

Master of Public Health Field Experience Report

PUBLIC HEALTH PREPAREDNESS AT THE COMMUNITY LEVEL

by

VICKIE K SMITH DVM
MPH Candidate

submitted in partial fulfillment of the requirements for the degree

MASTER OF PUBLIC HEALTH

Graduate Committee:

T.G. Nagaraja PhD
Justin Kastner PhD
David Renter PhD

Field Experience Site:

Lawrence Douglas County Health Department
June 2013 –March 2014

Field Experience Preceptor:

Charlie Bryan MPA

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2014

Summary

Although public health departments were introduced to the threat of bio-warfare during the events of the Cold War in the 1950's and 60's, it was the terrorist events of September 11, 2001 and subsequent anthrax scares that prompted the federal government to increase support of preparedness initiatives at the state and local levels. Despite extensive improvements in public health infrastructure including initiatives for laboratory surveillance, risk communication, and preparedness training, significant gaps remain in local health department preparedness programs. Twelve years after 9/11 there are still significant challenges in funding, staffing, leadership, and workforce development. Continued improvements in coordination between public health, emergency responders and the private sector are essential to reducing the capability gaps in emergency response.

Keywords: public, health, emergency, preparedness

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List of Abbreviations

AAR	After Action Report
ASPH	Association of Schools of Public Health
ASSPH	Association of Schools and Programs of Public Health
ASTHO	Association of State and Territorial Health Officers
BRFSS	Behavioral Risk Factor Surveillance System
CDC	Centers for Disease Control and Prevention
CGC	Continuity Guidance Circular
COOP	Continuity of Operations Plan
CPHP	Centers for Public Health Preparedness
EEG	Exercise Evaluation Guide
EOC	Emergency Operations Center
FAD	Foreign Animal Disease
FE	Functional Exercise
FSE	Full Scale Exercise
HAN	Health Alert Network
HSEEP	Homeland Security Exercise and Evaluation Program
ICS	Incident Command System
KDHE	Kansas Department of Health and Environment
KDEM	Kansas Department of Emergency Management
K-SERV	Kansas System for Emergency Registration of Volunteers
KSART	Kansas Animal Response Team
LDCHD	Lawrence Douglas County Health Department

MRC	Medical Reserve Corps
NACCHO	National Association of City & County Health Officials
NIMS	National Incident Management System
NRF	National Response Framework
OCDM	Office of Civil and Defense Mobilization
PPD	Presidential Policy Directive
PERLC	Preparedness and Emergency Response Learning Center
SOG	Standard Operating Guidelines
TTX	Tabletop Exercise

Chapter 1

Background and History

1.1 Civil Defense Era

Naturally occurring and man-made threats to the health of the public have served as motivation to increase preparedness activities at all levels of government. Terrorist attacks on the World Trade Center that occurred September 11, 2001, intentional anthrax exposures, and emergence of new viral strains such as H1N1 influenza, and Severe Acute Respiratory Syndrome (SARS) are notable examples of events that served to increase expectations that the public health community should be prepared to respond. Globalization, which has allowed humans, animals, goods and foodstuffs to travel across the world in a single day's time, presents a challenge to public health agencies in all jurisdictions. Emerging threats- whether of a biological, chemical, or terrorist origin-may present rapidly and often interventions must be implemented prior to the identification of an etiologic agent.¹

One might argue that these threats are not unique to the 21st century and that the United States has experienced similar dangers in the past. It was the threat of biological warfare during the Cold War that initiated the involvement of the Centers for Disease Control and Prevention (CDC) (then called the Communicable Disease Center) as a central player in the American response to preparing for biological, chemical and radiation risks. Historian Elizabeth Fee credits public health leader Alexander Langmuir for "exploiting an earlier generation's fear of biological warfare" in order to expand the mission of the CDC and disease reporting.² Langmuir was recruited to serve as chief

epidemiologist at the CDC in June of 1949 and he served in the position until 1970. He raised the question of biological warfare defense and concerns about the intentional sabotage of food and water supplies at meetings with state health officers and argued that epidemiologists were necessary as a first line of defense. When the United States went to war with Korea in June, 1950 President Harry Truman ordered all nondefense budgets to be cut so that maximum resources could be directed to the wartime effort. “Epidemiologic intelligence” was listed as defense expenditure in the CDC budget. The term “epidemiologic intelligence” is credited to Dr. Joseph Mountin, a pioneer in the Public Health Service who helped secure Congressional approval for the founding of the CDC. Langmuir made popular the term “surveillance” to describe the process of gathering epidemiologic intelligence rather than calling it the less exciting public health term of “disease reporting”. At a Washington meeting to discuss biological warfare in July, 1950 Langmuir had called for and received budget approval for an epidemiological intelligence service. He also contributed to the government’s report of its official position on biological warfare *Health Services and Special Weapons Defense* that was published by the Executive Office of the President in December, 1950.³ The report charged the Federal Civil Defense Agency with organizing a national system of defense against chemical, biological, and atomic weapons. Meanwhile, the Federal Civil Defense Agency and the US Army published informational pamphlets directed toward the general public concerning the threat of biological warfare.⁴ In 1951 the Department of Defense and Federal Civil Defense Agency in partnership aired a television program entitled *What You Should Know about Biological Warfare* as part of a Johns Hopkins University science program.⁵ These provided compelling evidence concerning the threat

of biological warfare and the necessity for a strong public health system as a means of defense against these types of hazards. While these efforts led to the strengthening of the CDC and the formation of the Epidemiologic Intelligence Service (EIS) not everyone was pleased with the addition of civil defense duties to the usual duties of a public health position. In November of 1951, at the 79th annual meeting of the American Public Health Association in San Francisco, CA, Harold Chope MD, a San Mateo county health officer, described his view of civil defense responsibilities as a “worm’s eye view” with difficulty seeing the sky due to a confusing galaxy of coordinators, chiefs, and directors attempting to give him advice from local, state, regional, and federal levels. He added that he also had the administrative responsibility of forming plans, directives, manuals and annexes in addition to coordinating with agencies such as the Red Cross, hospitals, pharmacists, and other voluntary organizations. All of these duties had to be accomplished with a meager budget while he continued to carry out a “sound, progressive public health program”.⁶ At the same time that funds were being allocated for biological warfare research resources for public health departments were being sharply cut and positions often went unfilled due to low salaries for public health officers. By 1958 the First National Conference on Public Health Training held in Washington heard an appeal to consider public health education as an important aspect of national defense.

“The great crises of the future may not come from a foreign enemy ...’D’ day for disease and death is every day. The battle line is already in our own community. To hold that battle line we must daily depend on specially trained physicians, nurses, biochemists, public health engineers... properly organized for the normal protection of the homes, the

schools, and the work places of some unidentified city somewhere in America. That city has, today, neither the personnel nor the knowledge necessary to protect it.”⁷ In October, 1958, Surgeon General Leroy Burney addressed the 86th annual meeting of the American Public Health Association where he outlined reorganization Plan Number 1 of 1958 that resulted in the merger of the Federal Civil Defense Administration and the Office of Defense Mobilization. The resulting agency renamed the Office of Civil and Defense Mobilization (OCDM) was in charge of policy determination and coordination of civil defense activities. Under the terms of the plan the Public Health Service was delegated with the responsibility for health and medical care operations. Burney articulated that medical and public health services for emergencies should be prepared for both manmade and natural disasters and argued that Civil Defense was an urgent matter that could not be postponed until staffing and funding issues were resolved. Dr. Burney called for new organizational relationships for a problem that did not have a clear goal, but was a hypothetical situation that required a constant state of readiness. He acknowledged that the national plan and its annexes were the guidelines for civil defense but that the implementation of the plan depended largely on local planning and response. Burney proposed that the basic components of civilian health and medical defense needed to include methods to activate plans by means of uniform organization and systematic practice of emergency health and medical exercises, ongoing training programs, and effective communications systems.⁸

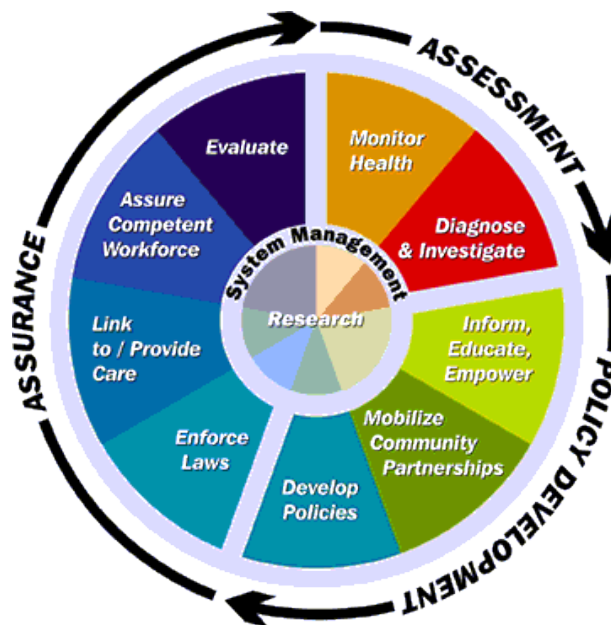
In a 2009 retrospective report entitled *Threats To Our Nation 1957-1959* George Moore, retired captain in the National Public Health Service recalled when he was summoned to active duty to help prepare for the imminent threats of the Cold War.⁹ He

related that preparedness at the community level was an essential element in planning for survival and recovery after a nuclear attack. He acknowledged that the nature of the threats may have changed but the role of public health administrators in dealing with those threats has remained constant. The current “all-hazards” approach for preparation and response to natural, biological, chemical, or radiological disasters is a modification of the civil defense plans of the fifties that had the goal of helping citizens to survive a nuclear attack.

1.2 Post 9/11/2001 Initiatives

Prior to 2001 the primary mission of public health was to promote physical and mental health to prevent disease, injury, and disability and the vision was *Healthy People in Healthy Communities*

Public Health in America

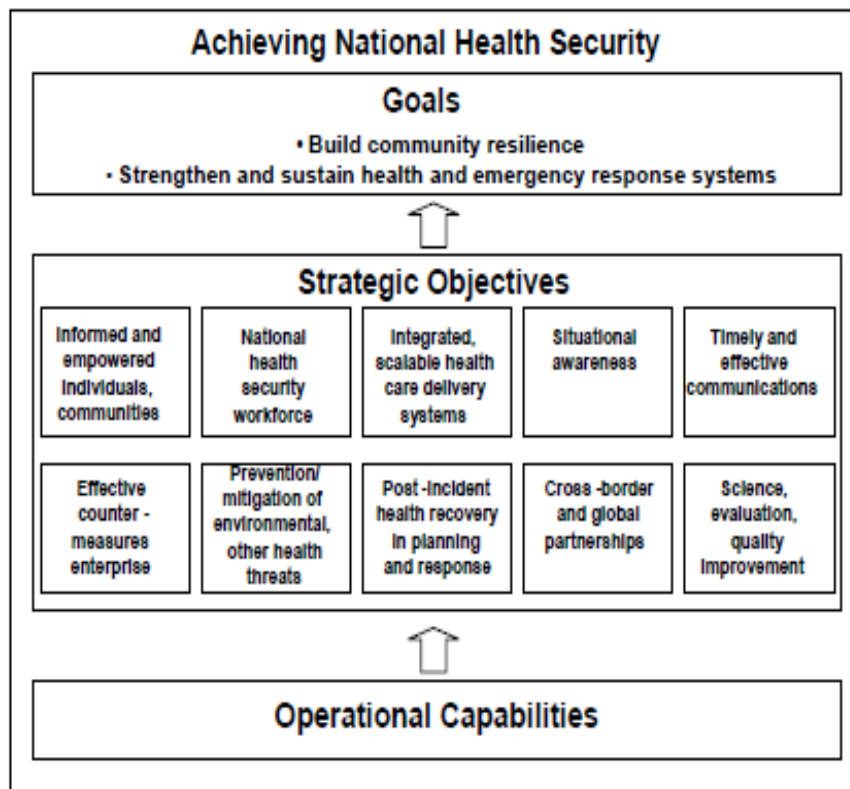


Adopted: Fall 1994, Source: Public Health Functions Steering Committee, Members (July 1995): American Public Health Association·Association of Schools of Public Health·Association of State and Territorial Health Officials·Environmental Council of the States·National Association of County and City Health Officials·National Association of State Alcohol and Drug Abuse Directors·National Association of State Mental Health Program Directors·Public Health Foundation·U.S. Public Health Service --*Agency for Health Care Policy and Research·Centers for Disease Control and Prevention·Food and Drug Administration·Health Resources and Services Administration·Indian Health Service·National Institutes of Health·Office of the Assistant Secretary for Health·Substance Abuse and Mental Health Services Administration*

Figure 1.1

Public health departments have been asked to expand their roles as community health caretakers and have been placed on the front lines of preparedness and response. The terrorist attacks on September 11, 2001 and subsequent anthrax exposure events prompted increased federal investment in public health to boost preparedness capabilities. Since late 2002, Congress has invested over \$12 billion in state and local public health preparedness, hospital preparedness, and pandemic response capacity at the state and local levels.¹⁰ Public health preparedness capabilities are outlined in the CDC 2011 document *Public Health Preparedness Capabilities: National Standards for State and Local Planning*.¹¹ Preparedness is also now included in the objectives of Healthy People 2020 based on a set of national priorities articulated in the *National Health Security Strategy of the United States* published by the Department of Health and Human Services in 2009.¹²

National Health Security Goals



National Health Security Strategy of the United States of America 2009

Figure 1.2

Post 9/11 the mission of public health has been expanded to include “all-hazards” preparedness responsibilities and local public health agencies have been thrust into a new position where interaction with first responders, law enforcement and firefighters has become essential. Local and state agencies are now tasked with surveillance, detection, risk communication and distribution of medical countermeasures (MCM). A skilled workforce, strong leadership, communication and IT capabilities, laboratory

facilities, and advanced surveillance systems are all requirements of a solid infrastructure that is equipped to mitigate and respond to emergencies. An influx of federal funds to public health was intentioned to fulfill a “dual purpose” by not only serving to improve public health’s abilities to plan for and respond to catastrophic biological, chemical, or terrorist threats but also to serve to expand and benefit public health infrastructure.¹⁰ Unfortunately, the funds also complicated the situation with an influx of guidance documents and increased reporting requirements.

1.3 Policy

Preparedness activities at all levels of government and the private sector are governed by a national plan called the National Incident Management System (NIMS).¹³ It serves as a template for emergency (incident) management regardless of size, complexity, or jurisdiction. Preparedness, communications and information management, resource management, command and management, and ongoing management and maintenance are its 5 key components. Significant challenges are still emerging as public health struggles to integrate itself into national entities such as the National Response Framework (NRF) and the Incident Command System (ICS). Presidential Policy Directive 8 (PPD-8), signed by President Barack Obama in May, 2011 mandated the creation of a National Preparedness Goal to encompass five mission areas—Prevention, Protection, Mitigation, Response, and Recovery.^{14,15} The NRF sets the doctrine for how the nation builds, sustains, and delivers the response core capabilities identified in the National Preparedness Goal.

National Preparedness Goal

Prevention: The capabilities necessary to avoid, prevent, or stop a threatened or actual act of terrorism. As defined by PPD-8, the term “prevention” refers to preventing imminent threats.

Protection: The capabilities necessary to secure the homeland against acts of terrorism and manmade or natural disasters.

Mitigation: The capabilities necessary to reduce loss of life and property by lessening the impact of disasters.

Response: The capabilities necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred.

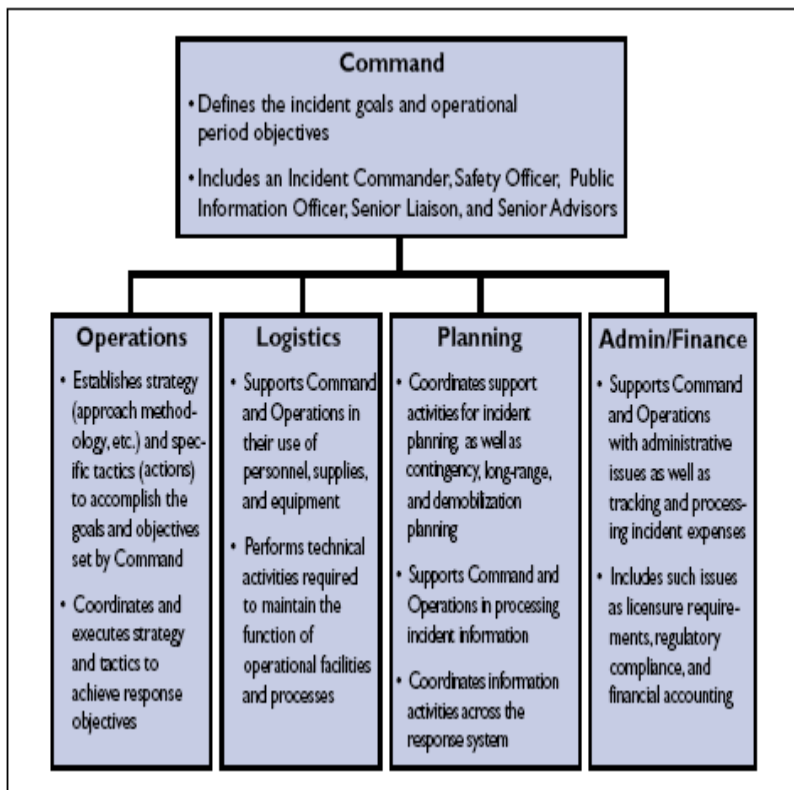
Recovery: The capabilities necessary to assist communities affected by an incident to recover effectively.

National Response Framework: Department of Homeland Security May 2013

Figure 1.3

The Incident Command System (ICS) is a standardized, on-scene, all-hazards incident management approach that enables a coordinated response among jurisdictions and agencies, establishes common processes for planning and managing resources and allows for integration of personnel and communications. Local health departments are not usually organized with a command system and are often unfamiliar with the terminology and acronyms of other emergency agencies so the ICS helps to provide a connection.¹⁶ Current Continuity of Operations Plans (COOP)s required of local agencies specifically include the ICS as the management system used in the event that the normal operations of the agency are disrupted.

Incident Command System



Medical Surge Capacity and Capability Handbook: Office of the Assistant Secretary for Preparedness and Response 2012

Figure 1.4

1.4 Education

Workforce development, retention, training, and credentialing continue to be barriers to effective preparedness planning and response despite the fact that the Centers for Public Health Preparedness (CPHP) program was established a year before the terrorist events of 2001. This network of academic institutions and practice partner agencies was assembled to focus on workforce preparedness, graduate education and collaborations between academia and public health practice.¹⁷ Federal public health

funding has faltered with the struggling economy but provisions in the 2006 Pandemic and All Hazards Preparedness Act broadened the scope of the CPHP's to include research and in 2010 new Preparedness and Emergency Response Learning Centers (PERLC) were launched.¹⁸



CDC's Office of Public Health Preparedness and Response 2014

Figure 1.5

Their mission is to carry out development of curricula and training that responds to the needs of local, state, and tribal agencies that are responsible for preparedness activities. PERLC's and CDC-Train offer a wide variety of courses pertaining to topics

such as public health practice, bioterrorism, disease, and emergency preparedness that can be accessed and taken online or viewed as webinars.

1.5 Credentialing

The public health workforce is diverse and multi-disciplinary and credentialing of public health staff remains an issue. Historically there have been no standardized competencies in public health preparedness and response. Some public health disciplines such as medicine, nursing, and environmental science require continuing education to maintain licensing but this education does not necessarily satisfy the training requirements demanded by current public health threats. Most public health workers are accustomed to a 9 to 5 mode of operation and not a 24/7 on call state of readiness. Achieving this readiness culture requires establishing agency response capacity, developing employee awareness of current and emerging large-scale community threats, and fostering a core sense of employees' professional roles on the frontlines of public safety and well-being.¹⁹

The CDC and Association of Schools of Public Health (ASPH) have developed a public health preparedness and response core competency model. The model report addresses the knowledge, skills, and attitudes deemed necessary to enable public health professionals, regardless of work setting or discipline, to identify areas of training needed in order to become proficient in the competencies required to address their areas of responsibility regarding public health preparedness.²⁰ Proficiency is targeted as the level of competence (necessary combination of knowledge, skills, and abilities) to be able to perform one's assigned duties in an emergency situation. It is developed not only through academic proficiencies but may be acquired through practice or

experience. Core competencies are those that public health workers are expected to demonstrate in order to assure that they are prepared to perform in an emergency situation and may include demonstration of knowledge of the chain of command, use of communications equipment, and realization of their individual role in a disaster.

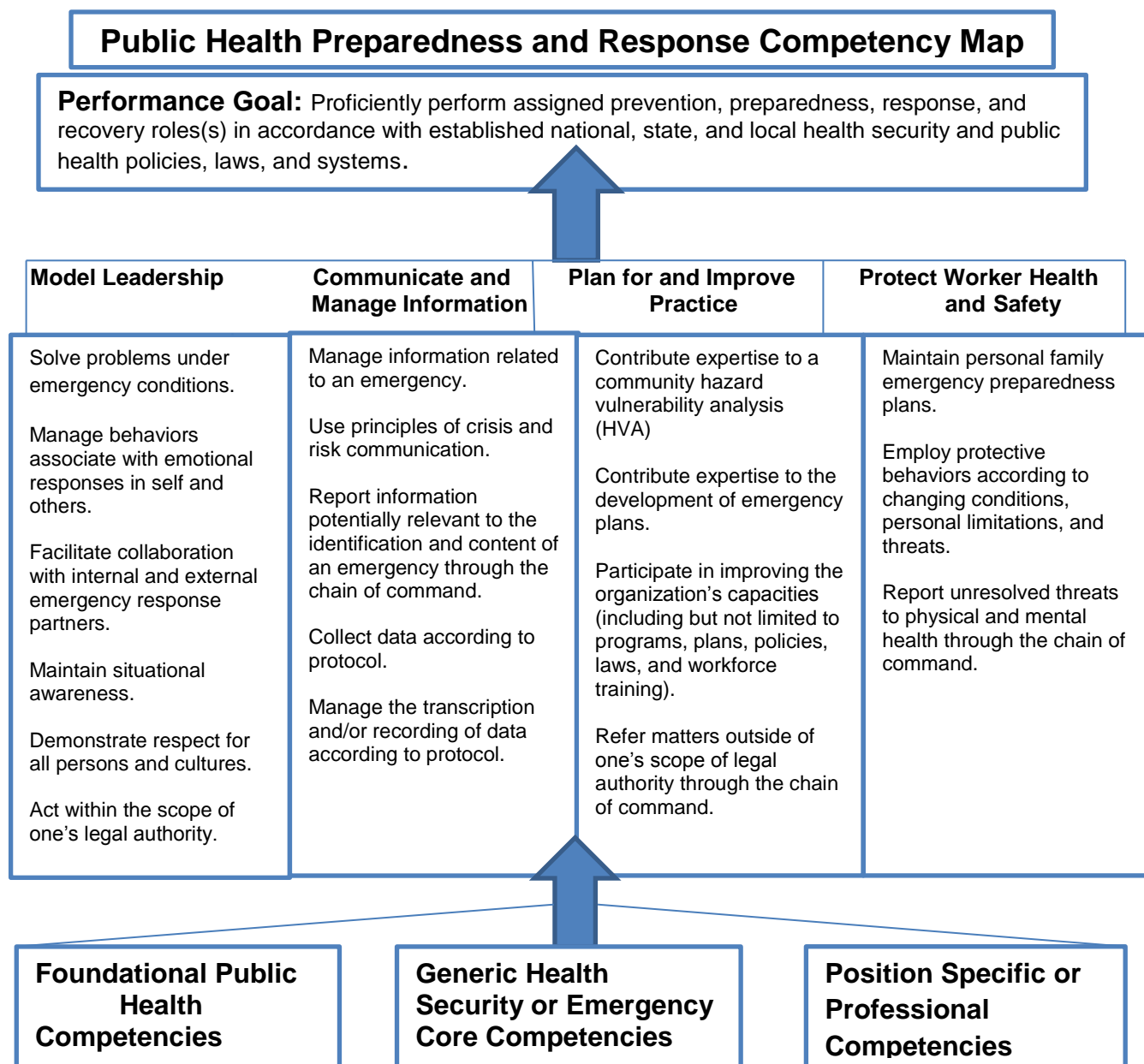


Figure 1.6

1.6 Exercises and Evaluation

Much of preparedness response involves being ready to address threats with low probability and high consequences. Planning is a process and must be tested to identify breaches. The Homeland Security Exercise and Evaluation Program (HSEEP) was developed to enable community stakeholders to test and validate plans and capabilities, and identify both capability gaps and areas for improvement. Exercises provide an opportunity to test capabilities, familiarize personnel with roles and responsibilities, and foster meaningful interaction and communication across organizations.²¹ The HSEEP exercise cycle is divided into 4 phases including design and development, conduct, evaluation and improvement planning.

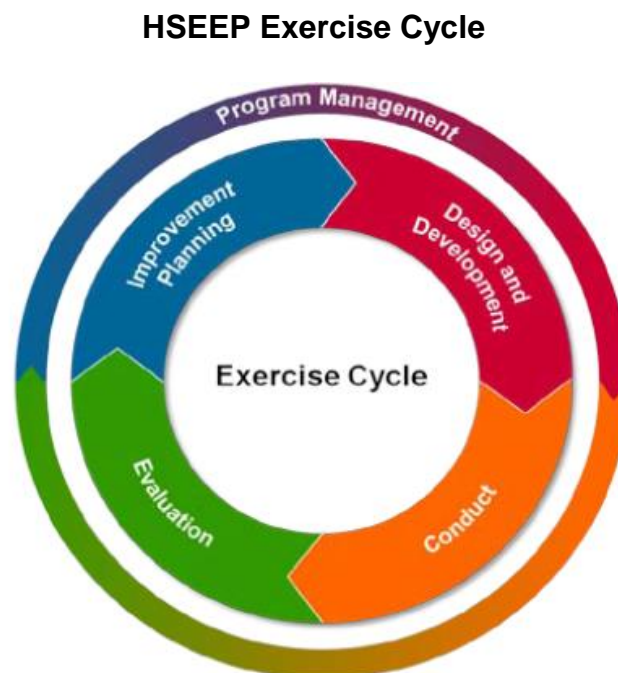


Figure 1.7

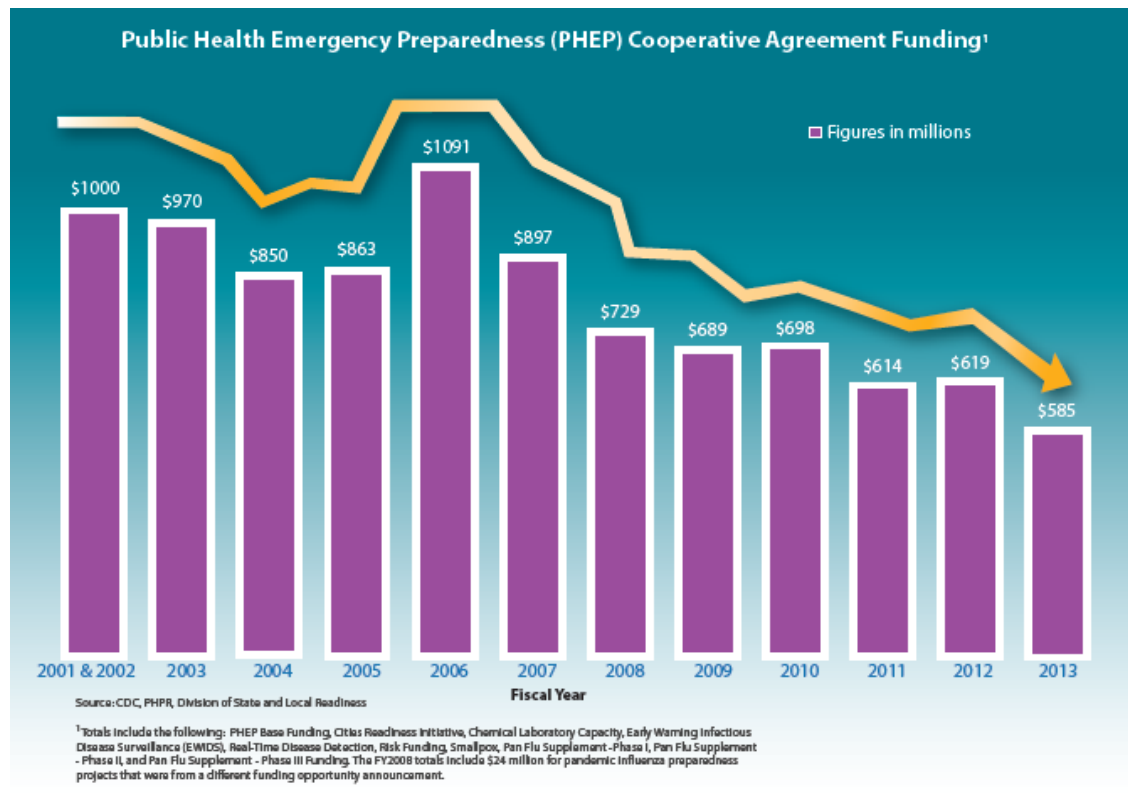
Homeland Security Exercise and Evaluation Program: April 2013

Exercise programs are progressive and build upon each other starting with discussion based programs such as seminars that orient participants to policies or procedures and tabletop exercises (TTX) that generate discussion of issues regarding a simulated emergency situation. Operations based exercises may be drills, functional exercises (FE) or full scale exercises (FSE) that are characterized by an actual reaction to an exercise scenario in real-time and require critical thinking, rapid problem solving, and effective responses by trained personnel. Exercises are not only an important part of training but also serve to strengthen the entire community by bringing everyone together in an effort to protect, prevent, mitigate and respond to disasters.

1.7 Challenges to Local Preparedness Efforts

Many challenges remain to developing and maintaining effective preparedness programs with funding being one of the most important. CDC provides funding and scientific expertise to state and local health departments through the Public Health Emergency Cooperative Agreement Program (PHEP) but a poor economy has decreased funding over the last decade.²² Budget cuts have curtailed expansion of preparedness programs and forced agencies to put their focus on sustaining existing capabilities rather than expanding infrastructure. In their 2011-2012 Preparedness Priorities report, the National Association of Community and County Health Officials (NACCHO) support multi-year funding at levels that can provide sustainable resources for preparedness activities rather than continuing year to year supports.²³ Even though funding has been cut, health departments must still continue to fulfill their function as a response provider and guardian of community health.

Public Health Emergency Preparedness Funding



CDC 2012 Public Health Preparedness State by State Report

Figure 1.8

Impending retirements among the workforce along with the diminishing number of workers are among the critical challenges cited by CDC's 2012 Public Health Workforce Summit report.²⁴ There is a need for leadership, mentorship, and cross-training along with development of new skills such as informatics, marketing, and communication. Federal funding has helped to shore up public health infrastructure since 2001 but significant gaps remain in terms of workforce readiness, leadership, and

response capabilities. With current cutbacks in funding, preparedness activities will likely be placed on hold in favor of more pressing public health issues.

Chapter 2

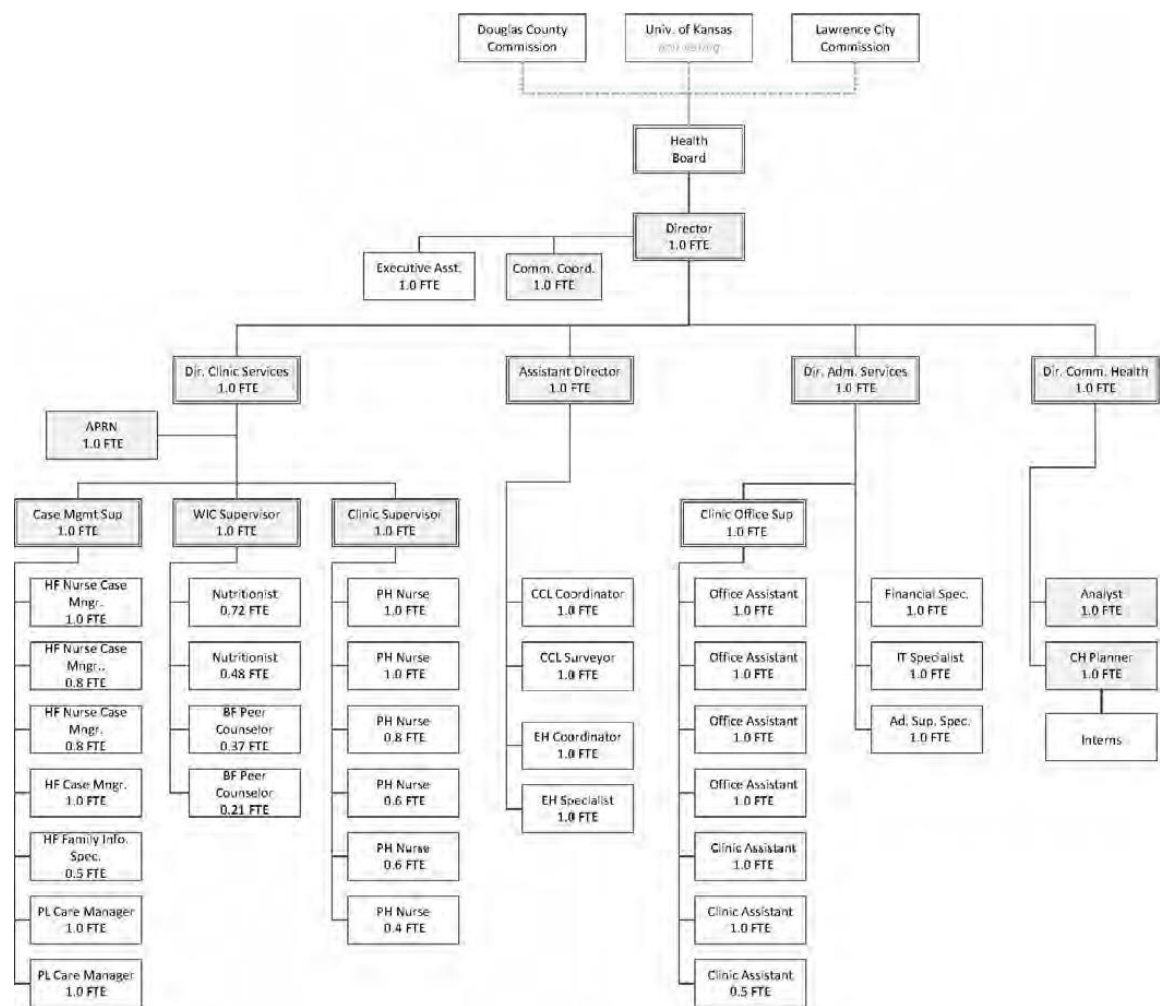
Field Experience

2.1 Scope of Work

My public health field experience was served at the Lawrence – Douglas County Health Department (LDCHD) in Lawrence, Kansas from June to December of 2013 with additional visits made in February and March of 2014. Douglas County has an estimated population of 2,893,957 and contains the cities of Lawrence, Eudora, and Baldwin City. The population of the city of Lawrence is 89,512.²⁵ The University of Kansas and Haskell Indian Nations University are located within the city of Lawrence and Baker University is located in Baldwin City. The joint city-county health department was formed in 1942 and has been governed by a Board of Health since 1951. Members serve three-year terms, with no member serving more than two consecutive terms. Members of the board are appointed by the Douglas County Commission, by the Lawrence City Commission and one by joint action of the two governing bodies. One ex officio member from the University of Kansas is selected by the KU Chancellor.²⁵ The health department is administered by a Director who supervises the Assistant Director and Directors for Community Health, Clinical Administration and Administrative Services. LDCHD offers clinical, family, regulatory, and community services.

LDCHD Organizational Chart

July 2013



Lawrence Douglas County Health Department website

Figure 2.1

My immediate supervisor was Mr. Charlie Bryan MPA, who serves in the position of the Community Health Planner under the leadership of the Community Health Director. Public health emergency planning comprises about 20% of his job responsibilities as the community health planner.²⁶ In addition to his duties of coordinating and planning public health emergency preparedness and response activities he supports a broad range of community health assessment and improvement activities including the facilitation of community meetings to assure development of effective plans to address population-based health priorities. Mr. Bryan serves as the facilitator for the Together Prepared Coalition, a group that was formed to ensure that vulnerable populations in Douglas County were included in emergency preparedness planning. He is also responsible for recruiting, interviewing and training Medical Reserve Corps (MRC) volunteers and serves as the Douglas County volunteer coordinator for the Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) known as the Kansas System for the Early Registration of Volunteers (K-SERV). All of the interns serving at LDCHD are familiarized with the various divisions of the organization including environmental health, clinical services, communicable disease investigations, community health, childcare services and emergency preparedness. During the summer interns met at least weekly with the supervisor to provide updates about current projects within the department. I participated in a brain-storming session for a Live Well-Eat Well restaurant rating project as well as a health department quality improvement training session. Because I have an interest in communicable disease I asked to shadow the communicable diseases nurse while she did a telephone interview of a patient diagnosed with a *Salmonella*

infection so that I could familiarize myself with the KDHE's electronic surveillance system EpiTrax. This is the management system used by KDHE to investigate and mitigate communicable diseases, environmental hazards and bioterrorism events. My primary duties as an intern were within the public health preparedness section.

LDCHD's written purpose of their preparedness program is "to protect and promote the health of Douglas County residents by improving the capacity of staff, volunteers, community partners and individuals to respond to and recover from significant health incidents." Their priority areas for improvement for 2013 were to; increase staff readiness for public health emergency role, increase volunteer engagement, and increase involvement of community partners in public health preparedness activities. All LDCHD employees are required to complete FEMA courses IS-22, IS-100 and IS-700 as part of their employment contract and interns were asked to do the same. I had previously completed these ICS trainings during earlier experiences with Kansas State Animal Response Team (KSART) and Foreign Animal Disease (FAD) training and had some background in emergency preparedness so I was asked to assist with the department's public health emergency planning projects during my internship.

Chapter 3

Objectives and Activities

3.1 Learning Objectives

My learning objectives as outlined in my field experience agreement were to familiarize myself with the daily operations of a county health department, to assist in developing and updating community emergency preparedness planning and to familiarize myself with the Medical Reserve Corps (MRC) “Factors for Success” planning template.²⁷

3.2 Activities Performed

3.21 Continuity of Operations Plan Review

I was first tasked with familiarizing myself with the Standard Operating Guidelines (SOG) that local health departments are required to have in regard to preparedness planning. In 2007, President George W. Bush issued National Presidential Directive-51/Homeland Security Presidential Directive-20 National Continuity Policy to emphasize the importance of continuity planning for all levels of government and the private sector. FEMA’s Continuity Guidance Circulars 1 and 2 provide direction for state, local, tribal, and private sector organizations in the development of Continuity of Operations Plans (COOP).²⁹ The purpose of a COOP is to provide guidance to ensure that essential functions of an organization are continued in the event of a natural or manmade emergency that disrupts normal operations. All local SOG’s in Kansas are periodically reviewed by KDHE as required by the Centers for Disease Control and Prevention’s Public Health Emergency Grant. A 2011 review of the LDCHD COOP had identified the

need for some updates including annexes for orders of succession and delegation of authority. With guidance from my supervisor, I learned that in the State of Kansas both the Kansas Department of Health and Environment (KDHE) and the Kansas Department of Emergency Management (KDEM) offer templates to facilitate development of a Continuity of Operations Plan (COOP) for a local health department. I examined both documents and Mr. Bryan contacted the state planners to determine which was most suitable for LDCHD. We were informed by the planners that either template would be suitable. Mr. Bryan elected to use the KDHE template since it most closely resembled the LDCHD's current COOP that was first written in 2009 using KDHE guidelines. I compared the KDHE template to the existing LDCHD COOP document and identified missing or incomplete information in addition to the changes suggested by the KDHE. In order to increase my understanding of the COOP writing process I attended a webinar entitled "Focused Continuity of Operations Planning" (FCOOP) presented by the Preparedness and Emergency Response Learning Center (PERLC) of the Association of Schools and Programs of Public Health (ASPPH). I presented my findings to Mr. Bryan and we made the revisions to update the COOP document in a joint work session.

3.22 Agency Coordination-Community Resilience

Public Health Preparedness Capability 1: Community Preparedness Function 2 tasks state and local planners to identify community partners and to create and implement strategies to help maintain the community's ability to continue delivery of medical, mental/behavioral and public health during and after an incident.¹¹ The ability of a community to withstand adversity and recover from disaster is termed "community

resilience”. Social connections, resource sharing and integration of government, private, and faith-based organizations is essential to public health preparedness planning and response. Douglas County has a coalition of organizations called “Together Prepared”. This group is dedicated to ensuring through education and training, that capabilities are present that will lessen the impact of a disaster on vulnerable populations. CDC defines these populations by socio-economic status, geography, gender, age, and disability status and they often include children, the elderly, disabled, impoverished and disenfranchised citizens.

The coalition’s membership includes churches, a housing authority, the Red Cross, a mental health center, volunteer agencies and the public library. Mr. Bryan serves as a facilitator for the coalition so I was able to observe a meeting of the coalition at Cottonwood, Inc. which is a not-for-profit organization dedicated to providing services to individuals with developmental disabilities. In preparation of this opportunity I enrolled in a KS-Train online course titled “Planning for Disasters-Related Risk Factors and Functional Needs of People with Disabilities”. The course gave me additional insight concerning preparedness planning for vulnerable populations. At the meeting the executive assistant of Cottonwood introduced us to the American Red Cross Ready Rating program that helps businesses, schools, and other organizations to prepare for emergencies. The program contains a self-assessment instrument designed to evaluate the level of preparedness of a business or organization along with tools to help improve their ability to withstand a disaster.

I was introduced to another example of community partnerships for preparedness activities when I attended a tabletop exercise (TTX) at the Lawrence

school district offices. Tabletop exercises simulate an emergency situation in an informal, stress-free environment. The participants-usually people on a decision-making level-gather around a table to discuss general problems and procedures in the context of an emergency scenario.²¹ The focus is on training and familiarization with roles, procedures, or responsibilities. School principals, safety officers, bus coordinators, law enforcement, emergency management, and the health department were all represented at the meeting. The tabletop exercise simulated a situation on a school day in a building where electricity was lost during a heat wave. A recent real life case of an overturned school bus in an adjacent county was also reviewed and given praise for the emergency response.

3.23 Training Reviews

From 2004 to 2010 CDC funded the Centers for Public Health Preparedness Agreement program that allowed 27 CPHP's located in accredited schools of Public Health to build relationships between academia, state and local health agencies in an effort to promote public health preparedness.¹⁷ During my field experience I enrolled in and completed courses offered by the University of North Carolina Center for Public Health Preparedness (UNCCPHP) including basic public health training, epidemiology, influenza, and Medical Reserve Corps training. I reviewed the MRC epidemiology training and forwarded the information to my supervisor for future use if MRC volunteers are called upon to help with a disease outbreak situation. I also forwarded information to the communicable diseases nurse for her use in circumstances where she may require additional staff to conduct interviews in the case of an outbreak. I reviewed the MRC Factors for Success template but did not have the opportunity to work with the

MRC unit because it was not active during the period of time that I was at the health department.

Chapter 4

Products Developed

4.1 Emergency Responder Readiness Survey

A relevant concern for public health agencies is the question of adequate staffing during a public health emergency. Not only is there a concern as to whether health workers are prepared to report in a public health emergency but also as to whether they will be willing to respond. A literature search concerning the willingness of workers to report (WTR) during a flu pandemic found several studies that surveyed public health, EMS and hospital workers to determine their willingness to report. Results indicated that 16%-40% of employees might not respond to an emergency regardless of whether reporting to work was a requirement.^{29,30,31,32} Potential barriers described were responsibilities for children, elderly or disabled dependents and pets. Other obstacles included perception about the importance of the worker's role in an emergency and concerns about possible exposure to disease. Staff readiness for an emergency role is a priority preparedness goal at LDCHD and although personal preparedness is promoted there are currently no measures of performance available. We decided to develop a responder readiness survey to assess current levels of staff preparedness and to determine what improvements might be necessary.

I had no previous experience with survey development so I reviewed the preparedness module of CDC's Behavioral Risk Factor Surveillance System (BRFSS) survey as well as KDHE survey guidelines. Charlie assisted me with some revisions and suggested that I present my research and survey to the PHE team for their review

and input. It was sometimes difficult to develop questions with responses that could lead to actionable improvements. I developed a power-point presentation for the PHE team and presented it at the September 30, 2013 meeting. Each of the team members took the survey and provided suggestions for improvements to the survey and my power-point before I made a presentation to the entire staff. On October 8, 2013 I presented a less research intensive power-point to the entire LDCHD staff and provided them with a link to the survey. The initial response rate was disappointing with only about 7 replies by the time that I finished my hours at LDCHD in December despite a follow-up reminder to the staff. Mr. Bryan suggested that I continue with follow-ups as he felt that normally there would be better compliance with requests. The survey remained opened for another 60 days and when I closed it we had reached 31 responses.

Barriers to reporting to work aligned with the national studies with caring for dependent children and pets ranking first (8/31:25.81%) and third. (4/31:12.90%). Questions regarding personal preparedness revealed that most employees did not have written emergency plans (16/27:59.26%) nor did they have an emergency supply kit (14/27:51.85%). Concerning perceptions of the significance of personal preparedness, incident command, CPR, and First Aid training, I constructed importance matrix charts to show the connection between perceived importance and perceived competency. Ideally if employees view training as important but do not believe themselves to be competent these could be areas in which the health department could implement changes in terms of further training.

On the basis of the responses to the responder survey I would recommend to the PHE team that possible strategies for improvement might be to offer CPR and First Aid

training because a majority of those polled deemed these courses important or essential. ICS training is currently required of employees by LDCHD but of those who considered it important only half felt that they had intermediate or advanced proficiency. PERLC courses offer reviews of the ICS oriented toward public health workers that could serve to reinforce previous FEMA training.

4.2 Measles Table Top Exercise

My field experience hours were completed in December but I was asked if I wanted to help with a table top exercise scheduled for February and I agreed to help. Charlie Bryan (Community Planner), Kim Ens (Director of Clinic Services), Ron Starbuck (Wyandotte County Exercise Planner), and I met and revised a KDHE situation manual to make it more specific to Douglas County. The agencies to be invited included Lawrence, Baldwin & Eudora schools, Douglas County Emergency Management, Kansas University, Haskell Indian Nations University, KDHE, Douglas County MRC, Lawrence Memorial Hospital, and local physician's offices. The capabilities to be tested were #3 Emergency Operations Coordination, #6 Information Sharing, and #13 Public Health Surveillance and Epidemiological Investigation.¹¹

The exercise was held on February 28, 2014 at the Community Health Center in Lawrence. There were 19 players, 5 observers, 3 evaluators and 1 facilitator present. Of the agencies invited only Haskell did not send a representative. The situation presented was the arrival of a 44 year old man recently returned from a mission trip to Nigeria at the emergency department of the local hospital. He presented with a fever, cough, runny nose and rash and had attended a church supper the previous evening.

As the incident unfolds the participants are questioned about their priority actions in response to the scenario and what steps would need to be taken.

The exercise consisted of 3 modules each of which were followed by questions from the facilitator and group discussion. At the end of the session participants were asked to complete written feedback forms and participate in a hot wash session to discuss the exercise. Each of the 3 evaluators submitted an evaluation for one of the 3 specific capabilities being tested. I prepared a summary of the participant feedback forms and Exercise Evaluation Guides (EEG) submitted by the evaluators. I used this information to draft an initial After Action report (AAR). Charlie, Kim and I met on March 20 and made revisions to the report which will next be presented to the PHE team members so that an improvement plan with target completion dates may be added before it is submitted to KDHE.

Chapter 5

Core Competencies

I embarked upon this journey to obtain an MPH in 2011 after spending 31 years as a veterinary practitioner. Operation of a veterinary clinic in a town with a population of 5,000 has afforded me ample opportunities to contribute my expertise in infectious disease for the cause of public health. In the fall of 2006 I was asked to join a county-wide committee for influenza pandemic planning. I was also contacted by the Leavenworth county emergency manager about serving as the animal health representative on the K.C. Metro Homeland Security Council. All of these experiences prompted me to seek further education and when I discovered that I could complete courses online I decided to take the big step and go back to school.

5.1 Biostatistics

My previous experience with statistics was primarily in reading new vaccine or pharmaceutical research. I had never taken a formal statistics course before so this class provided me with the basic skills that I needed to interpret the research data that I found in my literature search. My experience with the course also presented me with the ability to produce a survey and perform basic analysis of results.

5.2 Environmental Health Sciences

During my veterinary education I completed a course in toxicology that introduced me to the concepts of LD₅₀ and dose response relationships that I have used in practice on numerous occasions. I use risk assessment regularly in clinical practice as I determine what vaccines or parasiticides are appropriate for a particular patient.

The Environmental Toxicology course introduced me to the formal concept of risk assessment which was reinforced by preparing a risk analysis for both this class and Food Safety Risk Analysis.

5.3 Epidemiology

I completed a course in epidemiology and zoonosis as part of my veterinary curriculum but was not introduced to measures of disease until I took the Introduction to Epidemiology course. Disease outbreaks and herd health are usual aspects of veterinary practice so I am very familiar with these aspects of epidemiology. Diagnosis of disease in clinical practice requires me to consider test sensitivity and specificity. Shadowing the communicable diseases nurse and observing the measles TTX allowed me to view epidemiological processes at work in the public health arena.

5.4 Health Services Administration

One of the advantages of being an older, non-traditional student is that I have had considerable experience in navigating health services as an individual, employer, and care-giver. I also have many peers employed in healthcare services with which I have had many conversations about the state of healthcare in our country. This class gave me the opportunity to interview the administrator of the local community hospital which offered me another perspective of healthcare.

5.5 Social and Behavioral Basis of Public Health

My field experience truly exemplified the theories of health behavior. From my literature search concerning the willingness to report to work during a pandemic the

results indicated that an individual must perceive a threat (i.e. the possibility of a pandemic) as well as feel competent about their role in order to report for an emergency. In my local questionnaire 80% of those responding did not perceive that there would be an emergency that would cause them to be called back into work. Without that sense of threat it is difficult to promote preparedness activities among department employees. Community involvement and empowerment were evidenced by the interaction of the health department with the community organizations in “Together Prepared” and the schools, university and hospital represented at the measles TTX.

5.6 Infectious Diseases and Zoonoses Emphasis Area Competencies

5.61 Pathogens/Pathogenic Mechanisms

My veterinary education and 33 years of practice experience have given me an abundant opportunity to develop an understanding of modes of disease causation. In my veterinary career I have witnessed the emergence of diseases such as Lymes, and West Nile virus and MRSA. I take advantage of many opportunities for continuing education so that I can stay current and remain a credible source of advice for my clients.

5.62 Host response to pathogens/Immunology

In addition to my immunology training in the veterinary school curriculum my undergraduate degree included a course in immunology. Vaccinations are an integral part of veterinary practice and infectious disease control. An understanding of host immune response is crucial not only to vaccine selection and timing but also to the diagnosis and treatment of immunological disorders.

5.63 Environmental/Ecological influences

Global Disease and Fundamental Concepts of Emerging Disease were two of my MPH courses that emphasized the influence of environmental factors on disease. Food Safety Risk Analysis allowed me to utilize my background in microbiology in regard to food safety in the “farm to fork” continuum. Climate directed migration of tick species and the appearance of greater numbers of tick borne diseases such as ehrlichiosis and Rocky Mountain spotted fever were the topics of a “One Health” summit that I attended in Tulsa 2 years ago. This past summer and fall I have diagnosed more than 10 canine patients with either one or both of these diseases which is a greatly increased incidence over past years.

5.64 Disease surveillance/Quantitative methods

Disease surveillance is very familiar to me because one of my responsibilities as a veterinarian is to report any notifiable diseases to the Kansas State Agriculture Department of Animal Health. The Food Safety Risk Analysis course reinforced my knowledge of disease surveillance regarding food borne disease outbreaks.

Globalization, Cooperation and the Food Trade gave me an historical view of international disease surveillance and its impact on trade. Through my field experience and the measles TTX I gained familiarity with Disease Investigative Guidelines (DIG) from KDHE as well as EpiTrax, the electronic surveillance system.

5.65 Effective Communication

In order to be a successful veterinary practitioner one must not only be a skilled diagnostician but also an effective communicator. In fact there are times when the

ability to communicate becomes more important than a clinician's abilities in medicine. Risk communication is an important part of disaster preparedness and may become crucial to a desired outcome. The Food Safety Risk Analysis course provided me the opportunity to learn and practice techniques for oral and written risk communications.

5.66 Frontier Program

I was fortunate to get involved with the Frontier program last fall and got to participate in a trip to Boston where we attended a seminar at Harvard about "Nudge" policy (i.e. behavioral economics) and toured a seafood manufacturing plant where we saw food safety in action. While at Massport we viewed the security measures that are taken with foodstuffs entering through the port as well as were given some insight to the measures that were taken to safeguard the port on the day of the Boston Marathon terrorist event. In January we visited the Clendening History of Medicine Library at the Kansas University Medical School and the Truman Library both of which piqued my curiosity concerning the history of emergency preparedness measures prior to 2001. We also toured Hunt Midwest Subtropolis and Sysco Foods. At Sysco foods we learned about the emergency plans that the company has in place to keep its food supplies safe even in the event of a prolonged power interruption. These interdisciplinary trips have given me a much broader perspective of food safety, public policy, emergency preparedness, and public health.

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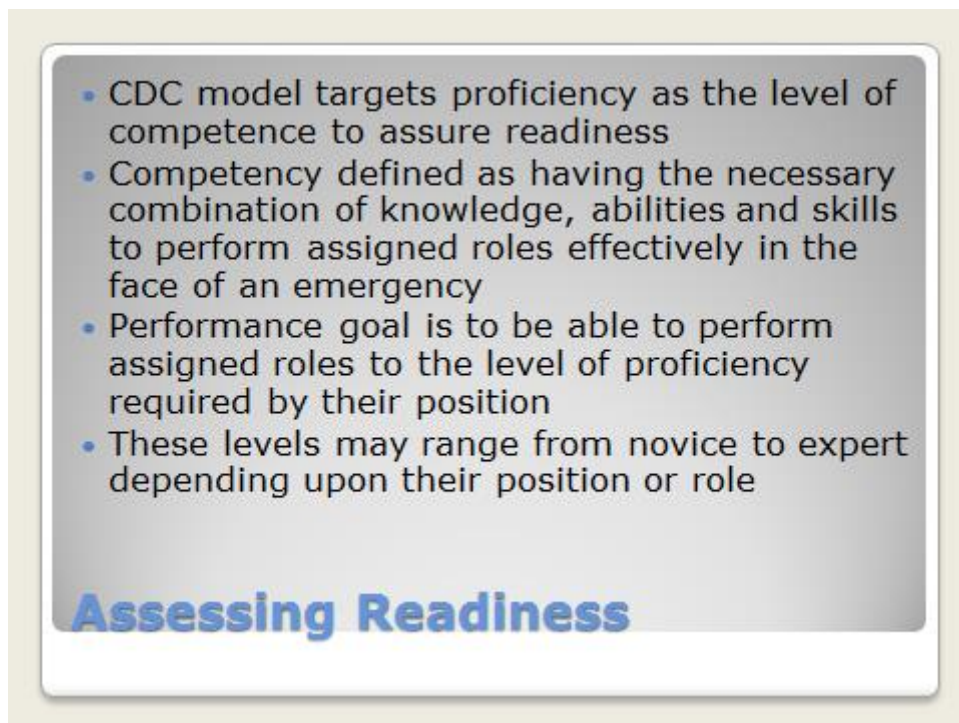
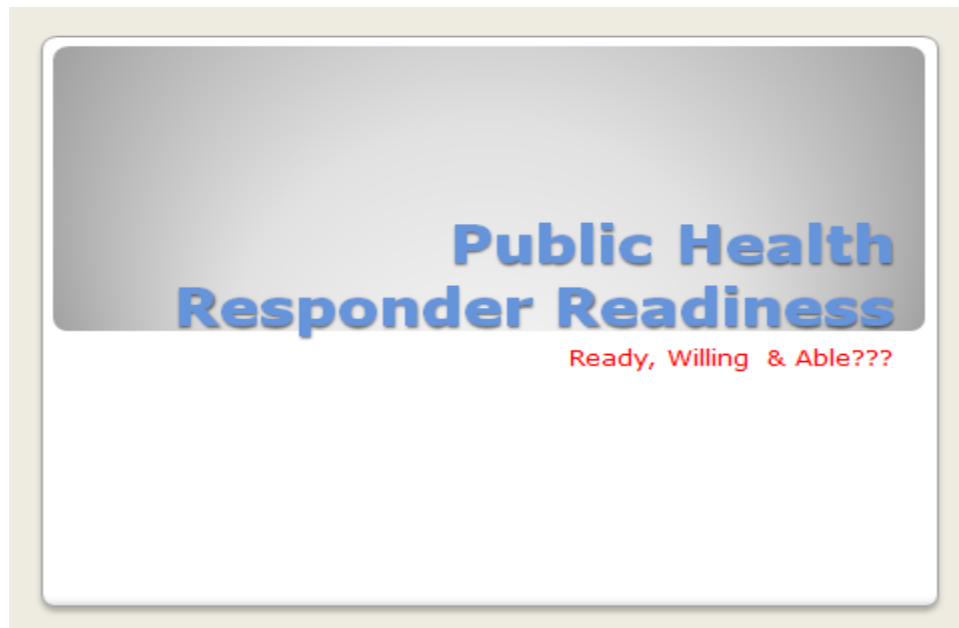
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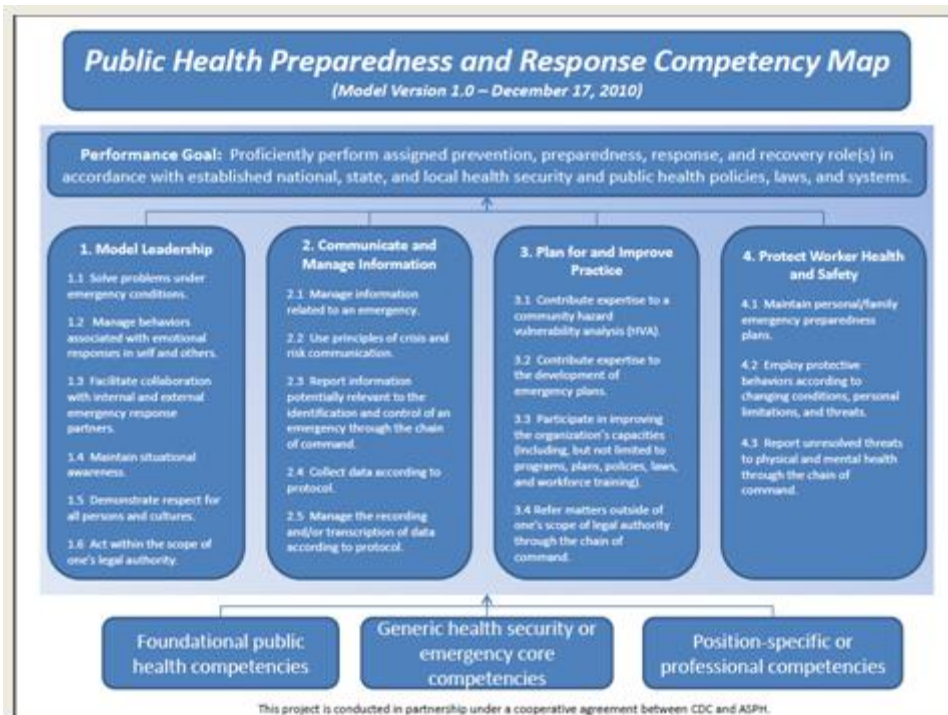
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Appendix 1

Responder Readiness Power Point





- Research published in 2006 suggests that 40% of local health department employees may not be willing to report to duty in the face of a pandemic influenza threat
- Clinical staff workers more likely to report than clerical or technical staff
- Less than 1/3rd of workers felt that they would have an important role in the response to a pandemic

• Balicer et al, R. D. (2006). Local public health workers' perceptions toward responding to an influenza pandemic. *BMC Public Health*, 6(99). doi:10.1186/1471-2458/6/99

Determinants of Willingness

- Results from a 2009 study suggest that 1 in 6 workers would not be willing to respond to a pandemic flu emergency
- A worker's motivation to prepare and respond includes a perceived threat of the emergency
- Workers must feel confident in their ability to perform and perceive their role as important in order to report

• Barnett, D. J., Balicer, R. D., Thompson, C. B., Storey, J. D., Omer, S. B., Semon, N. L., . . . Links, J. M. (2009). Assessment of local public health workers' willingness to respond to pandemic influenza through application of the extended parallel process model. *PLoS One*, 4(7). doi:<http://dx.doi.org/10.1371/journal.pone.0006365>

- Determine barriers specific to local health department employees and determine possible strategies for intervention
- Enhance emergency core competencies with training i.e. NIMS and other non- ICS emergency preparedness courses
- Promote family preparedness to reduce challenges to worker willingness to respond

Strategies for Intervention

- Determine barriers specific to local health department employees and determine possible strategies for intervention
- Enhance emergency core competencies with training i.e. NIMS and other non- ICS emergency preparedness courses
- Promote family preparedness to reduce challenges to worker willingness to respond

Strategies for Intervention

Presented to LDCHD PHE team September 30, 2013

Appendix 2

Responder Readiness Survey

1. Does your job description require that you report to work in case of an emergency situation?

☐ Yes

☐ No

☐ Unsure

2. How likely do you think that there would be an emergency occurring in the next 12 months that would require you to be called back in to work?

☐ Highly likely

☐ Likely

☐ Not Likely

☐ Unsure

3. Are you confident that your workplace has the ability to contact you in a timely matter concerning the need to report to work in the event of an emergency?

☐ Highly confident

☐ Confident

☐ Slightly confident

☐ Not confident

☐ Unsure

4. What types of emergencies do you feel are most likely to affect your household?

☐ Tornadoes

☐ Ice/Snowstorm

☐ Disease Epidemic/Pandemic

☐ Chemical Spill

☐ Flooding

☐ Terrorism/Bio-terrorism

Other (please specify)

5. Indicate the likelihood that the following issues would make it difficult for you to report to work during an emergency.

	Not applicable	Not likely a barrier	Possibly a barrier	Potentially significant barrier
Dependent children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dependent elder or household member with disability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dependent pets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dependent livestock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of own transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of four-wheel drive transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spouse/partner required to report during emergencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fears for personal safety due to weather conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fears of possible exposure to disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Describe any other issues that might be potentially significant barriers for you to report to work during an emergency?

6. How confident are you that your family or other dependents could function in your absence if you were called in to work for 12-24 hours in the case of an emergency?

- ☐ Highly confident
☐ Confident
☐ Slightly confident
☐ Not confident
☐ Unsure
☐ Not applicable

Preparedness Knowledge and Skills

7. To be an effective emergency responder, how important are knowledge and skills in the following areas?

	Not Important	Somewhat Important	Very Important	Essential
CPR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
First Aid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal & Family Preparedness & Response	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Incident Command System (ICS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
National Incident Management System (NIMS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mass Dispensing/Vaccination Operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pandemic Preparedness & Response	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bioterrorism Preparedness & Response	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Describe any other preparedness knowledge or skills that you think is essential.

8. What is your current level of proficiency in the following areas?

	Not Proficient	Basic	Intermediate	Advanced
CPR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
First Aid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal & Family Preparedness & Response	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Incident Command System (ICS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
National Incident Management System (NIMS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mass Dispensing/Vaccination Operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pandemic Preparedness & Response	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bioterrorism Preparedness & Response	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Describe any other preparedness knowledge or skills in which you are not proficient or are only basically proficient.

Preparedness Activities

9. Have you received an influenza vaccination within the past year?

- ☐ Yes
☐ No

10. Within the past year, indicate the preparedness topics you have specific discussed with your family.

- ☐ Events to prepare for (e.g., tornadoes, fire)
☐ Communicating with each other during disasters (text, call, email, etc.)
☐ Identifying other emergency contacts (e.g., names and phone numbers)
☐ Meeting places outside of disaster/emergency impact area
☐ Evacuation routes
☐ I have not discussed any preparedness topics with my family in the past year

Describe any other preparedness topics you have discussed with your family in the past year.

11. Does your family have any written emergency plans? Check all that apply.

- ☐ Lists of contacts
☐ Evacuation routes
☐ Meeting places for family members
☐ Copies of important documents
☐ None

Other (please specify)

12. Has your household prepared a basic emergency supply kit with supplies such as flashlights, weather radio and extra batteries that is kept in a designated place in your home?

- ☐ Yes
☐ No

13. Why have you not prepared an emergency supply kit?

- ☐ I don't know how to prepare a basic emergency supply kit
- ☐ It costs too much
- ☐ It has not been a priority for me
- ☐ I have not had enough time

Other (please specify)

Emergency Preparedness Kits

14. FEMA suggests that families be prepared to shelter-in-place for at least 3 days in the case of an emergency. Which of the following supplies do you keep in a designated emergency kit in your home?

- ☐ Flashlight
- ☐ Battery powered radio
- ☐ Extra batteries
- ☐ First Aid Kit
- ☐ Prescription medicines for any family members that require them
- ☐ Sturdy shoes, boots, gloves, hats, heavy coats
- ☐ Sleeping bags or blankets
- ☐ Copies of important personal documents in waterproof container
- ☐ A 3 day supply of water and non-perishable food items for each family member
- ☐ I do not have a designated kit

15. FEMA recommends that your disaster kit be updated every 6 months so that food, water, and prescription medications are not spoiled when they are needed. Have you updated your disaster supplies in the last 6 months?

- ☐ Yes
- ☐ No
- ☐ I do not have a designated disaster kit

16. In an emergency if your household was asked to evacuate what would you do with your pets/livestock?

- ☐ Take them with you
- ☐ Remove them to a shelter/boarding kennel
- ☐ Leave them behind with food and water
- ☐ Refuse to evacuate because of pets/livestock
- ☐ I do not have pets or livestock

17. What preparedness/ planning steps have you taken in regard to your pets/livestock?

- ☐ Companion animals have permanent identification such as a microchip or tattoo
- ☐ Arrangements are made with a boarding kennel, friend etc. in the event that you must evacuate
- ☐ 3 days worth of pet food, water and medications on hand
- ☐ Vaccination and medical records readily available
- ☐ Vehicle and trailer to transport livestock available
- ☐ I have not made any plans
- ☐ I do not have pets or livestock

Demographics

18. What is your gender?

- ☐ Male
☐ Female

19. What is your age in years?

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

- ☐ Less than High School
☐ High School / GED
☐ Some College
☐ 2-Year College Degree
☐ 4-Year College Degree
☐ Masters Degree
☐ Doctoral Degree
☐ Professional Degree (JD, MD)

21. How long (in years) have you been employed at the Lawrence-Douglas County Health Department?

22. How far (in miles) is your commute to work?

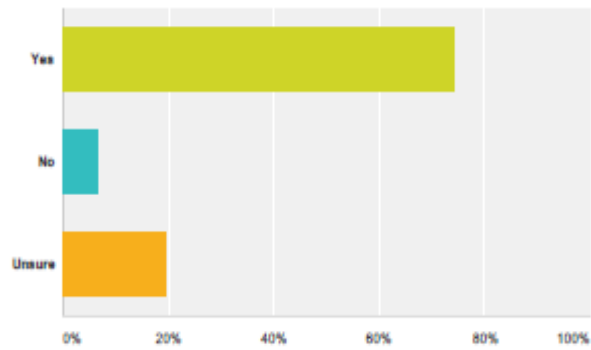
Appendix 3

Survey Results

Responder Readiness Survey

Q1 Does your job description require that you report to work in case of an emergency situation?

Answered: 31 Skipped: 0

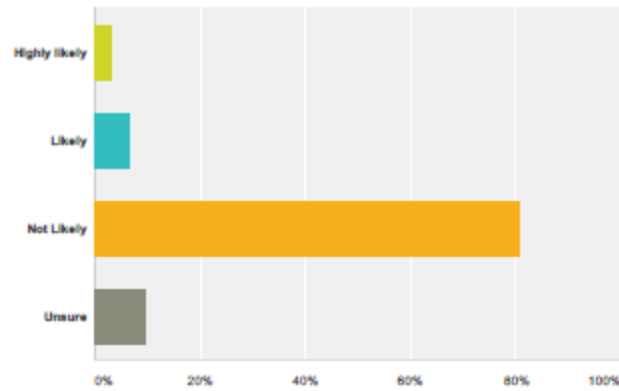


Answer Choices	Responses	
Yes	74.19%	23
No	6.45%	2
Unsure	19.35%	6
Total		31

Responder Readiness Survey

Q2 How likely do you think that there would be an emergency occurring in the next 12 months that would require you to be called back in to work?

Answered: 31 Skipped: 0

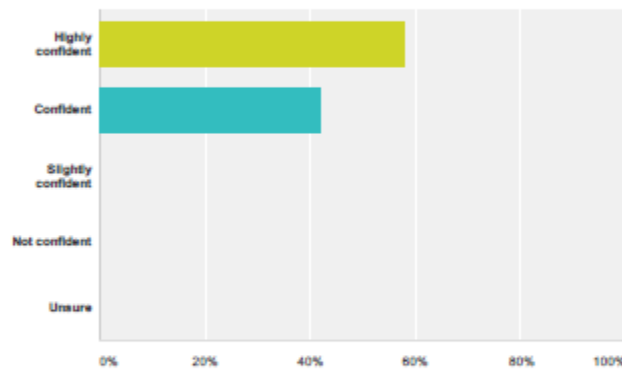


Answer Choices	Responses
Highly likely	3.23% 1
Likely	6.45% 2
Not Likely	86.65% 25
Unsure	9.68% 3
Total	31

Responder Readiness Survey

Q3 Are you confident that your workplace has the ability to contact you in a timely matter concerning the need to report to work in the event of an emergency?

Answered: 31 Skipped: 0

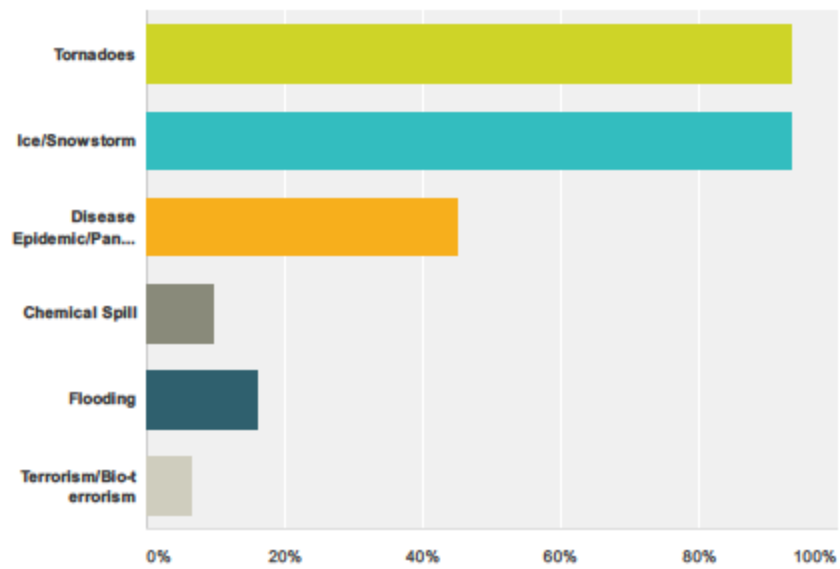


Answer Choices	Responses
Highly confident	58.06% 18
Confident	41.94% 13
Slightly confident	0% 0
Not confident	0% 0
Unsure	0% 0
Total	31

Responder Readiness Survey

Q4 What types of emergencies do you feel are most likely to affect your household?

Answered: 31 Skipped: 0

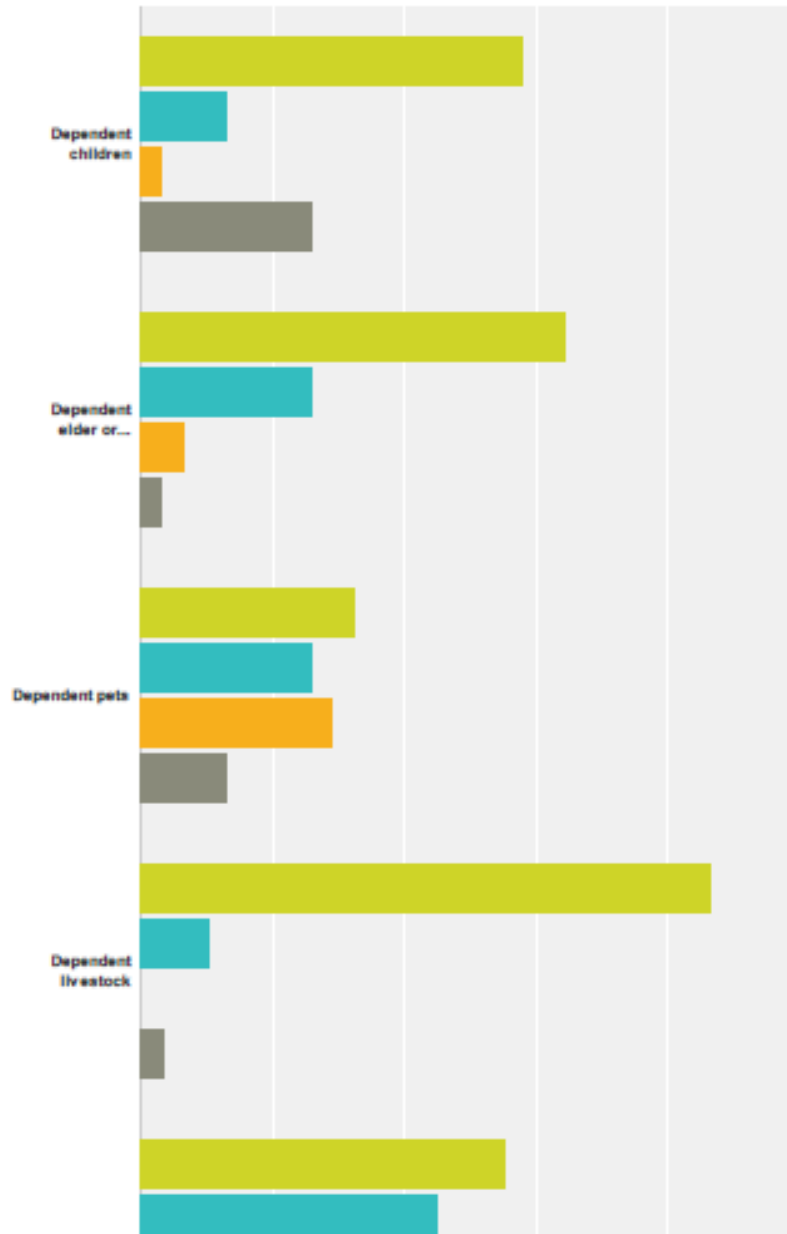


Answer Choices	Responses
Tornadoes	93.55% 29
Ice/Snowstorm	93.55% 29
Disease Epidemic/Pandemic	45.16% 14
Chemical Spill	9.68% 3
Flooding	16.13% 5
Terrorism/Bio-terrorism	6.45% 2
Total Respondents: 31	

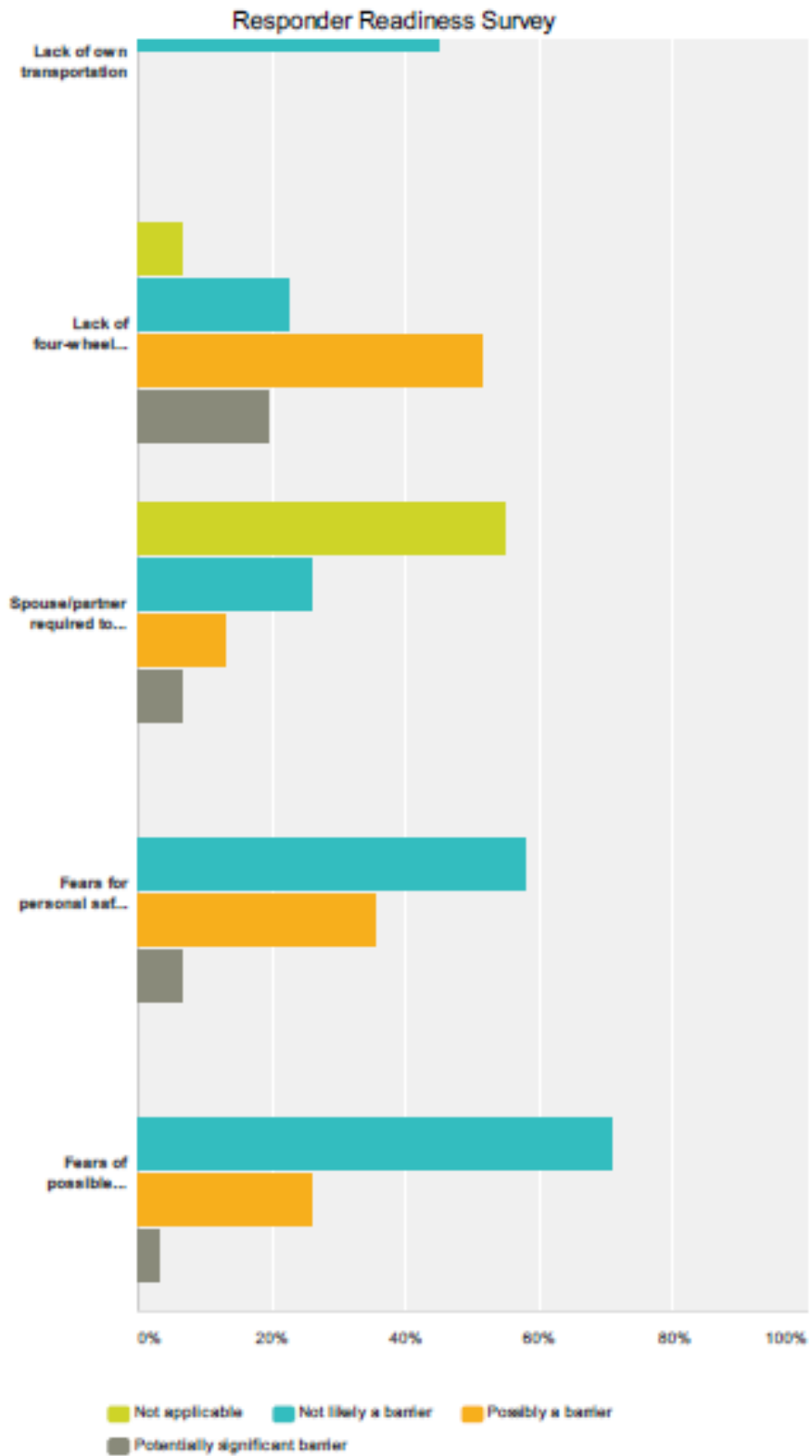
Responder Readiness Survey

Q5 Indicate the likelihood that the following issues would make it difficult for you to report to work during an emergency.

Answered: 31 Skipped: 0



5 / 29



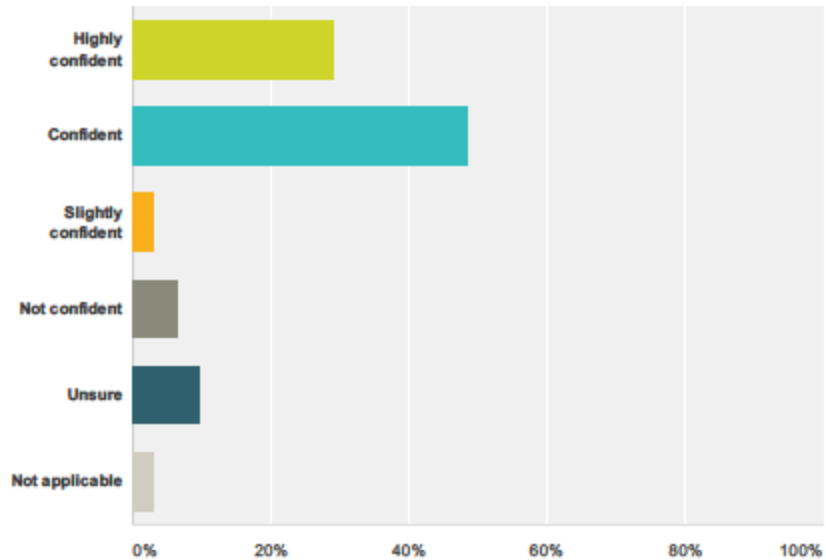
Responder Readiness Survey

	Not applicable	Not likely a barrier	Possibly a barrier	Potentially significant barrier	Total
Dependent children	58.06% 18	12.90% 4	3.23% 1	25.81% 8	31
Dependent elder or household member with disability	64.52% 20	25.81% 8	6.45% 2	3.23% 1	31
Dependent pets	32.26% 10	25.81% 8	29.03% 9	12.90% 4	31
Dependent livestock	86.21% 25	10.34% 3	0% 0	3.45% 1	29
Lack of own transportation	55.17% 16	44.83% 13	0% 0	0% 0	29
Lack of four-wheel drive transportation	6.45% 2	22.58% 7	51.61% 16	19.35% 6	31
Spouse/partner required to report during emergencies	54.84% 17	25.81% 8	12.90% 4	6.45% 2	31
Fears for personal safety due to weather conditions	0% 0	58.06% 18	35.48% 11	6.45% 2	31
Fears of possible exposure to disease	0% 0	70.97% 22	25.81% 8	3.23% 1	31

Responder Readiness Survey

Q6 How confident are you that your family or other dependents could function in your absence if you were called in to work for 12-24 hours in the case of an emergency?

Answered: 31 Skipped: 0

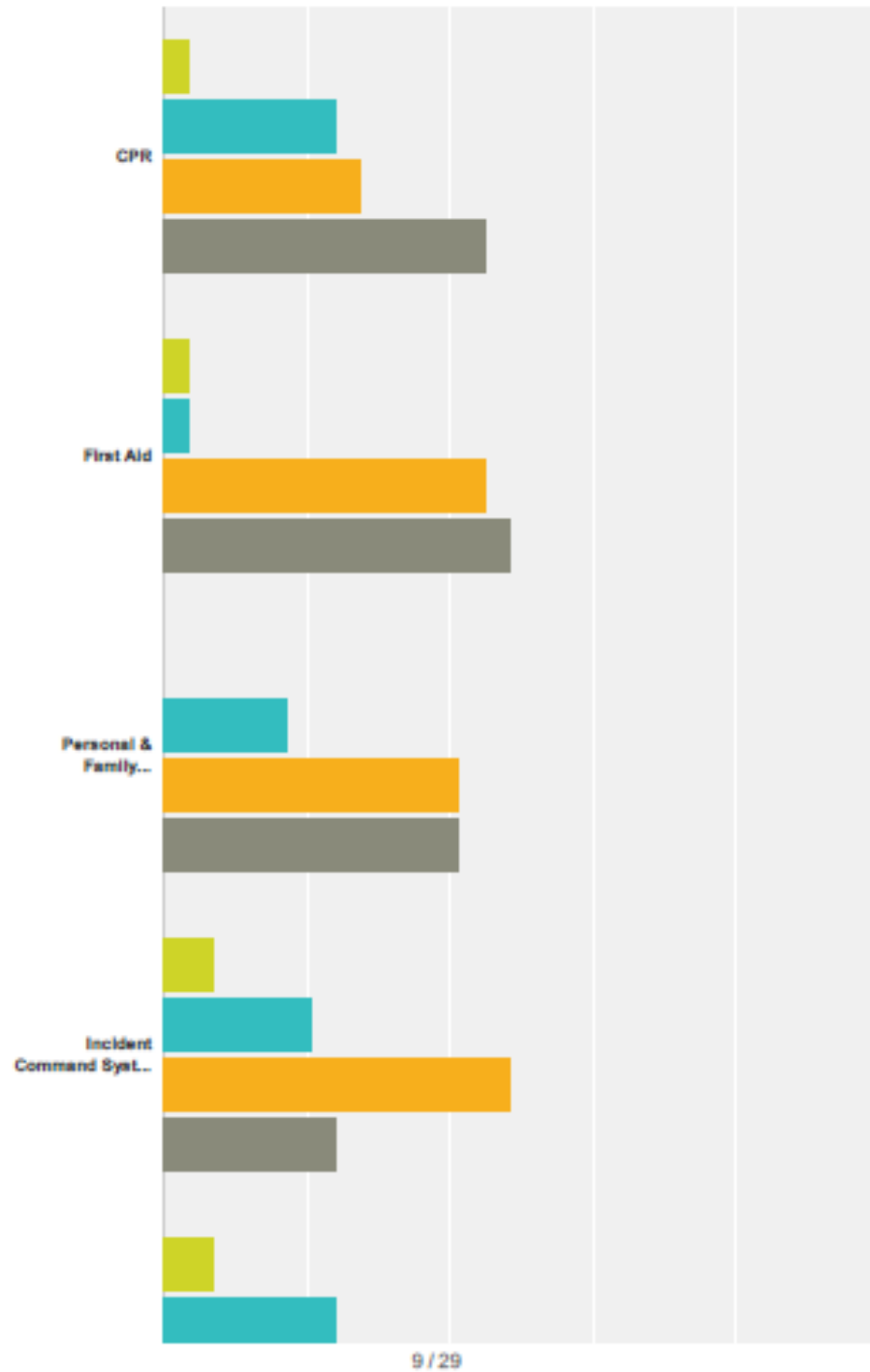


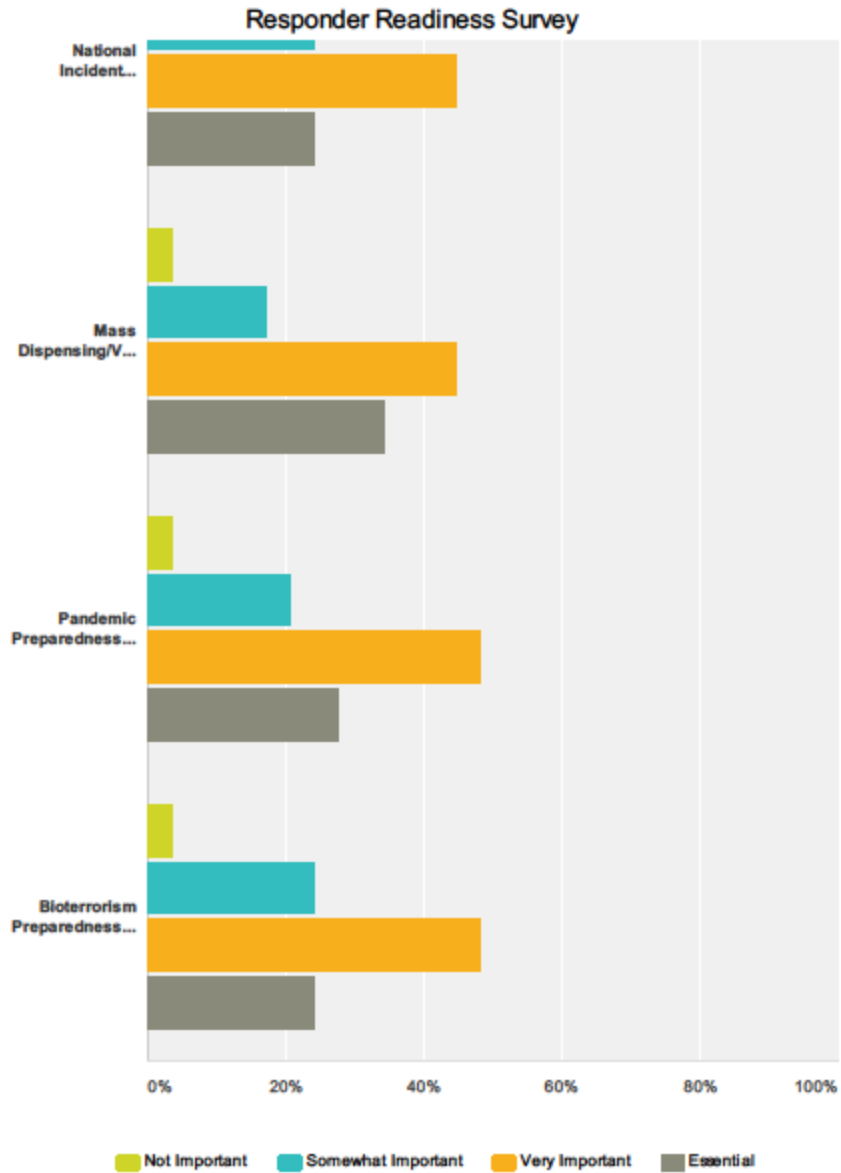
Answer Choices	Responses	
Highly confident	29.03%	9
Confident	48.39%	15
Slightly confident	3.23%	1
Not confident	6.45%	2
Unsure	9.68%	3
Not applicable	3.23%	1
Total		31

Responder Readiness Survey

Q7 To be an effective emergency responder, how important are knowledge and skills in the following areas?

Answered: 29 Skipped: 2





	Not Important	Somewhat Important	Very Important	Essential	Total
CPR	3.45% 1	24.14% 7	27.59% 8	44.83% 13	29
First Aid	3.45% 1	3.45% 1	44.83% 13	48.28% 14	29
Personal & Family Preparedness & Response	0% 0	17.24% 5	41.38% 12	41.38% 12	29

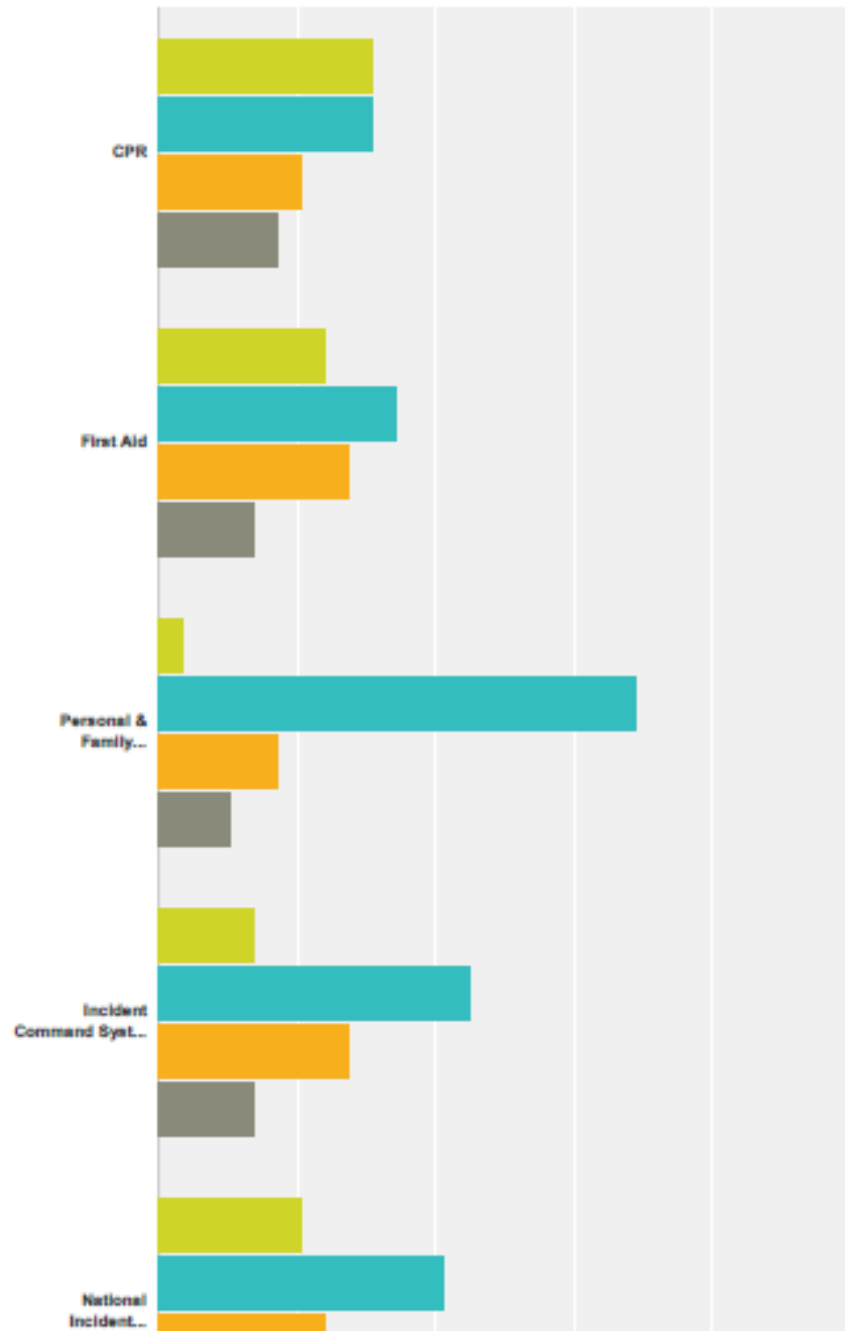
Incident Command System (ICS)	8.62% 2	20.69% 6	48.28% 14	24.41% 7	29
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10 / 29

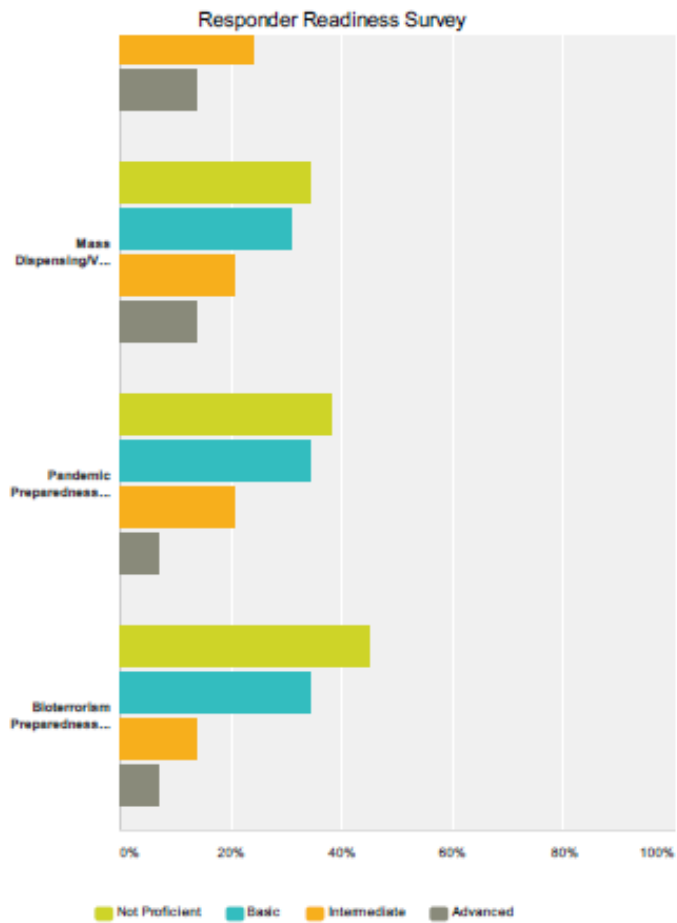
Responder Readiness Survey

Q8 What is your current level of proficiency in the following areas?

Answered: 29 Skipped: 2



12 / 29



	Not Proficient	Basic	Intermediate	Advanced	Total
CPR	31.03% 9	31.03% 9	20.69% 6	17.24% 5	29
First Aid	24.14% 7	34.48% 10	27.59% 8	13.79% 4	29
Personal & Family Preparedness & Response	3.45% 1	68.97% 20	17.24% 5	10.34% 3	29
Incident Command System (ICS)	13.79% 4	44.83% 13	27.59% 8	13.79% 4	29
National Incident Management System (NIMS)	20.69% 6	41.38% 12	24.14% 7	13.79% 4	29

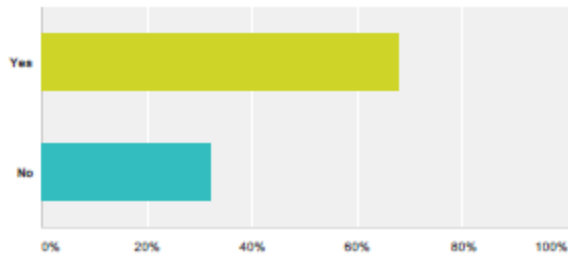
Responder Readiness Survey

	Not Proficient	Basic	Intermediate	Advanced	Total
Mass Dispensing/Vaccination Operations	34.48% 10	31.03% 9	20.69% 6	13.79% 4	29
Pandemic Preparedness & Response	37.93% 11	34.48% 10	20.69% 6	6.90% 2	29
Bioterrorism Preparedness & Response	44.83% 13	34.48% 10	13.79% 4	6.90% 2	29

Responder Readiness Survey

Q9 Have you received an influenza vaccination within the past year?

Answered: 28 Skipped: 3

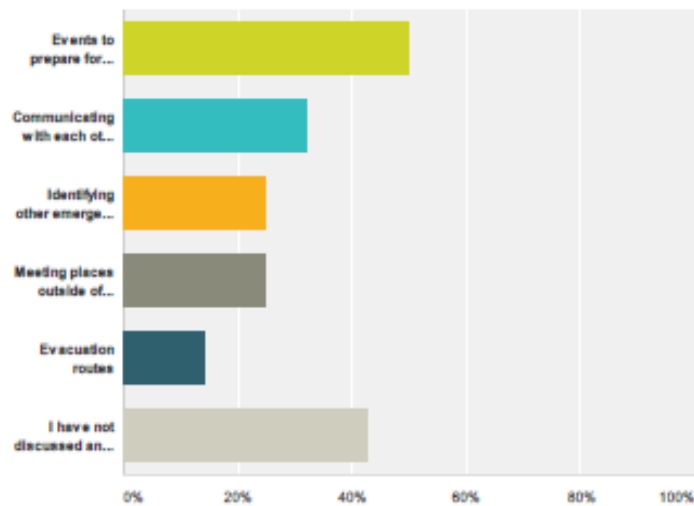


Answer Choices	Responses
Yes	67.86% 19
No	32.14% 9
Total	28

Responder Readiness Survey

Q10 Within the past year, indicate the preparedness topics you have specific discussed with your family.

Answered: 28 Skipped: 3

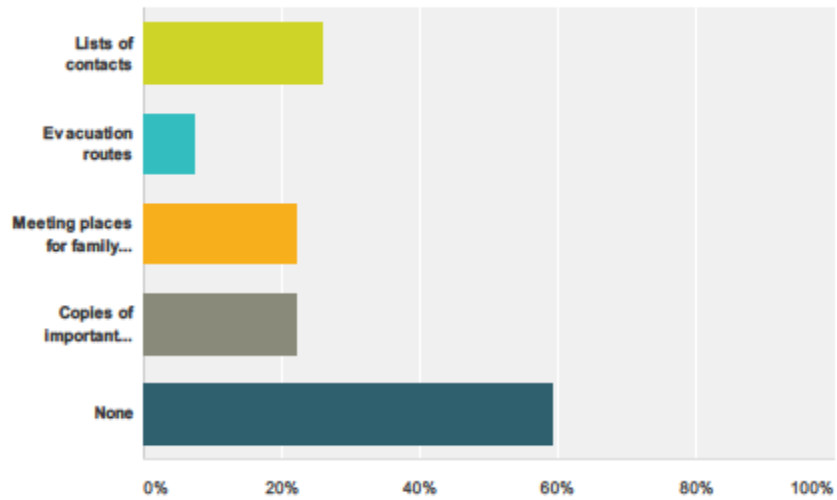


Answer Choices	Responses
Events to prepare for (e.g., tornadoes, fire)	50% 14
Communicating with each other during disasters (text, call, email, etc.)	32.14% 9
Identifying other emergency contacts (e.g., names and phone numbers)	25% 7
Meeting places outside of disaster/emergency impact area	25% 7
Evacuation routes	14.29% 4
I have not discussed any preparedness topics with my family in the past year	42.86% 12
Total Respondents: 28	

Responder Readiness Survey

Q11 Does your family have any written emergency plans? Check all that apply.

Answered: 27 Skipped: 4

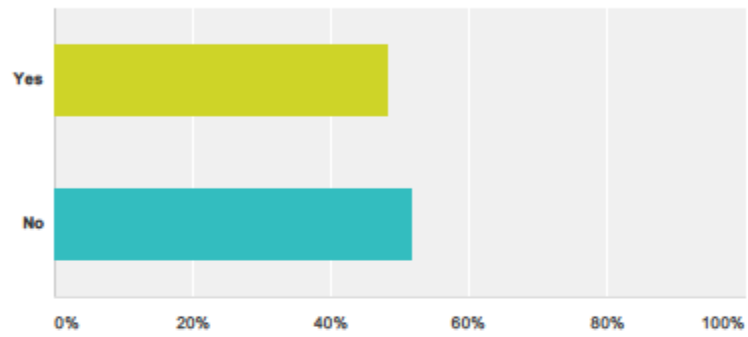


Answer Choices	Responses	
Lists of contacts	25.93%	7
Evacuation routes	7.41%	2
Meeting places for family members	22.22%	6
Copies of important documents	22.22%	6
None	59.26%	16
Total Respondents: 27		

Responder Readiness Survey

Q12 Has your household prepared a basic emergency supply kit with supplies such as flashlights, weather radio and extra batteries that is kept in a designated place in your home?

Answered: 27 Skipped: 4

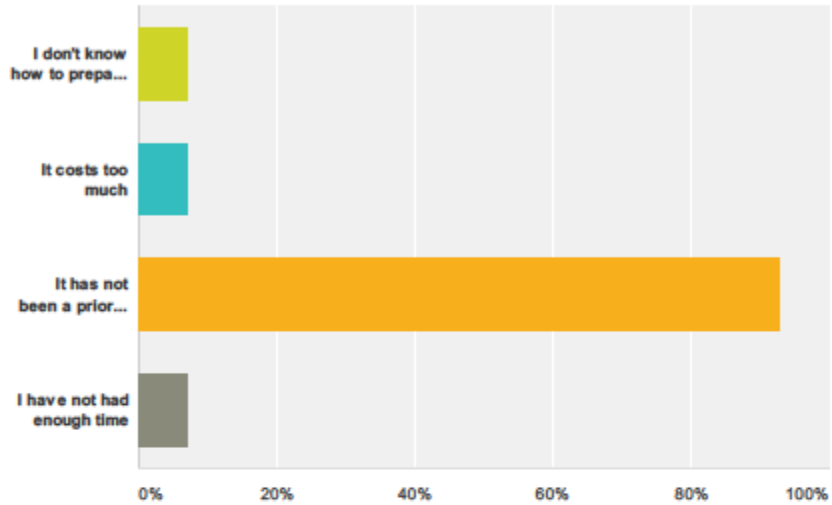


Answer Choices	Responses	
Yes	48.15%	13
No	51.85%	14
Total		27

Responder Readiness Survey

Q13 Why have you not prepared an emergency supply kit?

Answered: 14 Skipped: 17

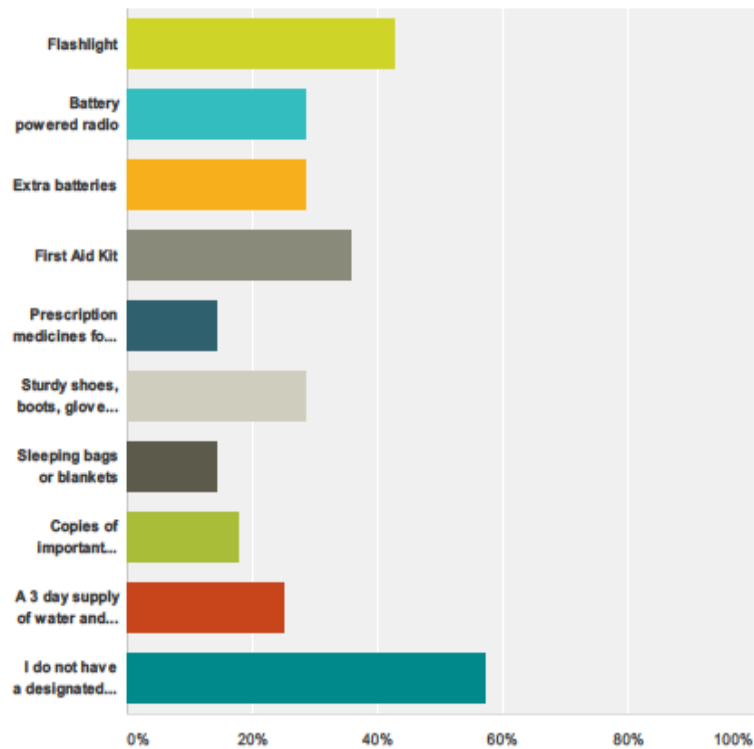


Answer Choices	Responses	
I don't know how to prepare a basic emergency supply kit	7.14%	1
It costs too much	7.14%	1
It has not been a priority for me	92.86%	13
I have not had enough time	7.14%	1
Total Respondents: 14		

Responder Readiness Survey

Q14 FEMA suggests that families be prepared to shelter-in-place for at least 3 days in the case of an emergency. Which of the following supplies do you keep in a designated emergency kit in your home?

Answered: 28 Skipped: 3



Answer Choices	Responses	
Flashlight	42.86%	12
Battery powered radio	28.57%	8
Extra batteries	28.57%	8
First Aid Kit	35.71%	10
Prescription medicines for any family members that require them	14.29%	4
Sturdy shoes, boots, gloves, hats, heavy coats	28.57%	8
Sleeping bags or blankets	14.29%	4
Copies of important personal documents in waterproof container	17.86%	5

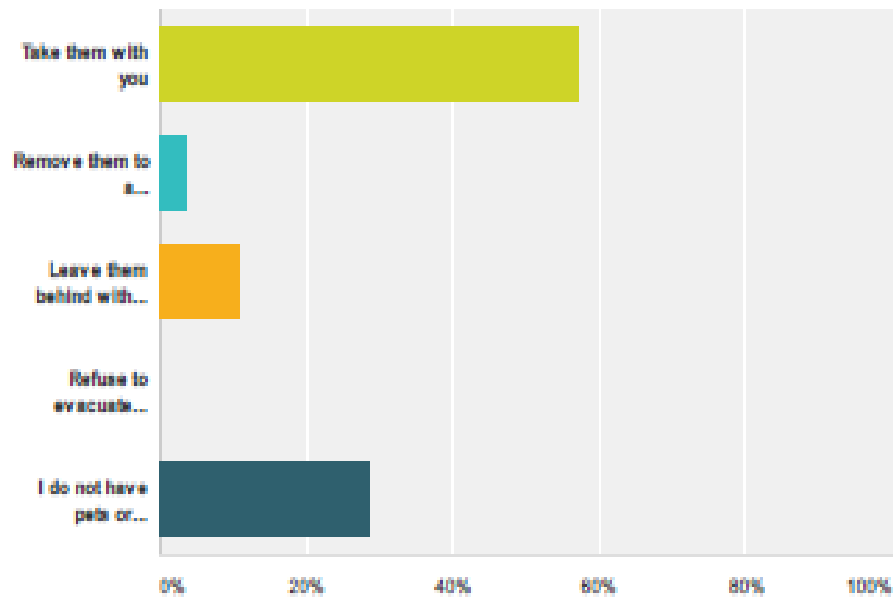
Responder Readiness Survey

A 3 day supply of water and non-perishable food items for each family member	25%	7
I do not have a designated kit	57.14%	16
Total Respondents: 28		

Responder Readiness Survey

Q16 In an emergency if your household was asked to evacuate what would you do with your pets/livestock?

Answered: 28 Skipped: 3

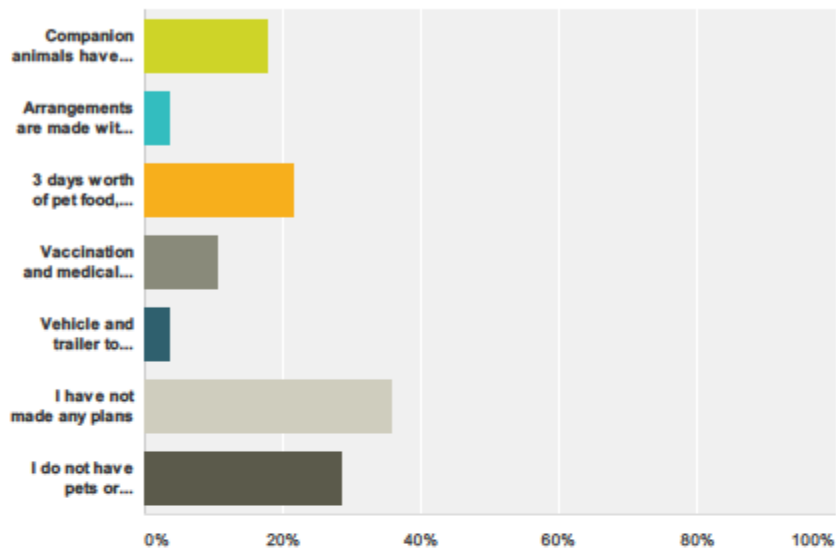


Answer Choices	Responses	
Take them with you	57.14%	16
Remove them to a shelter/boarding kennel	3.57%	1
Leave them behind with food and water	10.71%	3
Refuse to evacuate because of pet/livestock	0%	0
I do not have pets or livestock	28.57%	8
Total		28

Responder Readiness Survey

Q17 What preparedness/ planning steps have you taken in regard to your pets/livestock?

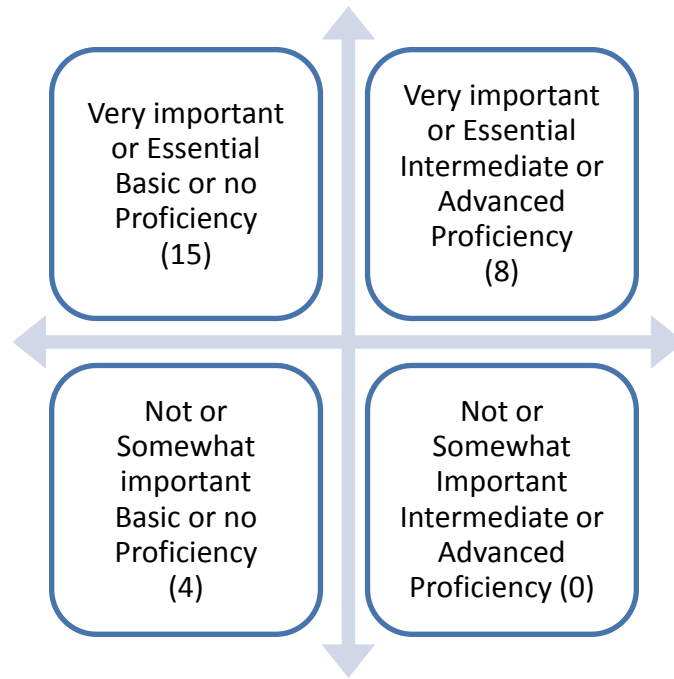
Answered: 28 Skipped: 3



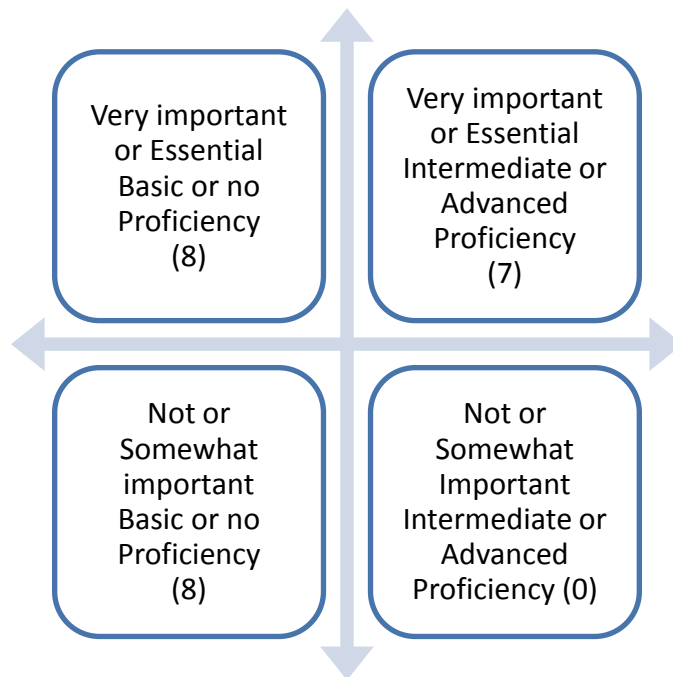
Answer Choices	Responses
Companion animals have permanent identification such as a microchip or tattoo	17.86% 5
Arrangements are made with a boarding kennel, friend etc. in the event that you must evacuate	3.57% 1
3 days worth of pet food, water and medications on hand	21.43% 6
Vaccination and medical records readily available	10.71% 3
Vehicle and trailer to transport livestock available	3.57% 1
I have not made any plans	35.71% 10
I do not have pets or livestock	28.57% 8
Total Respondents: 28	

Importance Matrix

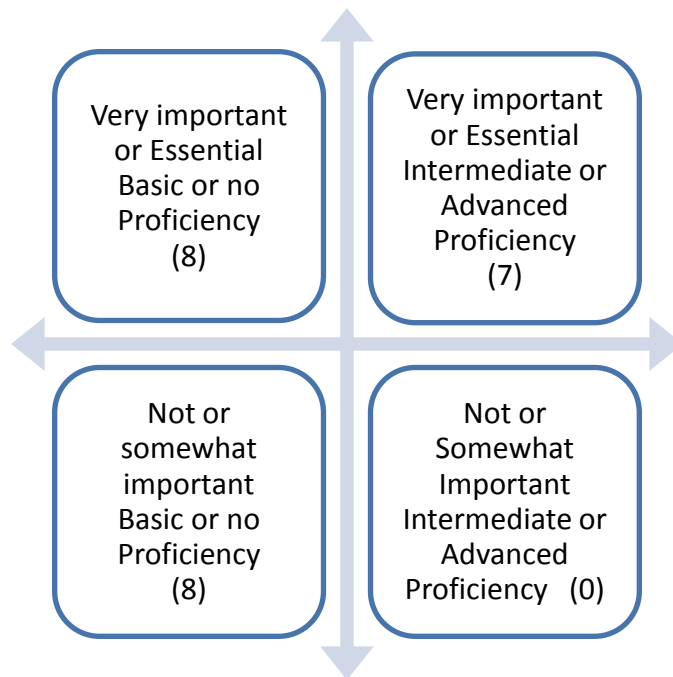
Personal Preparedness



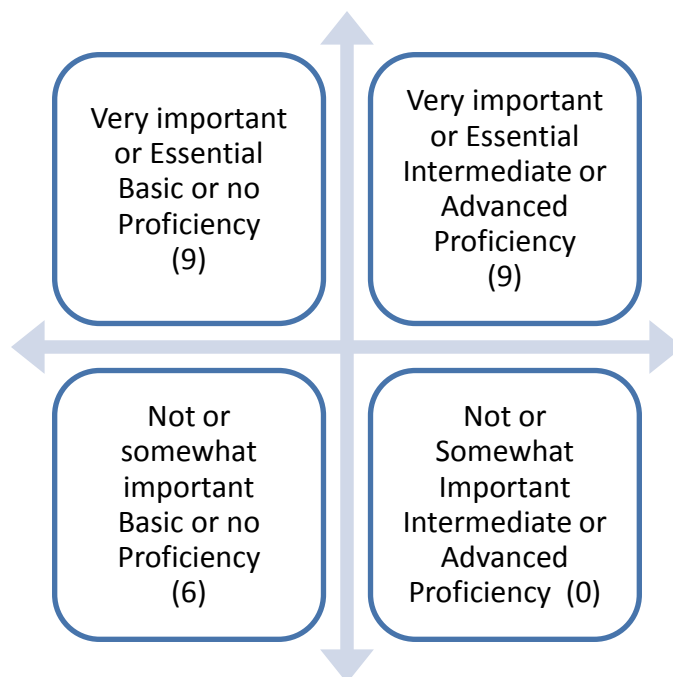
Pandemic Preparedness



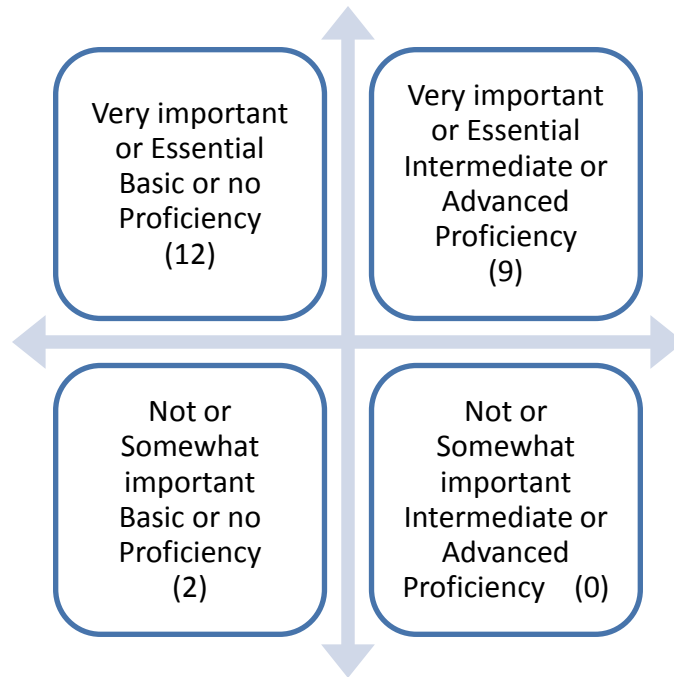
Incident Command Training



CPR



First Aid Training



Appendix 4

Summary of Participant Feedback from Tabletop Exercise

February 28, 2014

28 total participants: 1 facilitator, 3 evaluators, 5 observers, 19 players

Strengths

The top 3 strengths listed were:

- Partnering between the agencies and organizations represented. (14)
- Communication and information sharing modalities are in place including the county PIO. (15)
- The availability of resources within the county (7)

Additional strengths mentioned were:

- Broad areas of expertise were represented at the exercise (2)
- The HD demonstrated strong communicable disease protocols (2)
- The schools are able to readily identify unvaccinated children (2)
- KU has a system to identify participants in a university sponsored camp (2)
- MRC members are available

Improvements Needed

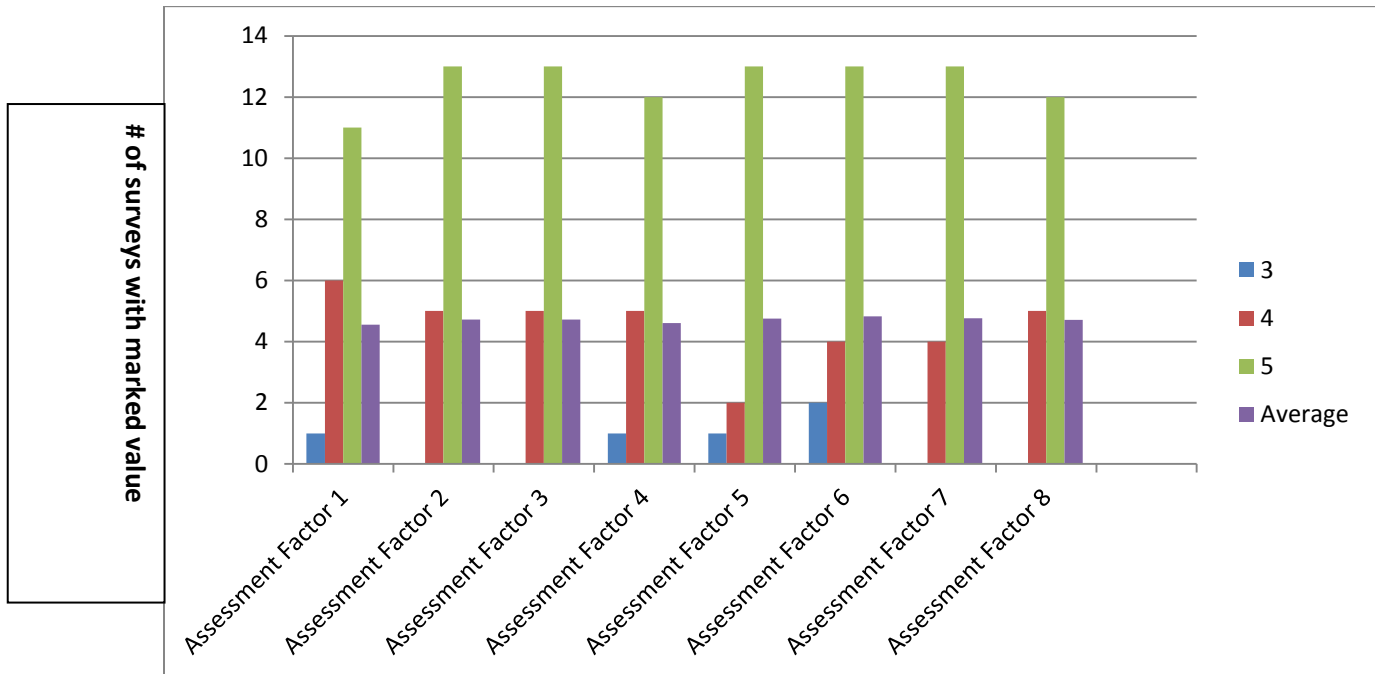
The top 3 improvements needed were:

- Immunization histories for school and hospital staff (7)
- More education for the public regarding vaccination to reduce religious exemptions (7)
- Health officer needs to be present and alternate health officer identified (3)

Additional ideas for improvement include:

- More focus on preventative strategies
- Additional education and training for staffing purposes –cross-training & back-ups (2)
- Increase discussion concerning when to initiate the ICS (2)
- Include city & county government officials, day-cares, urgent care and mental health facilities in exercise
- Address fears of litigation (2)
- Increase involvement of legislators to keep them apprised of ramifications of religious exemptions
- Need to include decontamination procedures for ED and other exposed areas

Exercise Design and Conduct



Assessment Factors

1.-The exercise was well structured and organized.
2.-The exercise scenario was plausible and realistic.
3.-The facilitator/controller(s) was knowledgeable about the area of play and kept the exercise on target.
4.-The exercise documentation provided to assist in preparing for and participating in the exercise was useful.
5.-Participation in the exercise was appropriate for someone in my position.
6.-The participants included the right people in terms of level and mix of disciplines.
7.-This exercise allowed my agency/jurisdiction to practice and improve priority capabilities.
8.-After this exercise, I believe my agency/jurisdiction is better prepared to deal successfully with the scenario that was exercised.

Appendix 5

After Action Report

Exercise Name:	Measles	Type: <input checked="" type="checkbox"/> TTX <input type="checkbox"/> Functional <input type="checkbox"/> Full Scale <input type="checkbox"/> Real Event
Exercise Date & Location:	02/28/2014; Community Health Facility 200 Maine Street, Lawrence, Kansas	
Emergency Planning Team Primary Point of Contact:	Name: Charlie Bryan	Organization; Lawrence Douglas County Health Department
	Phone: 785-843-3060	Email:
Capabilities Tested:	<input type="checkbox"/> 1. Community/Healthcare System Preparedness <input type="checkbox"/> 2. Community/Healthcare System Recovery <input checked="" type="checkbox"/> 3. Emergency Operations Coordination <input type="checkbox"/> 4. Emergency Public Info. & Warning <input type="checkbox"/> 5. Fatality Management <input checked="" type="checkbox"/> 6. Information Sharing <input type="checkbox"/> 7. Mass Care	<input type="checkbox"/> 8. Medical Countermeasure Dispensing <input type="checkbox"/> 9. Medical Materiel Mgmt. & Distribution <input type="checkbox"/> 10. Medical Surge <input type="checkbox"/> 11. Non-Pharmaceutical Interventions <input type="checkbox"/> 12. Public Health Laboratory Testing <input checked="" type="checkbox"/> 13. Public Health Surveillance & Epidemiological Investigation <input type="checkbox"/> 14. Responder Safety & Health <input type="checkbox"/> 15. Volunteer Management
Scenario Type:	<input type="checkbox"/> Natural Hazard <input checked="" type="checkbox"/> Biological <input type="checkbox"/> Foreign Animal Disease <input type="checkbox"/> HazMat	<input type="checkbox"/> Workplace Violence / Active Shooter <input type="checkbox"/> CBRNE <input type="checkbox"/> Chemical <input type="checkbox"/> Other:
Participating Organizations:	Baldwin City Public Schools Douglas County Emergency Management Eudora Public Schools Lawrence Memorial Hospital Lawrence Public Schools Lawrence-Douglas County Health Department Lawrence Pediatrics University of Kansas Student Health Services Kansas Department of Health & Environment	
Scenario Summary: <i>Provide a brief overview of the exercise scenario. The full exercise scenario (e.g., Situation Manual, Master Scenario of Events List, etc.), exercise timeline, and/or other documents may be attached as separate documents.</i>	A middle aged man recently returned from a mission trip has presented to an ED with a runny nose, cough, rash and fever. He had attended a church supper the previous evening. He is hospitalized and soon after his wife and sons also present to the ED with similar symptoms. Samples are submitted to the lab and the ICN notifies the Health Department. Four more patients show up at the ED with similar symptoms including 1 patient that attends school with the first patient's son as well as attending a summer football camp. The HD has contacted the university to obtain a camp roster as well as contacting KDHE about the positive tests for measles. KDHE in turn notifies CDC and issues a HAN to private providers, hospitals, and health departments to make them aware of the situation. The local health department mounted an education campaign to promote MMR vaccinations in all children 12 months and older and susceptible adults or those with an unknown vaccination history. They have worked to identify exposures to known measles cases and to ascertain vaccination histories. The hospital is reviewing its policies regarding vaccination status for staff involved with patient care.	

<p>Major Strengths: <i>List (in complete sentences) at least 3 major strengths identified during the exercise.</i></p>	<ul style="list-style-type: none"> • Strength: Agencies have established partnerships that foster collaboration. • Strength: Resources to be used in an emergency situation have been identified. • Strength: Interagency communication and information sharing is in place in the form of a county PIO group with the HD taking the lead role.
<p>Major Areas of Improvement: <i>List (in complete sentences) at least 3 major areas of improvement identified during the exercise.</i></p>	<ul style="list-style-type: none"> • Improvement: Agencies including schools and hospital need means to identify staff immunization status. • Improvement: More advocacy is needed for preventive strategies (i.e. vaccination) by schools, HD and physicians. Lawmakers need to be educated to change status for religious exemptions. • Improvement: Triggers to initiate the ICS need to be identified by the Health Department.
<p>Analysis of Capabilities: <i>For each capability identify the activities related to the objective including what went well and what didn't. Identify recommendations.</i></p>	<ul style="list-style-type: none"> • Capability Summary & Recommendations #3 Emergency Operations Coordination Emergency Operations Coordination was fully discussed as far as need for public activation and information sharing. Authorization to activate was partially covered with the HD leaning toward no activation. Notification/Information sharing was fully discussed pertaining to staffing needs but no consensus was reached on how to activate or when activation is necessary. Strategy to create an IAP was not assigned to an individual or position nor was there discussion concerning staff issues for demobilization beyond extending HD hours of operation. Roles and responsibilities, essential services and functional concerns were fully discussed. Available resources were identified but facilities and use were not mentioned. Recommendations were to include a logistics specialist as a player and to familiarize participants to the WEB EOC so that it could be used as a potential management tool. • Capability Summary & Recommendations #6 Information Sharing Stakeholders were identified for information sharing with the HD taking the lead for determining media releases. Douglas County has an existing PIO group to coordinate information sharing. Events that would trigger information exchange were identified but the only policy barriers discussed had to do with school administrators that do not support collection of staff immunization records. Information sharing redundancies were not fully discussed. KS-HAN, and inclusion of EM in situational awareness were mentioned with communication achieved by phone, electronics, and distribution of fact sheets. Stakeholders do not have access to bed availability at the hospital but that information will be supplied through the PIO. Recommendations are for all stakeholders to review plans and procedures for disease outbreak and communication procedures. • Capability Summary & Recommendations #13 Public Health Surveillance and Epidemiological Investigation During the exercise the group involved all of the stakeholders but did not provide complete rundown of the disease prior to the discussion which would have been helpful to those with non-medical backgrounds. Protocols, procedures and communication were fully covered including the information to be forwarded to state and federal agencies. Mitigation and containment strategies were discussed including isolation and post-exposure vaccination of exposed individuals. Potential obstacles during a disease investigation such as staff shortages, "worried well" and immunization records were mentioned but few solutions were offered. The HD has a good understanding of disease investigation protocols and stakeholders are on

	the same page. Recommendations are to increase discussion about an EOC and IAP assignments.			
	Capability Recommendation:#3 1.Players inexperienced and hesitant to ask questions 2.Need logistic specialist input 3.Little familiarity with WEB EOC	Corrective Action: 1.Training 2. Seek out specialist for future exercises 3.Seek agency training for WEB EOC	Primary Responsible Agency: 1.Schools, hospital, HD and EM 2.State 3.EM, HD	Target Completion Date: 1. 2. 3.
Improvement Plan: <i>The IP is used to determine what actions will be taken to increase a specific capability. Include at least 3 corrective actions.</i>	Capability Recommendation:#6 1.Review & revise isolation and quarantine procedures 2.Review communication plans to ensure they follow discussion 3.Pursue additional communication modalities	Corrective Action: 1Review county &HD biological incident annex.in EOP 2.Review county &HD biological incident and communications annex in EOP 3 Investigate #211 as phone bank.	Primary Responsible Agency: 1.Hospital & HD 2.Hospital & HD 3.County EM, HD	Target Completion Date: 1. 2. 3.
Improvement Plan: <i>The IP is used to determine what actions will be taken to increase a specific capability. Include at least 3 corrective actions.</i>	Capability Recommendation:13 1.Include discussion of EOC and IAP 2Address potential staff shortages. 3.Provide disease information to players prior to exercise	Corrective Action: 1.Review KDHE PH Emergency Activation Levels/ICS training 2.Staff cross-training/recruit additional MRC volunteers 3.Print disease information prior to exercise	Primary Responsible Agency: 1.State, EM, HD 2.HD 3.HD	Target Completion Date: 1. 2. 3.
Submitted By:	Name:		Organization: Lawrence Douglas County Health Department	
	Phone:		Email:	

Appendix 6

Transcript of Courses Reviewed



Transcript

Training Title	Status
ABC's of Pandemic Influenza VIEW	<i>Completed</i>
Avian Influenza VIEW	<i>Completed</i>
Business Continuity During a Flu Pandemic VIEW	<i>Completed</i>
Community Containment of Pandemic Influenza (Pan Flu Preparedness for LHDs, Session 7) VIEW	<i>In Progress</i>
Data Analysis Basics for Analytic Epidemiology (E is for Epi, Session 3.3) VIEW	<i>Completed</i>
Descriptive Epidemiology (E is for Epi, Session 3.1) VIEW	<i>Completed</i>
Disaster Behavioral Health (Basics of Public Health Preparedness, Module 7) VIEW	<i>Completed</i>
Disaster Epidemiology (Basics of Public Health Preparedness, Module 9) VIEW	<i>Completed</i>

Epidemiology Applications: Disaster and Environmental Epidemiology (E is for Epi, Session 5.1) VIEW	<i>In Progress</i>
Epidemiology Partners and Resources (E is for Epi, Session 2.2) VIEW	<i>Completed</i>
Epidemiology Tools and Methods (E is for Epi, Session 2.1) VIEW	<i>Completed</i>
Epidemiology: A Basic Public Health Science (E is for Epi, Session 1.1) VIEW	<i>Completed</i>
Federal Public Health Surveillance (E is for Epi, Session 4.2) VIEW	<i>Completed</i>
Interviewing Techniques (Medical Reserve Corps Training, Module 3) VIEW	<i>Completed</i>
Introduction to Epidemiology (Medical Reserve Corps Training, Module 1) VIEW	<i>Completed</i>
Introduction to Public Health Preparedness for Preparedness Staff (Basics of Public Health Preparedness, Module 1) VIEW	<i>Completed</i>
Introduction to Surveillance (E is for Epi, Session 4.1) VIEW	<i>Completed</i>
Medical Countermeasures (Basics of Public Health Preparedness, Module 4) VIEW	<i>Completed</i>
Occupational Health for Public Health Responders (Basics of Public Health Preparedness, Module 6) VIEW	<i>Completed</i>
Outbreak Investigations (Medical Reserve Corps Training, Module 2) VIEW	<i>Completed</i>
Overview of the 2009 H1N1 Influenza Pandemic VIEW	<i>Completed</i>

Public Health Preparedness Exercises (Basics of Public Health Preparedness, Module 3) VIEW	<i>Completed</i>
Public Health Preparedness Planning (Basics of Public Health Preparedness, Module 2) VIEW	<i>Completed</i>
Responder Health and Safety (Basics of Public Health Preparedness, Module 5) VIEW	<i>Completed</i>
Risk Communication (Basics of Public Health Preparedness, Module 10) VIEW	<i>Completed</i>
Study Designs for Analytic Epidemiology (E is for Epi, Session 3.2) VIEW	<i>Completed</i>
The Practice of Epidemiology: An Overview (E is for Epi, Session 1.2) VIEW	<i>Completed</i>
Working with Community Partners (Basics of Public Health Preparedness, Module 8) VIEW	<i>Completed</i>

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Campus Box 8165 | Chapel Hill, NC 27599-8165

Phone 919-843-5561 | Fax 919-966-9138 | email cphp@unc.edu