EVALUATION OF JOHNSON COUNTY KANSAS HEALTHCARE PROVIDERS' KNOWLEDGE OF THE JOHNSON COUNTY HEALTH DEPARTMENTS' PUBLIC HEALTH EMERGENCY PREPAREDNESS AND RESPONSE PROGRAM AND UTILIZATION OF THE DATA COLLECTED TO CREATE AN EMERGENCY CONTACT DATABASE

by

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Abstract

The American Medical Association (AMA) and the American Public Health Association (APHA) have realized the need for collaboration between medicine and public health. Many initiatives have been started to examine the benefits of these two groups working together. Numerous panels have convened to analyze findings collected from focus groups made up of practitioners and students studying public health throughout the United States. Federally funded grants with goals specified by the Centers for Disease Control and Prevention have been distributed to numerous public health programs. The two objectives for this project were 1) Evaluate the Johnson County medical community's awareness of the Johnson County Public Health Emergency Preparedness and Response Programs existence and 2) Gather pertinent contact information from the medical community to create an emergency contact database.

To effectively achieve these objectives, specific goals needed to be addressed: 1) Meeting the federally funded goals specified by the Centers for Disease Control and Prevention Bioterrorism Grant, 2) Developing communications and interactions between the Johnson County medical community and the Johnson County Public Health and Emergency Preparedness and Response Program, 3) Determining the level of familiarity the Johnson County medical community has with the Public Health Emergency Preparedness and Response Program, 4) Analyzing data collected to help establish guidelines for future educational programs and 5) Obtaining pertinent contact information from Johnson County medical providers to create a database to be utilized during emergency.

The components of this project are: the creation of an introductory letter and a questionnaire to be mailed to the Johnson County medical community, obtaining a current mailing list of all the medical providers (physicians, nurses, veterinarians, pharmacists) in Johnson County, formulating a mailing schedule, developing a usable database for keeping track of questionnaire responses, analyzing data collected to provide insight for future educational programs, and producing and populating a workable database to house contact information for the medical providers wanting to participate in the emergency contact resource.

The results of the survey showed that there is interest in these groups working together but there is still a lot of work needing to be done to facilitate this happening.

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Dedication

Dedicated to my family and friends past and present, near and far.

CHAPTER 1 - Introduction

1.1: Introduction

The success of any response to a disaster, natural or man-made, depends on the capability of the medical and public health communities to work together. The nation's health care system of emergency departments, hospitals, private practices and public health agencies and clinics accepts the overall responsibility of caring for patients. Since September 11th, 2001 the possibility of a terrorist attack has caused the government to analyze how medicine and public health work together. To strengthen the medical and public health preparedness of the nation's health relief systems clinicians and health professionals need to be trained to function across their traditional professional roles, and in a multidisciplinary approach to the medical management of a disaster or public health emergency. They must be able to: recognize the signs and symptoms of an exposure to a biological, chemical, or a radiological agent or an emerging infectious disease; provide victims with skilled medical care; protect themselves from secondary exposure and contamination of health care facilities; communicate effectively within the public health system; and advocate for preparedness initiatives within the health system.

Public health is a multidisciplinary field that has the ultimate goal of protecting communities as a whole rather than focusing on individual cases. The new millennium has proven to be one that is in need of public health intervention. Currently the world is facing many public health challenges both old and new. The probability of these challenges disappearing anytime soon is not likely. Therefore the emphasis of public health is characteristically on prevention that implements simple non-medical measures instead of treatment of diseased individuals. There is a recognized need for collaboration between the medical community and the public health community in order to be successful in disease containment.

1.2: Grant Funded Position

The Johnson County Public Health Department Public Health Emergency Preparedness and Response Program Mission, KS, U.S.A was searching for a full-time Bioterrorism Epidemiologist. The position would be responsible for assuring effective and efficient performance of the Bioterrorism Program by maintaining current information, orienting, educating and training peers and other health department staff. The successful candidate would also facilitate disease surveillance in Johnson County to improve detection of and response to, bioterrorism events and other public health emergencies. They

would be responsible for developing written objectives, procedures, protocols and reports to help ensure preparedness in Johnson County through education and trainings. The researcher, a student from the Kansas State University Master of Public Health Program was chosen to fill this position. The title bestowed was Epidemiologist Specialist for the Public Health Emergency Preparedness and Response Program. The program, which is federally funded by the Centers for Disease Control and Prevention Bioterrorism Grant, specifies that certain goals must be attained during a predetermined timeframe in order to receive funding.

These goals were integrated into a work plan which the Program team members work from throughout the grant year. For the 2005 grant year (September 1, 2004 to August 31, 2005) there were a total of 122 goals. To receive funding, 94 or 80%, of the goals needed to be 100% complete by the end of the grant year (August 31st, 2005). There were a large number of goals needing to be completed; therefore some goals were allowed to be combined into larger projects. In the beginning stages of the work plan development two goals were joined and assigned to the researcher. The 2006 grant year (September 1, 2005 to August 31, 2006) had similar goals to complete. These goals were added to the researcher's assignment to create one large project that spanned over two grant years (2005-2006). It was decided that one large project would be adequate to fulfill the capstone field experience requirements for the Kansas State University's Master of Public Health program. The capstone project would involve designing a study, collecting qualitative data, performing descriptive statistical analysis, and performing presentations about the interpretation and significance of the findings to Kansas State University and to the Johnson County Health Department Public Health Emergency Preparedness Program.

1.3: Need

In general, the goals set forth by the grant are meant to help serve the needs of the local medical community and the Public Health Emergency Preparedness and Response Program by increasing interactions and communications. "*Communications and interactions are underdeveloped between Johnson County healthcare providers and the Johnson County Public Health Emergency Preparedness and Response Program. How can these two entities work as a team during an emergency situation if they do not work together on a routine basis?"* (Liz Ticer, PHEPR program manager, 2006)

1.4: Objectives for the Project

The 2005 grant stated that a survey of 80% of the medical providers (physicians) and selected veterinarians within the community is in need of being conducted. The survey will be used:

1) Obtain information from physicians and veterinarians awareness about the health department and its' Public Health Emergency Preparedness and Response Program.
2) Assess their knowledge about disease reporting.
3) Encourage physicians and veterinarians to enroll in the Public Health Information Exchange (PHIX) system.
4) Gather contact information as well as to determine the preferred methods for receiving communications from their public health colleagues.

The results of the survey will be used to create a database that will be a valuable resource for the Public Health Emergency Preparedness and Response Program and the Johnson County Health Department.

The 2006 grant stated a survey of the remaining 20% of physicians, and 100% of pharmacists, 100% of nurses, and the remaining veterinarians along with some specialty areas would still need to be conducted. The objective of this survey will be the same as previously stated. The results of the survey will be added to the database in order to enhance the resources' value for the Public Health Emergency Preparedness and Response Program and the Johnson County Health Department.

The following are the goals as they are stated in the 2005 CDC Bioterrorism Grant work plan:

Goal B2 24/7/365 Disease Reporting:

Objective B2a: Conduct a survey of Johnson County Kansas healthcare providers to determine what percent can accurately identify how and where to report notifiable diseases.

Goal E1 Assure Ability to Contact all Key Players in a Public Health Emergency:

Objective E1a: Make contact with at least 80% of all Johnson County physicians and encourage enrollment in PHIX (Public Health Information Exchange)

Objective E1b: Make contact with at least 10 Johnson County veterinarians and encourage enrollment in PHIX (Public Health Information Exchange)

The following are the goals as they are stated in the 2006 CDC Bioterrorism Grant work plan:

Goal 51:

Conduct a survey of Johnson County healthcare providers to determine what percent can accurately identify how and where to report on notifiable diseases.

Objective 1: Make contact with remaining 20% of Johnson County physicians and encourage enrollment in PHIX (Public Health Information Exchange)

Objective 2: Make contact with 100% of all Johnson County pharmacists and encourage enrollment in PHIX (Public Health Information Exchange)

Objective 3: Make contact with 100% of all Johnson County nurses and encourage enrollment in PHIX (Public Health Information Exchange)

Objective 4: Make contact with remaining Johnson County veterinarians and encourage enrollment in PHIX (Public Health Information Exchange)

Objective 5: Make contact with Johnson County specialty areas (exotic pet stores, zoos, farms).

Goal 52:

Create and maintain a database of Johnson County Kansas healthcare providers (including veterinarians) that show interest in the Public Health Emergency Preparedness and Response Program.

1.5: Hypotheses

The preceding objectives and goals generated four hypotheses that will be assessed during this project. The survey would be used to:

1) Obtain information on physician awareness about the health department and its' Public Health Emergency Preparedness and Response Program.
2) Assess their knowledge about disease reporting.
3) Encourage enrollment in the Public Health Information Exchange (PHIX) system.
4) Gather contact information as well as to determine the preferred methods for receiving communications from their public health colleagues.

The first hypothesis is that the majority of the local medical community would not be aware of the local Public Health Emergency Preparedness and Response Program at the Johnson County Health Department. The reasoning is that the local medical community in this project is very large, expands over an extended area and the medical personnel is ever changing due to numerous higher educational schools in the area. The local medical community may not be aware of the information and/or trainings a local health department can provide for them therefore not eliciting any further contact. The second hypothesis

acknowledges that local Public Health Emergency Preparedness and Response Program at the Johnson County Health Department is required to work directly with their local medical community to perform the mandatory tasks of their jobs but the local medical community is not as strictly bound to the same requirements. Local health department workers are more knowledgeable than the local medical community when it comes to contacting each entity and reporting diseases. The third hypothesis considers that many individuals of the local medical community may not want to participate in a Public Health Emergency Preparedness and Response Program sponsored emergency notification program because it is felt that their position in the local medical community involuntarily deems them already to be notified in an emergency. It is expected that the local medical community will automatically provide support during an emergency situation therefore conflicting with the local health department programs. Most Public Health Emergency Preparedness and Response Programs at health departments are short on resources, and do not have as many employees so they sometimes depend on help from the local medical community. The fourth hypothesis will define if an individual of the medical community is interested in becoming a part of the Public Health Emergency Preparedness and Response Program emergency notification database and what type of information will be provided.

CHAPTER 2 - Literature Review

2.1: Public Health

Public health is concerned with a multitude of areas including: bioterrorism, influenza, HIV/AIDS, tuberculosis, the safety of our food and water supply, epidemics including but not limited to heart disease, cancer, diabetes, obesity, and risky behaviors like smoking and substance abuse, and the health of our increasing elderly population (Turnock, 2000). Public health professionals frequently examine the overall health of a population and perform analyses to evaluate programs already in existence or create new programs (Scutchfield, 1997). Public health means promoting healthy lifestyles within communities by preventing disease and emphasizing the benefit of a high quality prolonged life (Turnock, 2000). The mission of public health is to ensure that environmental conditions are appropriate so that people can live long healthy lives. Public health professionals concentrate on the promotion of health by studying behavior changes, preventative measures, and disease controls (Scutchfield, 1997). According to the American Public Health Association (APHA, 2007), public health has 10 essential services which provide structural framework for the public health system, they include:

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

A Master of Public Health (MPH) is a highly sought after credential that is recognized professionally throughout public health practices. The MPH is an interdisciplinary degree designed to provide the recipient with a diverse background in public health. The MPH is often a requirement for leadership or supervisory positions and is considered to be the terminal degree in the practice of public health (Breslow, 1990). Medical professionals are encouraged to attain a MPH. Programs of study are

available for practicing medical professionals, current or prospective students, or students seeking a dual degree from the start of their medical education (Greenlick, 1995). *A Competency-Based Framework for Graduate-Level Health Educators*, published by the National Commission for Health Education Credentialing (NCHEC, 2005), outlines competencies that best suit the basic skills needed for health education and/or the promotion of professionals. They are very similar to the APHA's 10 essential public health services, and include:

1) Assessing individual and community needs for health education.
2) Planning effective health education programs.
3) Implementing health education programs.
4) Evaluating effectiveness of health education programs.
5) Coordinating provision of health education services.
6) Acting as a resource person in health education.
7) Communicating health and health education needs, concerns, and resources.
8) Applying appropriate research principles and techniques in health education.
9) Administering health education programs.
10) Advancing the profession of health education.

MPH graduates must have acquired specific information and skills from their MPH program such as: epidemiology, community health analysis, and behavioral changing strategies, teaching methodologies, planning and, implementing/evaluating programs. They must also have skills and knowledge of policy, administration, advocacy, communications, social marketing, and community enlistment (Coreil, 2001).

Graduates with an MPH are prepared to work in diverse public health settings and have adequate skills to perform as a public health professional, including: 1) The ability to focus on monitoring the health status of communities to determine if there are health problems present, 2) Investigating and diagnosing any health hazards or health problems within communities then informing appropriate entities, and 3) Educating members in the communities about the issues (Susser, 1996). MPH graduates also obtain skills to be able to organize community partnerships to solve health problems along with developing policies, creating plans that support community health efforts and ensuring and protecting health by enforcing laws and regulations (Halverson, 1996). MPH graduates are also considered to be an important resource for individuals within communities and should be able to connect people to needed personal health services or assure that health care is provided when health services are unavailable. They cannot do it alone therefore they must be part of an effective workforce team that is competent in accomplishing public health safety (Kellogg and Wood, 1997). Finally MPH graduates must be able to

evaluate accessibility, the effectiveness and the quality of health programs that are already established and then be able to develop new and innovative solutions for health problems (Baker, 1994).

Global health is an important area within the public health spectrum focusing on preventing and controlling diseases and/or other health issues in underdeveloped areas around the world including the United States (CDC, 2005). Globalization of the world's economy and commerce along with the increased travel of humans and animals has opened the door to new threats of infectious diseases and hazardous contaminants. Diseases or contaminants that may be endemic to one area of the world may be detrimental to another (APHA, 2000). According to the World Health Organization (WHO, 2006) some of the priority program areas of global health include: adequate health care systems, chronic disease (cancer, cardiovascular disease, diabetes, obesity etc.), the environment, food safety, HIV/AIDS, influenza, malaria, maternal health, mental health, rabies, safe blood supplies, tobacco usage, and tuberculosis. The Centers for Disease Control and Prevention (CDC, 2005) states that the improvement and protection of the public's health inside of the United States is not possible unless we have some positive activity outside of the United States. This includes: responding to health-related emergencies, sharing knowledge and expertise with international associates, and contributing to the health and welfare of other nations. Observations by the CDC have shown that public health officials that have worked overseas in multicultural scenarios have gained knowledge and experience that developed superior skills for dealing with the ever-diversifying United States population.

Master of Public Health degree seekers whether already a medical professional or a health science professional, are encouraged by their MPH programs to work together (Kanter, 1994). Many theses or dissertations are based on medicine and public health joint studies. In an era of advanced information technology, the need to collect, analyze and distribute information is increasing therefore it is important for individuals to be able to understand the goals of the medical community and the goals of public health (Reiser, 1996).

Information that is collected can be used to make educated decisions for the future. If the information collected through research is accurate there is a better chance of making the best decision possible for the situation. If the information collected by researchers is inaccurate the likelihood of making a good quality decision decreases (William, 2002).

2.2: Distinctions between Medicine and Public Health

During the 20th century, many analysts have distinguished significant pressures and divisions between medicine and public health (Duffy, 1979). Concurrently, reorganizers have often pleaded for

better allegiance and association between the two fields (Alter, 1993). Stephen Smith in 1873 declared that "*If…the medical profession was as devoted to the practice of the art of preventing as it is in curing disease, there can be no doubt that many diseases which now decimate communities would disappear altogether, and the larger number would have the mortality set opposite them greatly reduced."* (Bowditch, 1874).

2.2a: Medicine

1) Primary focus on individual.
2) Personal service ethic, in the context of social responsibilities.
3) Emphasis on disease diagnosis, treatment, and care for the individual patient.
4) Medical example places predominant emphasis on medical care.
5) Uniform system for certifying specialists beyond professional medical degree.
6) Lines of specialization organized, for example, by organ system (cardiology, neurology), patient group (obstetrics, pediatrics), etiology and pathophysiology (infectious disease, oncology), technical skill (radiology, surgery).
7) Biological science central, stimulated by needs of patients, research moves between laboratory and bedside.
8) Numerical sciences increasing in prominence, though still a relatively minor part of training.
9) Social sciences an integral part of public health education. (Fee, 1991).

Because of the advances of medical knowledge, the medical school curriculum had become so crowded that the social importance of preventive medicine and public health is seldom emphasized. This creates a blind sport which often persists throughout professional life and results at times in misunderstandings between the practicing physicians and constituted health authorities of the community (J.A. Miller, 1942).

2.2b: Public Health

1) Primary focus on population.
2) Public service ethic, as an extension of concerns for the individual.
3) Emphasis on disease prevention and health promotion for the whole community.
4) Public health example employs a spectrum of interventions aimed at the environment, human behavior, lifestyle, and medical care.
5) Variable certification of specialists beyond professional public health degree.

6) Lines of specialization organized, for example, by: analytical method (epidemiology, toxicology), setting and population (occupational health, international health), substantive health problem (environmental health, nutrition).
7) Biological sciences central, stimulated by major threats to the health of populations; research moves between laboratory and field.
8) Numerical sciences an essential feature of analysis and training
9) Social sciences an integral part of public health education (Coreil, 2001).

In the future the physician will expend a great deal more effort than heretofore in ascertaining how much of a man's illness is an outgrowth of his interaction with his own personal environment, and what can be done from a therapeutic point of view to change this interaction so that the man will be made healthier. I expect that this will be a more difficult challenge than at first it might seem (Lawrence Hinkle, Jr. 1966).

The apprehensions articulated in the quotations about incorporating knowledge of prevention into medical education are part of a larger, century-long dispute in the United States about the appropriate relationship between medicine and public health, its foundations and its professionals (White, 1991). The distribution of responsibility and authority between public health and medicine has been a continuous source of distress and disagreement (Gordon et al, 1996). Although representatives of both fields have customarily expressed very strong commitments to health and social betterment, the relationship between public health and medicine has been characterized by significant tensions, hidden hostilities, and at times open rivalry (Bunker, 1995). The last century has witnessed a series of attempts to precisely define the professional, institutional, and social boundaries between these naturally interconnected areas of knowledge and practice (Pearson, 1995). As the basic establishment of public health and medicine solidified in the early years of the 20th century, commentators such as those quoted criticized the separateness in this complex relationship (Rundall, 1994). Therefore, there is reason to believe that, currently, there is potential for collaboration between medicine and public health (Bhopal, 1995). The reappearance of infectious diseases that were thought to be under control has called for new attention to the gap between medicine and public health, especially when dealing with questions of necessary measures, prevention, and behavioral changes (Porter, 1999; Reiser, 1997).

2.3: Data Collection Using a Questionnaire

Information can be gathered in many different ways. The most universal methods for collecting data are through: focus groups, literature searches, mail surveys, personal interviews, and telephone surveys (Brace, 2008). When dealing with an overwhelming sample size or when the samples are from a

very large geographic area; mail surveys have been considered the best choice due to their cost effectiveness. Mail surveys cost less than telephone surveys. And because there is no interviewer the responses are completely unbiased (Dillman, 2007).

There are many advantages associated with written questionnaires:

1) They are cost effective when compared with personal interviews especially when dealing with larger sample sizes and/or large geographical areas. The more written questions included in a questionnaire the greater the increase is in its cost effectiveness.
2) Analysis is relatively simple with the aid of a computer. Data entry, calculations, and graphics can be done with many standard software packages.
3) Most people have at one time or another have filled out a questionnaire during their lifetime. Questionnaires in general are considered a non-threatening way of collecting data and do not usually trigger uneasiness among individuals surveyed.
4) Questionnaires are less invasive than other types of surveys. They allow the receiver of the questionnaire, the choice of when they want to fill it out.
5) If the questionnaire contains questions which are uniformly presented; the respondent, may observe that the survey will not be difficult to fill out.
6) Providing the subject the chance to complete the questionnaire by oneself also decreases the chance of them being interrupted and/or influenced by a biased interviewer.

All of these advantages may increase the overall number of responses received by the surveyor (Bradburn et al., 2004).

There are also disadvantages associated with written questionnaires. One major disadvantage, experienced by researchers, is the possibility of receiving a small response rate. Statistical analysis is plagued by small response rates. Response rates can vary between questionnaires, but throughout history, a well-formatted questionnaire generally yields a higher response rate. Another disadvantage associated with written questionnaires involves the answers being provided, by the subject, to the questions. There is not an opportunity to probe the subject for more detailed information due to inflexible structure of the questionnaire format. This can be overcome by the addition of a comments section after each question. Comments written on a questionnaire are usually the most helpful of all the information gathered because most of the time they provide an insight that may have been lost otherwise (Bradburn et al., 2004).

Problems during analysis of the questionnaire are usually traced all the way back to the design phase of the project. Small response rates can be very damaging to a research project. The response rate is the most important indicator of how much trust you can place on the results (Belson, 1981). The best

way to avoid any problems is to assure that the project has well-defined goals. When the goals of a project are articulated clearly and presented in a concise manner the development of the questionnaire becomes a lot simpler. A questionnaire is developed to directly address the goals of a study. Before designing a study it has to be decided how the gathered information will be utilized. This will assure that the study goals will be clear. Generally this process is overlooked even though it is the most important. To make sure that the goals are met put them in writing so they are available to review when developing questions for the questionnaire. Avoid questions that gather interesting facts. Only ask questions that are directly associated with the research goals (Sudman et al., 1996).

Observations have shown, with only a few exceptions, that shorter questionnaires get more response rates than longer questionnaires. However, some research shows that questionnaire length is not directly related to response rates, but that the question content is what drives the response rate (Kalton and Schuman, 1982). Researchers state that a respondent is more likely to complete a survey if they are somehow involved or interested in the topic being presented. Researchers have found a good way to test the successfulness of a questionnaire is to locate a representative of the questionnaires target audience to fill out the survey. It has also been recommended that the researcher(s) who developed the questions on the questionnaire should be present during this test of the survey. And also make sure to emphasize to the answerer that it is acceptable to ask for clarifications on any of the questions. This test method has been shown to indicate if there are any problems with the questionnaire prior to it being mass produced and mailed (Dillman, 2007).

The appearance of a questionnaire may also have an effect on response rates. The envelope should be unique. The answerers' first impression of the questionnaire is developed when they look at the envelope. Several researchers have evaluated whether or not there is a difference in response rates when actual stamps are used instead of bulk rate postage. Researchers hypothesize, that envelopes with bulk mail permits might be viewed as being junk mail, unimportant, or impersonal and therefore will elicit a decreased response rate (Tourangeau et al., 2004). Other researchers have evaluated whether actual stamps are more efficient than metered mail on the outgoing envelope. The results of this study show a tiny increase in response rates on the stamped envelopes (Dillman, 2007). Some researchers that have sent their questionnaires by: certified, registered, or special delivery mail reported an increase in their response rates. These techniques should be justified against the possible consequence of infuriating a respondent that had to make a special trip to the post office to pick up the questionnaire (Bradburn et al., 2004). It has not been proven whether or not if a hand-addressed or a typed envelope affects the response rate more. The University of Minnesota conducted a study that reported that there is a

difference in response rates. The study included sending questionnaires to professors and students. The results showed that the professors responded better to the typed addresses and the students to the hand-written addresses (Tourangeau et al., 2004). No studies were found that evaluated if gummed labels would have a harmful effect on response rates. One hypothesis is that if bulk rate postage had an effect due to the lack of personalization then so should gummed labels. Also no studies were located that evaluated the effect of colored envelopes on response rates, but understanding that the respondent's first impression of the study usually comes from the envelope containing the survey it could be predicted that color would have an effect on the response rate (Dillman, 2007). A professionally written cover letter should be provided inside the envelope. This is the answerers' next impression of the survey. The cover letter is an important component to the study because it is the only tool available to persuade the respondent to fill out the survey. It also provides an opportunity to increase the overall response rate by letting the respondent know that the questionnaire can be completed quickly (Brace, 2008). Some recommendations include:

1) Describe the reason for the study being done with a brief summary of the study and identify who is sponsoring the study.
2) Mention the incentive if there is one.
3) Mention the enclosed, self-addressed stamped envelope for their convenience.
4) Without using a deadline, try to encourage a prompt response.
5) Mention that their personal responses will be kept anonymous and confidential.
6) Provide the respondent with a name and phone number to contact with any questions (Dillman, 2007).

Research shows that flattering remarks in the cover letter do not affect the response rate but explaining the usefulness of the wanted data has sometimes shown an increase in response rates. However this should not be relied on as an effective form of motivation (Groves et al., 2006).

The decision to use personalized cover letters or not, has not provided a definitive answer in regards to affecting response levels. Some researchers have discovered that the personalization of a cover letter can have negative effects on the response rate because the confidentiality and anonymity factors are jeopardized. While others have found personalized cover letters with hand-written signatures have helped with the overall response rates (Tourangeau et al., 2004). However, it has also been reported, by another team of investigators, personalization of any part of the cover letter has absolutely no effect on response levels (Bradburn et al., 2004). Another aspect that has been investigated is cover letters which include the signature of the person conducting the research. Two characteristics looked at were whether or not an

ethnic sounding name or the status (undergraduate, graduate, professor) of the researcher had any effect on the response rate. Results illustrated no change in response rate. In one study, a cover letter was signed by a company owner and compared with a cover letter signed by a sales manager. The owner signed letter produced a higher response rate (Brace, 2008). Another characteristic examined was whether or not a hand-written or a photocopied signature had any effect on completion rates. The literature reviewed from the studies provided mixed reports. One study showed that a hand written signature proved an increased response rate and another study determined that a mass produced signature worked just as well as a hand written one (Tourangeau et al., 2004). Another investigation included cover letters signed in green ink. There was an increase in the overall response rate by more than 10 percent. Another study shows that cover letters containing a handwritten postscript (P.S.), increased response rates in an older study, while a more recent study showed that there was no significant difference (Kalton and Schuman, 1982).

Questionnaires should be given a concise title that the respondent will be able to relate to. **Error! Bookmark not defined.**A questionnaire with a title is generally perceived to be more credible than one that does not have one (Brace, 2008). Instructions should also be included on how to fill out the questionnaire and submit it back to the researcher. Contents of the envelope can get separated so make sure that the return address is included on as many components of the questionnaire as possible. Questionnaires that are greater than one page should be held together with some type of device (i.e. paperclip or staple) and an identifier linking the pages to the respondent should be annotated on each page in case separation of the materials occurs (Dillman, 2007).

Some researchers have observed that the order the questions are presented affects the way some people respond (Kalton and Schuman, 1982). One study reports that questions in the second half of a questionnaire were more likely to be skipped. Other researchers have suggested that it may be necessary to present easier questions before difficult ones in order to avoid confusion. Additional researchers have reported that when difficult questions were asked before easier questions, answerers exhibited more interest in the easier questions. It is not apparent whether or not question-order affects response rates. A handful of researchers have reported that question-order does not affect response rates, while others have reported that it does. Commonly, it is thought that question-order effects do not exist in written surveys, but only in live interviews (Brace, 2008).

Historically questionnaires that started out too boring or difficult did not get completed. The beginning questions should persuade the answerer to want to finish the questionnaire. The questions should be written in straightforward fashion. They should be as brief as possible without using uncommon terminology. These methods for question writing have been found to reduce the rate of

misunderstandings by the respondent (Kalton and Schuman, 1982). Another way to decrease misunderstandings is to use bold, italics or underlining to emphasize vital words (Tourangeau et al., 2004). Studies have shown that the first half of the questionnaire should contain the most important questions you want answered (Belson, 1981). Many times, surveys are partially filled out and sent back to the researcher. Although this information is still of value to the researcher some of the more important questions may have been left blank. Trying to keep the answerers interest can be achieved by: varying the format of the questions, grouping questions into logical categories, and making sure the transition from one question to another question is smooth (Brace, 2008).

Incentives have also been used to encourage the completion of surveys. A common practice found to work well includes attaching a dollar bill to the questionnaire. Another documented motivator is offering a free summary report to the respondent (Dillman, 2007). Researchers have observed, although not consistently, positive effects from providing non-monetary gift items as an incentive for subjects to fill out their questionnaires. An analysis of thirty-eight studies demonstrated that the use of some form of an incentive such as: a small package of a food item, a pen, postage stamps, a key ring, or coupons showed that non-monetary incentives were effective only when enclosed with the questionnaire (Bradburn et al., 2004). The promise of an incentive for a returned questionnaire was not as effective for increasing the amount of responses. Monetary incentives did increase the response rate. Most researchers have found that the higher the monetary incentive the better the results that are produced. An analysis of fifteen studies showed that an incentive of 25¢ increased the response rate by an average of 16 percent, and $1 increased the response by 31 percent (Dillman, 2007).

Surveys should be made to be as convenient as possible. It has been recommended that a self – addressed stamped envelope (SASE) be provided to the respondent. Studies have shown that envelopes with stamps get a higher response rate than business reply envelopes. Many researchers have suggested that people might feel uncomfortable disposing an unused stamp, therefore feel obligated to complete the questionnaire. While others have stated that implementing business reply envelopes suggests that it is a form of advertising to some people. Another possibility stated that a business reply envelope is seen as impersonal (Brace, 2008 and Tourangeau et al., 2004).

Some researchers have been done to evaluate if pre-notification letters might increase response rates. The two hypotheses for this increase are: pre-notification letters may help establish the legitimacy of the survey and pre-notification letters may reduce the possibility that the respondent might unintentionally dispose of the survey when it arrives in the mail (Bradburn et al., 2004). Implementing a follow- up procedure with the non-respondents has been shown to be one of the most influential devices for increasing overall response rates. Historically, it has been observed that between 10 and 60 percent of

people that were sent questionnaires respond without any follow-up (Brace, 2008). The bottom of the percentage range is considered to be too low to yield any confidence in the results of the survey therefore it is imperative that a follow-up on respondents be performed. Researchers can increase the response from follow-up attempts by including another copy of the questionnaire. When designing the follow-up procedure, it is important for the researcher to keep in mind the unique characteristics of the people in the sample (Bradburn et al., 2004). The most successful follow-ups have been achieved by phone calls. Many researchers have examined whether postcard follow-ups are effective in increasing response. The majority of these studies show follow-up postcards increases the response rate slightly, but mainly serves as a reminder for subjects to complete the survey (Brace, 2008).

Many studies have attempted to determine if there is a difference between respondents and non-respondents. Some researchers have reported that people who respond to surveys answer questions differently than those who do not. Others have found that late responders answer differently than early responders, and that the differences may be due to the different levels of interest in the subject matter. One researcher, who examined a volunteer organization, reported that those more actively involved in the organization were more likely to respond (Groves et al., 2006). Demographic characteristics of non-respondents have been investigated by many researchers. Most studies have found that non-response is associated with low education (Williams, 2002). However, one researcher reported that demographic characteristics such as age, education, and employment status were the same for respondents and non-respondents (Bradburn et al., 2004). Another study found that non-respondents were more often single males (Brace, 2008). Most researchers view non-response bias as a scale, ranging from really fast responders to very slow responders with the non-responders at the end of the scale. Studies have been done using extrapolation to estimate the extent of the unfairness created by non-responders. While other groups of researchers argue that non-responders should not be viewed on a scale, and that late respondents do not provide a suitable basis for estimating the characteristics of non-respondents (Groves et al., 2006).

An anonymous study is one in that no one including the researcher knows who provided the data. Some research has shown that the response rate is affected by the anonymity/ confidentiality policy of a study. Others have reported that responses became more distorted when subjects felt threatened that their identities would become known. Others have found that anonymity and confidentiality issues do not affect response rates or responses (Brace, 2008). Difficulties arise when trying to administer an anonymous questionnaire especially when using the mail system. Most questionnaire studies have some kind of follow- up procedure for non-responders. The only way to do a follow-up on a mailed questionnaire study is to mail a second survey to the non-responders or to send a reminder such as a

postcard to the entire sample population (Dillman, 2007). But there is a way to guarantee confidentiality. Researchers who are conducting the study can promise not to reveal respondents information or the researcher can use identifying numbers on questionnaires instead of the respondents' names. The number method can be very helpful for the purpose of follow-up. It is imperative that the use of numbers be explained to the respondents in an accompanying letter (Brace, 2008 and Dillman, 2007).

Researchers have also analyzed the effect of having a deadline for the survey to be submitted. A cut-off date will sometimes reduce the overall time from the mailing to receipt of the completed questionnaires, which is beneficial for the study but not for the response rate. It has been shown that it might actually reduce the response rate due to the fact that a deadline may discourage busy individuals or procrastinators from completing the questionnaire (Brace, 2008).

Researchers try hard to achieve a neutral position when creating surveys therefore it is very important that the wording of a question does not persuade a respondent into supplying a desired response (Groves et al., 2006). Unfortunately the effect of question wording is one of the least understood components in questionnaire research (Belson, 1981). Several investigators have shown that the slightest changes in the way a question is worded can have a considerable effect on responses. Authors of questions have reported that small changes made to a questions wording can cause a 25 percent, or more, difference in subjects responses (Kalton and Schuman, 1982). Researchers have examined the effects of changing adjectives and adverbs in questions. Words such as: occasionally, often, rarely, seldom, sometimes and usually, are frequently used in questionnaires. Even though certain words may mean the same thing it is clear that they do not mean the same thing to all subjects. Adjectives can exhibit a range in their meaning or variability. The higher the variability the more the adjective should be avoided in questionnaires. Some examples of highly variable adjectives include: many, most, numerous, and several. There are also some phrases which should be avoided that included: a considerable number, a large portion, a minority, a significant number, or a substantial majority. Adjectives that have less variability and mean the same thing to a greater number of subjects include: all, almost all, nearly all, virtually all, a consensus of, a majority of, a few, a couple, a small number of, not very many, almost none, and hardly any (Belson, 1981 and Kalton and Schuman, 1982).

Questions developed for use in questionnaires may include a non-determinant response option such as: "don't know", "not sure", "no opinion", or "undecided." These type of responses, along with definitive answers, need to be analyzed equally. Numerous studies have examined the effects of having a non-determinant response option in questions. The option allows the respondents the ability to affirm that they have no opinion or have not thought about a particular issue. These non-determinant responses may be beneficial to a researcher if their ultimate goal is to determine if enough information on a specific topic

has been made available to subjects' being surveyed (Belson, 1981). Offering a respondent a non-determinant option will make a difference in the conclusions collected from the data. The non-determinant option draws a significant number of respondents who might not be sure of their view. Research has found that the location of the non-determinant response option can directly affect the subjects' response. Studies have shown that placing the non-determinant response option in the last position of selectable answers increased the percentage of respondents who choose it by greater than nine percent. The research also showed that respondents were more likely to choose the non-determinant option when it was physically away from the other choices. There are also different response patterns depending on how the non-determinant option is worded (Tourangeau et al., 2004). Researchers have also studied the "don't know" option for factual questions. Unlike attitude questions, respondents might legitimately not know the answer to a factual question. Surprisingly, the research suggests that the "don't know" option should not be included in factual questions. Questions in a survey, which exclude the "don't know" option, produce a greater volume of accurate data. Furthermore, there is generally no difference in response rate depending on the inclusion or exclusion of the "don't know" option. There is still a controversy surrounding the "don't know" response category. Many researchers advocate including a "don't know" response category when there is any possibility that the respondent may not know the answer to a question. The best advice is probably to use a "don't know" option for factual questions, but not for attitude questions (Belson, 1981).

There are well written questions and poorly written questions. Researchers have found that well written questions have certain qualities to them such as: evoking truthful answers, asking for an answer only on one level, accommodating all possible answers, having exclusive options, producing a variety of responses, flowing smoothly from one question to the next question, **Error! Bookmark not defined.** does not assume knowledge about the answerers life situation, desired responses are not implied, does not contain controversial topics, use uncommon terminology or abbreviations, no dependency on previous questions answers, and ranking no more than five items (Brace, 2008).

CHAPTER 3 - Methods

3.1: Sampling Theory

A sample is a part of a population that is observed and used to draw conclusions about the population as a whole. A sample is used because it is impractical to examine an entire population. The idea that a sample of a group will represent the distribution of data for that group as a whole is a sampling theory (Studenmund, 2001). The sample in this report consists of the medical professionals working in Johnson County Kansas on record with the Kansas Department of Health and Environment. The researcher contacted the Kansas State Board of Healing Arts, the Kansas State Board of Pharmacists, the Kansas State Board of Nursing and the Kansas Board of Veterinary Examiners for the current list of licensed healthcare providers in Johnson County Kansas between August 2005 and October 2005. This sample is used in this instance because tracking down all of the medical providers in Johnson County Kansas would be time consuming, expensive, and difficult to achieve. The results collected from this survey sample will be used to acquire conclusions about how the Johnson County Kansas medical community interacts with the Johnson County Health Department.

The results of the survey depend on the responses of the medical professionals in the community. Medical professionals might not respond to a survey for mainly two reasons: non-response and non-response bias, and this must be taken into consideration when drawing conclusions about the information gathered. When a respondent is either unable to be contacted, or the coordinator of the survey fails at contacting the subject, referred to as non-response (Groves et al., 2006). When a subject receives the survey but chooses not to respond this is labeled as non-response bias. Non-response bias could be a result of many reasons, including little or no interest in the topic, fear of participation, or too busy to complete the survey. Both of these non-response types must be taken into consideration when analyzing the data, as not to misread the information gathered (Groves et al., 2006).

3.2: Sampling Procedures

The survey partakers consisted of medical professionals in Johnson County Kansas. All medical professionals in Johnson County Kansas were welcome to participate in the survey, and were not excluded for any reason other than the lack of knowledge of them practicing in Johnson County Kansas or the inability to contact them. The sampling procedure chosen for this report included: a promotional letter, a questionnaire, and a self-addressed stamped envelope sent through the United States Postal Service to the addresses provided by the Kansas Department of Health and Environment.

3.3: Letter and Questionnaire Development

The researcher assigned this project was responsible for making contact with the physicians, pharmacists, nurses, veterinarians and other specialties in Johnson County Kansas by developing an introduction/promotional letter (Appendix A) along with a questionnaire (Appendix B). The questionnaire was addressed to be return directly to the researcher so that the contents could be reviewed and information gathered could be entered in to an electronic database.

3.3a: Purpose of the Questionnaire

To collect information from the Johnson County Kansas health care providers regarding their knowledge about the Johnson County Health Department and the programs available.

3.3b: Questions on the Questionnaire

The researcher developed a total of twelve questions: nine yes or no response questions, two multiple choice questions, and one question requiring a written response if applicable. The questions were presented to supervisors for review and approval. All of the questions had an overall agenda for eliciting responses that could be manipulated into percentages. The quantitative data could then be analyzed and comparisons calculated between the populations surveyed. The data could then be used to determine focus areas for future projects implemented by the Johnson County Health Department.

3.3c: Yes/No Response Questions

1) Question 1: Prior to this correspondence were you aware that our program existed? This question will determine if the Johnson County Health Departments' Public Health Emergency Preparedness and Response Program needs more publicity in the Johnson County health care community and which population(s), (Physicians, Pharmacists, Nurses, Veterinarians) we need to focus on.
2) Question 2: In the future would you be interested in receiving information/trainings from us? This question will determine if there is a need for more education about our program and what our roles are in the community.
3) Question 3: Do you know how and where to report a Kansas Reportable Disease? This question will determine how well information is shared between the healthcare population and the Johnson County Health Department.

4) Question 4: Do you know about the Johnson County Health Department website? This question will determine if we have advertised our website well enough to the healthcare population.
5) Question 5: Prior to this correspondence where you aware of PHIX? This question will determine if we need to focus getting information out to the medical community.
6) Question 6: If so, are you a member? This question will let us estimate how many of Johnson County healthcare professionals are already enrolled in the program.
7) Question 7: If not, are you interested in becoming a member? This question will let us estimate how many Johnson County healthcare providers are interested in sharing public health information.
8) Question 8: Are you interested in becoming a part of our emergency notification database? This question will estimate how many Johnson County healthcare providers are interested in becoming part of the Public Health Emergency Preparedness and Response Program.
9) Question 9: If yes, would you be willing to provide us with additional contact information? This question will alert us to follow up with gathering contact information.

3.3d: Multiple Choice Response Questions

10) Question 10: What is the best way to contact you? This question was a multiple choice that gave contact options of email, fax, mail, pager, telephone. From this information we can develop call lists, email address groups, fax groups, and address labels.
11) Question 11: Do you have a preference for emergency notification? This question let the individual prioritize how they would like to be contacted.

3.3e: Written Response Question

12) Question 12: Do you speak more than one language fluently? If yes, what languages do you speak? This question will allow us to annotate if a healthcare professional may also be useful as a translator during an emergency situation.

3.4: Supply Calculation

The researcher contacted the Kansas State Board of Healing Arts, the Kansas State Board of Pharmacists, the Kansas State Board of Nursing and the Kansas Board of Veterinary Examiners for the current list of licensed healthcare providers in Johnson County Kansas. An appropriate number of

supplies were calculated to be able to conduct a survey by mail and submitted to the program aide for the Public Health Emergency Preparedness and Response Program. Supplies needed included:

1) Kansas State Board of Pharmacy electronic pharmacist list.
2) Kansas State Board of Healing Arts electronic physician list.
3) Kansas State Board of Nursing electronic nurse list.
4) Kansas Board of Veterinary Examiners.
5) Program Aide to order:
6) 20,000 Avery 5160 labels
7) 10,000 Johnson County letter head
8) 10,000 non-Johnson County letter head stationary
9) 20,000 Johnson County envelopes
10) 10,000 stamps for self-addressed stamp envelopes
11) The Johnson County Print Shop was employed to print letters, questionnaires, and envelopes.
    a) Letters (10,000 copies-1 page double-sided on letterhead)
    b) Questionnaires (10,000 copies-1 page on non-letterhead)
    c) Envelopes (20,000 copies-1 for mailing survey, 1 for self-addressed stamped envelope)
12) A metered-mail machine, located at the Johnson County Health Department, was used to apply the appropriate amount of postage to the surveys.
13) A computer with Microsoft Excel installed was provided so numerous databases containing information from the Kansas State Boards responses to the questionnaire and the final emergency contact database.

3.5: Mailing Schedule and Handling of Respondent Information

The researcher developed a mailing schedule that would allow for a certain number of surveys to be mailed at certain times so the researcher and the mail attendant on duty at the Johnson County Health Department would not be overwhelmed. Address labels for the envelopes to be mailed were created electronically from the databases sent by the Kansas State Boards. The questionnaires were addressed to return directly to the researcher. The address labels for the self-addressed stamped envelopes were assigned a number to identify which group of healthcare providers it belonged to but did not identify who the healthcare provider was unless they wanted to provide their contact information. See Table 3.1 for pharmacists; Table 3.2 for physicians; Table 3.3 for nurses; and Table 3.4 for veterinarians. The researcher designed numerous databases to retain information collected; including responses to the questionnaires and contact information submitted by health care providers wanting to participate in the

emergency contact database. Returned questionnaires were placed in numerical order by their codes which had been previously assigned. Each envelope's contents were reviewed by the researcher and the responses were entered into the appropriate database. The contents were then returned to the envelope and filed.

Table 3.1: Mailing Schedule for Johnson County Kansas Pharmacists (September 2005).

Total Number of Pharmacists in Johnson County Kansas:	Number of Pharmacists to be Contacted:	Contact Date:	Cumulative Percent Contacted:
842	842	09/20/2005	100%

Table 3.2: Mailing schedule for Johnson County Kansas physicians (August 2005).

Total Number of Physicians in Johnson County Kansas:	Number of Physicians to be Contacted:	Contact Date:	Cumulative Percent Contacted:
2213	1107	09/08/2005	50%
	1106	09/09/2005	50%

Table 3.3: Mailing schedule for Johnson County Kansas nurses (October 2005).

Total Number of Nurses in Johnson County Kansas:	Number of Nurses to be Contacted:	Contact Date:	Cumulative Percent Contacted:
7785	2092	10/24/2005	27%
	2091	10/25/2005	54%
	3602	On Hold	

Table 3.4: Mailing schedule for Johnson County Kansas Veterinarians (September 2005).

Total number of Veterinarians in Johnson County Kansas:	Number of Veterinarians to be Contacted:	Contact Date:	Cumulative Percent Contacted:
214	14	08/11/2005	7%
	200	On Hold	

3.6: Statistical Analysis

Descriptive statistics will be used to describe the basic features of the data in this study. Descriptive statistics simply describe what is or what the data shows. Descriptive statistics are used to present quantitative descriptions in a manageable form. Together with simple graphic analysis, they form the basis of for the quantitative analysis of data. Each descriptive statistic reduces lots of data into a simple summary (CDC, 2005).

CHAPTER 4 - Results

4.1: Pharmacists

A total of 842 letters and questionnaires were mailed to Johnson County pharmacists. A total of 172 (20%) of the pharmacists responded. The data analyzed for this report was based on the responses received from the 172 pharmacists. Results from pharmacists surveyed are presented using descriptive statistics (frequency, relative frequency and percentages).

Question 1: Prior to this correspondence were you aware that our program existed? This question will determine if the Johnson County Health Departments' Public Health Emergency Preparedness and Response Program needs more publicity in the Johnson County healthcare community and which population(s), (Physicians, Pharmacists, Nurses, Veterinarians) we need to focus on. Table 4.1 shows that 27 (15.7%) of pharmacists were aware of the program, 141 (82%) pharmacists were not, one (0.6%) pharmacist was unsure if they were aware of the program, and 3 (1.7%) did not respond to the question.

Question 2: In the future would you be interested in receiving information/trainings from us? This question will determine if there is a need for more education about our program and what our roles are in the community. Table 4.2 shows that 119 (69%) of the pharmacists would be interested in information/trainings and 53 (31%) of pharmacists were not interested.

Question 3: Do you know how and where to report a Kansas Reportable Disease? This question will determine how well information is shared between the healthcare population and the Johnson County Health Department. Table 4.3 shows that 48 (28%) of pharmacists were knowledgeable about how to report diseases in Kansas while 124 (72%) of pharmacists were not.

Question 4: Do you know about the Johnson County Health Department website? This question will determine if we have advertised our website well enough to the healthcare population. Table 4.4 shows that 68 (39.5%) of pharmacists were aware that the Johnson County Health Department does have a website and 103 (59.9%) of pharmacists were not aware of the existence of the website. One (0.60%) pharmacist did not respond to the question.

Question 5: Prior to this correspondence where you aware of PHIX? This question will determine if we need to focus getting information out to the medical community. Table 4.5 shows that 5 (2.9%) of pharmacists were aware of PHIX and 167 (97.1%) of were not.

Question 6: If so, are you a member? This question will let us estimate how many of Johnson County healthcare professionals are already enrolled in the program. Table 4.6 shows that 7 (4%) of pharmacists were existing members and 165 (96%) of were not members.

Question 7: If not, are you interested in becoming a member? This question will let us estimate how many Johnson County healthcare providers are interested in sharing public health information. Table 4.7 shows that 84 (48.8%) of pharmacists were interested in becoming a member of PHIX, 79 (45.9%) of pharmacists were not, 5 (2.9%) of pharmacists were unsure and requested more information about PHIX while 4 (2.3%) did not respond to the question.

Question 8: Are you interested in becoming a part of our emergency notification database? This question will estimate how many Johnson County healthcare providers are interested in becoming part of the Public Health Emergency Preparedness and Response Program. Table 4.8 shows that 104 (60.5%) of pharmacists would like to participate in an emergency notification database, 64 (37.1%) of pharmacists did not want to participate, and a total of 4 (2.4%) were either unsure 2 (1.2%) or did not respond to the question 2 (1.2%).

Question 9: If yes, would you be willing to provide us with additional contact information? This question will alert us to follow up with gathering contact information. Table 4.9 shows that 114 (66.3%) of pharmacists were willing to provide additional contact information, 24 (14%) did not, and 34 (19.7%) of pharmacists did not respond to the question.

Question 10: What is the best way to contact you? This question was a multiple choice that gave contact options of email, fax, mail, pager, telephone. From this information we can develop call lists, email address groups, fax groups, and address labels. Table 4.10 shows that 96 (37%) of pharmacists would like to be contacted by e-mail, 73 (28%) by phone, 39 (15%) by mail, 10 (4%) by fax, and 7 (3%) by pager. A total of 35(13%) pharmacists did not provide the best way of being contacted.

Question 11: Do you have a preference for emergency notification? This question let the individual prioritize how they would like to be contacted. Table 4.11 shows that the pharmacist's responses to question 10, for the best way to be contacted, concur with their preference of being contacted during emergency situations.

Question 12: Do you speak more than one language fluently? If yes, what languages do you speak? This question will allow us to annotate if a healthcare professional may also be useful as a translator during an emergency situation. Table 4.12 shows of the 172 pharmacists that responded only 17 (9.9%) speak more than one language fluently. 130 (76%) responded that they did not and 25 (14%) did not respond to the question.

Table 4.1: Prior to this correspondence were you aware that out program existed?

Response to Question #1	Frequency	Relative Frequency	Percentage
Yes	27	0.16	15.70%
Yes/No (unsure)	1	0.01	0.60%
No	141	0.82	82.00%
No Response	3	0.02	1.70%
Total	172	1.00	100.00%

Table 4.2: In the future would you be interested in receiving information/trainings from us?

Response to Question #2	Frequency	Relative Frequency	Percentage
Yes	119	0.69	69.00%
Yes/No (unsure)	0	0.00	0.00%
No	53	0.31	31.00%
No Response	0	0.00	0.00%
Total	172	1.00	100.00%

Table 4.3: Do you know how and where to report a Kansas Reportable Disease?

Response to Question #3	Frequency	Relative Frequency	Percentage
Yes	48	0.28	28.00%
Yes/No (unsure)	0	0.00	0.00%
No	124	0.72	72.00%
No Response	0	0.00	0.00%
Total	172	1.00	100.00%

Table 4.4: Do you know about the Johnson County Health Department website?

Response to Question #4	Frequency	Relative Frequency	Percentage
Yes	68	0.40	39.50%
Yes/No (unsure)	0	0.00	0.00%
No	103	0.60	59.90%
No Response	1	0.01	0.60%
Total	172	1.00	100.00%

Table 4.5: Prior to this correspondence where you aware of PHIX?

Response to Question #5	Frequency	Relative Frequency	Percentage
Yes	5	0.03	2.90%
Yes/No (unsure)	0	0.00	0.00%
No	167	0.97	97.10%
No Response	0	0.00	0.00%
Total	172	1.00	100.00%

Table 4.6: If so, are you a member?

Response to Question #6	Frequency	Relative Frequency	Percentage
Yes	7	0.04	4.00%
Yes/No (unsure)	0	0.00	0.00%
No	165	0.96	96.00%
No Response	0	0.00	0.00%
Total	172	1.00	100.00%

Table 4.7: If not, are you interested in becoming a member?

Response to Question #7	Frequency	Relative Frequency	Percentage
Yes	84	0.49	48.80%
Yes/No (unsure)	5	0.03	2.90%
No	79	0.46	45.90%
No Response	4	0.02	2.30%
Total	172	1.00	100.00%

Table 4.8: Are you interested in becoming a part of our emergency notification database?

Response to Question #8	Frequency	Relative Frequency	Percentage
Yes	104	0.61	60.50%
Yes/No (unsure)	2	0.01	1.20%
No	64	0.37	37.10%
No Response	2	0.01	1.20%
Total	172	1.00	100.00%

Table 4.9: If yes, would you be willing to provide us with additional contact information?

Response to Question #9	Frequency	Relative Frequency	Percentage
Yes	114	0.66	66.30%
Yes/No (unsure)	0	0.00	0.00%
No	24	0.14	14.00%
No Response	34	0.20	19.70%
Total	172	1.00	100.00%

Table 4.10: What is the best way to contact you?

Response to Question #10	Frequency	Relative Frequency	Percentage
Email	96	0.37	37.00%
Fax	10	0.04	4.00%
Mail	39	0.15	15.00%
Pager	7	0.03	3.00%
Phone	73	0.28	28.00%
No Response	35	0.13	13.00%
Total	260	1.00	100.00%

Table 4.11: Do you have a preference for emergency notification?

Response to Question #11	Frequency	Relative Frequency	Percentage
Email	96	0.37	37.00%
Fax	10	0.04	4.00%
Mail	39	0.15	15.00%
Pager	7	0.03	3.00%
Phone	73	0.28	28.00%
No Response	35	0.13	13.00%
Total	260	1.00	100.00%

Table 4.12: Do you speak more than one language fluently? If yes, what languages do you speak?

Response to Question #12	Frequency	Relative Frequency	Percentage
Yes (not identified)	3	0.02	2.00%
No	130	0.76	76.00%
No Response	25	0.14	14.00%
Arabic	1	0.006	0.60%
Cantonese	2	0.012	1.20%
Chinese	1	0.006	0.60%
Danish	1	0.006	0.60%
Dutch	1	0.006	0.60%
Korean	1	0.006	0.60%
Serbian	1	0.006	0.60%
Slovak	1	0.006	0.60%
Spanish	4	0.02	2.00%
Vietnamese	1	0.006	0.60%
Total	172	1.00	100.00%

4.2: Physicians

A total of 2,213 letters and questionnaires were mailed to Johnson County physicians. A total of 390 (18%) of physicians responded. The data analyzed for this report was based on the responses

received from the 390 physicians. Results from physicians surveyed are presented using descriptive statistics (frequency, relative frequency and percentages).

Question 1: Prior to this correspondence were you aware that our program existed? This question will determine if the Johnson County Health Departments' Public Health Emergency Preparedness and Response Program needs more publicity in the Johnson County healthcare community and which population(s), (Physicians, Pharmacists, Nurses, Veterinarians) we need to focus on. Table 4.13 shows that 71(18.2%) of physicians were aware of the program, 313 (80.3%) were not aware of the program and 6 (1.5%) did not respond to the question.

Question 2: In the future would you be interested in receiving information/trainings from us? This question will determine if there is a need for more education about our program and what our roles are in the community. Table 4.14 shows that 265 (67.9%) of the physicians would be interested in information/trainings, 109 (27.9%) were not interested, 4 (1%) were unsure, and 12 (3%) did not respond to the question.

Question 3: Do you know how and where to report a Kansas Reportable Disease? This question will determine how well information is shared between the healthcare population and the Johnson County Health Department. Table 4.15 shows that 221 (56.7%) of physicians were knowledgeable about how to report diseases in Kansas while 156 (40%) were not. Thirteen (3.3%) of physicians did not respond to the question.

Question 4: Do you know about the Johnson County Health Department website? This question will determine if we have advertised our website well enough to the healthcare population. Table 4.16 shows that 162 (41.5%) of physicians were aware that the Johnson County Health Department does have a website, 219 (56.1%) were not aware of the existence of the website, and 9 (2.3%) did not respond to the question.

Question 5: Prior to this correspondence where you aware of PHIX? This question will determine if we need to focus getting information out to the medical community. Table 4.17 shows that 35 (8.9%) of physicians were aware of PHIX, 347 (88.9%) were not, and 8 (2%) did not respond to the question.

Question 6: If so, are you a member? This question will let us estimate how many of Johnson County healthcare professionals are already enrolled in the program. Table 4.18 shows that 20 (5.1%) of physicians were existing members, 358 (91.7%) were not members, and 12 (3%) did not respond to the question.

Question 7: If not, are you interested in becoming a member? This question will let us estimate how many Johnson County healthcare providers are interested in sharing public health information. Table

4.19 shows that 145 (37.1%) of physicians were interested in becoming a member of PHIX, 192 (49.2%) were not, 8 (2%) were unsure and requested more information about PHIX while 45 (11.5%) of physicians did not respond to the question.

Question 8: Are you interested in becoming a part of our emergency notification database? This question will estimate how many Johnson County healthcare providers are interested in becoming part of the Public Health Emergency Preparedness and Response Program. Table 4.20 shows that 223 (57.1%) of physicians would like to participate in an emergency notification database, 149 (38.2%) did not want to participate, and 18 (4.6%) of physicians did not respond to the question.

Question 9: If yes, would you be willing to provide us with additional contact information? This question will alert us to follow up with gathering contact information. Table 4.21 shows that 259 (66.4%) of physicians were willing to provide additional contact information, 89 (22.8%) did not, and 42 (10.7%) of physicians did not respond to the question.

Question 10: What is the best way to contact you? This question was a multiple choice that gave contact options of email, fax, mail, pager, telephone. From this information we can develop call lists, email address groups, fax groups, and address labels. Table 4.22 shows that 173 (30%) of physicians would like to be contacted by e-mail, 130 (23%) by phone, 83 (14%) by mail, 58 (10%) by fax, and 38 (7%) by pager. A total of 91(16%) of physicians did not provide the best way of being contacted.

Question 11: Do you have a preference for emergency notification? This question let the individual prioritize how they would like to be contacted. Table 4.23 shows that the physician's responses to question 10, for the best way to be contacted, concur with their preference of being contacted during emergency situations.

Question 12: Do you speak more than one language fluently? If yes, what languages do you speak? This question will allow us to annotate if a healthcare professional may also be useful as a translator during an emergency situation. Table 4.24 shows of the 390 physicians that responded 74 (19%) speak more than one language fluently. 252 (65%) responded that they did not and 64 (16%) did not respond to the question.

Table 4.13: Prior to this correspondence were you aware that out program existed?

Response to Question #1	Frequency	Relative Frequency	Percentage
Yes	71	0.18	18.20%
Yes/No (unsure)	0	0.00	0.00%
No	313	0.80	80.26%
No Response	6	0.02	1.54%
Total	390	1.00	100.00%

Table 4.14: In the future would you be interested in receiving information/trainings from us?

Response to Question #2	Frequency	Relative Frequency	Percentage
Yes	265	0.68	67.95%
Yes/No (unsure)	4	0.01	1.02%
No	109	0.28	27.95%
No Response	12	0.03	3.08%
Total	390	1.00	100.00%

Table 4.15: Do you know how and where to report a Kansas Reportable Disease?

Response to Question #3	Frequency	Relative Frequency	Percentage
Yes	221	0.57	56.67%
Yes/No (unsure)	0	0.00	0.00%
No	156	0.40	40.00%
No Response	13	0.03	3.33%
Total	390	1.00	100.00%

Table 4.16: Do you know about the Johnson County Health Department website?

Response to Question #4	Frequency	Relative Frequency	Percentage
Yes	162	0.42	41.54%
Yes/No (unsure)	0	0.00	0.00%
No	219	0.56	56.15%
No Response	9	0.02	2.31%
Total	390	1.00	100.00%

Table 4.17: Prior to this correspondence where you aware of PHIX?

Response to Question #5	Frequency	Relative Frequency	Percentage
Yes	35	0.09	8.98%
Yes/No (unsure)	0	0.00	0.00%
No	347	0.89	88.97%
No Response	8	0.02	2.05%
Total	390	1.00	100.00%

Table 4.18: If so, are you a member?

Response to Question #6	Frequency	Relative Frequency	Percentage
Yes	20	0.05	5.13%
Yes/No (unsure)	0	0.00	0.00%
No	358	0.92	91.79%
No Response	12	0.03	3.08%
Total	390	1.00	100.00%

Table 4.19: If not, are you interested in becoming a member?

Response to Question #7	Frequency	Relative Frequency	Percentage
Yes	145	0.37	37.18%
Yes/No (unsure)	8	0.02	2.05%
No	192	0.49	49.23%
No Response	45	0.12	11.54%
Total	390	1.00	100.00%

Table 4.20: Are you interested in becoming a part of our emergency notification database?

Response to Question #8	Frequency	Relative Frequency	Percentage
Yes	223	0.57	57.18%
Yes/No (unsure)	0	0.00	0.00%
No	149	0.38	38.20%
No Response	18	0.05	4.62%
Total	390	1.00	100.00%

Table 4.21: If yes, would you be willing to provide us with additional contact information?

Response to Question #9	Frequency	Relative Frequency	Percentage
Yes	259	0.66	66.41%
Yes/No (unsure)	0	0.00	0.00%
No	89	0.23	22.82%
No Response	42	0.11	10.77%
Total	390	1.00	100.00%

Table 4.22: What is the best way to contact you?

Response to Question #10	Frequency	Relative Frequency	Percentage
Email	173	0.30	30.00%
Fax	58	0.10	10.00%
Mail	83	0.14	14.00%
Pager	38	0.07	7.00%
Phone	130	0.23	23.00%
No Response	91	0.16	16.00%
Total	573	1.00	100.00%

Table 4.23: Do you have a preference for emergency notification?

Response to Question #11	Frequency	Relative Frequency	Percentage
Email	173	0.30	30.00%
Fax	58	0.10	10.00%
Mail	83	0.14	14.00%
Pager	38	0.07	7.00%
Phone	130	0.23	23.00%
No Response	91	0.16	16.00%
Total	573	1.00	100.00%

Table 4.24: Do you speak more than one language fluently? If yes, what languages do you speak?

Response to Question #12	Frequency	Relative Frequency	Percentage
Yes(not identified)	2	0.01	0.50%
No	252	0.65	65.00%
No Response	64	0.16	16.00%
Afrikaans	1	0.00	0.20%
Arabic	6	0.02	2.00%
Creole	1	0.00	0.20%
Dutch	1	0.00	0.20%
Filipino	3	0.01	1.00%
French	7	0.02	2.00%
German	4	0.01	1.00%
Greek	1	0.00	0.20%
Guajarati	1	0.00	0.20%
Hindi	11	0.03	3.00%
Hindu	1	0.00	0.20%
Indian	2	0.01	0.50%
Italian	2	0.01	0.50%
Japanese	1	0.00	0.20%
Mandarin	4	0.01	0.50%
Nepali	1	0.00	0.20%
Portuguese	1	0.00	0.20%
Slovak	1	0.00	0.20%
Spanish	20	0.05	5.00%
Swedish	1	0.00	0.20%
Turkish	1	0.00	0.20%
Urdu	1	0.00	0.20%
Total	390	1.00	100.00%

4.3: Nurses

A total of 4,813 letters and questionnaires were mailed to Johnson County nurses. Of the 4813 surveys mailed 631 (15%) of nurses responded. The data analyzed for this report was based on the responses received from the 631 nurses. Results from nurses surveyed are presented using descriptive statistics (frequency, relative frequency and percentages).

Question 1: Prior to this correspondence were you aware that our program existed? This question will determine if the Johnson County health departments' Public Health Emergency Preparedness and Response Program needs more publicity in the Johnson County healthcare community and which population(s), (Physicians, Pharmacists, Nurses, Veterinarians) we need to focus on. Table

4.25 shows that 116 (18.3%) of nurses were aware of the program, 512 (81.1%) were not, 1(0.1%) were not sure, and 2 (0.3%) did not respond to the question.

Question 2: In the future would you be interested in receiving information/trainings from us? This question will determine if there is a need for more education about our program and what our roles are in the community. Table 4.26 shows that 456 (72.3%) of nurses would be interested in information/trainings, 154 (24.4%) were not interested, 10 (1.5%) were unsure, and 11 (1.7%) did not respond to the question.

Question 3: Do you know how and where to report a Kansas Reportable Disease? This question will determine how well information is shared between the healthcare population and the Johnson County Health Department. Table 4.27 shows that 302 (47.9%) of nurses were knowledgeable about how to report diseases in Kansas while 324 (51.3%) were not. Five (0.8%) of nurses did not respond to the question.

Question 4: Do you know about the Johnson County Health Department website? This question will determine if we have advertised our website well enough to the healthcare population. Table 4.28 shows that 326 (51.7%) of nurses were aware that the Johnson County Health Department does have a website, 299 (47.4%) were not aware of the existence of the website, and 6 (0.9%) did not respond to the question.

Question 5: Prior to this correspondence where you aware of PHIX? This question will determine if we need to focus getting information out to the medical community. Table 4.29 shows that 57 (9.0%) of nurses were aware of PHIX, 572 (90.6%) were not, and a total of 2(0.3%) nurses were either unsure or did not respond to the question.

Question 6: If so, are you a member? This question will let us estimate how many of Johnson County healthcare professionals are already enrolled in the program. Table 4.30 shows that 26 (4.1%) of nurses were existing members, 596 (94.5%) were not members, and 9 (1.4%) did not respond to the question.

Question 7: If not, are you interested in becoming a member? This question will let us estimate how many Johnson County healthcare providers are interested in sharing public health information. Table 4.31 shows that 295 (46.8%) of nurses were interested in becoming a member of PHIX, 268 (42.5%) were not, 32 (5%) were unsure and requested more information about PHIX while 36 (5.7%) of nurses did not respond to the question.

Question 8: Are you interested in becoming a part of our emergency notification database? This question will estimate how many Johnson County healthcare providers are interested in becoming part of the Public Health Emergency Preparedness and Response Program. Table 4.32 shows that 349 (55.3%)

of nurses would like to participate in an emergency notification database, 246 (38.9%) did not want to participate, 26 (4.1%) were unsure, and 10 (1.6%) of nurses did not respond to the question.

Question 9: If yes, would you be willing to provide us with additional contact information? This question will alert us to follow up with gathering contact information. Table 4.33 shows that 406 (64.3%) of nurses were willing to provide additional contact information and 225 (35.6%) of nurses did not respond to the question.

Question 10: What is the best way to contact you? This question was a multiple choice that gave contact options of email, fax, mail, pager, telephone. From this information we can develop call lists, email address groups, fax groups, and address labels. Table 4.34 shows that 277 (42%) of nurses would like to be contacted by phone, 100 (16%) by e-mail, 9 (61%) by mail, 29 (4%) by pager, and 25 (4%) by fax. A total of 168 (25%) of nurses did not provide the best way of being contacted.

Question 11: Do you have a preference for emergency notification? This question let the individual prioritize how they would like to be contacted. Table 4.35 shows that the nurse responses to question 10, for the best way to be contacted, concur with their preference of being contacted during emergency situations.

Question 12: Do you speak more than one language fluently? If yes, what languages do you speak? This question will allow us to annotate if a healthcare professional may also be useful as a translator during an emergency situation. Table 4.36 shows of the 631 nurses that responded 30 (4.7%) speak more than one language fluently, 485 (76.9%) responded that they did not and 116 (18.3%) did not respond to the question.

Table 4.25: Prior to this correspondence were you aware that out program existed?

Response to Question #1	Frequency	Relative Frequency	Percentage
Yes	116	0.18	18.38%
Yes/No (unsure)	1	0.00	0.15%
No	512	0.81	81.14%
No Response	2	0.00	0.31%
Total	631	1.00	100.00%

Table 4.26: In the future would you be interested in receiving information/trainings from us?

Response to Question #2	Frequency	Relative Frequency	Percentage
Yes	456	0.72	72.26%
Yes/No (unsure)	10	0.02	1.58%
No	154	0.24	24.40%
No Response	11	0.02	1.70%
Total	631	1.00	100.00%

Table 4.27: Do you know how and where to report a Kansas Reportable Disease?

Response to Question #3	Frequency	Relative Frequency	Percentage
Yes	302	0.48	47.86%
Yes/No (unsure)	0	0.00	0.00%
No	324	0.51	51.34%
No Response	5	0.01	0.79%
Total	631	1.00	100.00%

Table 4.28: Do you know about the Johnson County Health Department website?

Response to Question #4	Frequency	Relative Frequency	Percentage
Yes	326	0.52	51.66%
Yes/No (unsure)	0	0.00	0.00%
No	299	0.47	47.38%
No Response	6	0.01	0.95%
Total	631	1.00	100.00%

Table 4.29: Prior to this correspondence where you aware of PHIX?

Response to Question #5	Frequency	Relative Frequency	Percentage
Yes	57	0.09	9.03%
Yes/No (unsure)	1	0.00	0.15%
No	572	0.91	90.64%
No Response	1	0.00	0.15%
Total	631	1.00	100.00%

Table 4.30: If so, are you a member?

Response to Question #6	Frequency	Relative Frequency	Percentage
Yes	26	0.04	4.12%
Yes/No (unsure)	0	0.00	0.00%
No	596	0.94	94.45%
No Response	9	0.01	1.42%
Total	631	1.00	100.00%

Table 4.31: If not, are you interested in becoming a member?

Response to Question #7	Frequency	Relative Frequency	Percentage
Yes	295	0.47	46.75%
Yes/No (unsure)	32	0.05	5.07%
No	268	0.42	42.47%
No Response	36	0.06	5.70%
Total	631	1.00	100.00%

Table 4.32: Are you interested in becoming a part of our emergency notification database?

Response to Question #8	Frequency	Relative Frequency	Percentage
Yes	349	0.55	55.30%
Yes/No (unsure)	26	0.04	4.12%
No	246	0.39	38.98%
No Response	10	0.02	1.58%
Total	631	1.00	100.00%

Table 4.33: If yes, would you be willing to provide us with additional contact information?

Response to Question #9	Frequency	Relative Frequency	Percentage
Yes	406	0.64	64.34%
Yes/No (unsure)	0	0.00	0.00%
No	0	0.00	0.00%
No Response	225	0.36	35.65%
Total	631	1.00	100.00%

Table 4.34: What is the best way to contact you?

Response to Question #10	Frequency	Relative Frequency	Percentage
Email	100	0.16	16.00%
Fax	25	0.04	4.00%
Mail	61	0.09	9.00%
Pager	29	0.04	4.00%
Phone	277	0.42	42.00%
No Response	168	0.25	25.00%
Total	660	1.00	100.00%

Table 4.35: Do you have a preference for emergency notification?

Response to Question #11	Frequency	Relative Frequency	Percentage
Email	100	0.16	16.00%
Fax	25	0.04	4.00%
Mail	61	0.09	9.00%
Pager	29	0.04	4.00%
Phone	277	0.42	42.00%
No Response	168	0.25	25.00%
Total	660	1.00	100.00%

Table 4.36: Do you speak more than one language fluently? If yes, what languages do you speak?

Response to Question #12	Frequency	Relative Frequency	Percentage
Yes(not identified)	1	0.00	0.16%
No	485	0.77	76.86%
No Response	116	0.18	18.38%
Sign language	3	0.00	0.48%
French	1	0.00	0.16%
German	1	0.00	0.16%
Hmong	1	0.00	0.16%
Laos	1	0.00	0.16%
Spanish	17	0.03	2.69%
Swahili	1	0.00	0.16%
Tagalong	1	0.00	0.16%
Thai	1	0.00	0.16%
Vietnamese	1	0.00	0.16%
Yoruba	1	0.00	0.16%
Total	631	1.00	100.00%

4.4: Comparison of Responses between Pharmacists, Physicians and Nurses Surveyed

The following tables and graphs combine the tabulated results of the survey documented in pharmacist survey data, physician survey data, and nurse survey data respectively.

Table 4.37: Prior to this correspondence were you aware that our program existed?

Response to Question #1	Pharmacists	Physicians	Nurses
Yes	15.70%	18.20%	18.40%
Yes/No (unsure)	0.60%	0.00%	0.20%
No	82.00%	80.30%	81.10%
No Response	1.70%	1.50%	0.30%

Figure 4.1: Prior to this correspondence were you aware that our program existed?

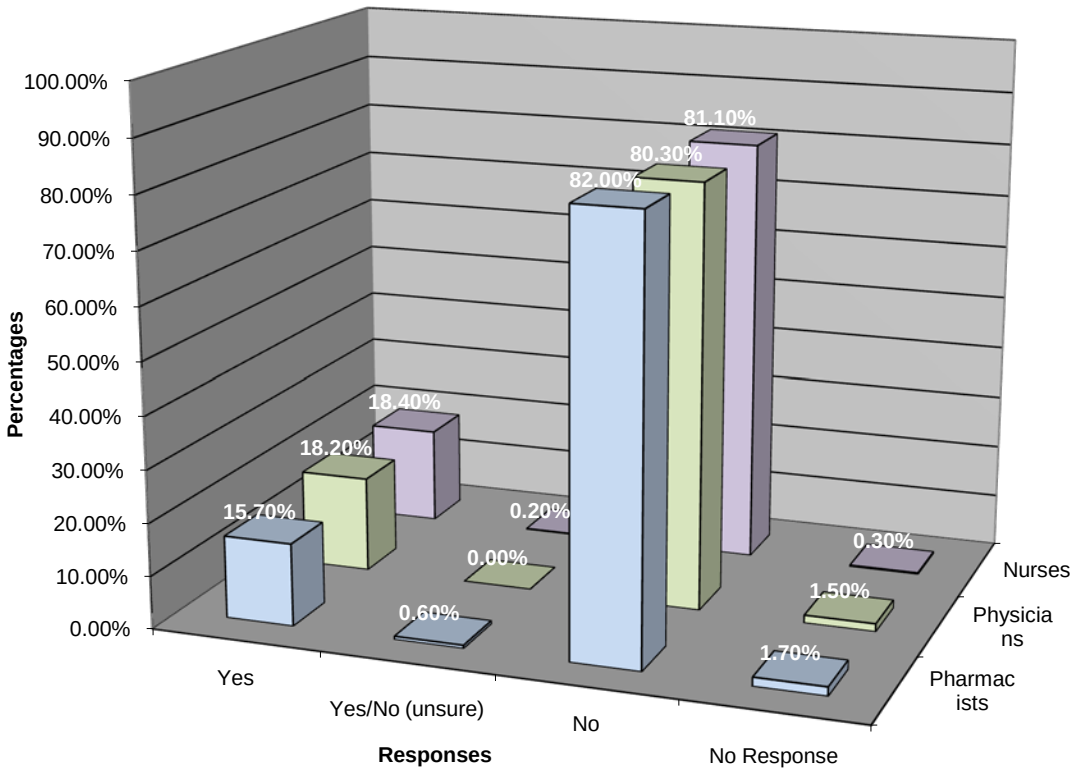


Table 4.38: In the future would you be interested in receiving information/trainings from us?

Response to Question #2	Pharmacists	Physicians	Nurses
Yes	69.00%	68.00%	72.30%
Yes/No (unsure)	0.00%	1.00%	1.60%
No	31.00%	28.00%	24.40%
No Response	0.00%	3.00%	1.70%

Figure 4.2: In the future would you be interested in receiving information/trainings from us?

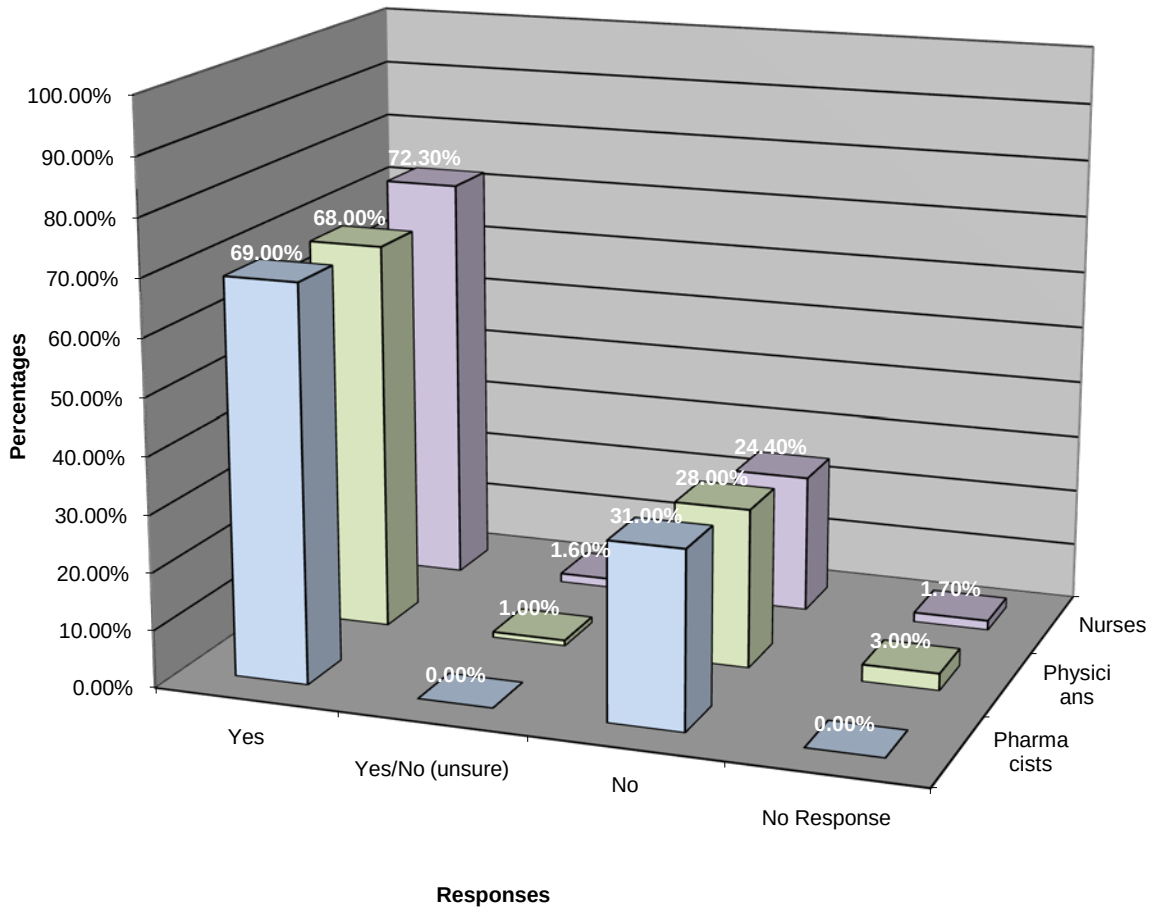


Table 4.39: Do you know how and where to report a Kansas Reportable Disease?

Response to Question #3	Pharmacists	Physicians	Nurses
Yes	28.00%	56.70%	47.90%
Yes/No (unsure)	0.00%	0.00%	0.00%
No	72.00%	40.00%	51.30%
No Response	0.00%	3.30%	0.80%

Figure 4.3: Do you know how and where to report a Kansas Reportable Disease?

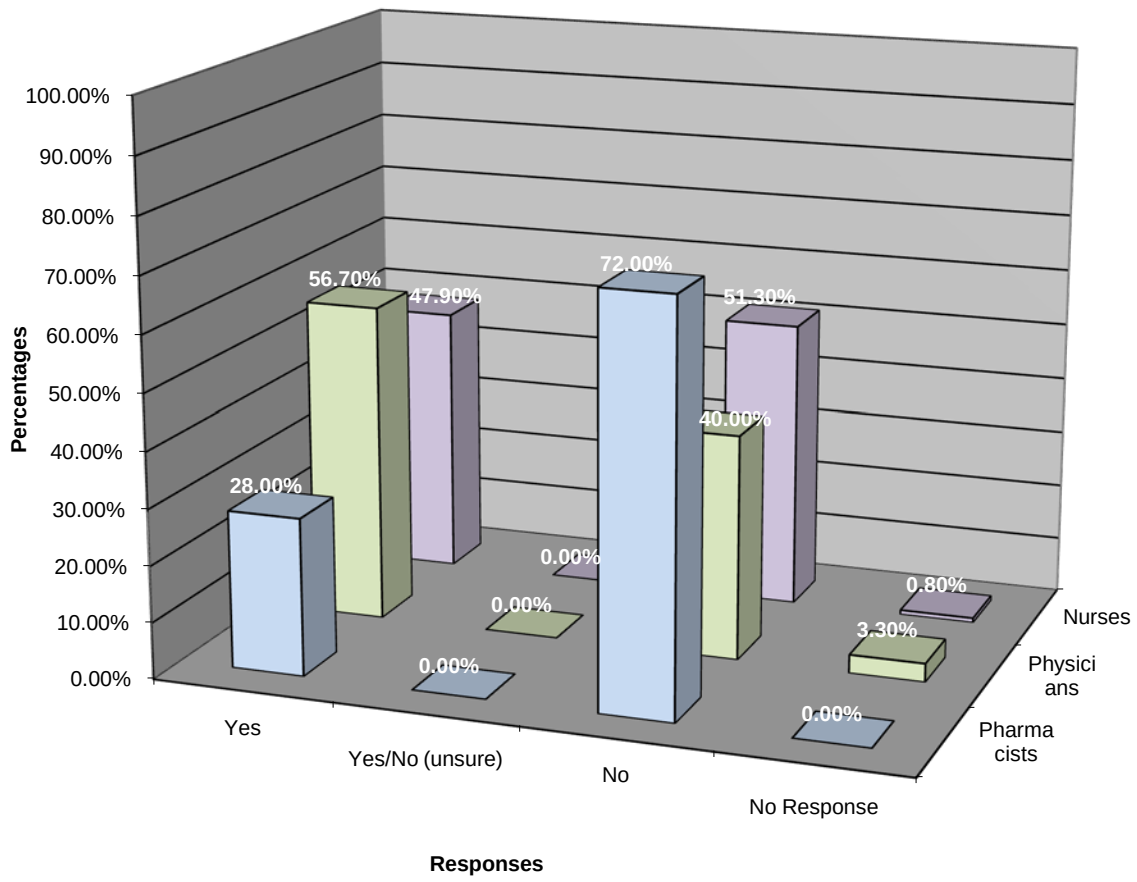


Table 4.40: Do you know about the Johnson County Health Department website?

Response to Question #4	Pharmacists	Physicians	Nurses
Yes	39.50%	41.50%	51.70%
Yes/No (unsure)	0.00%	0.00%	0.00%
No	59.90%	56.20%	47.40%
No Response	0.60%	2.30%	0.90%

Figure 4.4: Do you know about the Johnson County Health Department website?

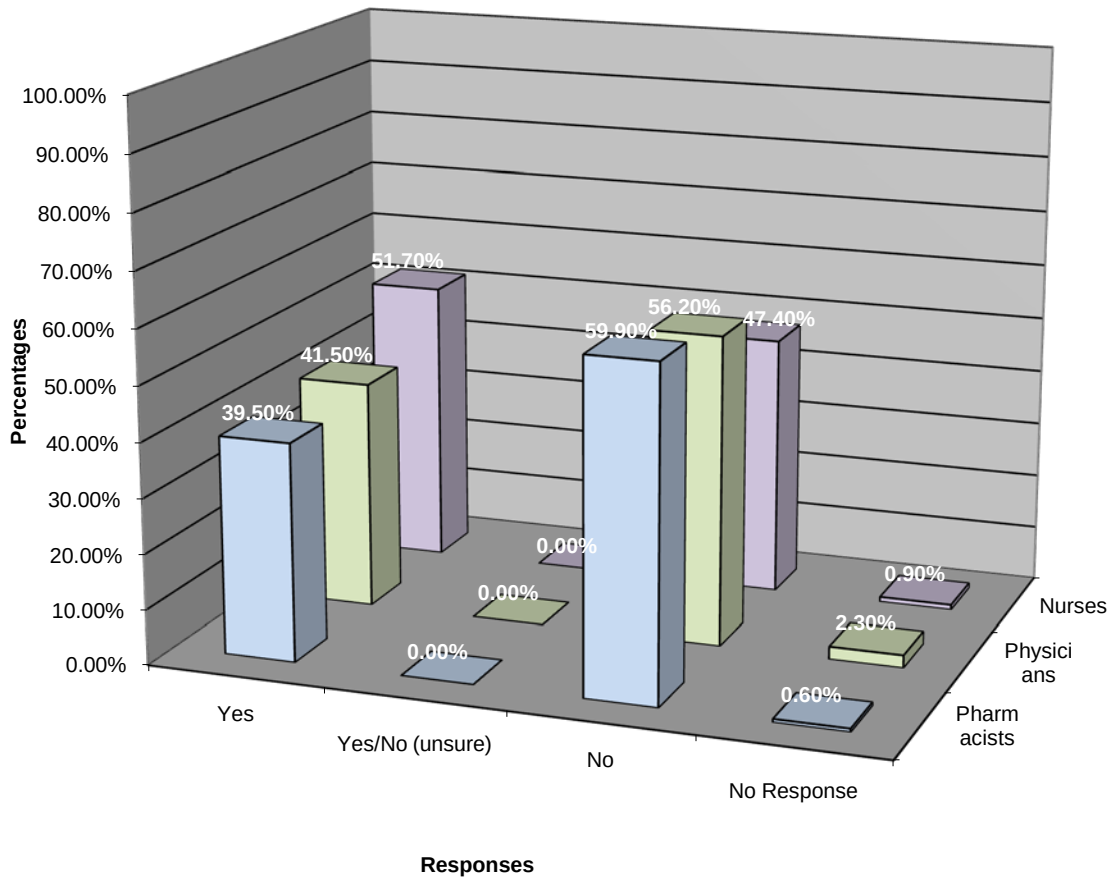


Table 4.41: Prior to this correspondence where you aware of PHIX?

Response to Question #5	Pharmacists	Physicians	Nurses
Yes	2.90%	9.00%	9.00%
Yes/No (unsure)	0.00%	0.00%	0.20%
No	97.10%	89.00%	90.60%
No Response	0.00%	2.00%	0.20%

Figure 4.5: Prior to this correspondence where you aware of PHIX?

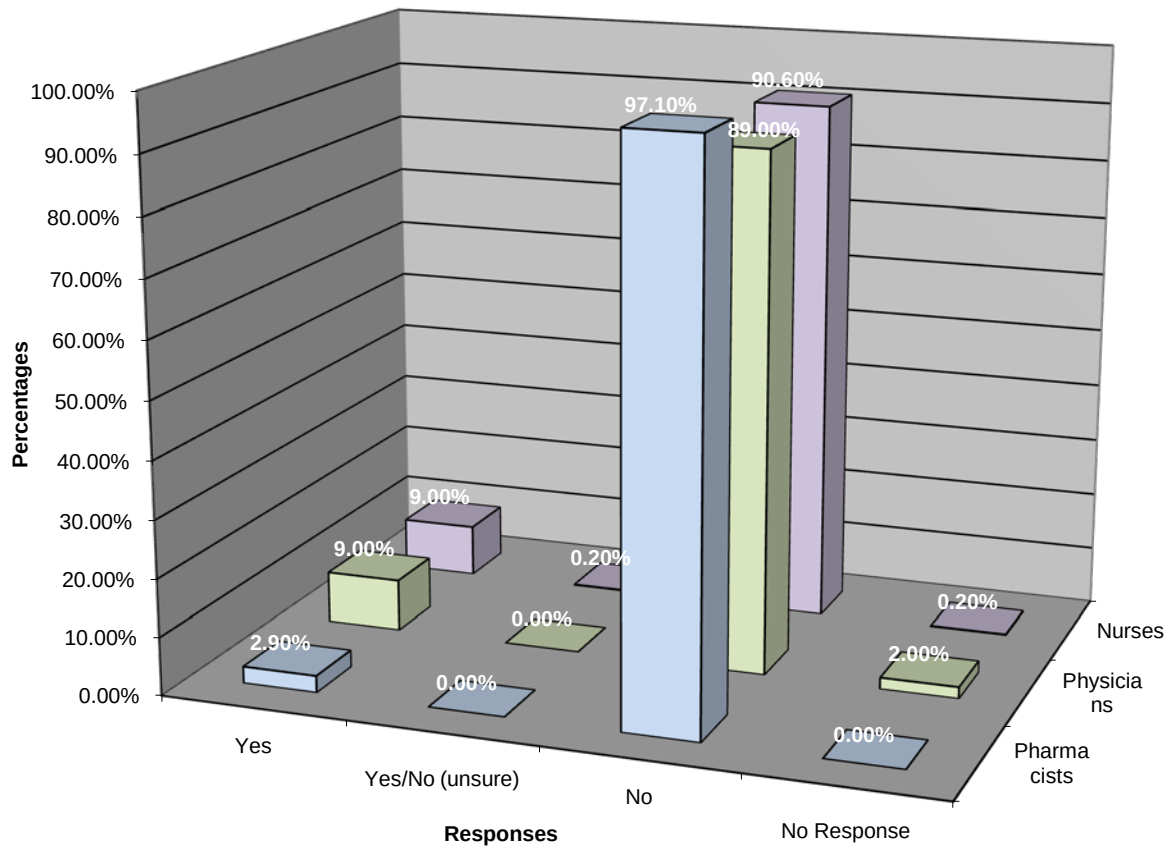


Table 4.42: If so, are you a member?

Response to Question #6	Pharmacists	Physicians	Nurses
Yes	4.00%	5.10%	4.10%
Yes/No (unsure)	0.00%	0.00%	0.00%
No	96.00%	91.80%	94.50%
No Response	0.00%	3.10%	1.40%

Figure 4.6: If so, are you a member?

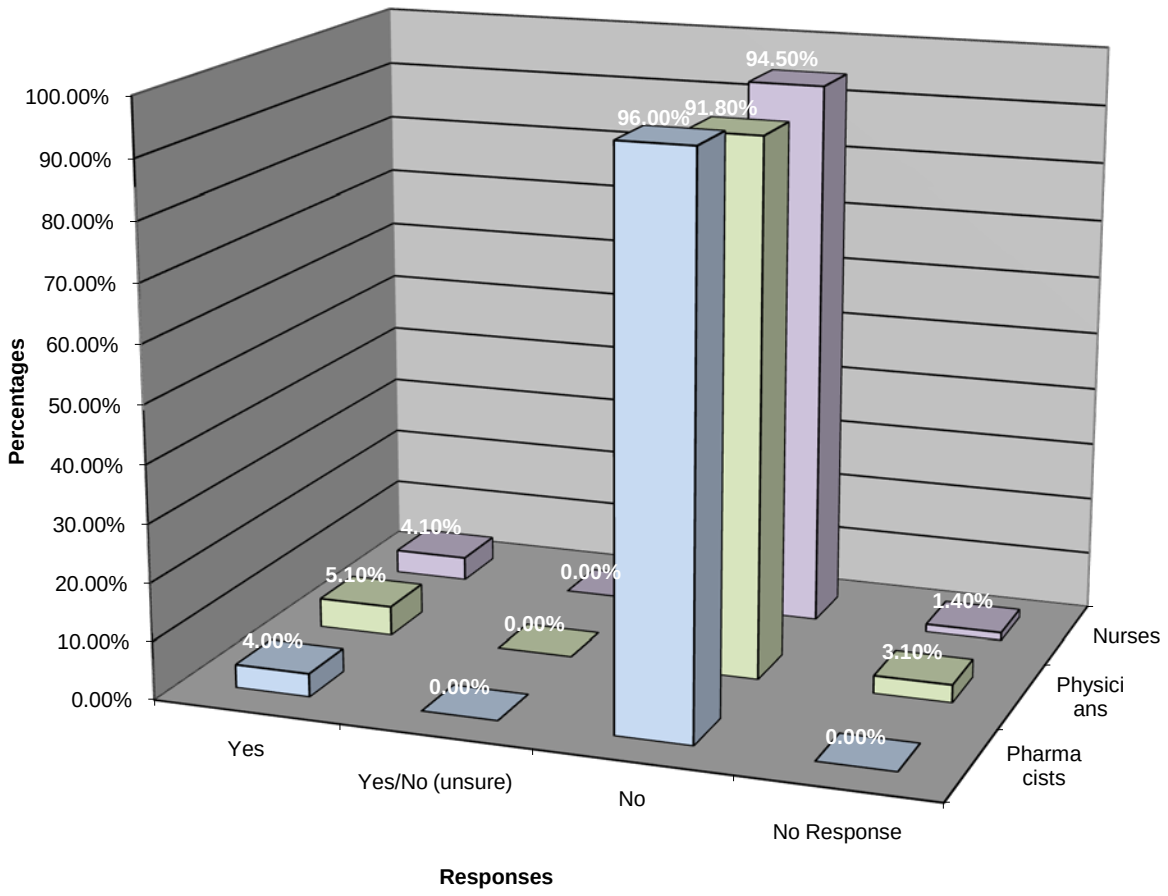


Table 4.43: If not, are you interested in becoming a member?

Response to Question #7	Pharmacists	Physicians	Nurses
Yes	48.80%	37.20%	46.80%
Yes/No (unsure)	2.90%	2.10%	5.00%
No	46.00%	49.20%	42.50%
No Response	2.30%	11.50%	5.70%

Figure 4.7: If not, are you interested in becoming a member?

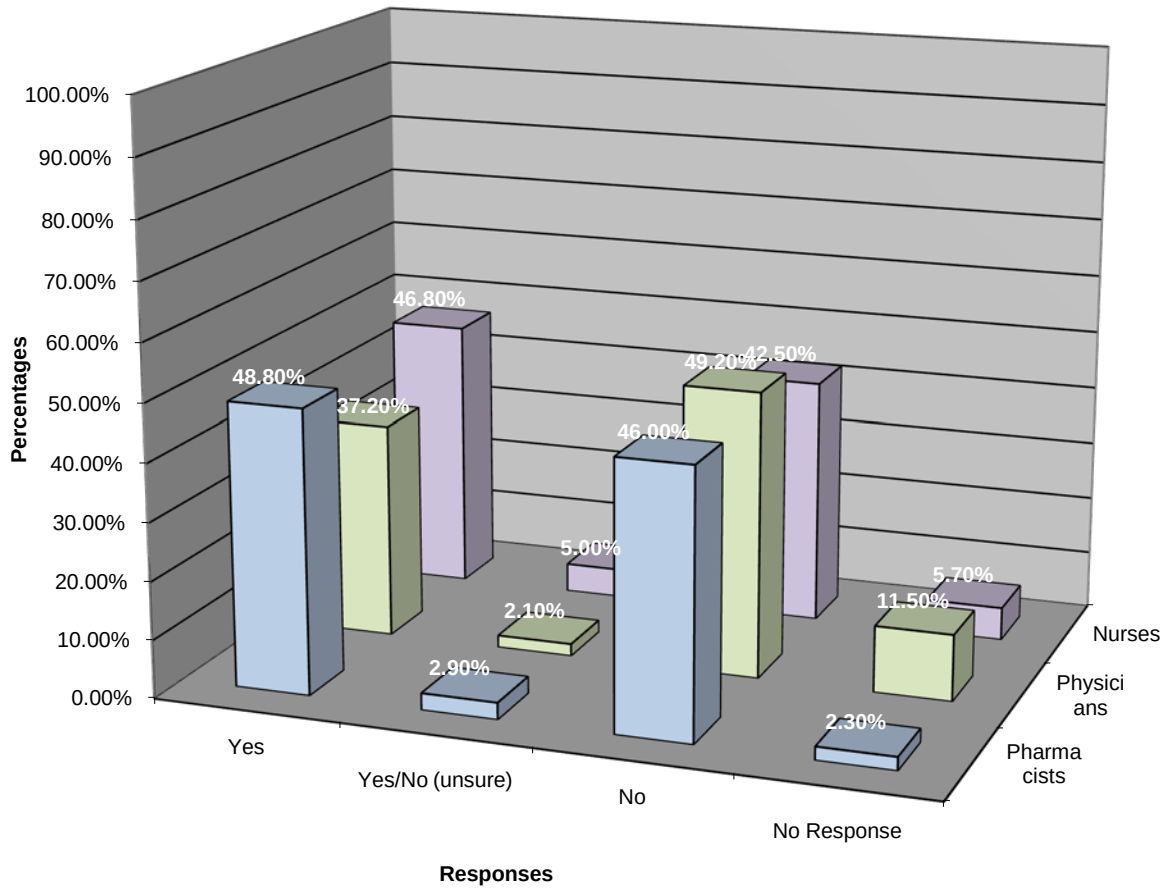


Table 4.44: Are you interested in becoming a part of our emergency notification database?

Response to Question #8	Pharmacists	Physicians	Nurses
Yes	60.50%	57.20%	55.30%
Yes/No (unsure)	1.20%	0.00%	4.10%
No	37.10%	38.20%	39.00%
No Response	1.20%	4.60%	1.60%

Figure 4.8: Are you interested in becoming a part of our emergency notification database?

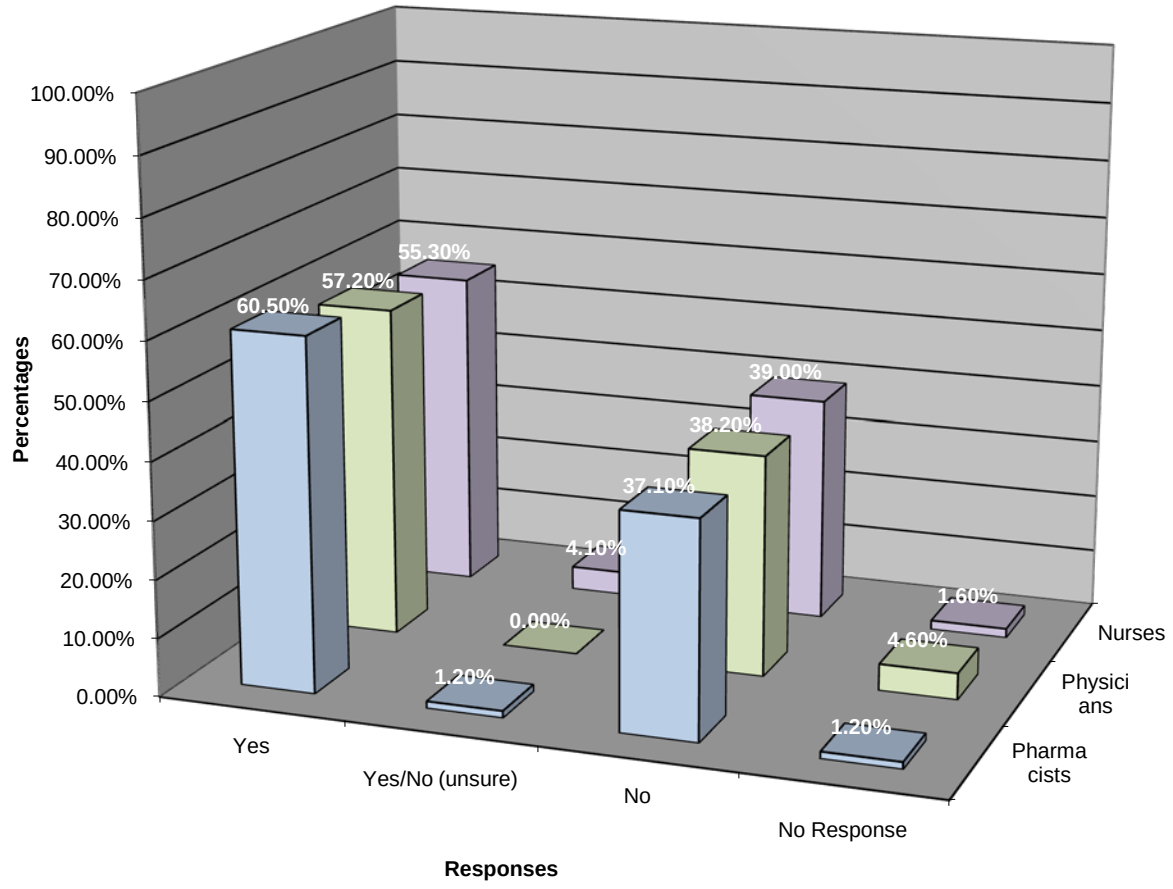


Table 4.45: If yes, would you be willing to provide us with additional contact information?

Response to Question #9	Pharmacists	Physicians	Nurses
Yes	66.30%	66.40%	64.30%
Yes/No (unsure)	0.00%	0.00%	0.00%
No	14.00%	22.80%	0.00%
No Response	19.70%	10.80%	35.70%

Figure 4.9: If yes, would you be willing to provide us with additional contact information?

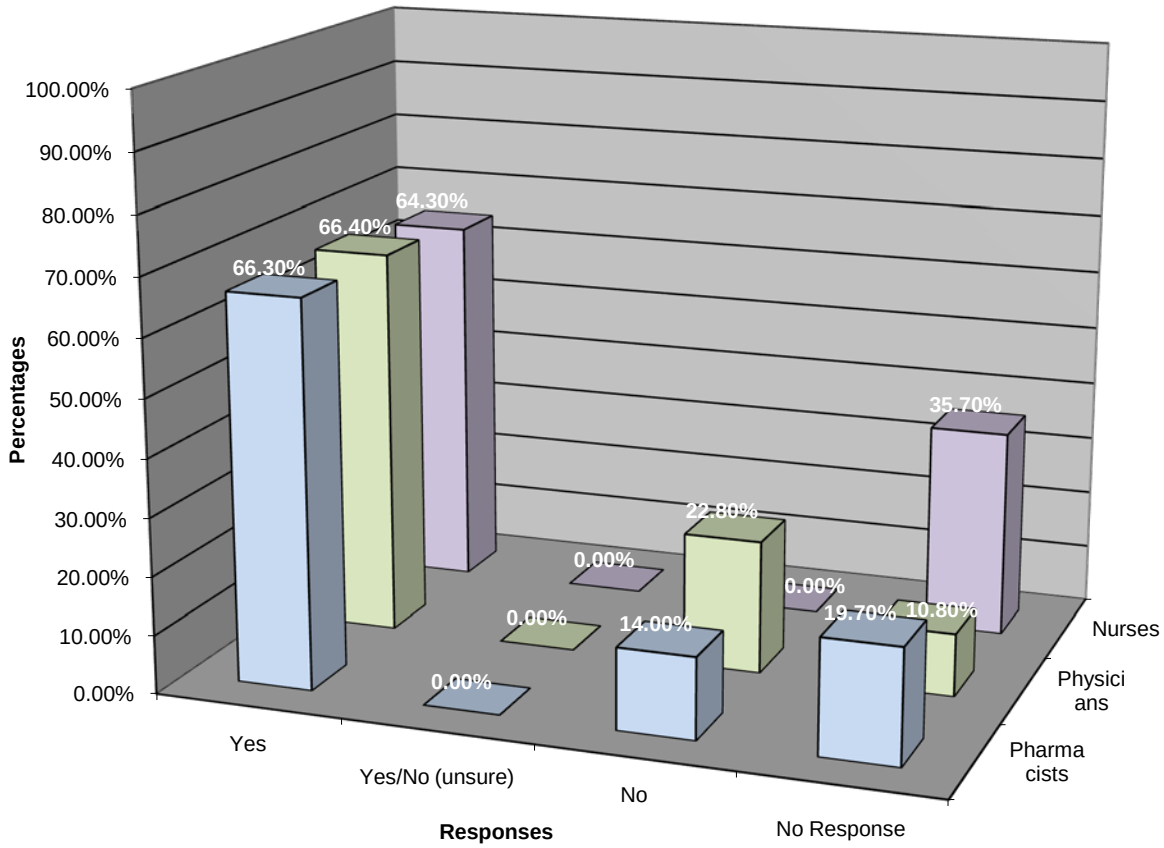


Table 4.46: What is the best way to contact you?

Response to Question #10	Pharmacists	Physicians	Nurses
Email	**37.00%**	**30.00%**	**16.00%**
Fax	**4.00%**	**10.00%**	**4.00%**
Mail	**15.00%**	**14.00%**	**9.00%**
Pager	**3.00%**	**7.00%**	**4.00%**
Phone	**28.00%**	**23.00%**	**42.00%**
No Response	**13.00%**	**16.00%**	**25.00%**

Figure 4.10: What is the best way to contact you?

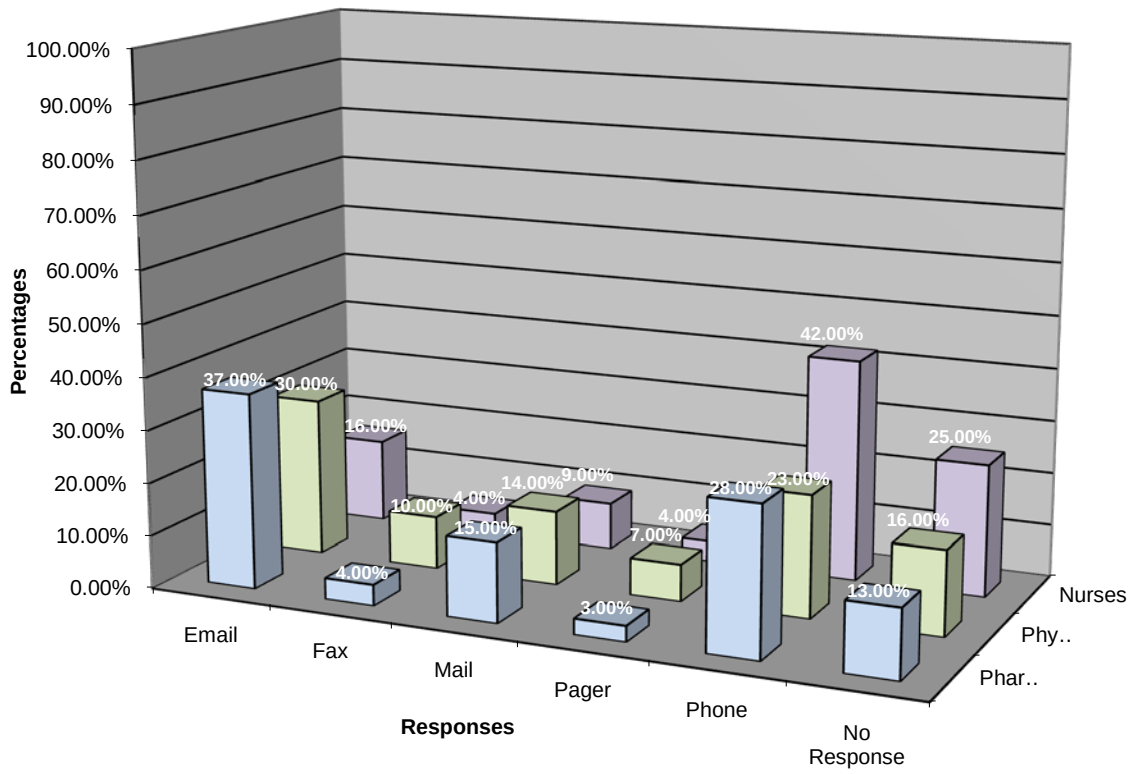


Table 4.47: Do you have a preference for emergency notification?

Response to Question #11	Pharmacists	Physicians	Nurses
Email	**37.00%**	**30.00%**	**16.00%**
Fax	**4.00%**	**10.00%**	**4.00%**
Mail	**15.00%**	**14.00%**	**9.00%**
Pager	**3.00%**	**7.00%**	**4.00%**
Phone	**28.00%**	**23.00%**	**42.00%**
No Response	**13.00%**	**16.00%**	**25.00%**

Figure 4.11: Do you have a preference for emergency notification?

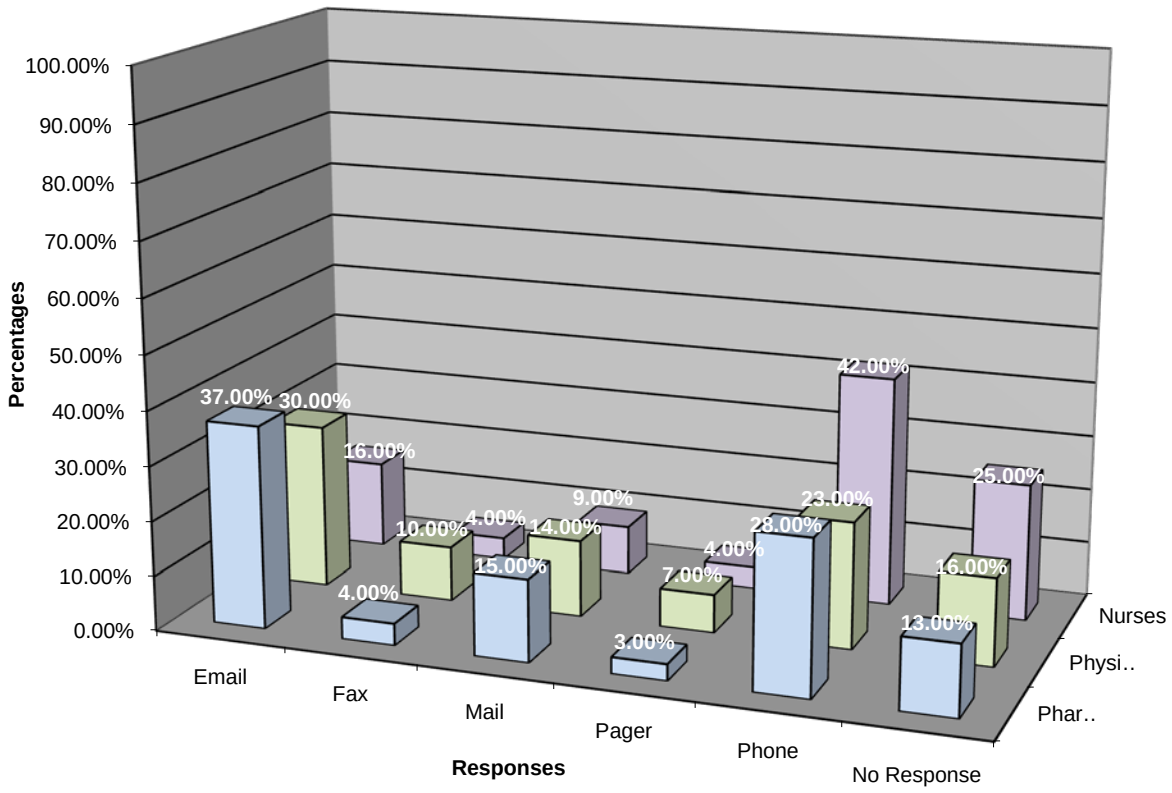
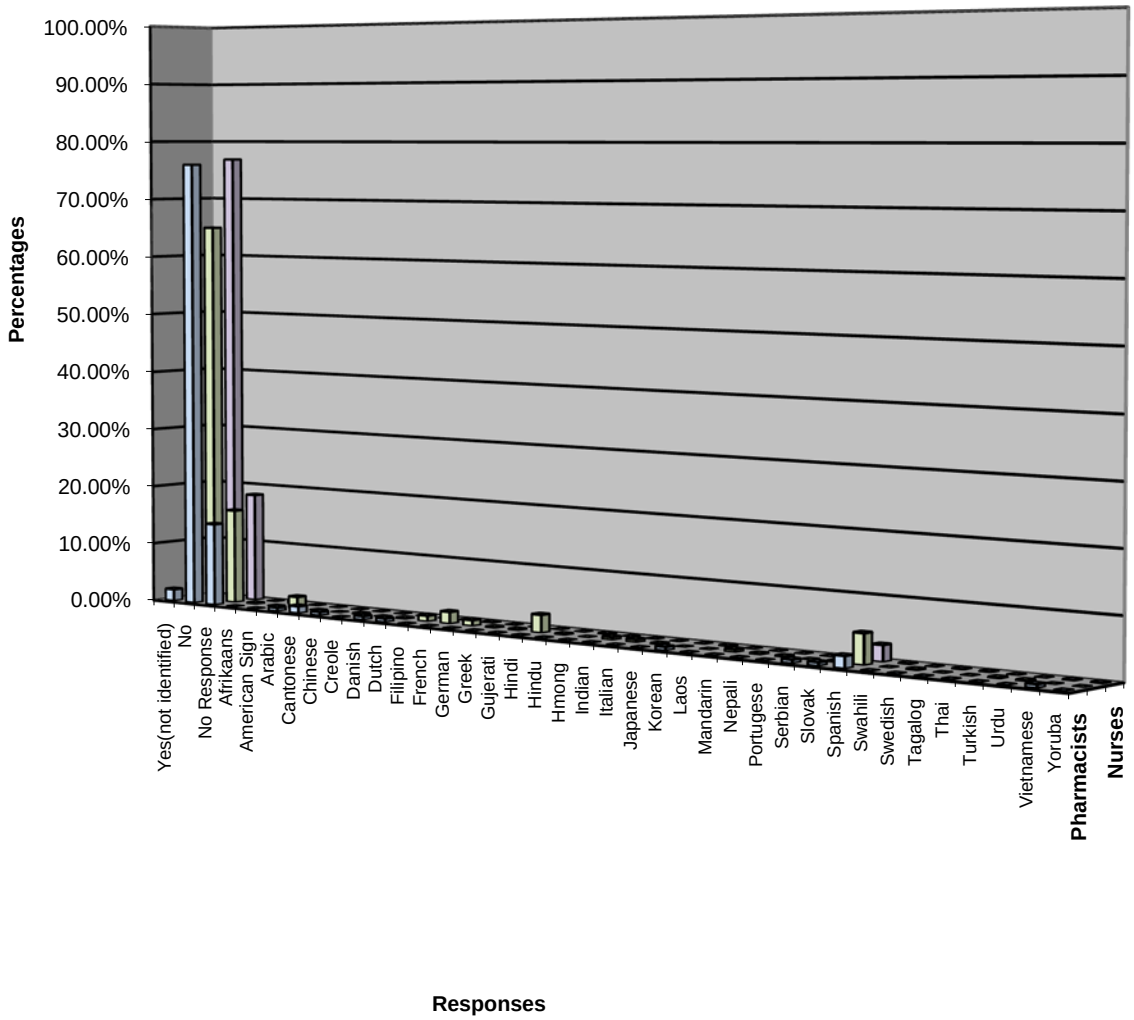


Table 4.48: Do you speak more than one language fluently? If yes, what languages do you speak?

Response to Question #12	Pharmacists	Physicians	Nurses
Yes(not identified)	2.00%	0.50%	0.16%
No	76.00%	65.00%	76.86%
No Response	14.00%	16.00%	18.38%
Afrikaans	0.00%	0.20%	0.00%
American Sign	0.00%	0.00%	0.48%
Arabic	0.60%	2.00%	0.00%
Cantonese	1.20%	0.00%	0.00%
Chinese	0.60%	0.00%	0.00%
Creole	0.00%	0.20%	0.00%
Danish	0.60%	0.00%	0.00%
Dutch	0.60%	0.20%	0.00%
Filipino	0.00%	1.00%	0.00%
French	0.00%	2.00%	0.16%
German	0.00%	1.00%	0.16%
Greek	0.00%	0.20%	0.00%
Guajarati	0.00%	0.20%	0.00%
Hindi	0.00%	3.00%	0.00%
Hindu	0.00%	0.20%	0.00%
Hmong	0.00%	0.00%	0.16%
Indian	0.00%	0.50%	0.00%
Italian	0.00%	0.50%	0.00%
Japanese	0.00%	0.20%	0.00%
Korean	0.60%	0.00%	0.00%
Laos	0.00%	0.00%	0.16%
Mandarin	0.00%	0.50%	0.00%
Nepali	0.00%	0.20%	0.00%
Portuguese	0.00%	0.20%	0.00%
Serbian	0.60%	0.00%	0.00%
Slovak	0.60%	0.20%	0.00%
Spanish	2.00%	5.00%	2.69%
Swahili	0.00%	0.00%	0.16%
Swedish	0.00%	0.20%	0.00%
Tagalong	0.00%	0.00%	0.16%
Thai	0.00%	0.00%	0.16%
Turkish	0.00%	0.20%	0.00%
Urdu	0.00%	0.20%	0.00%
Vietnamese	0.60%	0.00%	0.16%
Yoruba	0.00%	0.00%	0.16%

Figure 4.12: Do you speak more than one language fluently? If yes, what languages do you speak?



CHAPTER 5 - Conclusion

5.1: Summary

The purpose of this report was to determine the extent at which Johnson County's Medical Community was aware of the Johnson County Health Department Public Health Emergency Preparedness and Response Program, services that could be provided, and willingness of the medical community to work with the public health department. The purpose for this study was the Centers for Disease Control and Prevention was encouraging two entities, medicine and public health, be able to work together. A questionnaire was mailed to the Johnson County medical community to measure the level of knowledge that they had about the Johnson County Health Department and the Public Health Emergency Preparedness and Response Program and their willingness to work together with these programs. There were a total of 7,252 questionnaires sent out and 1,193 (16.5%) participants responded. The questionnaire sent to the participants consisted of twelve questions. The questions inquired about general knowledge of public health programs, willingness to collaborate with the public health department and ultimately providing contact information for future utilization.

Four hypotheses were generated for this report. Hypothesis one predicted the Johnson County medical community would not be knowledgeable about the health departments Public Health Emergency Preparedness and Response Program. This hypothesis was proven true for this survey. Hypothesis two predicts that not as many individuals in the medical community will be knowledgeable about reporting a disease to the health department. As shown in the results section, some individuals do know how to report diseases but the majority of the participants that responded were unaware of the proper way to report diseases. Hypothesis three suggests that collaborations between the medical community and public health are still not strong. Some of the individuals in the medical community were aware of specific public health information but the majority of the respondents were unaware of the information and services that the Johnson County Health Department could provide to them. The fourth hypothesis will define if an individual of the medical community is interested in becoming a part of the Public Health Emergency Preparedness and Response Program emergency notification database and what type of information will be provided. Hypothesis four acknowledged that some of the individuals in the medical community were willing to provide contact information so that they could become part of the electronic emergency contact database.

5.2: Limitation

A few limitations that the researcher experienced during this project included: the large sample size, part of the project being placed on hold indefinitely, and the medical community's participation.

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Appendix A – Introductory/Promotional Letter

August 9, 2005

Dear Healthcare Provider,

Thank you for providing an invaluable service to the Johnson County community.

We would like to take this opportunity to introduce ourselves. We are the Public Health Emergency Program, which is a component of the Disease Containment Division, for the Johnson County Health Department.

The Public Health Emergency Program was established by the Kansas Department of Health and Environment's Kansas Bioterrorism Program utilizing guidelines issued by the Centers for Disease Control and Prevention to help prepare Johnson County for public health emergencies.

We have been trained in enhanced surveillance and reporting by the Kansas Department of Health and Environment and would like to provide you with the opportunity to become more active participants in our community's preparedness.

In order to help our preparedness goals of advance education and training we ask you to please fill out the enclosed questionnaire and submit it to us using the self-addressed stamped envelope provided. Thank you again for making Johnson County a safe and healthy community and supporting us in our preparedness efforts.

Reporting:

The **Public Health Information eXchange or PHIX,** provided through Kansas Department of Health and Environment is a secure website used to share information between KDHE and other PHIX members which include: private physicians, state and local government officials and hospital personnel. PHIX is available 24/7, has 3 notification levels: alert, advisory, and update. PHIX can send notification via email, fax, or text messaging and includes information regarding current disease situations and trends as well as training and educational information. We want all Johnson County healthcare providers to be able to access PHIX so they may enter or retrieve valuable information. If you are interested in becoming a member of PHIX and to help us with our preparedness actions, we ask you to please log onto http://PHIX.kdhe.state.ks.us and register.

Surveillance:

FirstWatch ™ is a syndromic surveillance system that is currently being utilized in Johnson County. It monitors 9-1-1 calls and ambulance runs for increased trends relating to location and chief complaint in real time. When the system detects a potential incident, it automatically notifies specific program members at Johnson County Health, who then inform appropriate healthcare providers. With this real time monitoring of urgent care information, we hope to respond to potential public health emergencies with more rapid and diligent care.

Our program's Focus Areas:

Preparedness Planning and Response Assessment – Includes developing a comprehensive emergency plan for response to a public health emergency resulting from naturally occurring outbreaks of disease or bioterrorism. The emergency plan includes procedures for distributing medicines and other medical supplies to needed areas within the county and greater metropolitan area through the Federal Strategic National Stock Pile and Mass Prophylaxis Dispensing Plan.

Surveillance- Public health surveillance is the central process of disease prevention. We continually utilize different types of surveillance to estimate the magnitude of a problem, portray the natural history of a disease, determine the distribution and spread of an illness, detect outbreaks, generate hypotheses to stimulate research, evaluate control and prevention measures, monitor changes in infectious agents, detect changes in health practices and facilitate planning.

Epidemiology- Our epidemiologists are trained to promote and protect the public's health by performing epidemiological outbreak investigations which are used to identify a problem, collect information related to the problem and to develop epidemiologic inferences from which prevention and control measures may be implemented.

Notification and Alert – We are active members in the PHIX system which allows us to share information between KDHE and other PHIX members. We receive PHIX notifications via email, fax, or text messaging about information regarding current disease situations and trends as well as training and educational information. Our goal is to educate and enroll all Johnson County healthcare providers in PHIX so they may also enter or retrieve valuable public health information.

Education and Training – We are currently developing a plan for providing education and training to local health professionals on how to effectively prevent diseases and to respond to public health emergencies. In 2005 the Public Health Emergency Program has been focusing its efforts on education and training of our health department staff to better prepare them for a public health emergency, updating our emergency plans, and expanding our current mass prophylaxis response capabilities.

We are more than happy to answer questions and/or provide you with any information regarding our services.

For additional information on the Public Health Emergency Program, please contact:

Liz Ticer
Public Health Emergency Coordinator
Liz.ticer@jocogov.org
(913) 477-8316

Appendix B – Questionnaire

Johnson County Public Health Emergency Program Questionnaire

Please annotate with appropriate response

		Yes	No
1	Prior to this correspondence were you aware that our program existed?		
2	In the future would you be interested in receiving information/ trainings from us?		
3	Do you know how and where to report a Kansas Reportable Disease? Link http://health.jocogov.org/Disease		
4	Do you know about the Johnson County Health Department website? Link http://health.jocogov.org		
5	Prior to this correspondence were you aware of PHIX? Link http://phix.kdhe.state.ks.us		
6	If so, are you a member?		
7	If not, are you interested in becoming a member?		
8	Are you interested in becoming a part of our emergency notification database?		
9	If yes, would you be willing to provide us with additional contact information.		

If not, I would like to take this opportunity to thank you very much for answering the preceding questions. Your responses will enable us to strengthen our programs overall mission.

		E-mail	Fax	Mail	Pager	Phone
10	What is the best way to contact you?					
11	Do you have a preference for emergency notification?					

		Yes	No
12	Do you speak more than one language fluently?		

If yes, what languages do you speak? _____

Through the Kansas State Board of Healing Arts, we have access to your address and phone number. If you would like us to be able to contact you in a different manner please send us the appropriate information (A business card will be sufficient). If you have an email address or pager number you would like to share with us please write it in the space provided or on the back of your business card. Once again I would to take this opportunity to thank you very much for answering all of our questions. Your responses will enable us to strengthen our programs overall mission.

E-mail Address _____

Fax _____

Pager _____