

EXAMINING THE IMPORTANCE OF INCORPORATING EMERGENCY
PREPAREDNESS AND DISASTER TRAINING CORE COMPETENCIES INTO
ALLIED HEALTH CURRICULA AS PERCEIVED
BY COLLEGE INSTRUCTORS

A DISSERTATION
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ABSTRACT

EXAMINING THE IMPORTANCE OF INCORPORATING EMERGENCY PREPAREDNESS AND DISASTER TRAINING CORE COMPETENCIES INTO ALLIED HEALTH CURRICULA AS PERCEIVED BY COLLEGE INSTRUCTORS

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Preparation for responding to emergency events that does not warrant outside help beyond the local community resources or responding to disaster events that is beyond the capabilities of the local community both require first responders and health care professionals to have interdisciplinary skills needed to function as a team for saving lives. To date, there is no core emergency preparedness and disaster planning competencies that have been standardized at all levels across the various allied health curricula disciplines. The purposes of this study was to identify if emergency preparedness and disaster training content is currently being taught in allied health program courses, identify possible gaps within allied health curricula, and explore the perceptions of allied health college educators for implementing emergency preparedness and disaster training core competencies into their existing curricula, if not already included. A quantitative data collection was employed in which 51 allied health college educators completed an online survey questionnaire. Descriptive statistics was used to answer the research questions. A Pearson correlation was conducted to address the null hypothesis. An analysis of

variance was computed to help support investigations. Findings of this study indicated that the majority of allied health college instructors do not currently teach emergency preparedness and disaster training core competency content within their allied health discipline; however, their perceived level of importance for inclusion of the competencies was high. The results of this study supported the need for establishing a national set of standardized core emergency preparedness and disaster planning competencies at all levels across various allied health curricula disciplines to ensure victims receive the best patient care and have the best possible chance of survival.

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CHAPTER I

INTRODUCTION

In 2010, approximately 303,750 deaths resulted from natural and man-made disasters which were the highest number of deaths worldwide since 1976 (Swiss Re, 2011). In 2011, a total of 325 catastrophic events occurred, with 150 man-made disasters and 175 natural disasters claiming another 35,000 lives (Swiss Re, 2012). The impact of these events demonstrates the need for improved emergency preparedness and response management practices among health professionals. Hospitals in the United States have emergency and disaster plans in place as required by state licensure or The Joint Commission (TJC); however, successful implementation of these plans depend upon the skills and training of allied health professionals. Equally important, collegiate programs in emergency management, emergency preparedness, emergency response, disaster training, and homeland security have expanded since the tragic terrorists attacks on September 11, 2001 and the devastation aftermath of Hurricane Katrina and Rita in 2005 (Federal Emergency Management Institute [FEMA], 2012a). In the United States, a total of 465 academic programs with titles such as emergency management, homeland security, international disaster management, humanitarian assistance, and related higher education programs in the United States have been identified and compiled into an exhaustive list by the Federal Emergency Management Agency (FEMA) Emergency Management Institute Higher Education (FEMA, 2012a). In addition to the expansion of

emergency academic programs, a number healthcare programs including emergency medicine, emergency medical technician, nursing, and allied health programs have incorporated emergency preparedness competencies into their courses. Furthermore, core competency models have been recommended and developed for health professionals. In particular, the Centers for Disease Control and Prevention funded the Center for Public Health Preparedness at the Columbia University Mailman School of Public Health in the fall of 2000 to promote relationships between academia and public health practice. In 2000, the Center for Public Health Preparedness at the Columbia University partnered with the New York City Department of Health and Mental Hygiene and developed basic competencies in emergency and bioterrorism readiness for all public health care workers (Columbia University School of Nursing, Centers for Disease Control and Prevention, Association for Prevention Teaching and Research, 2002; Morse, 2003). In addition, TJC parallels the competencies that were developed by Columbia University Mailman School of Public Health and School of Nursing in their emergency management standards for health care organizations. The Joint Commission's emergency management standards mandate that all health care organizations, which are accredited by TJC and offer emergency services or is designated as disaster receiving stations, must have an emergency management program (U.S. Department of Health and Human Services, 2010). According to TJC, this plan is based on the concept that hospital workers and leaders possess core skills and abilities for responding to emergencies (Caduceus Shield Exercise Initiative, n.d.). Furthermore, TJC emergency management standards require accredited hospitals to provide safe and effective patient care during emergencies, to

clearly define the roles of personnel, to provide employee training for emergencies, to test emergency operations plan regularly, and continuously sustain personnel emergency competency skills (Caduceus Shield Exercise Initiative, n.d.). Furthermore, in 2003, the United States Department of Health and Human Services, Health Resources and Services Administration (HRSA) announced support for a two-year program to train health care professionals to respond to bioterrorism and other public health emergencies under a Bioterrorism Training and Curriculum Development Program. In 2005 the HRSA awarded 26.1 million in curriculum development grants to support bioterrorism training for the nation's public health and continuing education for health care professionals and students (HRSA, 2005).

Statement of Problem

An initial review of literature revealed the development of proposed emergency preparedness and disaster training competencies among public health workers, nurses, emergency medical services personnel, and emergency physicians, but no core emergency preparedness and disaster planning competencies have been standardized at all levels across the various allied health curricula disciplines (Dalton, 2009; Gebbie & Qureshi, 2002; Markenson, DiMaggio, & Redlener, 2005; Whitty, 2006). Key problems associated with the absence of core competencies among health care professionals include the following: limited preparedness; personnel shortages; unorganized relations with hospitals and community responders; lack of accountability; lack of interdisciplinary teamwork skills, inadequate training, equipment, and funding; lack of national standards for training and credentialing; and limited understanding of

effectiveness (Calhoun, Wrobel, & Finnegan, 2011; Interprofessional Education Collaborative Expert Panel, 2011; Kavanaugh & Giffin, 2006). This study was designed to explore the existence or “nonexistence” of emergency preparedness core competencies among allied health curricula and the current perceptions of educators for incorporating and implementing emergency preparedness core competencies into their existing curricula. An objective of this study is to demonstrate a need in the ability for health care workers to compare and contrast emergency preparedness information prior to and after September 11, 2001 and Hurricane Katrina in 2005 concerning emergency preparedness and response competency skills. It is not a matter of if a mass casualty event, major natural disaster, or terrorist attack will occur, but when.

Purpose of the Study

The purpose of this study was to collect background data on existing emergency preparedness and disaster training competencies within allied health curricula as well as identify possible gaps in allied health curricula, and explore the current perceptions of college educators for implementing emergency preparedness core competencies into their existing curricula, if not already included. Data obtained from this study demonstrated the importance of incorporating emergency preparedness core competencies that are consistent across all allied health discipline curricula; furthermore, data supported recommendations for establishing a national standard for training and credentialing allied health professionals who act as first responders during a disaster. These skills could help to better prepare new allied health graduates for operating on interdisciplinary levels when responding to emergencies. Allied health professionals are required to become

certified in basic cardiopulmonary resuscitation (CPR) in an effort to save lives; likewise, increasing knowledge in emergency preparedness and disaster response could also play a critical role in preserving lives.

Theoretical Foundation

In formulating a theoretical perspective for studying the importance of incorporating emergency preparedness and disaster training core competencies into allied health curricula, the protection motivation theory provides a useful prototype. The theoretical formulation of a person to event approach was originally described by R.W. Rogers in 1983. This theory examines how stakeholders are motivated to protect one self from harm as a result of four perceptions: the severity of the event, the probability that the event will occur, the effectiveness of recommended preventive behavior, and the ability to perform risk reducing behavior (Rogers, 1983). This theory indicates that stakeholders can be influenced to engage in desirable behaviors to avoid health risks. To date, the protection motivation theory has been applied in various studies to influence and predict the following health related behaviors: for protection against cancer such as screening and monitoring, for promoting healthy lifestyles such as eating healthy and alcohol consumption, for adherence to medical treatment regimens such as juvenile diabetes and asthma, for addressing safety issues such as pesticide safety and cardiopulmonary resuscitation education, and for environmental protection such as home radon testing, wildfire risks, and earthquake preparedness (University of Twente, 2013; Mulilis & Lipka, 1990). As applied to this study, the four perceptions or cognitions of the protection motivation theory will be defined as follows:

1. The perceived severity of a threatened event represents an emergency crisis occurrence such as a mass casualty event either as a result of a natural disaster or man-made.
2. The perceived probability of the occurrence or vulnerability to personal risks represents the education of emergency threats and fear appraisals.
3. The perceived effectiveness of preventive behavior represents individual expectancy that obtaining emergency and disaster training core competency education will help equip them to be able to carry out recommendations that help reduce risks during a crisis.
4. The perceived self efficacy of executing recommended preventative behavior successfully represents the level of confidence in one's ability to perform recommended risks reducing behavior and is related to the education of coping skills while performing emergency response techniques (Rogers, 1983).

In regards to this study, the protection motivation theory reflects the variables of emergency preparedness and disaster training core competencies for allied health professionals to increase the knowledge, skills, and actions of health care workers as needed for responding to natural disasters, man made disasters, and mass casualty events.

Research Questions and Hypotheses

1. What emergency preparedness and disaster training competencies exist among current allied health curricula?
2. What is the perceived importance among college instructors for incorporating emergency preparedness and disaster training core competencies into allied health curricula?

3. What are perceived barriers among college instructors for incorporating emergency preparedness and disaster training competencies into current allied health curricula?

4. What are perceived benefits among college instructors for incorporating emergency preparedness and disaster training competencies into current allied health curricula?

The following null hypotheses will guide this study:

1. There will be no correlation between the lack of emergency core competencies in existing allied health curricula and the perceived importance among college instructors to incorporate emergency core competencies into their curricula.

2. There will be no association between the years of teaching experience ranging from less than 5 years to 30 years, and the belief among participants that all allied health programs should include emergency preparedness and disaster response core competencies into program curricula across all disciplines.

Delimitations

This study had the following delimitations:

1. Three community colleges selected to participate in this study contained allied health programs.

2. The participants selected for this study included only allied health program faculty who currently teach in these programs.

3. The survey was administered using selected software applications and delivered online using the colleges' faculty email addresses.

Limitations

The following were limitations of this study:

1. A sample of convenience was utilized to survey participants. Since convenience sampling is a non-probability method, participants are not randomly selected; therefore, the generalization to the entire population is affected due to some members of the population not having a chance to be included.
2. This study only surveyed participants who had an active email address.
3. Participants may not have checked their email in time to respond to the survey.
4. The results of the survey were self-reported, which is subject to human error.
5. Participants may not have wanted to be associated with the study.

Assumptions

Two assumptions underlie this study:

1. Faculty who participated in the study responded honestly and comprehensively to the survey questions.
2. Faculty were able to read and write in the English language and fully comprehend the questions on the survey and understand the language of the consent statement.

Definitions of Terms

Below are the definitions of terms utilized in this study:

Allied Health Professionals - “a large cluster of health related personnel who fulfill necessary roles in the health care system, including assisting, facilitating, and

complementing the work of physicians and other health care specialists” (Lecca, Valentine, & Lyons, 2003, p. 4).

Allied Health Care Programs - to include medical laboratory technician, emergency medical technicians, medical assistant, pharmacy technician, physical therapist assistant, respiratory therapy, phlebotomy, surgical technology, radiology, medical unit coordinator, electrocardiogram technician, occupational therapist, kinesiology, sonography, and nuclear medicine (Bossier Parish Community General Catalog, 2012; Delgado Community College, 2012; Southern University at Shreveport Louisiana, 2009).

Emergency - an urgent response to an event in a local area that does not warrant outside help beyond the local community resources such as a motor accident or gas leak.

Disaster - an urgent response to an event that is beyond what a local community can handle and the need for outside resources such as the flu outbreak or biological terrorist attack.

Emergency Preparedness and Disaster Training Core Competencies for Public Health Care Workers - the ability of a hospital to respond to an emergency depends upon having staff who know what to do during an emergency or disaster , and possess the skills to respond effectively. As a hospital employee, one should be able to: (1) Define and describe mass casualty events, biological, nuclear, chemical, radiological, explosive, terrorism, or natural disasters, (2) Identify federal and state resources that contribute to emergency and disaster response, as well as, basic legal and regulatory

issues to include health care (For example, Strategic National Stockpile, Disaster Medical Assistance Team, Metropolitan Medical Response System, FEMA), (3) Describe the public health role in emergency response in a range of emergencies that may arise, (For example: disease surveillance, investigation, public information in disease outbreaks, collaboration with other community agencies, or weather emergencies), (4) Locate and use the section of the hospital emergency response plan that applies to your position, (5) Describe your emergency response role and be able to demonstrate patient care skills during drills or actual emergencies, (6) Describe your responsibilities for communicating with or referring requests for information from other employees, patients and families, media, general public or your own family, and demonstrate these responsibilities during drills or actual emergencies, (7) Maintain risk communication skills during emergency or disaster response such as communicating with patients, families, other employees, the general public, and the media, (8) Demonstrate the ability to seek assistance through the chain of command during emergency situations or drills, (9) Define an incident command system and how it functions at the federal, state, local, agency and institutional level, (10) Examine importance of critical thinking, creative problem solving skills, modifying routine procedures, and trauma protocols when responding to emergencies or disasters within the hospital setting, (11) Identify personal limits to knowledge/skill/authority and be able to identify key system resources for referring matters when necessary, and (12) Recognize usual events that may indicate an emergency and describe appropriate actions (Columbia University School of Nursing, Centers for Disease Control and Prevention,

Association for Prevention Teaching and Research, 2002; Center for Public Health Preparedness, Columbia University Mailman School of Public Health, Center for Health Policy, Columbia University, School of Nursing in collaboration with Greater New York Hospital Association, 2004).

Importance of Study

This study helped demonstrate the importance of developing emergency preparedness core competencies that are consistent across all allied health discipline curricula. This study explored the current attitudes of educators for implementing emergency preparedness core competencies into their existing curricula, and their confidence levels in teaching emergency preparedness content. This study proposed a need to link academic allied health program curricula content and public health practice concerning emergency preparedness competencies. Both the Centers for Disease Control and Prevention and The Joint Commission entities support the incorporation of the core competencies among health care professionals. This study also contributed to literature concerning the identification of the absence of core emergency preparedness competencies among allied health discipline curricula.

CHAPTER II

LITERATURE REVIEW

This study explored the existence or absence of emergency preparedness and disaster training core competencies within allied health program curricula among three community colleges. A review of literature revealed only a few studies that examined the existence of bioterrorism, emergency response, or disaster training competencies among physicians, nursing, or public health workers' academic programs; however, no specific study was found that investigated the existence or absence of emergency preparedness and disaster training core competencies among multiple allied health programs as a whole. For example, an article by Markenson, DiMaggio, and Redlener (2005) discussed a review of 25 medical schools' core curricula which found only one program that included bioterrorism training. A second example by Buyum, Dubruiel, Torghele, Alperin, and Miner (2009) reported that 38 nursing educators, who attended one of two school of nursing summits, indicated that 50% or more nursing school curriculum in Georgia were lacking in emergency preparedness and disaster training to include response to bioterrorism, mass casualty events, and infectious disease outbreaks. A third example presents a study conducted by the American Association of Community Colleges (AACC) in which 760 community college presidents and chancellors were asked to identify existing programs that supported homeland security efforts. Community colleges reported that 79% had programs that train first responders, 36%

focused on cybersecurity, 32.4 % trained for security and protective services, and 9.3% involved education for counterterrorism and national security (American Association of Community Colleges, 2006).

Another objective of this study explored perceptions of college instructors for implementing emergency preparedness and disaster training core competencies into their existing curricula. To date, few studies were found that explored the relationship between physician perception, faculty perception, or student perception, and mass casualty events, bioterrorism, or CBRNE topics; however, no specific study was found that investigated allied health educator's perception of the importance for inclusion and implementation of emergency preparedness and disaster training core competencies into existing allied health programs. For example, Chen, Hickner, Fink, Galliher, and Burstin (2002) found that out of 614 family physicians, 82% had no bioterrorism training, yet 93% felt that bioterrorism training was needed. Another example is a survey of 166 nursing educators, conducted by Whitty and Burnett (2009), which found that nursing faculty had little mass casualty incident training, but perceived mass casualty incident content as important for teaching nursing students. A third example by Jasper et. al. (2013) found that 47% of 130 intern students, who attended Thomas Jefferson University Hospital, received CBRNE training prior to their residency portion of their program, however, 45 to 60 % of interns indicated that they perceived themselves as not being proficient in disaster management.

In an effort to address the importance of educating allied health professionals across all disciplines, the following review of literature presents resources as developed

by organizations and agencies for the purpose educating health professionals for emergency preparedness and disaster response. The origination of emergency preparedness and disaster response core competency models among nursing, medical students, and public health workers are described. Lastly, recommendations for implementation of the emergency core competencies are discussed.

The terrorist attacks of the September 11, 2001, the aftermath of Hurricane Katrina and Rita in 2005, the devastation of Hurricane Sandy in 2012, and the massacre at Sandy Hook Elementary school in 2012 have prompted health care organizations to expand their strategies for addressing emergency preparedness, bioterrorism, and disaster training for responding and aiding the community in the event of a crisis (Federal Emergency Management Institute [FEMA], 2012b; FEMA, 2013; Astor, et al., 2013). These strategies include the formulation of comprehensive solutions in various forms of publications by public health agencies, hospital accrediting agencies, academic universities, and professional public health associations for the purpose of creating resources for the health care community on local, state, and government levels (The Joint Commission, 2003). In addition to developing and publishing emergency response resources, efforts among health professional programs such as emergency physicians and nursing began incorporating emergency preparedness and disaster response core competencies into their curriculum soon after the terrorists attacks on September 11, 2001 and anthrax attacks in that same year (Bailey, 2010; Drabek & Evans, 2007; Sandmann, 2009; Weiner, Irwin, Trangenstein & Gordon, 2005).

Emergency Response Resource Development for Healthcare Professionals

The federal government and medical associations have developed and continue to develop emergency preparedness and response resources for public health, communities, private sectors, education institutions, and healthcare facilities. These resources cover a vast amount of information for preparing and responding to emergencies including natural disasters, epidemiology, hospital emergency management, training, and education. The following resources presented are specific to healthcare professionals and health care institutions.

Federal Government Resources

Center for Disease Control and Prevention. The Center for Disease Control and Prevention (CDC) in partnership with the Association for Professionals in Infection Control and Epidemiology Bioterrorism Task Force published a template for bioterrorism readiness plans. This template, entitled “Bioterrorism Readiness Plan: A Template for Healthcare Facilities” targets individual healthcare facilities and institutions. The template outlines recognition of potential agents, reporting requirements, detection of outbreaks, infection control precautions, management of post exposure, and laboratory support recommendations. This template was adopted by hospitals for the integration of bioterrorism into their existing emergency and disaster response plans (Association for Professionals in Infection Control and Epidemiology Bioterrorism Task Force & Center for Disease Control Hospital Infections Program Bioterrorism Working Group, 1999).

Occupational Safety and Health Administration. The Occupational Safety and Health Administration (OSHA) published a guide entitled, “OSHA’s Best Practices for

Hospital Based First Receiver of Victims from Mass Casualty Incidents Involving the Release of Hazardous Substances,” for hospitals to use when developing protection plans for hospital employees involved in caring for contaminated patients resulting from mass casualty events (OSHA, 2005; National Network of Libraries of Medicine-South Central Region, 2013). This best practices guide outlines training recommendations for hospital personnel who act as first receivers of patients. Furthermore, these recommendations incorporate OSHA’s existing regulations as indicated by the General Duty Clause of the OSHA Act of 1970 which states that employers must provide a safe work environment free from harm for their employees. Components of OSHA’s best practice document include personal protectant equipment, hazard management, respiratory protection, decontamination process, awareness levels, associated risks, competencies and training for first receivers, recognition of exposure, and risk communication (OSHA, 2005).

Federal Emergency Management Agency. In 2003, The Federal Emergency Management Agency (FEMA), under the Department of Homeland Security, announced a press release for the establishment of a single national incident command system in response to the terrorist attacks of September 11, 2001 (The White House, 2003). Later, this presidential directive led to the National Incident Management System (NIMS) template upon which FEMA mandated that all federal agencies including state, tribal, local governments, nongovernmental organizations, and the private sectors to integrate the NIMS template into their individual incident management plans by the year of 2005 (FEMA, 2008; The White House, 2006; National Network of Libraries of Medicine-South Central Region, 2013). This template outlines the following five key components:

Preparedness, communications and information management, resource management, command and management, and ongoing management and maintenance (FEMA, 2011).

As a result of this integration, agencies are expected to work together during disaster responses and also for preparedness effort across all disciplines. In 2008, FEMA published “NIMS Implementation Objectives for Healthcare Organizations” which consisted of the following 14 objectives:

1. Adopt NIMS throughout the healthcare organization including all appropriate departments and business units.
2. Ensure Federal Preparedness awards support NIMS Implementation (in accordance with the eligibility and allowable uses of the awards).
3. Revise and update emergency operations plans (EOPs), standard operating procedures (SOPs), and standard operating guidelines (SOGs) to incorporate NIMS and National Response Framework (NRF) components, principles and policies, to include planning, training, response, exercises, equipment, evaluation, and corrective actions.
4. Participate in interagency mutual aid and/or assistance agreements, to include agreements with public and private sector and nongovernmental organizations.
5. Identify the appropriate personnel to complete ICS-100, ICS-200, and IS-700, or equivalent courses.
6. Identify the appropriate personnel to complete IS-800 or an equivalent course.

7. Promote NIMS concepts and principles into all organization-related training and exercises. Demonstrate the use of NIMS principles and ICS Management structure in training and exercises.
8. Promote and ensure that equipment, communication, and data interoperability are incorporated into the healthcare organization's acquisition programs.
9. Apply common and consistent terminology as promoted in NIMS, including the establishment of plain language communications standards.
10. Utilize systems, tools, and processes that facilitate the collection and distribution of consistent and accurate information during an incident or event.
11. Manage all emergency incidents, exercises, and preplanned (recurring/special) events in accordance with ICS organizational structures, doctrine, and procedures, as defined in NIMS.
12. ICS implementation must include the consistent application of Incident Action Planning (IAP) and common communications plans, as appropriate.
13. Adopt the principle of Public Information, facilitated by the use of the Joint Information System (JIS) and Joint Information Center (JIC) during an incident or event.
14. Ensure that Public Information procedures and processes gather,

verify, coordinate, and disseminate information during an incident or event (FEMA, 2008, p. 3).

As a result, hospitals were expected to implement and achieve all 14 objectives by September 30, 2009 (FEMA, 2008).

Department of Health and Human Services. In 2002, the U.S. Department of Health and Human Services (HHS) established the National Bioterrorism Hospital Preparedness Program in response to the terrorist's attacks on September 11, 2001 and anthrax letters released that same year. The National Bioterrorism Hospital Preparedness Program provided funding to hospitals to help educate and train employees, implement an emergency plan for bioterrorism, and purchase stockpiles of pharmaceuticals and supplies (U. S. Department of Health & Human Services, Office Assistant Secretary for Preparedness and Response 2011, 2012). In 2004, the program expanded to include all hazards and therefore was simply renamed Hospital Preparedness Program (HPP). In 2007, the HPP was overseen by the Office Assistant Secretary for Preparedness and Response and required hospitals to demonstrate coordinated emergency response exercises. Currently, the HPP funds programs to enhance planning, increase integration, and improve infrastructure (U. S. Department of Health & Human Services, Office Assistant Secretary for Preparedness and Response 2011, 2012).

National Highway Traffic Safety Administration. The National Highway Traffic Safety Administration (NHTSA) is governed by the U.S. Department of Transportation and is responsible for reducing deaths and injuries caused by motor vehicles accidents (National Highway Traffic Safety Administration, 2013). While the

NHTSA enforces safety performance standards for motor vehicles, this administration has an expanded Office of Emergency Medical Services (OEMS) that works with federal partners and national stakeholders for improving emergency medical services nationwide and develops resources specifically designed for EMS (Emergency Medical Services) providers (National Highway Traffic Safety Administration, n.d.). In particular, in 2009, the NHTSA-OEMS published the National EMS Education Standards and Instructional Guidelines. These guidelines define the scope of practice among four different licensure levels of EMS personnel: emergency medical responder, emergency medical technician, advanced emergency medical technician, and paramedic. These guidelines also feature learning objectives and recommendations of content to be taught in EMS academic programs. For example, content listed under the EMS educational standards for operations include safe operation of ground ambulances, incident management, multiple casualty incidents, air medical, vehicle extrication, and hazardous materials awareness. Another component listed under the EMS operations section features clinical management of patients who are victims of a terrorist event or disaster resulting from mass casualty incidents (National Highway Traffic Safety Administration, n.d.).

Medical Associations Resources

American Nurses Association. The American Nurses Association (ANA) published a policy paper that was developed by the Center for Health Policy, Columbia University School of Nursing that targets decision making skills of health professionals when responding to extreme emergency events such as mass casualties, natural disasters, or pandemics, when the normal resources are unavailable. The focus of this policy,

entitled “Adapting Standards of Care Under Extreme Conditions Guidance for Professionals During Disasters, Pandemics, and Other Extreme Emergencies,” was to establish guidelines for answering questions and concerns for ethical and standards of care performed by individual health clinicians during disaster response (American Nurses Association, 2008; National Network of Libraries of Medicine-South Central Region, 2013). This policy states “beyond individual practitioners, this document can provide valuable guidance to a wide range of health professionals, including employees of health organizations (e.g., hospitals, community-based clinics, public health agencies), emergency planners, other public health partners (public health advisors, public health educators), and health profession educators” (American Nurses Association, 2008, p. 5).

American College of Emergency Physicians. The American College of Emergency Physicians (ACEP) is a national medical organization that represents physicians who practice emergency medicine. The ACEP has published several disaster planning policies and recommendations for emergency physicians; in particular, the 2013 Policy Compendium. This compendium focuses on external policy statements and includes a section on disaster preparedness and response which provides detailed guidelines for emergency physicians to follow. The targeted areas include disaster data collection, disaster medical response, health care system surge capacity recognition preparedness and response, hospital disaster physician privileging, support for national disaster medical system, and unsolicited medical personnel volunteering at disaster scenes. Furthermore, the ACEP encourages emergency physicians to take on a primary role when responding to disasters. The ACEP also recommends emergency physicians to

be directly involved in assisting their health care institutions and local community in disaster preparedness (American College of Emergency Physicians, 2013).

American Medical Association. The American Medical Association (AMA) is a large association of American physicians that promotes the art and science of medicine. In response to the gaps identified for educating physicians in how to participate with public health systems following the terrorist attacks on September 11, 2001, the AMA created the Center Public Health Preparedness and Disaster Response (PHPDR) in 2002. The AMA not only educates physicians, but also educates patients, the public, and military providers. The PHPDR has established protocols for public health preparedness, disaster medicine, and emergency response systems. Current examples of publications found on the PHPDR website include a guide to help American families plan for and respond to major emergencies, an influenza pandemic guide for physicians and health care professionals, a public health management emergency guide for physicians and community responders, and legal resources for volunteer health practitioners. Additional resources found on the AMA's website are the National Disaster Life Support (NDLS) program courses which are geared towards educating and training health care professionals and emergency response personnel for mass casualty events. These courses integrate all-hazards, are competency-based, and involve multiple disciplines (AMA, 2013).

The Joint Commission. The Joint Commission (TJC) is an independent, not-for-profit organization that oversees the accreditation and credentialing of hospitals and health care programs (The Joint Commission, 2013). In 2003, TJC published a public

policy initiative to address broad issues in the development of community wide preparedness. This policy called state and federal governments to action concerning responsibilities toward developing, funding, and deploying resources for emergency preparedness (The Joint Commission, 2003). These resources support the roles of hospitals and other health care organizations in the articulation of a community wide emergency preparedness system (The Joint Commission, 2003). In 2005, TJC partnered with the Illinois Department of Public Health Maryland Institute of Emergency Medical Services Systems, and the National Center for Disaster Preparedness at Columbia University for the publication of an emergency planning guide for small, rural, and suburban communities throughout the United States (The Joint Commission, 2005). The goal of the publication was to educate local community leaders on how to successfully plan for emergencies and eliminate readiness barriers such as determining which components of planning are most critical, determining who is in charge of emergency planning, determining how to coordinate with community response agencies, and determining how to sustain funding (The Joint Commission, 2005). Furthermore, in 2006, TJC published a document explaining the establishment of temporary surge hospitals as a response to catastrophic events that may result in shutting down primary health care facilities. These surge hospitals would provide medical care to include emergency triage and acute care until the main health care facilities are restored and reopened. These temporary surge hospitals would be established in close proximity of existing medical centers and could be set up in facilities such as schools, hotels, veterinary hospitals, convention centers, exhibition halls, empty warehouses, airport

hangars, and sports arenas (The Joint Commission, 2006). For example, following hurricane Katrina in 2005, surge hospitals were set up at the Reliant Building located next to the Houston Astrodome in Houston, Texas; at the Dallas Convention Center in Dallas, Texas; at the LSU Pete Maravich Assemble Center which is a basketball arena located in Baton Rouge, Louisiana; at a vacant retail store located a half of a block from LSU's Earl K. Long Medical Center in Baton Rouge; and at the College of Veterinary Medicine and Biomedical Sciences at Texas A & M University in College Station, Texas. These surge hospitals were staffed by medical volunteers that included physicians, university faculty, psychiatrists, nurses, pharmacists, respiratory therapists, allied health care workers, health care students, information technology experts, social service workers, and food service personnel (The Joint Commission, 2006). As a result of the various surge hospitals that responded to Hurricane Katrina, TJC is considering implementing minimum standards to ensure safe quality patient care at surge hospitals, but has not published the surge hospital standards as of to date (The Joint Commission, 2006). Meanwhile, The Joint Commission's existing emergency management standards support public health workers competencies that were developed by Columbia University Mailman School of Public Health and School of Nursing. TJC mandates that all health care organizations, which are accredited by TJC and offer emergency services or is designated as disaster receiving stations, have an emergency management program. According to TJC, this plan is based on the concept that hospital workers and leaders possess core skills and abilities for responding to emergencies (Caduceus Shield Exercise Initiative, n.d.).

The federal government resources, the medical association resources, and The Joint Commission's resources all serve as a foundation to support the framework of emergency preparedness and disaster core competency models for academic programs to adopt for curriculum planning. Academic programs prepare future health care workers who will act as emergency management leaders and first responders when catastrophic events occur. Having a foundation in emergency preparedness and disaster training is vital for saving lives during such incidents.

Core Competency Models by Discipline

Nursing Emergency and Disaster Competency Models

Nursing emergency preparedness education coalition model. According to the seventh annual report to the Secretary of the U.S. Department of Health and Human Services and the U.S. Congress, many times nurses take on the role of first responders when taking care of victims of disasters and emergencies especially during surge capacity and triage (National Advisory Council on Nurse Education and Practice, United States Department of Health and Human Services, 2009). As a result, the scope of disaster nursing has expanded over the last ten years. One of the first set of emergency response and disaster related competencies developed for nursing curricula was mass casualty incidents. In 2001, the Department of Health and Human Services Office of Emergency Preparedness invited Dr. Colleen Conway-Welch, Dean of Vanderbilt University School of Nursing, to host an important meeting bringing together nursing organizations, deans of nursing schools, government representatives, curriculum experts, nursing accrediting agencies, and the National Council of State Boards of Nursing organization to address

educating nurses for mass casualty skills. A second meeting was held at the Public Health Service Noble Training Center in Anniston, Alabama which is known for training health care professionals to respond to emergencies, biological, chemical, and radiological attacks. As a result of these two meetings, the International Nursing Coalition for Mass Casualty Education (INCMCE) was formed. In 2003, the INCMCE in collaboration with the National League for Nursing conducted a descriptive study to investigate the existing level of disaster preparedness content being taught in nursing programs at all levels from LPN to PhD. The sample consisted of a total of 2,013 deans and directors of nursing schools across the United States, of which 348 responded to an online survey. Results indicated that nursing schools taught approximately four hours of disaster preparedness content throughout their existing program curricula. In addition, findings demonstrated that 75 percent of respondents indicated that they felt inadequately prepared to teach disaster preparedness related content. A major barrier noted was little room to add disaster preparedness content into an already packed curriculum. This study demonstrated a need for establishing baseline content covering disaster preparedness and response to all hazards among nursing curricula (American Public Health Association, 2008; Weiner, Irwin, Trangenstein & Gordon, 2005). Prior to this study, the INCMCE coalition had already developed a set of core competencies for nurses to respond to mass casualty incidents and provided a framework for nursing curricula (American Public Health Association, 2008; Conway-Welch, 2002; NEPEC, n.d.; Stanley, 2003; Whitty, 2006). In 2007, the INCMCE was renamed the Nursing Emergency Preparedness Education Coalition (NEPEC). Unfortunately in 2010, the NEPEC became inactive due

to lack of federal funding; however, the competency resources remain available on their website (NEPEC, n.d.).

The NEPEC model for mass casualty incident competencies for nursing curricula consist of three major categories: core competencies, core knowledge, and professional role development. The first major category, core competencies, has four subcategories: critical thinking, assessment, technical skills, and communication. Critical thinking targets clinic judgment and decision making skills when responding to mass casualty incidents. Assessment targets recognizing signs and symptoms of exposure to selected chemical, biological, radiological, nuclear, and explosive (CBRNE) agents. Technical skills target safe administration of medications and immunizations as well as proper CBRNE isolation and decontamination procedures. Communication targets the principles of risk communication to groups and individuals affected by a mass casualty incident (NEPEC, n.d.). The second major category, core knowledge, has the following six subcategories:

1. Health Promotion, Risk Reduction, and Disease Prevention – targets identifying and describing threats to the general public and health care community.
2. Health Care Systems and Policy – targets defining specific terms and identifying the roles of local and government agencies when responding for mass casualty incidents.
3. Illness and Disease Management – targets differentiating biological attack and natural disease outbreaks.

4. Information and Health Care Technologies – targets the principles of containment and decontamination and equipment for selected CBRNE agents.
5. Ethics – targets ethical issues related to CBRNE events.
6. Human Diversity – targets cultural, spiritual, and social issues.

The third major category, professional role development, targets staying current with mass casualty incident skills and participating in emergency drills (NEPEC, n.d.).

Center of excellence model. The University of Hyogo (2006) College of Nursing Art and Science located in Japan published a framework of disaster nursing core competencies. These competencies were developed as a result of the college's Development of a Center of Excellence for Disaster Nursing research project conducted by the Ubiquitous Society. The disaster nursing core competencies emerged from a previous description presented in a 2003 report by the Japanese Ministry of Education, Culture, Sports, Science and Technology research group (University of Hyogo, 2006). As a result, in 2003, Hyogo University was designated as a 21st Century Center of Excellence (COE) (University of Hyogo, 2006; WHO & ICN, 2009; WHO, 2007). The COE competencies consist of five major categories with 25 subcategories. The following is a list of the Hyogo Universities (2006) COE core major competencies for disaster nursing:

1. Fundamental attitudes toward disaster nursing – targets legal, ethical, and accountability practices.
2. Systematic assessment and provision of disaster nursing care – targets providing nursing care for immediate, intermediate, and long term care.

3. Care provision for vulnerable people and their families – targets care for pregnant women, children and their families, chronic disease patients, disabled persons, and persons with mental illnesses.
4. Care management in disaster situations – targets support mechanisms for victims and service resources.
5. Professional Development – targets continuing education (University of Hyogo, 2006).

International Council of Nurses and the World Health Organization model.

In 2009, The International Council of Nurses (ICN) and the World Health Organization (WHO) published a framework of disaster nursing competencies. These competencies were added as a subset to the general nurse competencies that were already established as a foundation by ICN (Krutz & Olchin, 2012; WHO & ICN, 2009). According to ICN and WHO (2009) the following

“competency documents contributed to the development of the disaster nursing competencies: Core Competencies for All Public Health Workers (Gebbie, 2001), Core Competencies for Nursing and Midwifery in Emergencies (WHO, 2006), APRN Emergency Preparedness and All Hazards Response (2007), Emergency and Disaster Preparedness: Core Competencies for Nurses (Gebbie and Qureshi, 2002), Mental Health Competencies (Iowa Department of Health, 2006) and Health Care Worker Competencies for Disaster Training (Hsu et al., 2006)”
(p. 37).

After completing an analysis of the supporting documents, the WHO and ICN (2009)

created four major categories for their disaster nursing competencies model: (1) Mitigation and prevention, (2) preparedness, (3) response, and (4) recovery and rehabilitation competencies. Furthermore, within the four major categories, WHO and ICN (2009) developed ten subcategories. The first major category, mitigation/prevention competencies, has two subcategories: (a) risk reduction, disease prevention and health promotion; and (b) policy development and planning. Risk reduction and disease prevention aim to reduce risks of disasters occurring and affecting the community to include vulnerable populations. Health promotion targets educating the community in disaster preparedness, response, and recovery. Policy development and planning targets disaster management and planning for the workplace and the community (WHO & ICN, 2009). The second major category, preparedness competencies, has three subcategories: (a) ethical practice, legal practice and accountability, (b) communication and information sharing, and (c) education and preparedness. Ethical practice, legal practice, and accountability targets ethical challenges as well as legal and regulatory issues during disaster management. Communication and information sharing target crisis communication, intervention, and risk management. Education and preparedness target acquiring new knowledge and maintaining expertise in disaster management. The third major category, response competencies, has the following four subcategories: (a) care of the community, (b) care of individuals and families, (c) psychological care, and (d) care of vulnerable populations. Care of the community targets evaluating the health needs and available resources within the community. Care of individuals and families targets rapid assessment skills and treatment for injured victims. Psychological care targets the mental

health of victims. Care of vulnerable populations targets special needs populations. The fourth major category, recovery/rehabilitation competencies has only one subcategory which is long-term recovery of individuals, families and communities; this category targets meeting the survivors' short and long term physical and psychological needs (WHO & ICN, 2009).

Association of American Medical Colleges Model for Physicians

In 2007, President George Bush released a Homeland Security Presidential Directive-21 calling for the development of an emergency preparedness and response plan to help counteract catastrophic health events that would potentially overwhelm the local and regional health care system (U.S. Department of Health and Human Services, 2008). However, to date, various studies and literature reveal that there is no standardized curriculum model within medical schools for preparing physicians to practice effectively in disaster medicine (Bigongiari, 2013; Cordi & Cascardo, 2011; Jasper et. al. 2013; Kaiser, Barnett, Hsu, Kirsch, James, & Subbarao, 2009). Previously in 2003, the Association of American Medical Colleges (AAMC) in partnership with the CDC released a report by an expert multi-disciplinary panel who recommended incorporating disaster education, weapons of mass destruction (WMD), and CBRNE training into medical school curricula (Association of American Medical Colleges, 2003; Jasper et. al. 2013). More specifically, the disaster content should encompass all four years of the curriculum and can easily be threaded into some of the existing courses such as pathophysiology, toxicology, infectious diseases, biostatistics, and epidemiology

(AAMC, 2003). The following are the proposed general principles as presented in the AAMC (2003) model for physicians:

1. When dealing with CBRNE, physicians should have a general knowledge of WMD, how to identify the agent at hand, the cause of injury, and the treatment options.
2. Physicians are expected to apply their knowledge of WMD agents into their clinical experiences.
3. Physicians are expected to know their role and responsibilities when working with multidisciplinary teams and the public health system during response interventions for WMD.

In addition to the general principles, AAMC proposed educational objectives and activities for basic sciences, clinical sciences, public health, and emergency management systems curriculum content. The basic science competencies include knowledge of recognizing WMD characteristics, recognizing the route and potential injury, knowledge of pharmaceuticals used to counteract exposure, knowledge of applying epidemiology concerning WMD, and knowledge of identifying biological and chemical agents related to WMD (AAMC, 2003). The clinical science competencies include assessing accurate patient history related to exposure WMD, conducting physical examination on victims of WMD, identifying causative agents of WMD, planning victim's treatment and recovery plans, practicing risk communication, and reporting WMD forensic evidence (AAMC, 2003). Public health competencies include knowledge of how the public health system responds to emergencies such as WMD, and the ability

to communicate this knowledge to patients and communities (AAMC, 2003). The educational objectives for medical students to meet in the Emergency Management System category include knowledge of state and federal resources available for local disaster events, knowledge of the functions of the incident command system, knowledge of data collection for surveillance and tracking, and knowledge of the role and responsibilities when responding to disaster events (AAMC, 2003).

Emergency Medical Services Model

In 2000, the National Highway Traffic Safety Administration and the Health Resources and Services Administration published *The EMS Education Agenda for the Future: A Systems Approach* that recommended the need for a National EMS Scope of Practice Model to support education, certification, and licensure of EMS personnel. As a result, the National EMS Scope of Practice Model was published in 2006 (NHTSA, 2007). This model defines the scope of practice and minimum competencies for four different levels of EMS personnel: emergency medical responder, emergency medical technician, advanced emergency medical technician, and paramedic. The competencies are detailed into two categories. The first category is a description of the scope of practice for the each licensure level. Examples of competencies listed under scope of practice include patient assessment, acute management, transportation of critical patients, and minimization of secondary injuries (NHTSA, 2007). The second category is a description of the psychomotor skills performed by the different levels of EMS personnel. Examples of competencies listed under psychomotor skills include airway and breathing, pharmacological interventions, cardiac care, and trauma care (NHTSA, 2007).

Public Health Workers Model

In 2002, the Centers for Disease Control and Prevention in a cooperative agreement with the Columbia University Mailman School of Public Health and School of Nursing, and the Greater New York Hospital Association, defined and published the core competencies necessary for a public health work force in addressing bioterrorism and other public health issues (Columbia University School of Nursing, Centers for Disease Control and Prevention, 2002; Morse, 2003). The core competencies for all public health care workers include the following:

- Describe the public health role in emergency response
- Describe the chain of command in emergency response
- Describe functional roles in emergency response
- Describe communication roles in emergency response
- Demonstrate correct use of communication equipment
- Identify and locate the agency emergency response plan
- Identify limits to one's self knowledge and skills, recognize unusual events, and apply creative problem solving (Columbia University School of Nursing, Centers for Disease Control and Prevention, Association for Prevention Teaching and Research, 2002).

Furthermore, the Columbia University team published core competencies for hospital leaders. These competencies are defined as the following:

- Describe the mission of the hospital during response to all emergencies, including the disaster response chain of command and emergency management system (e.g.

Hospital Emergency Incident Command System, Incident Command System)

used in the hospital

- Describe the ability to review, write, and revise as needed those portions of the hospital emergency response plan applicable to local management responsibilities
- Participate in the hospital's hazard vulnerability analysis on a regular basis
- Manage and implement the hospital's emergency response plan during drills or actual emergencies within assigned functional role and chain of command
- Describe the collaborative relationship of hospital to other facilities or agencies in the local emergency response system and follow the planned system during drills and emergencies
- Describe the key elements of hospital's emergency preparedness and response roles and policies to other agencies and community partners
- Initiate and maintain communication with other emergency response agencies as appropriate to management responsibilities
- Describe responsibilities for communicating with other employees, patients and families, media, the general public or own family, and demonstrate communication during drills or actual emergencies
- Demonstrate the use of necessary equipment (such as personal protective equipment or special communication equipment) required by personal emergency response role
- Demonstrate flexible thinking and use of resources in responding to problems that arise carrying out functional role during emergency situations or drills

- Evaluate the effectiveness of the response within local area of management during drills or actual emergencies, and identify areas of improvements (Columbia University School of Nursing, Centers for Disease Control and Prevention, Association for Prevention Teaching and Research, 2002).

Common Threads among Models

When comparing the above emergency and disaster core competency models among nurses, physicians, and public health workers, all models addressed the following commonalities: risk communication, critical thinking skills, decision making skills, recognizing signs and symptoms of CBRNE, health care systems and policies, hospital emergency response plans, educating communities in disaster preparedness, disaster management, role and responsibilities during disaster events, role of public health system, participation in emergency drills, and continuing education. Additional common threads found throughout the core competency models are the four constructs of the protection motivation theory.

Protection Motivation Theory

The protection motivation theory was selected for its appeal to influence behavior change as a result of perceived susceptibility and severity of outcomes resulting from perceived health threats. For example, health messages such as how to survive a hurricane can be framed to address perceived threats (Bosworth & Voils, 2006). “Fear-arousing messages can be effective when (1) the message is credible as it warns that if the current behavior continues, the probability of negative health consequences is high, and (2) the warning also provides the person an effective method of changing behavior that

guarantees protection from the predicted aversive health outcome” (Hankin et al., 1993, p. 11). The theoretical formulation of a person to event approach was originally described by an American psychologist, R.W. Rogers in 1975. Roger theorized that fear impacts persuasion and can be used as a strategy to influence change in attitudes and behavior. Roger later modified the protection motivation theory to predict cognitive change due to threat appraisal and coping responses (Maddux & Rogers, 1983; Rogers, 1975; Rogers, 1983; Williams, 2012). The protection motivation theory proposes that a person will be receptive to adopt recommended actions for protecting themselves from a perceived health threat that could cause negative consequences (Watkins et al., 2007). Currently, this theory examines how stakeholders are motivated to protect one self from harm as a result of perceived threat appraisal and coping appraisal wherein four stimuli are evaluated: the severity of the event, the probability that the event will occur, the effectiveness of recommended preventive behavior, and the ability to perform risk reducing behavior (Rogers, 1983; Williams, 2012). This theory indicates that stakeholders can be influenced to engage in desirable behaviors to avoid health risks.

Taking a closer look, the identification of the four stimuli or perceptions of the protection motivation theory is found threaded throughout the core competency models (Rogers, 1983). First, the perceived severity of the occurrence of a threatening event is linked to all of the previously mentioned core competencies found among the various models. Second, the perceived vulnerability to personal risks is linked to educating communities in disaster preparedness, disaster management, role and responsibilities during disaster events, role of public health system, participation in emergency drills, and

continuing education. Third, the perceived effectiveness of preventive behavior is linked to health care systems' policies, hospital emergency response plans, and participation in emergency drills. Fourth, the perceived self-efficacy of executing recommended preventative behavior is linked to critical thinking skills, decision making skills, recognizing signs and symptoms of CBRNE, and health care worker's role and responsibilities during disaster events (Rogers, 1983).

Cross Disciplinary Emergency Preparedness Recommendations

Other academic and public health associations in support of public health emergency competencies include the American Medical Association (AMA) in partnership with the American Public Health Association (APHA) who released a national action brief advocating fifty-three recommendations for strengthening and enabling public health and health care systems for preparing and responding to terrorism and other disasters such as mass casualty events. These recommendations addressed collaboration, coordination, planning, communications, information exchange, disaster recovery, education, training, funding, surge capacity, legislation, regulation, and research for organization of health care systems emergency preparedness (American Medical Association & American Public Health Association, 2007). The health care systems identified, at minimum, were hospitals, physicians, internists, surgeons, pediatricians, family and general practice physicians, and emergency medicine physicians, as well as specialists in radiation safety, infectious diseases, psychiatry and medical toxicology, dentists, nurses, veterinarians, mental health professionals, allied health personnel, and EMS personnel (AMA & APHA, 2007).

Summary

The review of literature described the importance of establishing emergency preparedness core competencies in response to historical catastrophic events. The collaboration of publications and resources by the federal government, public health agencies, hospital accrediting agencies, academic universities, and professional public health associations help demonstrate the importance of preparing public health care employees and leaders for emergency preparedness and response to crisis events. The origination of core competency models among nursing, medical students, EMS providers and public health workers were defined. A summary of recommendations for implementation of the emergency core competencies was outlined. One avenue of accomplishing the implementation of recommendations would be to link academic emergency preparedness and disaster training core competencies into allied health program curricula for the purpose of influencing public health practice.

CHAPTER III

METHODOLOGY

A review of literature revealed recommendations for implementation of the emergency core competencies among physicians, nurses, emergency medical services personnel, and public health workers program curricula, but at the same time, established that there are no core emergency preparedness and disaster planning competencies that have been standardized across all levels of various allied health curricula disciplines. If the core competencies were found to have already been included, the allied health programs would be a step closer for implementation of a national set of standardized core emergency preparedness and disaster planning competencies at all levels across various allied health curricula disciplines as recommended by the principal investigator. To assess the ease or difficulty of establishing such standardization, the objectives of this study were to identify the existence or absence of emergency preparedness and disaster training core competencies within allied health program curricula and assess the current perceptions of college instructors for implementing these core competencies into their existing curricula. To accomplish these objectives, two methods of exploration were conducted and are detailed in this section. The design of this study is presented to include a discussion of three community colleges who served as the sample population. This section also describes how the principal investigator protected the human participants. The assessment process of the survey instrument is specified. The data collection procedures are described as well as presentation of data analysis.

The first method used for this study consisted of a preliminary investigation of current allied health curricula. Course descriptions consisting of 46 different allied health programs were retrieved from the three community college's online course catalogs as found posted on their college websites. The principal investigator identified courses that align with the public health emergency preparedness core competencies. The purpose of this preliminary review was to identify possible existing courses that emergency core competencies content could be added if not already included. The review did not establish that the content was already included.

The second method of this study was surveying participants who currently teach as allied health educators at the three chosen community colleges. The principal investigator emailed the link of the survey, which was created in SurveyMonkey, to department heads of allied health programs located in three separate conveniently selected community colleges. Next, the department heads forwarded the electronic survey to their program directors and allied health educators at their institution using faculty email addresses. The responses of the surveys were electronically and anonymously collected via SurveyMonkey.

Sample Population

Three separate community colleges that house allied health academic programs have been conveniently selected: Bossier Parish Community College located in Bossier City, Louisiana, Delgado Community College located in New Orleans, Louisiana, and Southern University at Shreveport located in Shreveport, Louisiana. Three community colleges with a total of 115 fulltime and part-time faculty members representing 46

programs and 479 courses collectively were selected. More specifically, the three community colleges were selected because of the number and variety of allied health programs that prepare graduates to work in health care settings who could take on the role of first responder in an emergency and disaster operation response plan. This study could easily be repeated in other states that have had similar disasters and also have community colleges within those states which have a variety of allied health programs. Bossier Parish Community College has six degree programs, three certificate programs, and two technical diploma programs in allied health discipline. Delgado Community College has five associate degree programs and eight certificate programs in allied health discipline. Southern University of Shreveport, which is a historically black community college, has four associate degree programs and three certificate programs in allied health discipline. The sample population was generalized to a homogenous sample of allied health professionals which was represented by the faculty teaching in the allied health programs; therefore, the faculty served as the sample population. Out of the 115 participants targeted, 51 participated in this study yielding a response rate of 44%. Attempts were made to raise the response rate by having the department heads announce taking the survey during employee meetings and having the department heads send out a reminder email before the survey closed.

Protection of Human Participants

Leedy (2005) defines internal review boards (IRB) as a board made up of scholars and researchers for the purpose of scrutinizing proposals for human research. The IRB investigates research proposals to be sure that the proceedings are not harmful to

the participants, assures the participants will receive proper informed consent, and assures that the participants' privacy and identity is protected. For this particular study, IRB approval was sought from Texas Woman's University (see Appendix A). The principal investigator ensured that the participants understood that their participation was voluntary, provided participants with clarification of the nature of this study, and included an informed consent within the instructions of the survey instrument (see Appendix B). Participation in completing the survey served as an agreement and understanding of the informed consent for this study as deemed appropriate by the IRB committee. Furthermore, the principal investigator emailed the survey link to department heads of allied health programs who then forwarded the electronic survey to their program allied health educators at their institution using faculty email addresses (see Appendix C). The principal investigator did not access the allied health program faculty emails. The responses of the surveys were electronically and anonymously collected via SurveyMonkey. The principal investigator set the options in SurveyMonkey for complete anonymity. The participant's email IP addresses was not tracked nor associated with their responses. Finally, the principal investigator completed both the National Institutes of Health online course and the Responsible Conduct of Research training through the Collaborative Institutional Training Initiative (CITI) as required by the Texas Women's University (see Appendices D and E). No further ethical issues were foreseen.

Instrumentation

A survey instrument was adopted by the principal investigator for the purpose of surveying faculty members employed at community colleges (see Appendix F). With

permission, the formatting of the instrument used in this study was modeled after the original survey used in two previous publications by the same author (see Appendix G). The survey in the first publication was designed to collect information for assessing nursing faculty training for responding to mass casualty events, assessing nursing faculty perceptions of the level of importance for teaching mass casualty event content, and assessing personal and professional characteristics of the nursing faculty who participated in the study (Whitty, 2006). The same survey was utilized in a second publication and was designed to assess whether a relationship existed between knowledge of responding to mass casualty events among nursing faculty and their perceived importance for teaching mass casualty content in their nursing programs (Whitty & Burnett, 2009). The reliability coefficient of Cronhach's alpha-test for a five-point anchored scale was 0.989 in the second study (Whitty & Burnett, 2009). The electronic version of the survey was designed within SurveyMonkey, an electronic survey software platform. The estimated time commitment for participants to complete the survey was 10 minutes. The survey was geared toward identifying both existing and nonexistent content throughout the allied health curricula that are components of emergency preparedness and disaster training education. Furthermore, the survey accessed the faculties' perception of the importance and benefits of implementing the core competencies into allied health programs. Survey questions 1-7 targeted demographic data. Questions 8A-8L were designed to answer the following first two research questions and null hypothesis:

- What emergency preparedness and disaster training competencies exist among current allied health curricula?

- What is the perceived importance among college instructors for incorporating emergency preparedness core competencies into allied health curricula?
- There will be no correlation between the lack of emergency core competencies in existing allied health curricula and the perceived importance among college instructors to incorporate emergency core competencies into their curricula.

Question nine collected data to answer the third research question: What are perceived barriers among college instructors for incorporating emergency preparedness and disaster training competencies into current allied health curricula? Question ten was designed to answer the fourth research question: What are perceived benefits among college instructors for incorporating emergency preparedness and disaster training competencies into current allied health curricula? Questions 11-12 were designed to address the following protection motivation theory perceptions: the severity of the event, the vulnerability to personal risks, the efficacy of recommended behavior or perceived response, and the ability to perform risk reducing behavior (Rogers, 1983). Depending how questions 13-14 were answered, data was geared towards either the third research question that addressed perceived barriers or the fourth research question that addressed perceived benefits. Question fifteen was designed to address the second research question and the second null hypothesis that both assessed the perceived importance among college instructors for incorporating emergency preparedness core competencies

into program curricula across all disciplines. Finally, question sixteen was open ended for additional comments.

The content validity of the instrument was established by administering the questionnaire to eight faculty members who currently teach in allied health programs, in particular, Bachelor of Sciences in Allied Health and Radiologic Sciences programs. The content review served to determine the clarity of wording, the understanding of content, the length of time it takes to complete the survey, and the effectiveness of fulfilling the purpose of the study. The survey was revised based on the feedback from the small group of faculty members. The edits were minor enough to not warrant a second content validity review.

Data Collection Procedures

A total of 115 faculty members currently teaching in various allied health programs, representing 46 programs and 479 courses, were targeted. First, the principal investigator emailed the link of the survey, created in SurveyMonkey, to department heads of allied health programs located in three separate conveniently selected community colleges. The department heads preliminarily agreed to participate and confirmed participation via email and agency approval letters (See Appendix H). Second, the department heads forwarded the electronic survey to their program directors and allied health educators at their institution using faculty email addresses. As a result of the department heads releasing the survey at different times, the collection period occurred between April 2013 to May 2013. The responses of the surveys were electronically and anonymously collected via SurveyMonkey.

Data Analysis

Creswell (2009) presents six steps to help researchers analyze data. These steps include the following: report information about the number of members of the sample who did and did not return the survey, discuss the method by which response bias will be determined, discuss the plan to provide a descriptive analysis of data for all independent and dependent variables in the study, identify statistical procedure for accomplishing scales, identify the statistics and computer program for testing the major inferential research questions or hypotheses in the study, and present the results in tables or figures and interpret the results from the statistical test.

Data was analyzed using two popular software tools: Statistical Package for the Social Sciences (SPSS) and SurveyMonkey. Means, frequency, and standard deviations were computed. Pearson's product moment correlation was calculated to help answer the null hypothesis and explore if a linear relationship exists between the perceived level of importance among college instructors to incorporate the competencies and the number of existing emergency core competencies identified in allied health curricula. Percentages and a frequency analysis were calculated to answer the second null hypothesis. Furthermore, the competencies were placed into three subcategories to include core knowledge, individual skills, and interdisciplinary teamwork skills that served as independent variables for additional comparisons of overall perceived level of importance by allied health discipline (dependent variable). A one-way analysis of variance was conducted to compare the means among all allied health disciplines and perceived level of importance for each competency subcategory.

All testing was conducted at the .05 alpha level.

Summary

This section presented the design of this study which included two methods: a preliminary analysis and description of an electronic survey. The convenient sample was described to include three community colleges. Protection of human participants was detailed. The adoption and assessment process of the survey instrument was outlined to include reliability and content validity. Steps of the data collection procedures were described as well as presentation of data analysis with associated computations.

CHAPTER IV

RESULTS

The purpose of this study was to collect background data on existing emergency preparedness and disaster training competencies within allied health curricula as well as help identify possible gaps in allied health curricula. This study also explored the current perceptions of educators for implementing emergency preparedness core competencies into their existing curricula, if not already included.

Preliminary Investigation

Table 1 presents the results of the preliminary investigation of collecting, identifying, and analyzing 479 course descriptions retrieved from 46 different allied health programs, among the three community colleges' online course catalogs. The public health worker's 12 emergency preparedness and disaster training competencies, as defined earlier in the definition of terms, were used as a framework for this study in which the investigator reviewed possible alignment with existing course descriptions for each competency.

Table 1

Existing Courses in Alignment with Emergency Core Competencies

| Emergency Preparedness Core Competencies | College Courses | | |
|--|---|--|---|
| | <u>BPCC</u> | <u>DCC</u> | <u>SUSLA</u> |
| 1. Currently incorporate emergency or disaster preparedness content, such as defining and describing mass casualty events, biological, nuclear, chemical, radiological, explosive, terrorism, or natural disasters, in any of your course lessons, activities, or discussions etc? | EMTP 206 Emergency Medical Tech Paramedic Special Considerations | EMTE 265 Emergency Medical Tech Assessment- Based Management and Special Situations RADT 101 Radiologic Technology I | HITG 208 Health Information Technology Intro to Medical Science |
| | | | MLTC 239 Medical Laboratory Tech Parasitology Mycology |
| | | | PHLE 101 Intro to Phlebotomy |
| | | | RADT 220 Radiologic Technology Radiation Biology and Protection |
| | | | RADT 242 Radiologic Technology Pathology |
| | | | SURG 112 Surgical Technology Pathology 1 |
| | | | |

| | | | |
|--|---|---|---|
| 2. Identify federal and state resources that contribute to emergency and disaster response, as well as, basic legal and regulatory issues to include health care (For example, Strategic National Stockpile, Disaster Medical Assistance Team, Metropolitan Medical Response System, FEMA). | ALHT 105 Allied Health Medical Ethics and Law PHAR 102 Pharmacy Practice Lab BIOT 103 Biotechnology | HEIT 102 Health Information Technology Legal Aspects SURG 101 Introduction to Medical-Legal Aspects of Surgery | HITG 109 Health Information Technology Legal Aspects of Health Information |
| 3. Discuss the public health's role in an emergency or disaster response (For example: disease surveillance, investigation, public information in disease outbreaks, collaboration with other community agencies, or weather emergencies). | EMTP 207 Operations | | HITG 202 Health Information Technology Healthcare Delivery Systems |
| 4. Describe hospital emergency response plans as mandated by The Joint Commission's emergency management standards (For example, the hospital emergency response plans at your students' local clinical sites such as emergency staffing, surge capacity for triage, patient isolation, acquisition of additional supplies, emergency evacuation, shelters-in-place, safety and security, staff responsibilities, or fatality management). | ALHT 109 Allied Health Health Care Systems MOS 111 Medical Office Specialist Re- imbursement Methodology | DIET 216 Management Practices in Dietetics | DYLT 109 Dialysis Tech/Water Treatment HITG 105 Health Information Technology Health Data and Content SPDT 110 Intro to Sterile Processing SURG 116 Surgical Tech |

| | | | |
|---|---|--|---|
| 5. Discuss direct patient care when responding to an emergency such as mass casualty events, terrorism, or natural disasters within a hospital setting (For example, medical history related to event, psychological trauma, physical exam, personal protective equipment, decontamination, isolation, waste disposal, surge capacity). | EMTP 100 Emergency Medical Tech Paramedic Basic | DMSU 254 Ultrasound Practicum IV | RADT 232 Radiologic Procedures and Positioning III |
| | EMTP 201 Intro to Paramedic | DIET 206 Nutrition in Disease | RESP 231 Respiratory Therapy Critical Care Concepts II |
| | EMTP 202 Airway and Ventilation | EMTE 235 Emergency Medical Tech Acute Medical and Trauma Emergencies | |
| | EMPT 203 Patient Assessment | EMTE 265 Assessment- Based | |
| | EMPT 204/208 Treatment of Trauma Patient | Management and Special Situations | |
| | RSTH 202 Fundamentals of Respiratory Therapy | OPHT 223 Ophthalmic MA Introduction to Diseases of the Eye | |
| | RSTH 204 Cardio Pharmacology | | |
| | RSTH 275 Cardio- pulmonary Diagnostics | RADT 211 Advanced Radiographic Positioning | |
| | STEC 111 Surgical Technology Clinical Specialties | RSPT 114 Respiratory Patient Care | |
| | | | |

| | | | |
|---|---|---|--|
| 6. Discuss how to maintain communication channels in the hospital setting during emergencies such as phones, cell phones, intercom systems, digital pagers, fax machines, 2-way radios, and runners. | EMTP 201 Intro to Paramedic STEC 101 Surgical Technology | | |
| 7. Explain the fundamentals for establishing risk communication skills during emergency or disaster response such as communicating with patients, families, other employees, the general public, and the media. | EMTP 201 Intro to Paramedic | PTAP 202 – Health Care Comm. | |
| 8. Describe the hospital chain of command structure and community chain of command structure, their roles, and responsibilities during emergency and disaster response. | EMTP 207 Operations | DMSU 200 Ultrasound Patient Care HEIT 205 Health Information Technology Health Data Structure and Content RSPT 253 Management of Respiratory Therapy Department | HITG 202 Health Information Technology Healthcare Delivery Systems |
| 9. Define an incident command system and how it functions at the federal, state, local, agency and institutional level. | EMTP 201 Intro to Paramedic EMTP 207 Operations | HEIT 201 Introduction to Health Care Information Systems | HITG 215 Health Information Technology Systems |

| | | | |
|---|---|--|---|
| | | | HITG 233 Health Information Technology Organiza- tional Resources |
| 10. Examine importance of critical thinking, creative problem solving skills, modifying routine procedures, and trauma protocols when responding to emergencies or disasters within the hospital setting. | EMTP 202 Airway and Ventilation EMPT 203 Patient Assessment EMPT 204 Treatment of Trauma Patient EMTP 206 Special Considerations RSTH 204 Cardio Pharmacology | DMSU 254 Ultrasound Practicum IV EMTE 265 Emergency Medical Tech Assessment- Based Management and Special Situations | RESP 256 Respiratory Therapy Advanced Cardio- pulmonary Physiology SURG 124 Basic Patient Care |
| 11. Define your discipline's scope of practice, functional roles, and knowing when it is necessary to refer matters that exceed your scope of practice when responding to an emergency or disaster. | EMTP 202 Airway and Ventilation EMPT 203 Patient Assessment EMPT 204 Treatment of Trauma Patient | EMTE 265 Emergency Medical Tech Assessment- Based Management and Special Situations | RADT 232 Radiologic Procedures and Positioning III |

| | | | |
|---|---|---|--|
| 12. Explain how to recognize unusual events that may indicate an emergency and appropriate follow-up action (For example, recognize patterns, signs, and symptoms of biological, chemical, or radiological exposure). | ALHT Allied Health Patho- physiology | EMTE 245 Advanced Airway Management and Emergency Cardiac Care | RADT 242 Radio- graphic Pathology and Critique |
| | ALHT 209 Laboratory Testing | HESC 212 – Pathology and Terminology | RESP 256 Advanced Cardio- pulmonary Physiology |
| | EMTP 202 Airway and Ventilation | HEIT 203 Health Information Technology Basic Patho- physiology and Pharmacology | RESP 265 Pathology of Disease |
| | EMPT 203 Patient Assessment | MLTS 208 Medical Lab Tech Hematology II | |
| | EMPT 204 Treatment of Trauma Patient | MLTS 220 Immunology and Serology | |
| | RSTH 220 Respiratory Pulmonary Disease | OPHT 223 Ophthalmic MA Introduction to Diseases of the Eye | |
| | RSTH 221 Respiratory Critical Care | RSPT 117 Respiratory Care II | |
| | | BIOL 211 Microbiology Human/Path. | |
| | | | |
| | | | |

Note. *n* = 46 programs. BPCC = Bossier Parish Community College, DCC = Delgado Community College, SUSLA = Southern University at Shreveport Louisiana

The investigator found 88 out of 479 existing college courses among the various allied health programs that could possibly incorporate emergency core competencies if not already included. The top two competencies identified as a most likely fit were “direct patient care when responding to an emergency such as mass casualty events, terrorism, or natural disasters within a hospital setting” (21%) and “recognizing unusual events that may indicate an emergency and appropriate follow-up action” (20%). Competencies that were least likely to fit were the following:

- The public health’s role in an emergency or disaster response
- Maintaining communication channels in the hospital setting during emergencies
- Fundamentals for establishing risk communication skills during emergency or disaster response

Based on an educated guess by the principal investigator, all 12 public health worker’s emergency preparedness competencies could possibly be aligned within the existing courses of the 46 different allied health programs.

Demographics

Table 2 displays a total of 51, out of 115, faculty members who participated in completing the survey representing 20 different allied health programs.

Table 2

Allied Health Programs as Reported by Participants

| Allied Health Discipline | Responses | % | Rank |
|--------------------------------|-----------|-----|------|
| Dietetic Technician | 2 | .04 | 8 |
| ECG/Telemetry Tech | 1 | .02 | 2 |
| Funeral Service Education | 2 | .04 | 8 |
| Health Information Technology | 3 | .06 | 14 |
| Medical Assistant | 2 | .04 | 8 |
| Medical Coding | 2 | .04 | 8 |
| Medical Laboratory Technician | 2 | .04 | 8 |
| Medical Office Specialist | 2 | .04 | 8 |
| Nuclear Medicine | 1 | .02 | 2 |
| Occupational Therapy Assistant | 3 | .06 | 14 |
| Ophthalmic Medical Assistant | 1 | .02 | 2 |
| Paramedic/EMS | 5 | .10 | 20 |
| Pharmacy Technician | 4 | .08 | 17.5 |
| Phlebotomy Program | 2 | .04 | 8 |
| Physical Therapist Assistance | 4 | .08 | 17.5 |
| Radiation Therapy | 2 | .04 | 8 |
| Radiologic Technology | 4 | .08 | 17.5 |
| Respiratory Therapy | 4 | .08 | 17.5 |
| Sonography | 2 | .08 | 8 |
| Surgical Technology | 3 | .06 | 14 |

Note. (n = 51)

Faculty members ($n = 51$) were also asked to report their current teaching positions. The majority of participants hold the rank of an instructor (49%), followed by program director (43%) and clinic coordinator (8%). Faculty members ($n = 51$) were asked to note their years of teaching experience in their specific discipline. Only 4 % indicated more than 30 years of teaching experience while the majority (37%) reported 11 to 20 years of teaching experience (See Table 3).

Table 3

Years of Teaching Experience in Specific Allied Health Discipline

| Teaching Experience | Responses | Percentage |
|---------------------|-----------|------------|
| Less than 5 years | 6 | 11.8 |
| 5 to 10 years | 17 | 33.3 |
| 11-20 years | 19 | 37.3 |
| 21-30 years | 7 | 13.7 |
| More than 30 years | 2 | 3.9 |

Note. ($n = 51$)

In addition to reporting years of teaching experience, participants ($n = 51$) were asked to indicate their highest level of education. Most participants hold a master's degree (45%) followed by a baccalaureate degree (41%). Only 4 % hold a doctorate and 10% hold an associate degree.

Existing Core Competency Content

Participants were asked to identify whether they currently incorporate any of the 12 public health worker's emergency preparedness core competencies into their existing courses. Results indicated that there were a higher percentage of participants who did not currently teach emergency preparedness and disaster training core competency content for each allied health discipline than the number of participants who did (See Table 4). The competencies that were least incorporated into existing courses was "defining an incident command system and how it functions at the federal, state, local, agency and institutional level (82%)" and "identifying federal and state resources that contribute to emergency and disaster response, as well as, basic legal and regulatory issues to include health care (78%)." Even though there was a higher percentage of participants who did not teach each competency, the competency incorporated the most was "defining and describing mass casualty events, biological, nuclear, chemical, radiological, explosive, terrorism, or natural disasters (45.1%)."

Table 4

Inventory of Existing Emergency Core Competency Content

| Emergency Preparedness Core Competency (<i>n</i> = 51) | Responses | Yes % | No % |
|--|-----------|----------|---------|
| Do you currently incorporate emergency or disaster preparedness content, such as defining and describing mass casualty events, biological, nuclear, chemical, radiological, explosive, terrorism, or natural disasters, in any of your course lessons, activities, or discussions etc? | 51 | 45.1 | 54.9 |
| Identify federal and state resources that contribute to emergency and disaster response, as well as, basic legal and regulatory issues to include health care. | 50 | 22.0 | 78.0 |

| | | | |
|---|----|------|------|
| (For example, Strategic National Stockpile, Disaster Medical Assistance Team, Metropolitan Medical Response System, FEMA). | | | |
| Discuss the public health's role in an emergency or disaster response (For example: disease surveillance, investigation, public information in disease outbreaks, collaboration with other community agencies, or weather emergencies). | 50 | 42.0 | 58.0 |
| Describe hospital emergency response plans as mandated by The Joint Commission's emergency management standards (For example, the hospital emergency response plans at your students' local clinical sites such as emergency staffing, surge capacity for triage, patient isolation, acquisition of additional supplies, emergency evacuation, shelters-in-place, safety and security, staff responsibilities, or fatality management). | 50 | 42.0 | 58.0 |
| Discuss direct patient care when responding to an emergency such as mass casualty events, terrorism, or natural disasters within a hospital setting (For example, medical history related to event, psychological trauma, physical exam, personal protective equipment, decontamination, isolation, waste disposal, surge capacity). | 50 | 38.0 | 62.0 |
| Discuss how to maintain communication channels in the hospital setting during emergencies such as phones, cell phones, intercom systems, digital pagers, fax machines, 2-way radios, and runners. | 50 | 26.0 | 74.0 |
| Explain the fundamentals for establishing risk communication skills during emergency or disaster response such as communicating with patients, families, other employees, the general public, and the media. | 49 | 30.6 | 69.4 |
| Describe the hospital chain of command structure and community chain of command structure, their roles, and responsibilities during emergency and disaster response. | 48 | 27.1 | 72.9 |
| Define an incident command system and how it functions at the federal, state, local, agency and institutional level. | 50 | 18.0 | 82.0 |
| Examine importance of critical thinking, creative problem solving, and modifying routine protocols when responding to emergencies or disasters within the hospital setting. | 50 | 38 | 62 |

| | | | |
|---|----|------|------|
| Define your discipline's scope of practice, functional roles, and knowing when it is necessary to refer matters that exceed your scope of practice when responding to an emergency or disaster. | 50 | 42.0 | 58.0 |
| Explain how to recognize unusual events that may indicate an emergency and appropriate follow-up action (For example, recognize patterns, signs, and symptoms of biological, chemical, or radiological exposure). | 50 | 42.0 | 58.0 |

Perceived Level of Importance for Core Competencies

Using a Likert scale, participants were asked to rate their perception of the level of importance for incorporating each of the 12 competencies into their allied health program's curriculum. Responses were categorized using the following five point response scale: 5 = very important, 4 = quite important, 3 = fairly important, 2 = slightly important, and 1 = not important at all. The competency perceived as most important was "defining discipline's scope of practice, functional roles, and knowing when it is necessary to refer matters that exceed scope of practice when responding to an emergency or disaster" (50%). The next highest perceived competency was "examining the importance of critical thinking, creative problem solving skills, modifying routine procedures, and trauma protocols when responding to emergencies or disasters within the hospital setting" (43%). The competencies perceived as least important were "describing the hospital chain of command structure and community chain of command structure, their roles, and responsibilities during emergency and disaster response" (20%) and "discussing direct patient care when responding to an emergency such as mass casualty events, terrorism, or natural disasters within a hospital setting" (18%) (See Table 5).

Table 5

Perceived Level of Importance for Inclusion of Core Competencies (n = 51)

| Emergency Preparedness Core Competency | <i>n</i> | Percentages/ (Response Count) | | | | |
|--|----------|----------------------------------|--------------|---------------|--------------|--------------|
| | | 5 | 4 | 3 | 2 | 1 |
| Do you currently incorporate emergency or disaster preparedness content, such as defining and describing mass casualty events, biological, nuclear, chemical, radiological, explosive, terrorism, or natural disasters, in any of your course lessons, activities, or discussions etc? | 39 | 38.5% (15) | 20.5% (8) | 17.9% (7) | 17.9% (7) | 5.1% (2) |
| Identify federal and state resources that contribute to emergency and disaster response, as well as, basic legal and regulatory issues to include health care (For example, Strategic National Stockpile, Disaster Medical Assistance Team, Metropolitan Medical Response System, FEMA). | 36 | 22.2% (8) | 8.3% (3) | 36.1% (13) | 19.4% (7) | 13.9% (5) |
| Discuss the public health's role in an emergency or disaster response (For example: disease surveillance, investigation, public information in disease outbreaks, collaboration with other community agencies, or weather emergencies). | 36 | 36.1% (13) | 19.4% (7) | 16.7% (6) | 19.4% (7) | 8.3% (3) |
| Describe hospital emergency response plans as mandated by The Joint Commission's emergency management standards. For example, the hospital emergency response plans at your students' local clinical sites such as emergency staffing, surge capacity for triage, patient isolation, acquisition of additional supplies, emergency evacuation, shelters-in-place | 39 | 38.5% (15) | 12.8% (5) | 15.4% (6) | 17.9% (7) | 15.4% (6) |

| | | | | | | |
|--|----|---------------|--------------|--------------|--------------|--------------|
| safety and security, staff responsibilities, or fatality management. | | | | | | |
| Discuss direct patient care when responding to an emergency such as mass casualty events, terrorism, or natural disasters within a hospital setting (For example, medical history related to event, psychological trauma, physical exam, personal protective equipment, decontamination, isolation, waste disposal, surge capacity). | 38 | 39.5% (15) | 23.7% (9) | 2.6% (1) | 15.8% (6) | 18.4% (7) |
| Discuss how to maintain communication channels in the hospital setting during emergencies such as phones, cell phones, intercom systems, digital pagers, fax machines, 2-way radios, and runners. | 36 | 38.9% (14) | 19.4% (7) | 2.8% (1) | 22.2% (8) | 16.7% (6) |
| Explain the fundamentals for establishing risk communication skills during emergency or disaster response such as communicating with patients, families, other employees, the general public, and the media. | 37 | 32.4% (12) | 18.9% (7) | 18.9% (7) | 16.2% (6) | 13.5% (5) |
| Describe the hospital chain of command structure and community chain of command structure, their roles, and responsibilities during emergency and disaster response. | 35 | 34.3% (12) | 14.3% (5) | 8.6% (3) | 22.9% (8) | 20.0% (7) |
| Define an incident command system and how it functions at the federal, state, local, agency and institutional level. | 35 | 22.9% (8) | 22.9% (8) | 17.1% (6) | 20.0% (7) | 17.1% (6) |
| Examine importance of critical thinking, creative problem solving skills, modifying routine procedures, and trauma protocols when responding to emergencies or disasters within the hospital setting. | 39 | 43.6% (17) | 17.9% (7) | 15.4% (6) | 7.7% (3) | 15.4% (6) |

| | | | | | | |
|---|----|---------------|--------------|--------------|-------------|--------------|
| Define your discipline's scope of practice, functional roles, and knowing when it is necessary to refer matters that exceed your scope of practice when responding to an emergency or disaster. | 38 | 50.0% (19) | 15.8% (6) | 15.8% (6) | 7.9% (3) | 10.5% (4) |
| Explain how to recognize unusual events that may indicate an emergency and appropriate follow-up action (For example, recognize patterns, signs, and symptoms of CRBNE exposure). | 37 | 37.8% (14) | 18.9% (7) | 21.6% (8) | 5.4% (2) | 16.2% (6) |
| <i>Note:</i> Response Scale: 5= Very Important, 4 = Quite Important, 3 = Fairly Important, 2 = Slightly Important, 1 = Not Important at all | | | | | | |

Pearson Correlation for First Null Hypothesis

A Pearson Correlation was computed to address the first null hypothesis: There will be no correlation between the lack of emergency core competencies in existing allied health curricula and the perceived importance among college instructors to incorporate emergency core competencies into their curricula. For the purpose of computing the Pearson correlation, the response categories were between persons who responded to whether they currently incorporate the emergency preparedness core competencies into their existing curricula or not and persons who rated their perception of importance level for the need to incorporate the competencies on a 5-point Likert scale. Table 6 shows the Pearson correlation coefficients between these two groups. There was strong positive correlation $r(49), = .783, p < .01$, for frequencies of participants who indicated that they do currently incorporate emergency preparedness core competencies into their existing courses and their perceived level of importance for inclusion of competencies into their allied health curricula. At the same time, there was strong negative correlation $r(49), = -.792, p < .01$, for frequencies of participants who indicated that they do not currently

incorporate emergency preparedness core competencies into their existing courses and their perceived level of importance for inclusion of competencies into their allied health curricula. Therefore, the first null hypothesis is rejected due to the relationships between the variables.

Table 6

Pearson Correlation Coefficients Among Existing Core Competencies and Perceived Importance (n = 51)

| | Yes | No | Very | Quite | Fairly | Slightly | Not at all |
|---------------|---------|---------|-------|-------|--------|----------|---------------|
| Yes | 1 | | | | | | |
| No | -.989** | 1 | | | | | |
| Very | .783** | -.792** | 1 | | | | |
| Quite | .272 | -.236 | .269 | 1 | | | |
| Fairly | -.046 | .085 | -.376 | -.555 | 1 | | |
| Slightly | -.466 | .463 | -.538 | -.147 | -.221 | 1 | |
| Not at all | -.456 | .398 | -.155 | -.064 | -.394 | -.021 | 1 |

Note. **Correlation is significant at the 0.01 level (2-tailed).

Response Scale: 5= Very Important, 4 = Quite Important, 3 = Fairly Important, 2 = Slightly Important, 1 = Not Important at all

Descriptive Analysis for Second Null Hypothesis

Frequencies and percentages were computed to address the second null hypothesis: There will be no association between the years of teaching experience ranging from less than 5 years to 30 years, and the belief among participants that all

allied health programs should include emergency preparedness and disaster response core competencies into program curricula across all disciplines. Question 5 on the survey asked participants to indicate their number of years teaching in their allied health discipline. Question 15 on the survey asked the participants if they believe that all allied health programs should include emergency and disaster response core competencies into program curricula across all disciplines. A simple cross tabulation feature in SurveyMonkey was used to calculate the following percentages and frequencies as shown in Table 7.

Table 7.

Years of Teaching Experience and Belief to Include Core Competencies Into all Curricula (n = 36)

| | | Belief for Including Core Competencies Into all Allied Health Curricula | | | |
|---------------------------------|-----------|--|----------|------|----------|
| | | Yes | | No | |
| Years of Teaching Experience | Responses | % | <i>f</i> | % | <i>f</i> |
| Less than 5 | 6 | 33.7 | 4 | 33.3 | 2 |
| 5 to 10 | 17 | 76.5 | 13 | 23.5 | 4 |
| 11 to 20 | 18 | 77.8 | 14 | 22.2 | 4 |
| 21 to 30 | 6 | 83.3 | 5 | 16.7 | 1 |

Observations of the overall percentages and frequencies among each category indicate that as the years in teaching experience increased, the belief for inclusion of the emergency preparedness and disaster training core competencies into all allied health

disciplines as a whole also increased. As a result of this positive association, the second null hypothesis was rejected.

Perceived Importance of Subscales

Subscales Defined

For additional comparisons of overall perceived level of importance by allied health discipline, the emergency preparedness core competencies were placed into three subcategories to include core knowledge, individual skills, and interdisciplinary teamwork skills. Each category had an equal number of constructs. Table 8 displays emergency core competencies as categorized into the subscales:

Table 8

Emergency Core Competencies Subscales Defined

| Subscales | | |
|---|--|---|
| Core Knowledge | Individual Skills | Interdisciplinary Teamwork |
| Emergency or disaster preparedness content, such as defining and describing mass casualty Events, biological, nuclear, chemical, radiological, explosive, terrorism, or natural disasters | Direct patient care when responding to an emergency such as mass casualty events, terrorism, or natural disasters within a hospital setting (For example, medical history related to event, psychological trauma, physical exam, personal protective equipment, decontamination, isolation, waste disposal, surge capacity). | The public health's role in an emergency or disaster response (For example: disease surveillance, investigation, public information in disease outbreaks, collaboration with other community agencies, or weather emergencies). |
| Identify federal and state resources that contribute to emergency and disaster response, as well as, basic legal and regulatory issues | Critical thinking, creative problem solving skills, modifying routine procedures, and trauma protocols when responding to emergencies or | Hospital emergency response plans as mandated by The Joint Commission's emergency management standards |

| | | |
|--|--|--|
| to include health care (For example, Strategic National Stockpile, Disaster Medical Assistance Team, Metropolitan Medical Response System, FEMA). | disasters within the hospital setting. | |
| Incident command system and how it functions at the federal, state, local, agency and institutional level. | Discipline's scope of practice, functional roles, and knowing when it is necessary to refer matters that exceeds your scope of practice when responding to an emergency or disaster. | Hospital chain of command structure and community chain of command structure, their roles, and responsibilities during emergency and disaster response. |
| Fundamentals for establishing risk communication skills during emergency or disaster response such as communicating with patients, families, other employees, the general public, and the media. | Recognize unusual events that may indicate an emergency and appropriate follow-up action (For example, recognize patterns, signs, and symptoms of biological, chemical, or radiological exposure). | Maintain communication channels in the hospital setting during emergencies such as phones, cell phones, intercom systems, digital pagers, fax machines, 2-way radios, and runners. |

Subscales Mean Analysis per Allied Health Discipline

Using the subscale categories, a comparison of mean analysis was conducted using descriptive statistics to identify which subscale category was perceived as the most important among each allied health discipline. The participants rated their perceived level of importance for emergency preparedness core competencies by selecting the following Likert response scale: 5 = very important, 4 = quite important, 3 = fairly important, 2 = slightly important, and 1 = not important at all (See Table 9).

Table 9

Perceived Importance of Sub-scale Scores by Allied Health Discipline (n = 51)

| Discipline | Responses | Perceived Importance Subscales | | | | | |
|-------------------------------|-----------|--------------------------------|------|-------------------|------|-----------------------------------|-------|
| | | Core Knowledge | | Individual skills | | Interdisciplinary teamwork skills | |
| | | Mean | SD | Mean | SD | Mean | SD |
| Dietetic Technician | 2 | 10.5 | 7.77 | 10.5 | 7.77 | 12 | 9.89 |
| Funeral Service Education | 1 | 6 | .00 | 0 | .00 | 3 | .00 |
| Health Information Technology | 2 | 12 | .00 | 12.5 | .70 | 16.5 | 4.9 |
| Medical Assistant | 3 | 9.3 | 5.03 | 12.3 | 3.78 | 11.3 | 5.50 |
| Medical Laboratory Technician | 3 | 9.0 | 2.64 | 7.6 | 6.42 | 8.6 | 2.51 |
| Nuclear Medicine | 1 | 12 | .00 | 14 | .00 | 9 | .00 |
| Paramedic/EMS | 5 | 18.2 | 2.36 | 20 | .00 | 13.75 | 7.32 |
| Pharmacy Tech | 2 | 9 | 1.41 | 12 | .00 | 9 | 1.41 |
| Phlebotomy Program | 1 | 5 | .00 | 4 | .00 | 4 | .00 |
| Physical Therapist Assistance | 3 | 11 | 2.82 | 12.3 | 2.51 | 12 | 2.82 |
| Radiation Therapy | 2 | 15 | 7.07 | 18 | 2.82 | 18 | 2.82 |
| Radiologic Technology | 2 | 20 | .00 | 12.5 | 10.6 | 11.5 | 12.02 |
| Respiratory Therapy | 5 | 13.8 | 6.37 | 15 | 6.74 | 14.2 | 5.97 |

| | | | | | | | |
|---------------|---|-----|------|----|------|----|------|
| Sonography | 1 | 11 | .00 | 13 | .00 | 9 | .00 |
| Surgical Tech | 3 | 8.3 | 4.93 | 14 | 6.55 | 14 | 5.65 |

Note. Response scale: 5 = Very important, 4 = Quite important, 3 = Fairly important, 2 = Slightly important, and 1 = Not important at all.

The subcategory “core knowledge” was rated most important by Funeral Service Education ($M = 6$), Medical Laboratory Technician ($M = 9$), and Radiologic Technology ($M = 20$). The subcategory “individual skills” was rated most important by Medical Assistant ($M = 12.3$), Nuclear medicine ($M = 14$), Paramedic ($M = 20$), Pharmacy Technician ($M = 12$), Phlebotomy ($M = 5$), Physical Therapist Assistance ($M = 12.3$), Radiation Therapy ($M = 14.2$), Sonography ($M = 13$), and Surgical Technology ($M = 14$). The subcategory “interdisciplinary teamwork skills” was rated most important by Dietetic Technician ($M = 12$), Health Information Technology ($M = 16.5$), Radiation Therapy ($M = 18$), Respiratory Therapy ($M = 14.2$), and Surgical Technology ($M = 14$).

Subscales Analysis of Variance

To compare mean scores of perceived level of importance by all allied health disciplines (dependent variable) among subscale categories (independent variable), a one-way analysis of variance (ANOVA) was conducted. The previous computed mean scores for the subscale categories that were perceived as the most important among each allied health discipline were included in the factor. Again, the mean scores were originally computed based on the following Likert response scale: 5 = very important, 4 = quite important, 3 = fairly important, 2 = slightly important, and 1 = not important at all. Testing was conducted at a significance level of .05. No significant difference was found

in perceived level of importance subscale categories $F_{(2,14)} = 2.07, p = .163$ by all allied health disciplines (See Table 10). The means did not differ more than would be expected by chance alone which implies that there was no one subscale category that was significantly perceived more important than the others.

Table 10

Comparison of Perceived Level of Importance Subscale Categories by All Allied Health Disciplines (n = 51)

| | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> | <i>p</i> |
|----------------|-----------|-----------|-----------|----------|----------|
| Between Groups | 66.55 | 2 | 33.27 | 2.07 | .163 |
| Within Groups | 225.03 | 14 | 16.07 | | |
| Total | 291.58 | 16 | | | |

Perceived Barriers

The percentages and frequencies of perceived barriers to incorporating the basic emergency preparedness core competencies into existing allied health curriculum are displayed in Table 11. The top barriers identified by participants were adequate resources (48.6%), finding time to train faculty (40.5%), implementation of competencies (40.5%), evaluating competency skills (40.5), and time constraints during class (40.5). The barrier identified as the least challenging was faculty buy in (10.8%).

Table 11

Perceived Barriers to Incorporating Emergency Core Competencies (n = 37)

| Perceived Barriers | % | <i>f</i> |
|--------------------------------|------|----------|
| Adequate resources | 48.6 | 18 |
| Curriculum change process | 32.4 | 12 |
| Finding time to train faculty | 40.5 | 15 |
| Faculty buy in | 10.8 | 4 |
| Evaluating competency skills | 40.5 | 15 |
| Development of assignments | 35.1 | 13 |
| Implementation of competencies | 40.5 | 15 |
| Time constraints during class | 40.5 | 4 |

Note. A total of 37 participants responded to this question, and 14 participants skipped this question.

Perceived Benefits

The percentages and frequencies of perceived benefits to incorporating the basic emergency preparedness core competencies into existing allied health curriculum are displayed in Table 12. The top benefits identified by participants were to better prepare graduates with emergency and disaster response skills (83.7%) and reduce stress during emergency response (71.4%). The benefit perceived as the least attractive was grant opportunities (6.1%).

Table 12

Perceived Benefits to Incorporating Emergency Core Competencies (n = 49)

| Perceived Benefits | % | <i>f</i> |
|--|------|----------|
| Interdisciplinary teamwork | 65.3 | 32 |
| Help establish national standard | 46.9 | 23 |
| Reduce stress during emergency response | 71.4 | 35 |
| Better prepare graduates with emergency and disaster response skills | 83.7 | 41 |
| Increase consistency for training and credentialing | 26.5 | 13 |
| Promote community partnerships | 30.6 | 15 |
| Engage stakeholders | 10.2 | 5 |
| Increase sensitivity to other disciplines | 42.9 | 21 |
| Share accountability with other disciplines | 36.7 | 18 |
| Collaboration with others | 55.1 | 27 |
| Networking | 38.8 | 19 |
| Grant opportunities | 6.1 | 3 |

Note. A total of 49 participants responded to this question, and 2 skipped this question.

Level of Concern

The percentages and frequencies of participant's level of concern that a catastrophic event such as a flood, terrorist threat, or mass casualty event could affect their local community are displayed in Table 13. Most participants were only moderately concerned (39.2%), followed by very concerned (25.5%).

Only one participant was not concerned at all.

Table 13

Perceived Level of Concern for Local Catastrophic Event Occurring (n = 51)

| Level of Concern | % | <i>f</i> |
|----------------------|------|----------|
| Extremely Concerned | 19.6 | 10 |
| Very Concerned | 25.5 | 13 |
| Moderately Concerned | 39.2 | 20 |
| Slightly Concerned | 13.7 | 7 |
| Not at all Concerned | 2.0 | 1 |

Perceived Readiness of Graduates

The percentages and frequencies of the faculty's opinion of how well they feel their new graduates will function in the health care setting when responding to a mass casualty event in their local community are displayed in Table 14. The majority of participants felt that their new graduates will function moderately well (60.8%) in the health care setting when responding to a mass casualty event. Participants indicated that none of their new graduates would function extremely well. On the opposite end, participants indicated that none of their new graduates would function poorly under the same circumstances.

Table 14

Perceived Readiness Level of New Graduates to Respond to a Mass Casualty Event
(*n* = 51)

| Readiness Level | % | <i>f</i> |
|-----------------|------|----------|
| Extremely Well | 0 | 0 |
| Very Well | 27.5 | 14 |
| Moderately Well | 60.8 | 31 |
| Slightly Well | 11.8 | 6 |
| Not at all Well | 0 | 0 |

Perceived Level of Comfort

The percentages and frequencies of how comfortable participants feel teaching basic emergency preparedness core competency content are displayed in Table 15. The majority of participants indicated that they are quite comfortable (31.4%) or fairly comfortable (25.5%) teaching the basic emergency core competency content. A small number of participants felt very comfortable (9.8%) while another small number of participants were not comfortable at all (11.8%).

Table 15

Perceived Level of Comfort Teaching Emergency Preparedness Core Competencies
($n = 51$)

| Comfort Level | % | <i>f</i> |
|------------------------|------|----------|
| Very Comfortable | 9.8 | 5 |
| Quite Comfortable | 31.4 | 16 |
| Fairly Comfortable | 25.5 | 13 |
| Slightly Comfortable | 21.6 | 11 |
| Not at all Comfortable | 11.8 | 6 |

Related Participant Inquiries

Related to teaching, participants ($n = 51$) were asked if they have earned continuing education credits regarding emergency preparedness or disaster training. The majority of participants indicated they have not engaged in continuing education credits for emergency or disaster training (68.6%). A smaller portion indicated they have completed the specified training (31.4%). Furthermore, participants ($n = 51$) were asked if they believe that all allied health programs should include emergency and disaster response core competencies into program curricula across all disciplines. The majority of participants indicated yes (75.5%). The minority of participants indicated no (24.5%). Finally, the participants were given the opportunity to provide additional comments concerning the incorporation of emergency and disaster preparedness core competencies into their existing curriculum as well as perceived need for faculty development or any other thoughts related to this topic. Only a few participants ($n = 9$) responded upon

which a pattern emerged indicating that the majority of participants feel allied health students should be introduced to emergency preparedness and disaster training before they graduate. Concerns were the need for faculty development in this area and limited class time.

Summary

A preliminary analysis was conducted to examine background data for existing emergency preparedness and disaster training competencies found within course descriptions retrieved from the three community colleges' online catalogs. Frequencies and percentages, obtained from a survey, were used to provide a description of the sample. Identification of whether emergency preparedness core competencies were currently being taught was examined. The level of importance for inclusion of emergency preparedness core competencies was presented using percentages and a Likert response scale. The relationship between persons who responded to whether they currently incorporate the emergency preparedness core competencies into their existing curricula or not and persons who rated their perception of importance level for the need to incorporate the competencies was examined using a Pearson correlation. As a result, the first null hypothesis was rejected. A descriptive analysis was conducted to determine if an association existed between the number of years teaching and the belief to include the core competencies into all allied health curriculum. A positive association was found; therefore, the second null hypothesis was rejected. Emergency preparedness core competencies were placed into subcategories and examined for level of importance by each allied health discipline and then again across all allied health disciplines as a group. An ANOVA revealed that no one subcategory was found to be perceived as more

important than the others. Percentages and frequencies were used to report perceived barriers and perceived benefits of incorporating the basic emergency preparedness core competencies into existing allied health curriculum. Descriptive statistics were used to present participants' level of concern that a catastrophic event could affect their local community as well as how well they feel their new graduates will function in the health care setting when responding to emergencies. Lastly, frequency and percentages were used to describe participant's preparation and level of comfort teaching emergency preparedness content.

CHAPTER V

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

Summary

The purpose of this study was to identify the existence or absence of emergency preparedness and disaster training content within allied health curricula. This was accomplished by reviewing existing college course catalogs as posted on selected school websites and also by having allied health faculty respond to a survey indicating whether they teach emergency and disaster content in their courses. Another purpose of this study was to assess the current perceptions of college instructors for implementing emergency preparedness core competencies into their existing curricula, if not already included. Using an online survey design, this study not only assessed faculty perceptions of implementation of emergency preparedness and disaster core competencies but also their perception of the level of importance for each competency. Participants were also asked to identify perceived benefits and barriers to teaching emergency and disaster related content within their allied health programs. Descriptive statistics and a Pearson Correlation helped describe the findings and addressed the need for establishing a national set of standardized core emergency preparedness or disaster planning competencies at all levels across various allied health curricula disciplines.

Discussion and Implications

Demographics

A total of 51 faculty members representing 20 different allied health programs participated in this study. Nursing programs and nursing educators were excluded. Three community colleges were selected because of the number and variety of allied health programs within their colleges that prepare graduates to work in health care settings. Current teaching positions consisted of instructors, program directors, and clinic coordinators. Only two participants indicated more than 30 years of teaching experience in their specific discipline while the majority indicated 11 to 20 years. Most participants hold a master's degree (n= 23) followed by a baccalaureate degree (n = 21). Five participants hold an associate degree and only 2 hold a doctorate. All of the participants were employed by the community colleges, located in the state of Louisiana, that were conveniently selected for this study.

Research Questions and Hypotheses

The first research question inventoried the existence or absence of emergency preparedness and disaster training competencies within current allied health curricula. Participants were asked to identify if they currently teach any of the 12 public health workers competencies in their existing courses. Data reported by the participants revealed an overall lower percentage of participants who currently teach emergency and disaster related content in their courses than the majority who indicated they did not (See Table 4). These findings were consistent with the investigator's educated guesses concerning the preliminary review of 479 college course descriptions that yielded only 88

(18%) of courses in possible alignment with the 12 public health workers' emergency preparedness and disaster related competencies. The competencies related to "direct patient care when responding to an emergency such as mass casualty events, terrorism, or natural disasters within a hospital setting" and "recognizing unusual events that may indicate an emergency and appropriate follow-up action" were the top two most likely fits with course descriptions due to most programs having basic patient care and assessment courses. Trauma and critical care courses could also include these two competencies.

The second research question asked the participants to rate their perceived level of importance for incorporating each of the 12 public health workers emergency preparedness core competencies into their specific allied health program's curriculum. Using a five point scale, findings demonstrated the competency perceived as the most important for incorporation was "defining discipline's scope of practice, functional roles, and knowing when it is necessary to refer matters that exceed scope of practice when responding to an emergency or disaster." A possible explanation could be that most health professionals are concerned with legal and regulatory issues within their scope of practice and keeping compliance with holding a professional license to practice. This same rationale could help explain why the second highest perceived competency of importance was "critical thinking, creative problem solving skills, modifying routine procedures, and trauma protocols when responding to emergencies or disasters within the hospital setting." For each competency, a range of 2-7 participants selected "Not important at all" while the range for "Very important" was 8-19. For the majority, there

were a higher number of educators who indicated the competencies were perceived as “very important” and “quite important” for inclusion in their courses, than participants who indicated “not important” or “slightly important.” The competency perceived as least important was “describing the hospital chain of command structure and community chain of command structure, their roles and responsibilities during emergency and disaster response.” This competency would be most important for emergency management team leaders but would also apply to hospital drills among all employees. A related inquiry on the survey was geared towards answering the second research question regarding perceived level of importance for inclusion of emergency preparedness core competencies, which simply asked straight forwardly, “Do you believe that all allied health programs should include emergency and disaster response core competencies into program curricula across all disciplines?” The majority of participants (75.5%) indicated yes. This particular question targeted the researcher’s proposal for supporting a national standardized set of emergency preparedness and disaster training core competencies across all allied health disciplines for more consistent education and preparation among health care professionals working as a team in emergency response and prevention efforts.

The first null hypothesis that guided this study stated the following: There will be no correlation between the lack of emergency core competencies in existing allied health curricula and the perceived level of importance among college instructors to incorporate emergency core competencies into their curricula. The response categories were between persons who responded to whether they currently incorporate the emergency

preparedness core competencies into their existing curricula or not and persons who rated their perception of importance level for the need to incorporate the competencies on a 5-point Likert scale. Findings supported the rejection of the null hypothesis for both positive and negative correlations. There was a positive correlation for frequencies of participants who indicated that they do currently incorporate emergency preparedness core competencies into their existing courses and their perceived level of importance for inclusion of competencies into their allied health curricula. At the same time, there was a negative correlation for frequencies of participants who indicated that they do not currently incorporate emergency preparedness core competencies into their existing courses and their perceived level of importance for inclusion of competencies into their allied health curricula. In other words, the majority of participants whether they currently teach emergency preparedness and disaster related content or not, felt that it is important to include the content in their programs.

The second null hypothesis investigated whether an association existed between the years of teaching experience ranging from less than 5 years to 30 years, and the belief among participants that all allied health programs should include emergency preparedness and disaster response core competencies into program curricula across all disciplines. To address this statement, two survey questions were cross tabulated. An observation of the results indicated that a positive relationship existed. As the years in teaching experience increased, the number of participants who believed that all allied health curricula should include the core competencies also increased.

Continuing the exploration of college instructors' overall perceived level of importance by allied health discipline, the emergency preparedness core competencies were placed into three subcategories to include core knowledge, individual skills, and interdisciplinary teamwork skills. Using the subscale categories, a comparison of mean analysis was conducted using descriptive statistics to identify which subscale category was perceived as the most important among each allied health discipline. The investigator was interested to see how each individual allied health discipline would rate the subcategories, in particular, which subcategories did the various types of allied health disciplines perceive as highest level of importance. Using a five point Likert response scale, data revealed Funeral Service Education, Medical Laboratory Technician, and Radiologic Technology programs found the subcategory "core knowledge" as most important. Medical Assistant, Nuclear medicine, Paramedic, Pharmacy Technician, Phlebotomy, Physical Therapist Assistance, Radiation Therapy, Sonography, and Surgical Technology programs rated "individual skills" subcategory as most important. Dietetic Technician, Health Information Technology, Radiation Therapy, Respiratory Therapy, and Surgical Technology programs rated the subcategory "interdisciplinary teamwork skills" as most important. The investigator did not find a pattern as to why some programs rated different subcategories higher than others. The investigator proposes that it could be due to their experience, comfort levels of performance, and emphasis on their particular scope of practice. Taking a closer look of how all the allied health programs grouped together rated the subcategories, the investigator conducted an ANOVA that revealed no significant difference was found in perceived level of

importance among the subscale categories, meaning while there were slight differences, there was no one subscale category that was significantly perceived more important than the other two.

The third research question asked participants (college instructors) to identify perceived barriers for incorporating emergency preparedness and disaster training competencies into current allied health curricula. Findings communicated the top level of concerned areas were having adequate resources, finding time to train faculty, strategies for implementing competencies, evaluating competency skills, and time constraints during class sessions. Additional concerns were development of assignments and the process of changing the curriculum. The participants were least concerned about faculty buy in to include the competencies. Another concern that emerged as a repeated pattern from an open ended question was that most participants agreed allied health students should be introduced to emergency preparedness and disaster training before they graduate. Drawing from a different question on the survey to help assess the amount of training faculty believed they might need to help teach the competencies, participants were requested to rate their current level of comfort to teaching the basic emergency preparedness core competencies. The majority of participants indicated that they are quite comfortable or fairly comfortable teaching the basic emergency core competency content. The least amount of participants felt very comfortable while the minority was not comfortable at all. Furthermore, educators were asked to if they have previously earned continuing education credits regarding emergency preparedness or disaster training. The majority of participants indicated they had not engaged in continuing

education credits for emergency or disaster training. While some educators felt more comfortable teaching the emergency and disaster related content than others, faculty development in this area could strengthen a more consistent presentation across all allied health disciplines and support interdisciplinary skills for their graduates.

The fourth research question requested participants to identify perceived benefits for incorporating emergency preparedness and disaster training competencies into current allied health curricula. Findings indicated the most beneficial reasons for including the competencies were to better prepare graduates with skills for responding to emergency and disaster related events and to reduce stress levels during emergency response. The benefits ranked just under these top two in order of importance were interdisciplinary teamwork, collaboration with others, and establishing a national standard. The benefit perceived as the least attractive was grant opportunities.

Theoretical Exploration

This study incorporated three questions to explore the following four constructs of the protection motivation theory perceptions: (1) the severity of the event, (2) the probability that the event will occur, (3) the effectiveness of recommended preventive behavior, and (4) the ability to perform risk reducing behavior (Rogers, 1983). To examine the first two constructs combined, participants were asked to indicate their level of concern that a catastrophic event such as a flood, terrorist threat, or mass casualty event could affect their local community. The majority of the participants were only moderately concerned, followed by a lower number who were very concerned, and only one participant was not concerned at all. To address the third construct, participants were

asked if they have completed any emergency preparedness or disaster training continuing education credits that would help equip them in preparing themselves and their students in responding to emergencies. The majority of participants indicated they have not completed such continuing education credits while a smaller portion indicated they have. To inspect the fourth construct of the protection motivation theory perceptions, participants were asked to rate how well they believed their new graduates would function in the health care setting when responding to a mass casualty event in their local community. The majority of participants felt that their new graduates would function moderately well and that none of their new graduates would function poorly. At the same time, no one indicated that their graduates would function extremely well under the same circumstances.

Conclusion

The literature review and findings of this study supported a need to link academic allied health program curricula content and public health practice concerning emergency preparedness and disaster core competency content. This study also contributed to a gap in literature concerning the identification of the absence of core emergency preparedness and disaster training competencies among allied health discipline curricula. The importance of adopting and implementing emergency preparedness and disasters training core competencies that are consistent across all allied health discipline curricula was emphasized. The federal government, medical associations, and The Joint Commission have published resources that could be used for such curriculum planning. Academic and public health associations have advocated recommendations for strengthening and

enabling public health and health care systems for preparing and responding to terrorism and other disasters to include collaboration, coordination, planning, communications, information exchange, disaster recovery, education, training, funding, surge capacity, legislation, regulation, and research for organization of health care systems emergency preparedness (American Medical Association, 2013). Interdisciplinary connections between academia and health care organizations ensure proper safety measures towards prevention and preparation for responding to catastrophic events affecting communities. The benefits of establishing a national standardized set of core emergency preparedness and disaster planning competencies across all allied health curricula include interdisciplinary teamwork, communication, collaboration, networking, technical skills, shared accountability, and stress reduction. Most importantly, this unified and collaborative approach will help save and protect lives. Lastly, this study demonstrated that what health care workers needed to know before September 11, 2001 and before Hurricane Katrina in 2005 is different than what healthcare workers need to know today concerning emergency preparedness and disaster training competency skills. Previously, the investigator stated that “It is not a matter of if a mass casualty event, major natural disaster, or terrorist attack will occur, but when.” In the duration of conducting this study between 2012-2013, more natural disasters, bombings, and explosions took place that was not be included for the purpose of ending this study.

Limitations and Recommendations for Future Studies

Several limitations were identified in this study. A small convenience, homogeneity sample was used; therefore, the subjects are not considered to be

representative of the entire population which results in a low external validity of the study. Random selection of allied health programs is recommended for representation of the entire population. The investigator recommends the study be repeated using a larger sample size to include more allied health programs. The sample could also be expanded to include other geographic areas outside of the state of Louisiana. For example, different geographic regions experience different natural hazards such as tornadoes in the Great Plains, hurricanes along the Gulf Coast or the Atlantic Coast, flooding and mudslides in the Southwest, tsunamis around the Pacific Basin, droughts in the midwestern states, and wildfires in western United States (United States Environmental Protection Agency, 2012). The sample could also be extended to include bachelor level programs that offer more advanced courses.

The data collection method limited the number of potential respondents to the online survey. Not all of the participant's email addresses were posted on the community colleges websites; therefore, the investigator was dependent upon the department heads of the colleges to forward the link to the online survey to their allied health faculty. There was no guarantee that all participants were included on the email. Furthermore, spam filters could have prevented the survey from reaching the potential participants' email accounts. The timing of the release of the survey was dependent upon the participation of the college department heads and out of the control of the principal investigator. The investigator recommends that future researchers seek IRB approval for obtaining the participant's email addresses in future studies so that there is more control over of the release and collection of data.

An additional recommendation for future studies include investigating the correlation between the participant's perceived level of concern that a catastrophic event could affect their local community and the amount of time the participants have lived in their local community. Findings from this study indicated that the majority (39%) of participants were only moderately concerned that a catastrophic event could occur, and 14% were slightly concerned. These results were interesting due to the fact that the participants live in the state of Louisiana where Hurricane Katrina occurred in 2005.

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[Health%20Communication/Protection_Motivation_Theory.doc/](http://www.utwente.nl/cw/theorieenoverzicht/Theory%20clusters/Health%20Communication/Protection_Motivation_Theory.doc/)

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APPENDIX A
TWU IRB APPROVAL



Institutional Review Board
Office of Research and Sponsored Programs
P.O. Box 425619, Denton, TX 76204-5619
940-898-3378 FAX 940-898-4416
e-mail: IRB@twu.edu

April 4, 2013

Ms. Tammy Curtis
9118 Lindsay Road
Mooringsport, LA 71060

Dear Ms. Curtis:

Re: Examining the Importance of Incorporating Emergency Preparedness Core Competencies Into Allied Health Curricula as Perceived by College Instructors (Protocol #: 17301)

The above referenced study has been reviewed by the TWU Institutional Review Board (IRB) and was determined to be exempt from further review.

If applicable, agency approval letters must be submitted to the IRB upon receipt PRIOR to any data collection at that agency. Because a signed consent form is not required for exempt studies, the filing of signatures of participants with the TWU IRB is not necessary.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any unanticipated incidents. If you have any questions, please contact the TWU IRB.

Sincerely,

Dr. Rhonda Buckley, Chair
Institutional Review Board - Denton

cc. Dr. Gay James, Department of Health Studies
Dr. Kimberly Parker, Department of Health Studies
Graduate School

APPENDIX B

INFORMED CONSENT IN SURVEY INSTRUCTIONS

Emergency Preparedness Competency Survey

The return of your completed questionnaire constitutes your informed consent to act as a participant in this research.

Participation in this survey is voluntary and may be discontinued at anytime. Because this survey is administered via internet, there is a potential risk of loss of confidentiality in all email, downloading, and internet transactions; however, every precaution will be taken by the principal investigator, Tammy Curtis, to protect your identity. I have set the options in SurveyMonkey for complete anonymity. Your email IP address will not be tracked nor associated with your responses. I may be contacted at 318-455-5655 or curtis@nsula.edu. Thank you for taking time to complete the following questions.

APPENDIX C

EMAIL SCRIPT SENT TO PARTICIPANTS

Graduate student, Tammy Curtis, at Texas Woman's University, located in Denton, Texas, is conducting a research study for the purpose of investigating existing emergency preparedness and disaster training components within allied health curricula as well as the current perceptions of educators for implementing emergency preparedness core competencies into their curricula, if not already included. As previously agreed, Tammy Curtis is requesting that you forward the electronic survey to your faculty members and program directors of your allied health programs. Participation is voluntary and information gathered is anonymous and will be kept confidential. The responses of the surveys will be electronically and anonymously collected via Survey Monkey. However, there is a potential risk of loss of confidentiality in all email, downloading, and internet transactions. Participants will complete a survey that includes questions about demographic information, as well as questions about their perceptions of emergency preparedness core competencies within their program. The anticipated time to complete the survey is 10 minutes.

For more information, questions or concerns, please contact the investigator, Tammy Curtis at curtist@nsula.edu or (318) 455-5655.

APPENDIX D
NATIONAL INSTITUTES OF HEALTH CERTIFICATE



APPENDIX E
CITI COMPLETION REPORT

CITI Collaborative Institutional Training Initiative (CITI)

**Social and Behavioral Responsible Conduct of Research Curriculum Completion
Report**

Printed on 2/9/2013

Learner: Tammy Curtis (username: curtist)

Institution: Texas Woman's University

Contact Information

9118 Lindsay Road
Mooringsport, LA 71060 USA
Department: Health Sciences
Phone: 318-455-5655
Email: curtist@nsula.edu

Social and Behavioral Responsible Conduct of Research: This course is for investigators, staff and students with an interest or focus in **Social and Behavioral** research. This course contains text, embedded case studies AND quizzes.

Stage 1. RCR Passed on 02/09/13 (Ref # 9630477)

| Required Modules | Date Completed | Score |
|--|-----------------------|--------------|
| Introduction to the Responsible Conduct of Research | 01/30/13 | no quiz |
| Research Misconduct 2-1495 | 01/31/13 | 4/5 (80%) |
| Data Acquisition, Management, Sharing and Ownership 2-1523 | 01/31/13 | 4/5 (80%) |
| Publication Practices and Responsible Authorship 2-1518 | 02/01/13 | 4/5 (80%) |
| Peer Review 2-1521 | 02/01/13 | 5/5 (100%) |
| Mentor and Trainee Responsibilities 01234 1250 | 02/02/13 | 5/5 (100%) |
| Conflicts of Interest and Commitment 2-1462 | 02/08/13 | 5/6 (83%) |
| Collaborative Research 2-1484 | 02/09/13 | 5/5 (100%) |
| Elective Modules | Date Completed | Score |
| A Possible Co-Author | 02/09/13 | no quiz |

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by

your institution.

Paul Braunschweiler Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Course Coordinator

APPENDIX F
SURVEY INSTRUMENT

Emergency Preparedness Competency Survey

The return of your completed questionnaire constitutes your informed consent to act as a participant in this research.

Participation in this survey is voluntary and may be discontinued at anytime. Because this survey is administered via internet, there is a potential risk of loss of confidentiality in all email, downloading, and internet transactions; however, every precaution will be taken by the principal investigator, Tammy Curtis, to protect your identity. I have set the options in SurveyMonkey for complete anonymity. Your email IP address will not be tracked nor associated with your responses. I may be contacted at 318-455-5655 or curtist@nsula.edu. Thank you for taking time to complete the following questions.

For the purpose of this survey, the following questions are based on the emergency preparedness core competencies for all public health workers as established by the Center for Public Health Preparedness at the Columbia University, the New York City Department of Health and Mental Hygiene, and the CDC.

1. Select the community college where you currently teach:

- ☐ Bossier Parish Community College
- ☐ Delgado Community College
- ☐ Southern University at Shreveport

2. Please state the allied health program in which you currently teach.

3. Please select your current teaching position:

- ☐ Faculty/Instructor
- ☐ Clinic Coordinator
- ☐ Program Director

Other (please specify)

4. Please list the primary courses that you currently teach:

5. How many years of teaching experience do you have in your specific discipline?

- ☐ less than 5 years
- ☐ 5 to 10 years
- ☐ 11 to 20 years
- ☐ 21 to 30 years
- ☐ more than 30 years

Emergency Preparedness Competency Survey

6. What is the highest level of education you have completed?

- ☐ Diploma
- ☐ Associate
- ☐ Baccalaureate
- ☐ Master's
- ☐ Doctorate

7. Approximately how many students graduate from your program each year?

Emergency Preparedness Competency Survey

8. For questions 8A- 8L, in Column A please indicate whether you currently incorporate the following emergency competencies into your existing courses. If you answer yes for any questions in column A, please list the courses that you incorporate the competencies in following comment box. For column B, please rate your perception of the importance of each competency for inclusion into your allied health program's curriculum.

| | A: Yes or No | B: 5 = Very important, 4 = Quite important, 3 = Fairly important, 2 = Slightly important, 1 = Not at all important |
|---|----------------------|--|
| 8A. Do you currently incorporate emergency or disaster preparedness content, such as defining and describing mass casualty events, biological, nuclear, chemical, radiological, explosive, terrorism, or natural disasters, in any of your course lessons, activities, or discussions etc? | <input type="text"/> | <input type="text"/> |
| 8B. Identify federal and state resources that contribute to emergency and disaster response, as well as, basic legal and regulatory issues to include health care (For example, Strategic National Stockpile, Disaster Medical Assistance Team, Metropolitan Medical Response System, FEMA). | <input type="text"/> | <input type="text"/> |
| 8C. Discuss the public health's role in an emergency or disaster response (For example: disease surveillance, investigation, public information in disease outbreaks, collaboration with other community agencies, or weather emergencies). | <input type="text"/> | <input type="text"/> |
| 8D. Describe hospital emergency response plans as mandated by the Joint Commission's emergency management standards (For example, the hospital emergency response plans at your students' local clinical sites such as emergency staffing, surge capacity for triage, patient isolation, acquisition of additional supplies, emergency evacuation, shelters-in-place, safety and security, staff responsibilities, or fatality management). | <input type="text"/> | <input type="text"/> |
| 8E. Discuss direct patient care when responding to an emergency such as mass casualty events, terrorism, or natural disasters within a hospital setting (For example, medical history related to event, psychological trauma, physical exam, personal protective equipment, decontamination, isolation, waste disposal, surge capacity). | <input type="text"/> | <input type="text"/> |
| 8F. Discuss how to maintain communication channels in the hospital setting during emergencies such as phones, cell phones, intercom systems, digital pagers, fax machines, 2-way radios, and runners. | <input type="text"/> | <input type="text"/> |
| 8G. Explain the fundamentals for establishing risk communication skills during emergency or disaster response such as communicating with patients, families, other employees, the general public, and the media. | <input type="text"/> | <input type="text"/> |
| 8H. Describe the hospital chain of command structure and community chain of command structure, their roles, and responsibilities during emergency and disaster response. | <input type="text"/> | <input type="text"/> |
| 8I. Define an incident command system and how it functions at the federal, state, local, agency and institutional level. | <input type="text"/> | <input type="text"/> |
| 8J. Examine importance of critical thinking, creative problem solving skills, modifying routine procedures, and trauma protocols when responding to emergencies or disasters within the hospital setting. | <input type="text"/> | <input type="text"/> |

Emergency Preparedness Competency Survey

8K. Define your discipline's scope of practice, functional roles, and knowing when it is necessary to refer matters that exceed your scope of practice when responding to an emergency or disaster.

8L. Explain how to recognize unusual events that may indicate an emergency and appropriate follow-up action (For example, recognize patterns, signs, and symptoms of biological, chemical, or radiological exposure).

If you answered yes for any questions in the above column A, please list the courses that you incorporate these competencies in following comment box.

9. Which of the following are possible BARRIERS to incorporating the previously mentioned basic emergency core competencies from question #8 into your existing curriculum? Select all that apply.

- ☐ Adequate resources
- ☐ Curriculum change process
- ☐ Finding time to train faculty
- ☐ Faculty buy in
- ☐ Evaluating competency skills
- ☐ Development of assignments
- ☐ Implementation of competencies

Other (please specify)

Emergency Preparedness Competency Survey

10. Which of the following are possible BENEFITS to incorporating the previously mentioned basic emergency core competencies from question #8 into your existing curriculum? Select all that apply.

- ☐ Interdisciplinary teamwork
- ☐ Help establish national standard
- ☐ Reduce stress during response
- ☐ Better prepare graduates with emergency and disaster response skills
- ☐ Increase consistency for training and credentialing
- ☐ Promote community partnerships
- ☐ Engage stakeholders
- ☐ Increase sensitivity to other disciplines
- ☐ Share accountability with other disciplines
- ☐ Collaboration with others
- ☐ Networking
- ☐ Grant opportunities

Other (please specify)

11. How concerned are you that a catastrophic event such as a flood, terrorist threat, or mass casualty event could affect your local community?

- ☐ Extremely Concerned
- ☐ Very Concerned
- ☐ Moderately Concerned
- ☐ Slightly Concerned
- ☐ Not at all Concerned

Emergency Preparedness Competency Survey

12. Based on your current curriculum, rate how well you feel your new graduates will function in the health care setting when responding to a mass casualty event in your local community.

- ☐ Extremely Well
- ☐ Very Well
- ☐ Moderately Well
- ☐ Slightly Well
- ☐ Not at all Well

13. How comfortable do you feel teaching the previously mentioned basic emergency core competency content?

- ☐ Very Comfortable
- ☐ Quite Comfortable
- ☐ Fairly Comfortable
- ☐ Slightly Comfortable
- ☐ Not at all Comfortable

14. Have you earned continuing education credits regarding emergency preparedness or disaster training?

- ☐ Yes
- ☐ No

15. Do you believe that all allied health programs should include emergency and disaster response core competencies into program curricula across all disciplines?

- ☐ Yes
- ☐ No

16. Please feel free to add any additional comments concerning the incorporation of emergency and disaster preparedness core competencies into your existing curriculum as well as perceived need for faculty development or any other thoughts related to the above questions.

APPENDIX G
PERMISSION TO ADOPT SURVEY

Re: Request to Adopt Your Survey

Kristin Whitty [kristin.whitty@selu.edu]

Sent: Wednesday, January 23, 2013 10:12 AM

To: Tammy Curtis

Hi Tammy,

Sorry for the delayed response. We have been on semester break and just returned yesterday. I am moving my home and will not have Internet there until 1/31. Anyway, of course you may use my instrument for your study. Please send me a copy of your findings.

Good luck,
Kristin

On Thu, Jan 17, 2013 at 4:47 PM, Tammy Curtis <curtist@nsula.edu> wrote:
Dr. Whitty,

I am a PhD student preparing my dissertation prospectus for Texas Woman's University located in Denton, TX. My dissertation proposal is "Examining Attitudes and Beliefs towards Incorporating Emergency Preparedness Core Competencies into Allied Health Curricula Among College Instructors." My study will be based on the core competencies for public health workers as defined by the Center for Public Health Preparedness at the Columbia University and the New York City Department of Health and Mental Hygiene.

I came across your dissertation, "Factors Influencing the Importance of Incorporating Competencies Regarding Mass Casualty Incidents into BS Degree Nursing Programs, 2006" during my literature review search, as well as, your publication of "The Importance of Instruction on Mass Casualty Incidents in BS Nursing Programs: Perceptions of Nursing Faculty, 2009."

I was wondering if you would grant me permission to adopt the formatting of your survey for an instrument that I am creating for my study. My questions are original. I am particularly interested in how you set up the two separate columns with five point anchored scales for self-perceived knowledge and perceived importance as demonstrated in the dissertation abstract. Your survey for 2009 publication was not included in the online version. I would be very interested in reviewing your survey for this study if you would be so kind to share. My study will assess allied health disciplines across various majors. Nursing, as you know is not considered allied health and there is a gap in literature to include other disciplines for emergency core components. I will be examining existing core competencies or the lack of in current curricula and the attitudes of instructors for adopting the core competencies. Data obtained from this study will demonstrate the importance of developing emergency preparedness core competencies that are consistent across all allied health discipline curricula and why these competencies should be basic skills for health professionals who act as first responders during a disaster. I appreciate your support and enjoyed reading your dissertation and publications. I am looking forward to hearing from you.

Tammy Curtis, MSRS,RT(R)(CT)(CHES)
Northwestern State University
Radiologic Sciences
Associate Professor/Clinical Coordinator/Graduate Faculty
1800 Line Ave, Shreveport, LA 71101
Office: 318-677-3067
Fax: 318-677-306

APPENDIX H
AGENCY APPROVAL LETTERS



Excellence • Integrity • Accountability • Service
Division of Allied Health Sciences

Date: April 2, 2013

Attention: Texas Woman's University IRB

Please accept this letter of approval to participate in the study by graduate student Tammy Curtis in fulfillment of her dissertation on the topic of emergency and disaster preparedness core competencies. I have agreed to forward her electronic survey to the email addresses of my allied health faculty members who are employed at my college.

Jo Ann Brown, MBA, RRT
Division of Allied Health
Chair
610 Texas Street, Suite 400
Shreveport, LA 71101 (318) 670-9651
jwarren@susla.edu<mailto:jwarren@susla.edu>

BOSSIER PARISH COMMUNITY COLLEGE

6220 East Texas St.
Bossier City, Louisiana 71111



(318) 678-6000
www.bpcc.edu

Date: April 2, 2013

Attention: Texas Woman's University IRB

Please accept this letter of approval to participate in the study by graduate student Tammy Curtis in fulfillment of her dissertation on the topic of emergency and disaster preparedness core competencies. I have agreed to forward her electronic survey to the email addresses of my allied health faculty members who are employed at Bossier Parish Community College.

Carolyn Burroughs, Dean
Division of Science, Nursing, and Allied Health
(318) 678-6082
cburroughs@bpcc.edu

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New Orleans, LA 70119
(504) 671-6247 FAX: (504) 483-4609
www.dcc.edu

Date: April 2, 2013

Attention: Texas Woman's University IRB

Please accept this letter of approval to participate in the study by graduate student Tammy Curtis in fulfillment of her dissertation on the topic of emergency and disaster preparedness core competencies. I have agreed to forward her electronic survey to the email addresses of my allied health faculty members who are employed at my college.

A handwritten signature in black ink, appearing to read "H. Gaspard", written over the printed name.

Harold Gaspard, B.S.
Dean, Allied Health Division
Delgado Community College
Phone: 504-671-6201
hgaspa@dcc.edu