-maintenance health patterns of disaster victims. With the virtual model, The Texas Red Cross was able to address all open cases reported to the Red Cross from March, 2016 to March, 2017. With this case study, I am now able to share the positive results with various stakeholders.

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Appendix A: Survey Regarding Virtual Process for the Red Cross Health Services

1. How long have you been a volunteer Red Cross nurse?
    a. 6 – 12 months
    b. 1-5 years
    c. 6-10 years
    d. 11-20 years
    e. 21 years or more

2. Do you work daily disaster cases in your chapter/region/state using a ground (face to face) process?
    a. Yes
    b. No

3. Do you work daily disaster cases in your chapter/region/state using a virtual process?
    a. Yes
    b. No

4. Do you believe that the virtual health services process for working daily disaster cases is/could be effective in meeting the disaster-related health needs of the clients?
    a. Yes
    b. No

5. Do you believe that working on a virtual health services team provides or could provide knowledge of the application of national disaster health services processes?
    a. Yes
    b. No

6. Does your state currently incorporate the virtual health services process in the transition phase of a large disaster back to the chapter level?
    a. Yes
    b. No

7. Does your state keep any database regarding disaster health services cases flagged and completed by HS?
    a. Yes
    b. No

Please answer the following comments from Strongly Agree to Strongly Disagree:

8. Do you believe your chapter/region/state could benefit from written virtual disaster health services processes?
    a. Strongly Agree
    b. Agree
    c. Neither Agree or Disagree
    d. Disagree
    e. Strongly Disagree

9. Do you believe it would be beneficial for the virtual disaster health services process to be incorporated into national disaster health services policy?
    a. Strongly Agree
    b. Agree
    c. Neither Agree or Disagree
    d. Disagree
    e. Strongly Disagree

10. Do you believe that the virtual disaster health services process is/could be an effective recruitment/retention tool for Red Cross disaster health services nursing?
    a. Strongly Agree
    b. Agree
    c. Neither Agree or Disagree
    d. Disagree
    e. Strongly Disagree

Open Comments Questions:

11. How have you been involved in the virtual health services team process?

    _____
    _____
    _____
    _____
    _____

12. What do you see as strengths of the virtual process?

    _____
    _____
    _____
    _____
    _____

13. Where are areas that could be improved in the virtual process and how?

    _____
    _____
    _____
    _____
    _____

14. Comments: Please feel to provide any information that you feel would be benefit, pro or con, regarding the virtual process in disaster health services nursing for the Red Cross.

_____
_____
_____
_____
_____
_____
_____
_____

This survey is part of a Walden University Doctor of Nursing Practice (DNP) Practicum Project for student Kathy Weseman DNP-C, MSN, RN. Your participation is strictly voluntary and your input will remain anonymous.

Appendix B: Texas Red Cross Disaster Health Services Model

Policy and Workflows

Purpose and Mission Policy

Purpose

The purpose of the Texas Red Cross Virtual Disaster Health Services (DHS) Model is to formalize a process utilized in Texas by the DHS team members to meet the disaster-related health needs of those affected by a disaster. This model allows DHS team members to administer DHS services to the disaster victims of Texas utilizing a virtual means of communication**.** Virtual is any method other than face to face – i.e. phone, e-mail, or text. This can be real time or delayed (voice message) and simulates a face-to-face visit.

The utilization of a virtual process allows Texas DHS team members to address a service delivery gap created by a large ratio of population and land mass to the number of virtual DHS volunteers. This model incorporates the American Red Cross DHS policies and procedures as listed in The Exchange in the Red Cross Intranet. DHS team members can utilize the Red Cross traditional face-to-face ground method of communication, when indicated.

Per The American Red Cross DHS Standards and Procedures Policy: DHS is a RN led model with the DHS team member rendering care that is within their scope of practice and expertise. Disaster Health Services is unique and allows healthcare professionals to use their skills in assessment, care, teaching, coaching, and coordinating recovery to promote and achieve an optimal level of health for a client after disaster. ***Disaster Health Services promotes client independence and resiliency***. Disaster Health

Services team members coordinate with a client's local physicians, pharmacies, and other providers when possible to maintain the continuity of care that is necessary when the life of the client is altered by disaster.

Mission

The mission of the Texas Red Cross Virtual DHS Team is to uphold the mission of the American Red Cross utilizing a virtual method of communication when assisting disaster victims. The American Red Cross mission is "to prevents and alleviates human suffering in the face of emergencies by mobilizing the power of volunteers and the generosity of donors" (http://www.redcrossblood.org/about-us/our-mission).

Workflows

State Team Management

None of the following are mandatory requirements for states or of leadership at any level for Red Cross DHS at the national level. This is a voluntary process by Texas Red Cross DHS team members and its DHS leaders to improve state management of DHS cases across all regions and provide a collaborative process among all state DHS team members.

A. Designated volunteer state DHS leader rotate and share team management duties.
B. The DHS lead(s) maintain an Excel spreadsheet of all the DHS cases, as listed in the Red Cross Client Assistance System (CAS), covering all three regions in Texas (TX). Two tab sheets are utilized per spreadsheet for open and closed cases, lists are maintained by year. Column headings can be arranged as preferred and are:

HS Assigned/Region/Client Last Name/Client First Name/CAS ID/County/Case Open Date/Case Closed Date/Comments

C. The Excel spreadsheet of Texas DHS CAS cases is to be shared daily via e-mail with all active DHS team members in Texas utilizing the DHS volunteer's preferred e-mail address. There is no confidential information about the disaster victims being shared utilizing this method.

D. Utilize this daily communication, when sending out the TX DHS CAS List, to also provide educational tidbits regarding DHS policy, update on current disaster operations in the state or nation, or situations that require other regions to help cover another region.

E. Cases are audited by the team leadership on closure for completeness of notes and that the DHS team member has addressed all persons flagged (marked) for DHS in the case. Ensure that the DHS case completed note is the final DHS note and that the health services (HS) flag in CAS is changed from 'Needed' to 'Completed' on all persons assisted by DHS in the case. Ensure DHS notes address that DHS work was completed on each person who HS flag is 'Completed'.

F. Use audit findings to identify any infringement on the privacy of the person's medical information. Utilize findings to educate each DHS team member individually via e-mail or if a pattern is identified in various DHS member's notes utilize as educational tidbit for the entire state DHS team, include with daily e-mail of DHS CAS List.

G. State DHS leaders will provide mentoring on the virtual DHS process for Texas DHS members or other state leaders as requested.

H. Audit the CAS health services (HS) discharged list against the Texas Red Cross Virtual DHS Excel Discharged spreadsheet to determine accuracy of listing on both lists. Occasional adjustment of HS flags in some CAS cases back to 'Completed' is necessary secondary to a possible computer issue that changes the HS flag back to 'Select' when casework saves entries in CAS.

Case Assignment

A. DHS members will assume cases in their region, following their regional method of case assignment (on-call or voluntary assumption) by documenting the following:

    Names of clients currently flagged to HS. HS case assumed by (name of DHS team member), volunteer's license type (RN/LVN/EMT/PA), and volunteer's contact phone number (#).

    Example: Mary and John flagged for HS. HS case assumed by Nancy Nurse, RN 555-555-5555.

B. Texas DHS team members only assume cases from another region if the region with an excess of cases requests assistance.

DHS Assessment for Disaster-Related Health Services Items

A. DHS team members will NOT add additional disaster victims to a CAS case. The main person in the case will be referred back to casework if they feel someone

else in their household was eligible for Red Cross assistance and needs to be added to the case.

B. The DHS team member will assess for the loss of the following types of disaster-related items for eligible members identified in each CAS cases:

    Medications, durable medical equipment, medical supplies, prescription eyeglasses, contacts, artificial eyes, dental devices (dentures, retainers, partials, Invisalign braces, spacers, or TMJ devices), hearing aids, prosthetic devices, diabetic shoes, and ostomy supplies.

C. The disaster victim may have new medications or medical supplies ordered since the disaster for an illness/disease related to the disaster (wound care supplies, burn ointments, antibiotics, inhalers, pain medications, etc.). The disaster victim can be assisted with the cost of up to one month of these items. This may include OTC 4x4's and OTC Triple Antibiotic Cream. The price for these OTC items can be verified by receipts, with their pharmacy, or by using vendor pricing lists available on the Internet.

D. DHS *DOES NOT* cover medical bills, emergency room bills, hospital bills, urgent care center bills, transportation to the doctor or hospital, or furniture (mattresses or adjustable beds found in a furniture store). DHS also does not cover DME they bought from the Internet or other sources that was not ordered by a MD, pet prescription medications lost in a disaster, dehumidifiers, air purifiers, or most OTC medications.

Medications

A. Per DHS Standards and Procedures Policy: The client's pharmacy determines if insurance will provide coverage, not the DHS team member.
B. Per the DHS Support to Clients Job Tool policy in The Exchange "Replace over-the-counter medication using direct client assistance if these medications are an essential part of the client's health maintenance". i.e. – aspirin for a post MI patient, Omega 3 for high cholesterol. These must be ordered by an approved medical provider. The Red Cross does not cover OTC medications not ordered by an approved medical provider as part of their essential treatment plan.
C. Per the DHS Support to Clients Job Tool for loss of medications determine if there is a valid prescription and/or if a new prescription is needed. A three to seven-day supply may be appropriate, but a 30-day supply is acceptable for replacement. If a person only receives their medications in a 90 day supply amount (from a pharmacy or mail order) DHS can assist with this full replacement under the person's allowed $500 max assistance, regardless of the amount of the prior 90 day's supply they lost in the disaster.
D. To help the disaster victim determine if their medications were rendered unusable by a disaster refer them to their pharmacist or they can reference information at http://www.fda.gov/Drugs/EmergencyPreparedness/ucm085200.htm
E. For disaster victims with high deductible insurance plans or no prescription drug plan the DHS team member can refer them to www.GoodRx.com or rxassist.org for discount coupons they can utilize to lower their prices for the medications covered by DHS policy. They can use this process for subsequent non-disaster

related fills of the medications also, which will not be covered by the Red Cross. The disaster victim must present these coupons to the pharmacy at the time of medication processing. They can contact their pharmacy to see if discount coupons are accepted or if their pharmacy has any discount programs of their own.

F. Disaster victims are to be reminded not to buy drugs off of Craig's list or E-bay as the purity and expiration date on these drugs cannot be verified. They should only buy drugs from licensed drug dispensing companies.

Durable Medical Equipment (DME)

A. Always ask how the disaster victim originally obtained the item and if it was originally ordered by a medical provider for the disaster victim.

B. If the item required a prescription to be obtained the first time, it will require one for replacement. If the DHS team member replaces an item without a MD order they are prescribing without a license.

C. If the item requires a medication (I.e. medication for a nebulizer) and no current refills are available on the medication, they must have an order for the medication before assistance for either item can be determined.

D. If they have health insurance the DME and medication may both need new physician orders. Insurance companies usually require a FD report to process a replacement.

E. Medicare and Medicaid (and some insurances) cover diabetic shoes. If ordered by a physician and covered by insurance the disaster victims can work with the

ordering physician for replacement, which may require a FD report. Medicare allows one pair of diabetic shoes per year for a Medicare approved diagnosis, like diabetes. The DHS team member can assess for possible assistance with any copays.

F. Utilize the DME pricing list as provided by your region for assistance for replacement for those low dollar items not covered by insurance (like a BP cuff and cane). This pricing list is utilized to replace all DME if the client does not have health insurance and In-Kind donation is not available.

G. If they only have one health insurance the DHS team member can assist with any copays, once determined. Medicare covers DME at 80% and commercial insurances vary by plan so the DHS team member will need to verify the copay(s) with the provider.

H. If they have two health insurances (like Medicare/Medicaid or a primary and secondary insurance) DME should be covered at 100% utilizing both insurances, replacement will most likely require a physician order and FD report.

I. If the disaster victim's CPAP/BIPAP is over two years old they may need another sleep study, which is not reimbursable by the Red Cross but may be covered by their health insurance. If replacement will take more than two weeks for them to do the DHS team member can close the DHS case for that client and have them return a call to DHS when the item cost/copay is determined and ready to verify by the DHS team member.

J. DME replacement may be covered under their renters or homeowners insurance if not covered by health insurance or they do not have health insurance.

K. For cases that do not have insurance they will need to have a physician's order sent to a DME provider. Assist them to find an In-Kind donation (refer to chapter partners), if possible, before using Red Cross DHS funds.

L. If the disaster victim utilizes both a regular and power wheelchair: Medicare/Medicaid will only pay for either a standard or a power wheelchair – not both. It is best to have the disaster victim utilize their insurance to cover the higher cost item and use In-Kind donation then Red Cross DHS funds to cover the lower cost item. Assist with copays as indicated.

M. Most insurances only cover replacement of any DME item every five years. With a FD report most insurances will allow override and replacement sooner. The FD report is given to the DME provider plus the disaster victim will need a MD order to show that they have been medically evaluated that they still need the item.

N. For hearing aids – have them contact the prior provider to see if the item is still under warranty for replacement. Use In-Kind donation or 211 (United Way) who may have local resources to aid with replacement. Price of replacement must be verified by the DHS team member to assist with cost, which is included in the $500 max per person.

O. If the disaster victim has Veterans Administration (VA) benefits ask what items were covered by VA – if covered by VA they will replace items with FD proof of disaster. The client can tell you the items the VA covers for them. Look for other

insurances, In-Kind, United Way, and Red Cross assistance for items the VA does not cover for them. VA coverage depends on their disability rating and income. Some dependents or spouses may also be covered by VA under a qualified veteran – the VA determines this eligibility.

P. For loss of communication devices for the blind they can contact the Lighthouse http://lighthouse-sf.org/ if their renters, home owners, or health insurance does not cover all or only does partial replacement. Braille devices are not usually covered by medical insurances.

Q. For communication devices for those with severe vocal communication impairment the Electrolarynx devices are covered by Medicare/Medicaid. Seek insurance assistance for replacement. The $500 max per person for DHS needs applies to this device.

Dental

A. Lost dental items will require a revisit and repricing by the dental provider. The cost must be verified by the DHS team member with the dental provider before assistance can be considered by Red Cross. The Red Cross only covers the cost of the actual dental device, not the office visit, molding, or x-rays. Assistance is inclusive of their $500 max for all disaster-related items (not per item).

B. Ask how the dental item was paid for the first time. Medicaid covers dentures for some people that have certain very low income Medicaid plans. The disaster victim can contact their insurance to see if they coverage for replacement of the

dental device. Usually Medicaid will replace these with a FD report and reassessment by a dental provider.

Vision

A. If the disaster victim lost prescription eyeglasses and contacts ask how they usually pay for these items.
B. Verify if they have a vision plan – if not they are eligible for a Vision Service Plan (VSP) certificate issued by the Red Cross to assist in replacing their prescription eyeglasses.
C. Offer assist to replace only one pair of prescription eyeglasses, the Red Cross does not cover reading glasses unless they are prescription. If the disaster-victim lost prescription eyeglasses and sunglasses we can assist with only one pair.
D. If their insurance covers either eyeglasses or contacts once per year provide assist for the contacts using their CAC. This will be part of $500 max. Only replace the number of boxes of contacts lost in the disaster. Verify cost with the contact supplier. Have them use their vision insurance to replace their glasses. This is because a VSP cannot be used for contacts.
E. If they have Medicaid or CHIP (a Medicaid type plan) ask if insurance provided the prior pair. They are allowed one disaster replacement per year with proof of disaster from the FD. Only assist with a VSP if they have already used their one replacement in 12 months (except in case of FEMA declared disasters).
F. Medicare covers one pair of glasses or contacts in the first year after cataract surgery. If loss of these occurs within that year they can contact their providers

for assistance in replacing the glasses or contacts under their insurance. They will need a FD report.

G. Send the request for a VSP voucher to your regional contact for VSPs (unless the DHS team member is able to do these). Signify in your CAS note which person(s) requires a VSP, the verified address the VSP(s) is to be sent too, and that they do not have vision insurance.

H. The VSP certificate covers a basic eye exam and one pair of single vision or lined bifocal lens. If they require replacement of progressive or trifocal lens the DHS team member can add additional cost for these lens to the CAC after this additional cost is verified with the optical provider. The Red Cross does not cover an upgrade cost on the frames or scratch coatings, etc. that are added to the lens.

I. If the disaster victim's usually vision provider is not in the VSP network or they do not have a VSP provider in their area, the DHS team member can verify the cost of the glasses with the eyeglass provider of their choice and provide the funds on the CAC. Remember, this is part of the $500 maximum allowed per person per disaster.

J. VSP certificates are available in Spanish, if needed.

K. The person issuing the VSP will follow standard protocol for documentation of the VSP on the VSP tab in CAS and placing a note regarding same in CAS.

L. VSP policies can be found in the Red Cross Intranet in The Exchange.

Documentation Guidelines for CAS (a non-HIPAA protected system)

A. Per national DHS Standards and Procedure Policy: No confidential legal or medical information, such as diagnosis, names of lost medications, and names of clinics, doctors or health insurance companies may be document in CAS. Confidential health or mental health client information may only be documented in the Client Health Record (F2077) and may not be documented in CAS.
B. The DHS team member should record enough information to express who you are assisting and what you are assisting with without providing confidential medical information. Example: Working with Mary for replacement of DME through her provider and insurance. $20 placed on CAC for copay on three medications for Mary. $400 placed on CAC for copay on large item DME for John – verified cost of copay with DME provider. Sign all notes with your name and license type (Nancy Nurse, RN).

Determination of DHS Funds Allowed

A. Per the Red Cross Financial and Statistical Information (FSI) Handbook there is a $500 per person DHS maximum per disaster. Need for additional DHS funds must be submitted to the Regional Disaster Officer (RDO) for RDO Exception.
B. Per DHS Standards and Procedures Policy: Whenever possible, private medical insurance, Medicare or Medicaid funds, or other available resources (including private funds/donations, hospital waivers/discounts or other financial sources) are used to address the unmet health needs of the disaster client before Red Cross funds are utilized.

HS Only Eligible to Work One Group/Activity/Position (GAP) per Case

Per FSI policy if a volunteer holds more than one GAP they are only allowed to work one GAP per case. If the volunteer is doing disaster action team (DAT) they cannot do DHS, if they are DHS they cannot do casework. Exception to this rule for small chapters/regions must be approved by your division FSI team.

Case Time Frames

A. The DHS team member assumes the case within 24 hours of case creation and flagged to HS. First call by the DHS team member is done within 24 hours and documented in CAS. Assumption of the case is done by designating in the note which persons in the case are flagged for DHS services and writing the assumption note as stated under Case Assignment topic above.
B. Case contacts and notes must be made on a minimum of once weekly, more often as dictated by issues being addressed.
C. Make three attempts, made on three different days, to reach the client (try and not make the days sequential to allow the disaster victim time to get their phone and/or charger replaced if lost in the disaster). Leave a voice mail (VM) if possible. If no return call after three attempts close the case for non-contact and make a note that if disaster victim contacts Red Cross and still has disaster-related DHS needs case can be reflagged to DHS. Turn all the HS flags on everyone flagged to HS to 'Completed' and document names of clients in CAS that you have flagged as Completed. This allows DHS case auditing to ensure correct productivity accounting and for casework and FSI the ability to know that all issues of identified persons were addressed.

D. The DHS team member should try and complete their case as soon as possible, preferably under 30 days. Fatality cases may take longer while awaiting the coroner's report for a disaster-related cause of death determination.

E. Casework is required to complete a case within 45 days, they cannot close the case until DHS has put in a final note with final statement of 'HS case closed'.

F. A casework supervisor is tasked to do the final closing of a case within 60 days of the case opening date. This means DHS, casework follow-up calls, and FSI must all be done with their tasks in a case for this to happen. Caseworkers and FSI cannot complete their tasks until DHS completes theirs.

G. If the DHS team member plans to be deployed or go on vacation etc. and will not be able to cover their cases as discussed prior they are responsible to ask another DHS team member in their region or another region to take over on their case(s). They should provide this new DHS team member with an e-mail of case handoff notes. Cases cannot be idle for over 7 days without any DHS team member adding update notes on the case. On fatality cases when awaiting a coroner's report document weekly attempts to obtain coroner's report.

Client Assistance Cards (CAC) Utilized for Financial Assistance to Clients

A. The CAC is valid for 60 days from the date of issue. It is not necessary to close out the CAC when closing the case, it will happen automatically.

B. Each CAC allows an initial maximum load of $1200 and a maximum load of $1500. If the amount being awarding by DHS exceeds the CAC limit and the case has more than one CAC the DHS team member can split the funds across CACs

to load the entire amount being awarded. If the client's CAC(s) will not allow the full posting of DHS funds contact the client's Red Cross chapter disaster program manager (DPM), or their designee, who will arrange to have another CAC issued to the client. Case notes should clearly denote what funds for what person have been loaded on what CAC card and what the funds cover. The DPM, or their designee, will need clear notes on the amount of funds that they are to load on the new CAC.

C. For fatality cases follow the Integrated Care Condolence Team (ICCT) guidelines in the Red Cross Intranet in The Exchange.

D. If the disaster victim loses their CAC put the card into 'Suspend' on the CAC tab in CAS and notify the disaster victim's local Red Cross chapter DPM, or their designee, who will issue a new CAC and deactivate the old one in CAS.

E. If the disaster victim calls the Red Cross regarding a closed case after 60 days and now has pricing for a DME, dental device, etc. the DHS team member will need to verify the cost/copay with the provider and the place information in a CAS note. Then contact the local Red Cross chapter's DPM, or designee, to have a new CAC issued, The CAS note needs to clearly state how much funds are to be loaded on the CAC, for what, and for whom in the case.

Foreign Language Clients

A. Determine if the disaster victim or any family members speak English.

B. If no one in the household speaks English ask if they have a neighbor or friend that can provide interpretation for them.

C. If the DHS team member is not able to find or provide interpreter assistant contact the local Red Cross chapter for a list of their interpreters.

D. If desired the Red Cross does provide a free language bank. Information about this interpreter service can be found @ http://www.redcross.org/images/MEDIA_CustomProductCatalog/m27940127_lb_quick_tips_.pdf

Out of Country (United States) Providers

A. The American Red Cross provides disaster assistance to anyone affected by disaster in the United States regardless of citizenship status.

B. Casework will determine the potential client's eligibility for Red Cross assistance at the time of the disaster and Red Cross registration in CAS. If eligible they will be listed in a case in CAS.

C. If medications are obtained out of country by in-person pickup or mail order have them provide you a copy of the receipt with the date, medication(s) name and amount. If the provider is out of country you will not be able to verify the cost and if the medication was used prior to disaster. Allow for cost of medications for eligible clients in the case, keeping in mind that this goes towards each person's $500 max per disaster occurrence.

D. DHS assistance cannot be given for DME, dental devices, or medical devices obtained from outside of the United States (US) as their medical necessity and prior order cannot be determined. Assistance can be provided using standard DHS

funding protocols if the disaster victim has an American medical provider's order and the item is obtained from a US medical or dental provider.