

COMMUNITY PREPAREDNESS:
***A MULTIDISCIPLINARY APPROACH TO PUBLIC HEALTH IN SOUTHERN
CONNECTICUT***

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Abstract

The Naugatuck Valley Health Department (NVHD) of Seymour, Connecticut, is the official public health entity for its participating communities. Those employed with NVHD are committed to improving the quality of life for all served through the promotion of health, prevention of disease, and ensuring a safe and clean environment for all. Projects facilitated during field experience hours at NVHD aimed to implement community preparedness strategies through disaster and bioterrorism response outreach, food safety promotion, senior citizen emergency planning, and radon awareness. Field experience work, discussed in this report, demonstrates applied knowledge and skill performance in the five core competencies of public health: biostatistics, environmental health, epidemiology, health services administration, and social and behavioral sciences, as well as the public health emphasis area of food safety and biosecurity. As a culminating experience, the Naugatuck Valley Medical Reserve Corps (NV-MRC) was created to supplement existing emergency response procedures during times of natural disaster, or intentional attack. A three year strategic plan, complete with five specific objectives, was developed to grow and strengthen the NV-MRC as a vital community preparedness and response organization. Hurricane Sandy was a natural disaster that provided an opportunity to deploy the NV-MRC and later assess and evaluate the NV-MRC response strengths and weaknesses.

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List of Abbreviations

AAR: After Action Report (Hurricane Sandy)
AIDS: Acquired Immunodeficiency Syndrome
BBP: Bloodborne Pathogens
CDC: Centers for Disease Control and Prevention
CRI: Cities Readiness Initiative
DCVMRC: Division of Civilian Volunteers Medical Reserve Corps
DEMHS: Department of Emergency Management and Homeland Security
DHHS: Department of Health and Human Services
EPA: Environmental Protection Agency
FEMA: Federal Emergency Management Agency
HBM: Health Belief Model
HIV: Human Immunodeficiency Virus
MDA: Mass Dispensing Area
MI: Managed Inventory
MPH: Master of Public Health
MRC: Medical Reserve Corps
MRE: Meal Ready to Eat
MSA: Metropolitan Statistical Area
NVHD: Naugatuck Valley Health District
NV-MRC: Naugatuck Valley Medical Reserve Corps
POD: Point of Dispensing
PPE: Personal Protective Equipment
RSS: Receiving, Staging, and Storage Site
SCT: Social Cognitive Theory
SNS: Strategic National Stockpile
TTM: Transtheoretical Model

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Introduction

The Naugatuck Valley Health District (NVHD) is the official public health entity for six Connecticut towns and cities: Ansonia, Beacon Falls, Derby, Naugatuck, Seymour, and Shelton. As of the latest 2012 statistic, 126,161 people reside within the valley municipality (Reynolds et al, 2012). Since its inception in 1972, NVHD professionals employed have focused their efforts on improving the quality of life for all valley residents through the promotion of health, prevention of disease, emergency preparedness, and assuring a safe and clean environment (NVHD, 2012). Because NVHD is a health “district”, and not simply a health “department”, public health professionals at NVHD are tasked with implementing programs appropriate to the diverse challenges of rural (Beacon Falls, 611 people/sq mi), suburban (Seymour, 1102 people/sq mi), and urban (Derby, 2389 people/sq mi) environments (Reynolds et al, 2012).

The NVHD is comprised of four separate divisions:

- Environmental Health
- Community Health
- Emergency Preparedness, and
- Administration

Environmental Health Division

The primary goal of the Environmental Health Division is to “prevent illness, disability, and death from the interactions between people and the environment.” These tasks are primarily achieved through scheduled health inspections of local operations, educational public outreach programs, and the investigation and resolution of health hazard complaints (NVHD, 2012).

Community Health Division

The Community Health Division holds legal responsibility for the investigation of infectious diseases within the valley community. Further work includes preventative health outreach programs to promote an increased span of healthy life for valley residents. This division maintains strong partnerships with local health and human service agencies, municipal departments, and local physicians (NVHD, 2012).

Emergency Preparedness Division

The Emergency Preparedness Division develops and maintains "...all-hazards public health emergency response plans, to ensure optimal response to various man-made and natural disasters." Emergency planning within this division outlines preparation procedures, response protocol, and recovery effort plans in the event of pandemic influenza, small pox outbreaks, bioterrorism attacks, or any other emergencies that may impact the public's health. The Emergency Preparedness Division aims to model local preparedness initiatives from those set forth by state and federal preparedness standards (NVHD, 2012).

Administration Division

The Administration Division employs professionals in the disciplines of human resources, data management, accounting, purchasing, and facilities control to support public health professionals with valley health initiatives and projects (NVHD, 2012).

Field Experience and Culminating Project Overview

As an intern with NVHD, my field experience hours were spent working within all four health district divisions to improve community preparedness in the fields of emergency response, food safety, senior citizen emergency planning, and radon awareness. As a

culminating project, the Naugatuck Valley Medical Reserve Corps (NV-MRC) was created. The NV-MRC is a network of medical and non-medical volunteers who wish to contribute to public health initiatives and supplement existing response capabilities in times of emergency in the Naugatuck Valley.

The Division of Civilian Volunteer Medical Reserve Corps (DCVMRC) is a nationally recognized public health preparedness organization. As of February 2013, there were 985 MRC Units located regionally throughout the United States with a network of over 207,997 credentialed volunteers—thus covering 73.69% of United States territorial regions, and 91.16% of the current United States population (MRC, 2013a). Prior to September, 2012, there were twenty nationally recognized Medical Reserve Corps throughout the state of Connecticut. However, the six Connecticut cities which comprise the Naugatuck Valley region did not fall within any of these MRC supplemented jurisdictions. To correct this issue, work ensued to facilitate the development of the Naugatuck Valley Medical Reserve Corps from September to December, 2012. The NV-MRC will be an ongoing organization, which focuses to better prepare the community for future natural disasters, bioterrorism attacks, and any related public health emergencies in which existing response operators become overwhelmed.

Figure 1.1. Locations of Medical Reserve Corps (MRC) in Connecticut as of February 2013. The yellow star indicates the Naugatuck Valley Medical Reserve Corps – inception September 2012. Heavy MRC activity is noticed in the lower southwest corner of Connecticut due to the dense population of the Greater New York City area.



(MRC, 2013a)

Chapter 1

Knowledge and Skills in Practice: Public Health Core Competencies

The Master of Public Health program at Kansas State University promotes proficiency in five core public health competencies: biostatistics, environmental health, epidemiology, health services administration, and social and behavioral health. Interdisciplinary work involving all five core competency areas was executed during field experience hours, between September and December, 2012. This chapter will present specific examples of the core competency knowledge and skills in public health from the projects performed at NVHD.

Section A: Biostatistics

As of the latest 2012 statistic, the population of Connecticut is approximately 3,590,347 people (US Census Bureau, 2012). As of September 2012, 126,161 Naugatuck Valley residents lacked coverage by a Medical Reserve Corps organization. This meant that should an emergency situation occur, such as a natural disaster or a bioterrorism attack, at least 3.5% of people within Connecticut would not benefit from supplemental services of an MRC should the local emergency response system become overwhelmed. Therefore, a need existed to create a local MRC to serve the Naugatuck Valley residents. During the inception stages of the NV-MRC, five on-going, measurable objectives were developed and presented in the format of a three year strategic plan. Statistical analysis of these objectives will be discussed in later chapters.

Naugatuck Valley population demographics and review of MRC coverage are most significant when evaluating the specific demographics of each individual town within Naugatuck

Valley. Because Naugatuck Valley is comprised of six separate towns, we will use the town of Seymour, CT, as a specific example. Seymour is a suburban Connecticut town, with a 2010 population of 16,540 people. One concern is that 14.4%, or 2,382 people, within this population were over the age of 65 (Reynolds et. al, 2012). In the field of public health, senior citizens are considered a vulnerable population. Before the inception of the NV-MRC, roughly 2,382 seniors of Seymour, CT, had less access to emergency response personnel than they do today.

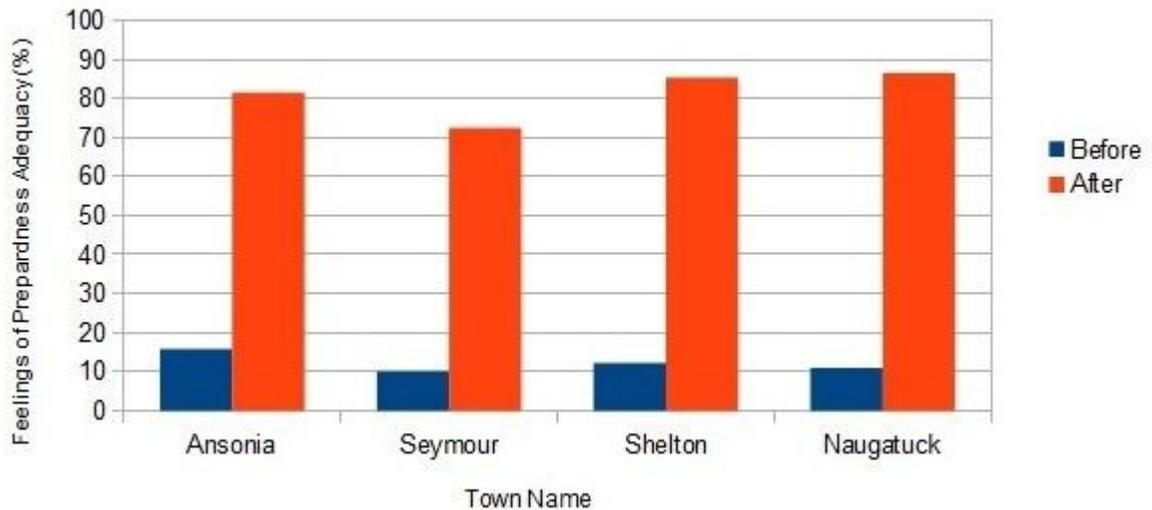
Because Naugatuck Valley is home to a significantly sized senior population, further field experience work involved facilitating emergency preparedness outreach seminars at local senior centers. During these presentations, emphasis was placed upon preparing for an emergency ahead of time to ease stress and tension should an emergency situation arise. Handouts titled “Emergency Preparedness Specific to Your Needs” (Appendix A) were prepared, with tips focusing on seniors and particularly those with special needs such as: oxygen therapy, dialysis, hearing impairments, visual impairments, mobility impairments, and diabetes. Remarks during these presentations stressed the importance of creating a network of neighbors, relatives and friends ahead of time, to aid each senior should an emergency arise.

Identical senior preparedness seminars were presented on four separate occasions at varying senior centers throughout Naugatuck Valley. Again using the city of Seymour, CT as an example, the presentation for senior residents of Seymour took place on November 16, 2012. An emergency preparedness survey was administered to a cohort of 40 senior attendees (over the age of 65) before and after the hour-long presentation. Post presentation results showed a 62.5% increase in personal feeling of preparedness adequacy amongst seniors.

Table 1.1. Entrance and exit survey results from a November 16, 2012, emergency preparedness presentation at Seymour Senior Center in Seymour, CT.

Question:	Number of Yes Votes	% of Cohort
Before Emergency Preparedness Presentation for Seniors: “Do you feel you were adequately prepared for hurricane Sandy?”	4	10
After Emergency Preparedness Presentation for Seniors: “Do you feel more prepared now, than prior to this presentation, should an event similar to hurricane Sandy occur again”	29	72.5

Figure 1.2. Self-reported personal feelings of preparedness adequacy amongst senior cohorts in four Naugatuck Valley (CT) towns before and after an emergency preparedness presentation.



Section B: Environmental Health

In order to qualify for Connecticut state funding and various other grants and insurances, NV-MRC members must be credentialed through a series of specific trainings.

“Training” topics are semi- negotiable and can be altered to best fit the needs of each individual

MRC organization. The specific training schedule for credentialing NV-MRC members will be discussed in detail in Chapter 3. This section will solely discuss the October, 2012, NV-MRC training titled: “Bloodborne Pathogens”.

Should a bioterrorism attack, natural disaster, or catastrophic public health emergency occur in which NV-MRC members are deployed, volunteers may be subjected to various environmental hazards. In an effort to prepare members for such a situation, a training on bloodborne pathogens and environmental hazards was conducted in October, 2012. This was a collaborate effort, facilitated by NV-MRC management and emergency medical technicians of Echo Hose Ambulance in Shelton, CT. Topics discussed included routes of exposure and methods to assess, prevent, and control environmental hazards.

Training began with defining bloodborne pathogens as “...specific microorganisms transmitted in human blood or bodily fluids, which can cause disease in people.” Emphasis was placed upon the dangers of contracting three major bloodborne pathogens (BBP): Hepatitis B, Hepatitis C, and Human Immunodeficiency Virus (HIV). Hepatitis C was presented to NV-MRC volunteers as an extremely infectious BBP which causes inflammation of the liver and possible liver failure. Also adversely affecting the liver, the dangers of Hepatitis B were described in a similar fashion. It was, however, emphasized that Hepatitis B is easily preventable by vaccine. HIV was described as a human retrovirus causing Acquired Immune Deficiency Syndrome, better known as AIDS (CU, 2012).

In addition to bloodborne pathogens, various other infectious agents, with which NV-MRC members have the potential to come in contact, were discussed. Such discussion included the dangers of various bacteria, fungi, parasites, and viruses.

The second half of this training session focused on routes of exposure to these infectious agents which NV-MRC members may experience when volunteering in an emergency situation. Routes of exposure discussed included inhalation, ingestion, injection, and dermal. It was stressed to NV-MRC volunteers that chemicals or certain infectious agents may have significant health effects via one route, but minimal health consequences when contact occurs via a different route of exposure.

Using HIV as an example, NV-MRC members were trained on the three most common routes of HIV transmission: sexual contact with an individual infected with HIV, exposure to HIV infected bodily fluids such as blood or tissue, or the passing of the HIV virus from mother to child. Given the nature of the NV-MRC program, volunteer members are most likely to be exposed to HIV via exposure to infected bodily fluids such as blood or tissue. Therefore, the final part of the October NV-MRC training session included discussion on how to prevent and control environmental hazards, such as bloodborne pathogens, in an emergency situation.

Preventative measures discussed included exposure control via administrative controls, standard universal precautions, engineering controls, and the use of personal protective equipment (PPE). From an administrative perspective, the NV-MRC management is currently working to put in place an exposure control plan, outlining environmental risks and control measures for NV-MRC volunteers. Discussion during the October NV-MRC training included sharps precautions, such as executing proper care when coming in contact with needles. The NV-MRC volunteers were instructed to always wear appropriate PPE when coming in contact with potential hazards. Though PPE will vary by incident, discussion of standard PPE always required included gloves, eye protection, and a face shield. Proper hand hygiene during an

event requiring NV-MRC volunteers was also stressed. In all, the overall goal of the October NV-MRC training session facilitated by NV-MRC management was to train volunteers on the importance of environmental health and safety in an emergency situation.

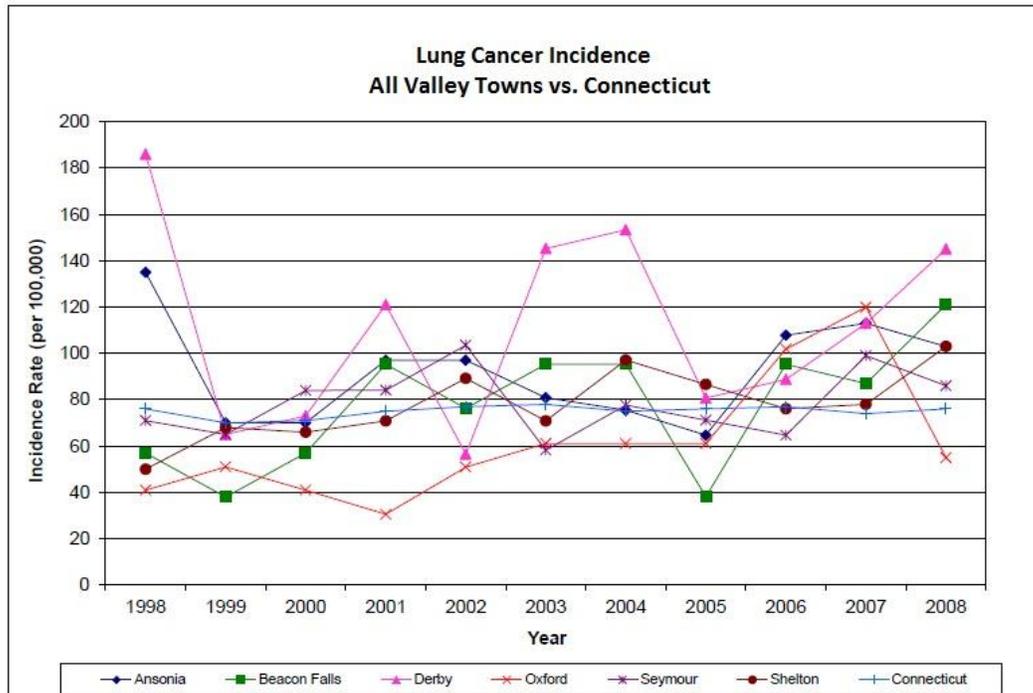
Section C: Epidemiology

During field experience hours, time was spent evaluating current epidemiological data concerning lung cancer in the Naugatuck Valley. When evaluating incidence, there were 106 new cases of lung cancer in Naugatuck Valley in 2008, as opposed to 81 new cases in 2001. More significantly, when the rate of disease was adjusted for age, figures showed the incidence rate of lung cancer cases increased from 81 per 100,000 persons in 2001 to 100 per 100,000 persons in 2008. Using the most currently available data, the crude death rate attributable to lung cancer in Naugatuck Valley was calculated to be 63 per 100,000 people in 2001, and 54 per 100,000 people in 2008 (Reynolds et al, 2012). This sparked interest during field experience work, because, although more people died from lung cancer in 2001 than in 2008, the incidence rate of lung cancer cases was greater in 2008 than 2001. This means that the number of people acquiring lung cancer in the valley today is more than during 2001—even though less people are dying from lung cancer, most likely due to medical advancements.

Sex adjusted mortality rates for lung cancer were calculated by taking the number of deaths in a specific sex group, dividing that number by the total population in that sex group, and multiplying the quotient by 100,000. Results showed a sex adjusted mortality rate of 58 deaths per 100,000 people for males and 51 deaths per 100,000 people for females in 2008

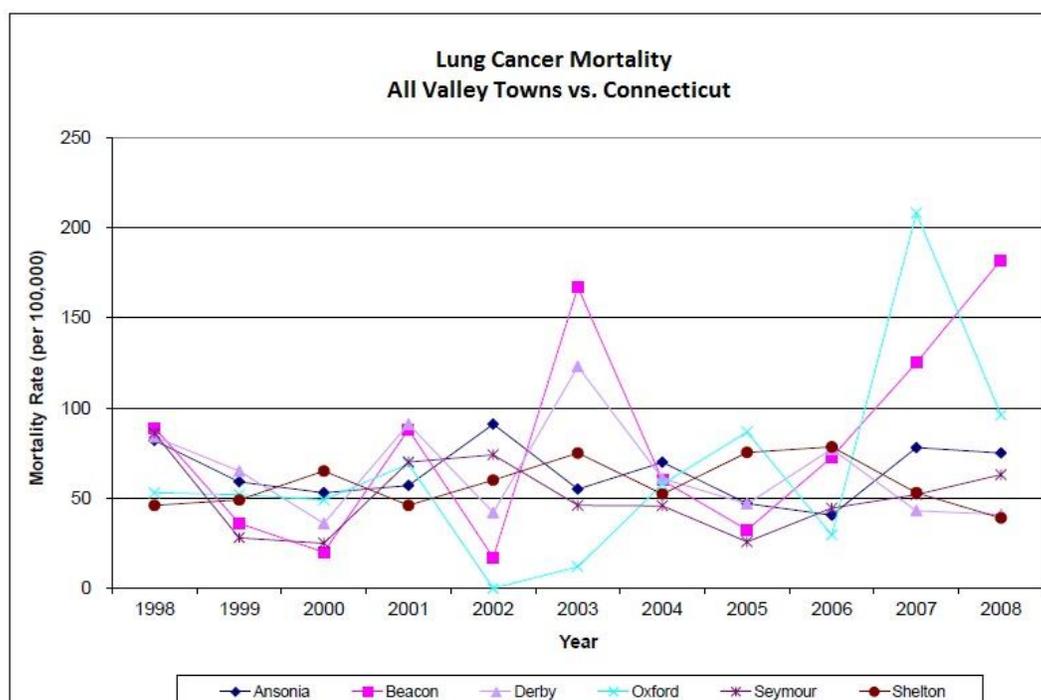
(Reynolds et al, 2012). This figure was not terribly surprising, since more men than women currently identify as being smokers in the valley.

Figure 1.3. Lung cancer incidence rates (per 100,000) for all valley towns and the state of Connecticut from 1998 to 2008.



(Reynolds et al, 2012)

Figure 1.4. Lung cancer mortality rates (per 100,000) for all valley towns and the state of Connecticut from 1998 to 2008.

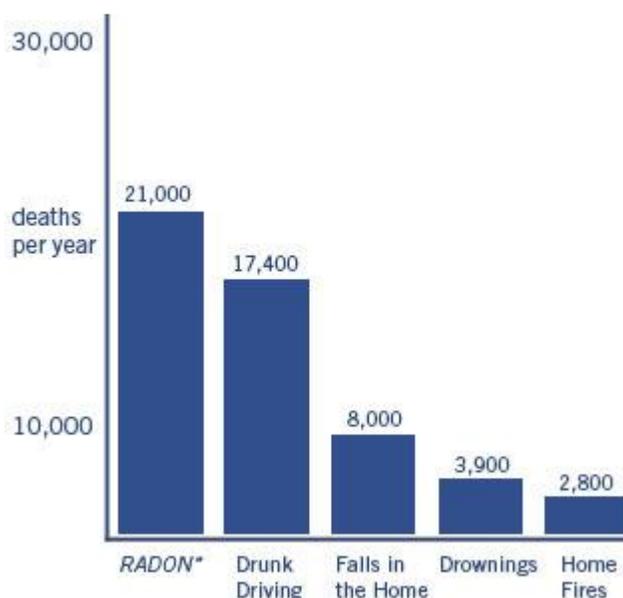


(Reynolds et al, 2012)

After evaluating all data available in the most current community health profile, focus turned to hypothesizing why incidence rates of lung cancer amongst valley residents may be higher today than they were in 2001. Over the past 10 years, significant amounts of resources have been placed into valley smoking cessation programs. Fewer people today identify as smokers in the valley than did in 2001, further igniting interest into why lung cancer incidence rates have increased in recent years.

Since it is the second leading cause of lung cancer in the United States, it was hypothesized that radon may have some role in increasing valley lung cancer incidence rates since 2001. “Radon is a naturally occurring radioactive gas released in rock, soil, and water from the natural decay of uranium. While levels in outdoor air pose a relatively low threat to human health, radon can accumulate to dangerous levels inside buildings” (EPA, 2012a). According to the U.S. Environmental Protection Agency, radon is the second leading cause of lung cancer in the United States and is the agent responsible for over 21,000 lung cancer deaths per year, in the United States (EPA, 2012b).

Figure 1.5. Estimated deaths per year in the United States from radon relative to other causes.



(EPA, 2012b)

With January being designated “Radon Action Month” by the Environmental Protection Agency, field experience work included increasing radon awareness in the Naugatuck Valley. To further overall promotion of community preparedness, an informational poster on radon awareness was crafted for January (2013) publication in local newspapers, online newsletters, Facebook, Twitter, and various other news outlets. Appendix B depicts the poster crafted for publication.

Additionally, “Free Radon Test Kit” giveaways were organized by NVHD. Several times during the month of January, NVHD-sponsored booths were established at the local library to provide free radon test kits to valley residents. As a follow-up to obtaining a free test kit, residents were asked to report findings to NVHD for further statistical analysis.

Section D: Health Services Administration

Today’s healthcare organizations, including NVHD, are subjected to complex and often turbulent work environments. Community preparedness outreach initiatives facilitated during field experience hours required input and involvement of multiple sets of players in the healthcare system. Such players included third party payers, healthcare providers, the healthcare workforce itself, and valley consumers of available healthcare services.

By standard definition, a third party payer is an organization other than the patient or healthcare provider involved in the financing of personal health services. In a hospital setting, the phrase “third party payer” typically refers to insurance companies or managed care organizations. Though there was little involvement with either of the aforementioned healthcare organizations during this field experience, there was significant interaction with the

government to secure available disease prevention and emergency preparedness outreach funds.

The NV-MRC was initiated with money supplied by the Connecticut state government. Government monies received were to be used to better prepare the valley community for future natural disasters, bioterrorism attacks, and any related public health emergencies. This being the mission of the NV-MRC, NVHD was approved for the state funded grant; however, gaining approval was a complex process. State funding for the NV-MRC program required production and approval of an array of paperwork, such as an NV-MRC Capacity Building Plan (Appendix C), and a three year NV-MRC Strategic Plan (Appendix D). Additional requirements to qualify for the available state grant included: on-going statistical analysis of NV-MRC successes and failures, regular meetings with MRC state commanders, and a pre-determined NV-MRC volunteer credentialing program – which will be discussed in detail in Chapter 3.

Monthly NV-MRC member trainings organized by the NV-MRC management team require input from various healthcare providers outside the NVHD workforce. Nurses, doctors, emergency medical technicians, firefighters, and policemen have been recruited by NV-MRC organizers to aid with credentialing of volunteers. Adequate training and credentialing of NV-MRC volunteers would not be possible without input from experts in all the various disciplines of healthcare.

Section E: Social and Behavioral Sciences

Public health community outreach requires a multidisciplinary approach and the application of various learned social and behavioral models. This section will evaluate three

commonly used public health models. Discussion will include examples of performed actions relating to such models, as initiated during field experience hours at NVHD.

E1. The Health Belief Model

According to the Health Belief Model (HBM), the likelihood that a person will take action to prevent illness depends upon that person's perception that:

- A. They are personally vulnerable to the condition
- B. The consequence of the condition would be serious
- C. The precautionary behavior effectively prevents the condition
- D. The benefits of reducing the threat of the condition exceed the costs of taking action (Redding et al, 2000)

Various aspects of the HBM were utilized during the September, 2012 NV-MRC member training titled "Personal Preparedness". The overall goal of this credentialing session was to train NV-MRC volunteers on the importance of personally preparing for a natural disaster, bioterrorism attack, or various other public health emergencies. It was stressed to members that they are personally vulnerable to such catastrophic events, and it is most important to prepare themselves and their families now, should they be deployed to assist others in an emergency situation. Not preparing themselves now could lead to serious consequences if deployed. For example, an NV-MRC may be deployed to a local "Point of Dispensing" to assist with prophylactic treatment during a bioterrorism attack. Active deployment would separate this NV-MRC member from his family and possibly hinder communication abilities and the safety of his family members. It was suggested to volunteers that they make a deployment plan now should the NV-MRC be requested. Such a plan included a written list of all important contacts, preparation of alternate means of communication such as handheld transceivers, a

designated disaster response meeting place, and the creation of emergency preparedness kits filled with flash lights, batteries, and various medical records and supplies. The NV-MRC management stressed that a precautionary plan would ease tension and stress should member deployment be requested. Volunteers positively reacted to the idea of creating a pre-deployment action plan. It was clear that many NV-MRC members believed the benefits of producing such a plan now clearly outweighed the consequences that could occur should NV-MRC deployment be required unexpectedly.

E2. Social Cognitive Theory

The Social Cognitive Theory (SCT) aims to include environmental and social factors into a comprehensive model of health behavior change. This theory suggests that there is a continuous, dynamic interaction between the individual, the environment, and behavior—and thus, any change in one of these factors significantly affects the other two (Redding et al, 2000). The SCT employs a comprehensive list of key concepts, the majority of which are explained in Table 1.2.

Table 1.2. Social cognitive theory constructs and descriptions.

Constructs	Description
Environmental	Factors outside the person
Situation	One's perception of the environment
Behavioral Capability	One's knowledge and skills to perform a behavior
Expectations	One's anticipation of the outcomes of a behavior
Expectancies	How good or bad one evaluates the outcomes to be
Self-control	Regulation of one's own behavior
Observational Learning	Acquiring a new behavior by watching someone else perform it and observing the outcomes—a.k.a. modeling
Reinforcements	Responses to a person's behavior that affect how likely it is that the behavior will reoccur
Self-efficacy	One's confidence in one's own ability to perform a behavior
Emotional Coping Responses	Strategies used by someone to deal with emotionally challenging thoughts, events, or experiences
Reciprocal Determinism	Dynamic interaction of the person, the behavior, and his/her environment

(Redding et al, 2000)

As an example demonstrating application of the SCT, NV-MRC management built the NV-MRC program to incorporate aspects of self-efficacy and positive reinforcement. Self-efficacy can be described as an individual's confidence in his ability to perform a behavior in a given situation. The concept of self-efficacy incorporates an important mediating variable between knowledge, attitude, skill and behavior (Redding et al, 2000). Through the nine month NV-MRC member training program, to be discussed in Chapter 3, NV-MRC members are provided the necessary knowledge and skill sets to promote adequate performance during a public health emergency. Volunteers are allowed several opportunities to ask questions and clarify any uncertainties they may have. Furthermore, a yearly NV-MRC training drill has been established to test knowledge and improve learned skills. Through the provided training program and required annual drills, NV-MRC volunteers will be allowed sufficient opportunity to build confidence and improve emergency response self-efficacy.

Reinforcement is described as responses to a person's behavior that affect how likely it is that the behavior will reoccur (Redding et al, 2000). Within the SCT, both negative and positive reinforcement are possible. NV-MRC management focuses on positive reinforcement amongst members. For example, NV-MRC members are offered simple snacks and refreshments, free of charge, when attending each monthly meeting. After completing their third training session, members are rewarded with an official NV-MRC t-shirt and lanyard (Appendix E). Finally, an annual award banquet has been included in the NV-MRC strategic plan (Appendix D) to honor those members who have officially completed the nine month training program that calendar year.

E3. Transtheoretical Model

The Transtheoretical Model (TTM) is a model of intentional behavior change which describes the relationships amongst: stages of change, processes of change, decisional balance, the pros and cons of change, situational confidence, self-efficacy in the behavior change, and situational temptations to relapse. The advantage to the TTM, over other social and behavioral models, is that it describes behavior change as a process instead of a single event. Using the TTM, the change process can be broken down into stages. This allows public health experts to study which variables are most strongly associated with progress, and determine adequate tools for research and intervention development (Reynolds et al, 2000). The “Stages of Change,” one series of constructs outlined in the TTM, will be used to discuss an example of how the concepts of this model were applied during field experience hours at NVHD.

Table 1.3. The transtheoretical model stages of change with itemized constructs and descriptions.

Constructs	Description
<i>Stages of Change</i>	
Precontemplation	No intention to take action within the next 6 months
Contemplation	Intends to take action within the next 6 months
Preparation	Intends to take action within the next 30 days and has taken some behavioral steps in this direction
Action	Has changed overt behavior for less than 6 months
Maintenance	Has changed overt behavior for more than 6 months

(Redding et al, 2000)

A major challenge faced by NV-MRC management is increasing recruitment of new NV-MRC volunteers. As outlined in the three year NV-MRC strategic plan (Appendix D), objective

#1 is to “recruit a total of 100 active volunteer responders to assist in management of public health emergencies by January 1, 2016.” Most new recruitment occurs through heavy promotion—the details of which will be discussed in Chapter 3. In terms of the TTM, most average people approached to join the NV-MRC are in the precontemplation stage, or have no intention to take action and join the NV-MRC within the next six months. Through education on the possible impact of natural disasters, bioterrorism attacks, or other catastrophic public health emergencies, NV-MRC recruiters seek to move people out of the precontemplation stage into the contemplation stage. The further along each person moves in the TTM stages of change, the more likely he is to eventually join the NV-MRC.

The maintenance stage of change, embedded within the TTM, is of major concern to NV-MRC management. Once a person enters the action stage, and joins the NV-MRC, maintaining active participation from that individual is crucial to the success of the NV-MRC. To combat this issue, Objective #2: “Maintain a 45% attendance rate of active members at each monthly meeting” and methods to achieve this objective have been outlined in the three-year NV-MRC strategic plan (Appendix D).

Chapter 2

Knowledge and Skills in Practice: Food Safety

In addition to exhibiting knowledge of the five core public health competencies, candidates for the Master of Public Health degree at Kansas State University are required to demonstrate proficiency in a unique public health related emphasis field. Chapters 2 and 3 will discuss specific examples of applied knowledge in the fields of food safety and biosecurity, performed during field experience hours at NVHD.

Section A: Food Safety Promotion in Naugatuck Valley

According to the United States Centers for Disease Control and Prevention, 1 in 6 Americans gets sick from a foodborne illness, and over 3,000 people die from a foodborne illness each year. This means approximately 48 million Americans per year suffer negative consequences from consuming unsafe food. The CDC suggests that reducing foodborne illness by just 10% would prevent upwards of 5 million people from getting sick each year (CDC, 2012a).

Preventing foodborne illness in the United States requires a collaborative effort between local, state, and federal government agencies. Local food safety promotion was a major public health initiative set forth by the Naugatuck Valley Health District during field experience hours. A specific example of food safety outreach is demonstrated by the production of the “Food Safety by Season” program. Seasonal food safety posters were created to be distributed quarterly in 2013 throughout the Naugatuck Valley. During each 2013 season,

a new food safety promotional guide will be released to the public via the NVHD website, the NVHD newsletter, Facebook, Twitter, local papers, and various other news outlets. The goal of each of these food safety flyers is to promote food safety preparedness tips relevant to common food safety risks. Although many of the items listed may be more common to a particular season, they still hold true and should be followed during all seasons.

A1. Spring Food Safety in Naugatuck Valley

The first quarterly food safety poster, to be released in spring 2013, encourages valley residents to be food safe by giving their kitchens, refrigerators, and freezers a thorough spring cleaning (Appendix F). This flyer suggests that spring is a great time of year to throw out food items which are losing their quality or have spoiled and check for unnoticed spills.

Spring cleaning tips include making it a weekly habit to throw away perishable food items that should no longer be eaten, and keeping the refrigerator as clean as possible. When cleaning, valley residents are urged to sanitize refrigerator and freezer surfaces with a solution of 1 tablespoon unscented liquid chlorine bleach per 1 gallon of water. When restocking, it is imperative that fresh/raw meats and their juices be separated from fresh produce. Because all refrigerators should be equipped with a working thermometer, it is also suggested that spring is a great time of year to check performance of refrigerator thermometers and make sure that refrigeration temperatures have not risen above 40°F.

One particular bacterium whose cross contamination in the refrigerator can be mediated by adequate cleaning and sanitizing is *Listeria monocytogenes*. Eating food contaminated with *Listeria monocytogenes* may result in one acquiring Listeriosis. Listeriosis is

a serious foodborne illness, often causing fever, muscle aches, diarrhea, and a wide array of other gastrointestinal problems. Pregnant women are particularly vulnerable to the effects of Listeriosis, for this illness has been found to lead to miscarriage, stillbirth, premature delivery, or life-threatening illnesses in the newborn child (CDC, 2012b).

Listeria monocytogenes is a unique pathogen that can survive at refrigerated temperatures. With most infections being caused by the consumption of tainted ready-to-eat meats (i.e. hot dogs, deli meats, etc.), spring cleaning of the refrigerator is a great way to reduce one's risk of exposure from cross contamination.

A2. Summer Food Safety in Naugatuck Valley

Summer is barbeque season in Naugatuck Valley, and with barbeque season comes particular food safety concerns. The second quarterly flyer, to be released in June 2013, provides simple food safety preparedness tips for the summer season (Appendix G). Naugatuck valley residents are urged to shop, thaw, marinate, serve, and store food "smart." Examples of particular summer food safety tips include buying cold foods like hamburger, hot dogs, and poultry last, right before check out and using the refrigerator to slowly thaw frozen foods. Amongst various other tips, it is emphasized that valley residents marinate food in the refrigerator, not on the counter, and use a clean platter when taking cooked food off the grill. Two additional food safety concerns during barbeque season are the proper storage of leftovers and the adequate cooking of meats to the proper internal temperature. The summer promotional poster will focus on proper leftover storage, for the latter concern will be highlighted during the winter season.

Proper food storage will be heavily promoted during the summer season, because improper storage of picnic leftovers may cause foods to become tainted. Valley residents are urged to refrigerate any leftovers promptly and discard any food that has been left out for more than 2 hours (1 hour if temperatures exceed 90°F). For example, improperly stored foods may acquire toxins produced by the bacterium *Staphylococcus aureus*. *Staphylococcus aureus* is a common bacterium found on the skin and in the noses of up to 25% of healthy people and animals. This common bacterium has the ability to make seven different toxins which are frequently responsible for foodborne illness (CDC, 2012c).

As an example, a summer picnic guest may arrive to a local barbeque with handmade tuna fish finger sandwiches. This same person may have contaminated these sandwiches with *Staphylococcus aureus*. Such contamination is not a problem in itself; however, if these sandwiches are then left out in the sun for over two hours without refrigeration, *Staphylococcus aureus* toxins may accumulate within the sandwiches. If the sandwiches are then consumed, such toxin may result in foodborne illness. Proper refrigerator storage of leftovers at summer barbeques, such as these sandwiches, can reduce risk of foodborne illness.

A3. Fall Food Safety in Naugatuck Valley

Come September, tailgate season will arrive in Naugatuck Valley. The September 2013 food safety preparedness poster aims to offer valuable tips for a food-safe fall (Appendix H). Valley residents are urged to practice good food safety while tailgating, picnicking, and enjoying the outdoors. The goal of this flyer is to target the issue of cross-contamination. Cross-

contamination occurs when bacteria from one food is transferred to another. Such an error may result in unsafe foods at fall potlucks, picnics, and sporting tailgates.

When tailgating, it is suggested that protective plastic bags be used to cover raw meats. Valley residents are urged to place raw or uncooked meat and poultry on the bottom of the tailgate coolers, so that juices do not drip onto fresh fruits and vegetables. This promotional flyer recommends dedicating separate utensils for each separate food item, and designating separate areas of the grill for meats/poultry and fruits/vegetables.

Any pathogen found in raw meat, such as those of the genus *Campylobacter*, may be of particular concern during the fall season. For instance, without adequate knowledge, valley residents may pack a cooler with raw chicken on top of uncovered salad. Juices from the uncooked chicken may then leak on the fresh salad, leading to cross-contamination. Such a behavior increases valley residents' chances of acquiring foodborne illness. Through informational outreach the fall food safety flyer aims to improve food safety awareness in Naugatuck Valley.

A4. Winter Food Safety in Naugatuck Valley

The final food safety preparedness flyer produced will be released in November 2013 (Appendix I). This winter food safety outreach tool will focus on four simple food safety steps: cleaning, separating, cooking, and chilling. With so many different foods being prepared during the holiday season, valley residents are urged to clean all cutting boards, knives and countertops after use. Residents are reminded to use separate cutting boards and knives for fresh produce and meat/poultry/seafood/eggs. The importance of using a food thermometer is

stressed, and an easy-to-follow chart is provided with minimum internal temperatures required for various food products to be deemed safe.

Pathogens present in the holiday turkey, such as those of the genus *Salmonella*, are of particular concern during the holiday season. Cleaning, separating, cooking, and chilling foods properly will reduce one's risk for Salmonellosis.

Chapter 3

Organization, Recruitment, Training and Credentialing of the Naugatuck Valley Medical Reserve Corps

The Division of Civilian Volunteer Medical Reserve Corps (DCVMRC) is “a national network of local groups of volunteers committed to improving the public health, emergency response, and resiliency of their communities”. An excerpt from the official, internationally recognized website of the DCVMRC, describes the Medical Reserve Corps (MRC) as the following (MRC, 2013b).

- MRC units are community-based and function as a way to locally organize and utilize volunteers who want to donate their time and expertise to prepare for and respond to emergencies and promote healthy living throughout the year. MRC volunteers supplement existing emergency and public health resources.
- MRC volunteers include medical and public health professionals such as physicians, nurses, pharmacists, dentists, veterinarians, and epidemiologists. Many community members—interpreters, chaplains, office workers, legal advisors, and others—can fill key support positions.
- MRC units are provided specific areas to target, that strengthen the public health infrastructure of their communities by the U.S. Surgeon General. These are outlined priorities for the health of individuals, and the nation as a whole, which also serve as a guide to the MRC. The overarching goal is to improve health literacy, and in support of this, she [the U.S. Surgeon General] wants us to work towards increasing disease prevention, eliminating health disparities, and improving public health preparedness.
- MRC volunteers can choose to support communities in need nationwide. When the southeast was battered by hurricanes in 2004, MRC volunteers in the affected areas and beyond helped communities by filling in at local hospitals, assisting their neighbors at local shelters, and providing first aid to those injured

by the storms. During this 2-month period, more than 30 MRC units worked as part of the relief efforts, including those whose volunteers were called in from across the country to assist the American Red Cross (ARC) and the Federal Emergency Management Agency (FEMA).

Prior to September 2012, Connecticut was supported by twenty regionalized MRC organizations. However, the six Connecticut cities which comprise the Naugatuck Valley region did not fall within any of these MRC supplemented jurisdictions. As a culminating experience, work ensued on facilitating the development of the Naugatuck Valley Medical Reserve Corps (NV-MRC) from September to December 2012. Through continued public health efforts, the NV-MRC aims to garner significant community support and continue to be an ongoing, emergency support organization. The NV-MRC volunteers' focus is to better prepare the valley community for future natural disasters, bioterrorism attacks, and any related public health emergencies in which existing response operations become overwhelmed.

Section A: Inception of the NV-MRC

During the inception phase of the NV-MRC in September 2012, two documents were required to secure Connecticut state funding. The NV-MRC Capacity Building Plan (Appendix C) broadly highlights NV-MRC organizational, recruitment, engagement, recognition, retention, screening, and verification procedures. The three year NV-MRC strategic plan (Appendix D), produced for 2013 – 2016, is more specific in that it includes the mission, visions, situations, goals, objectives, and strategies promoted through the NV-MRC program.

Section B: Recruitment of NV-MRC Volunteers Through Promotional Push

Upon completion of the planning stages, a heavy promotional push was enacted in an effort to recruit medical and non-medical NV-MRC volunteers. A variety of promotional methods and items were produced to meet objective #1, outlined in the three year strategic plan: "Recruitment of a total of 100 active volunteer responders to assist in management of a public health emergency by January 1, 2016". The NV-MRC had an initial startup of 26 members in September, 2012. As of January 2013, the NV-MRC had recruited a total of 40 active volunteers. Of these 40 active volunteers, 22 were deemed "emergency medical" professionals. This statistic is significant, for potentially 22 out of 40 NV-MRC volunteers may not be available for deployment during an emergency situation due to job related obligations. For this reason, objective #3 "increase the number of non-emergency medical volunteers by 15% over current levels (as of January 2013)," was included in the three year NV-MRC strategic plan.

B1. Promotional Flyers

An NV-MRC promotional flyer was created and distributed at local healthcare events, schools, senior centers, public health board meetings, mental health centers, and Department of Emergency Management and Homeland Security (DEMHS) offices, beginning in September 2012 (Appendix J). This flyer continues to circulate through the aforementioned outlets and there are plans in place to maintain distribution of this promotional tool through the coming year.

B2. NV-MRC Website

An official NV-MRC website was created to allow interested Naugatuck Valley community members to research the NV-MRC and learn about the organization's continued efforts towards community preparedness. An easily accessible, online application was made available to streamline the application process – a strategy implemented to meet objective #1 set forth in the three year strategic plan. Through the website, current members have access to the future trainings schedule, pictures of past events, training links, the NV-MRC handbook, and appropriate contact information – a strategy implemented to meet objective #2 of the strategic plan. The official NV-MRC website can be accessed at www.NVMRC.com.

B3. Newspapers/Online Publications

NV-MRC promotional articles were published monthly in the local Naugatuck Valley newspaper and the online news outlet “Shelton Connecticut Patch,” from September to December 2012. Write-ups summarized the monthly meeting topics, prefaced future trainings, and reemphasized the importance of the NV-MRC and volunteer recruitment. Publication of these articles will continue throughout the duration of the three year NV-MRC strategic plan.

B4. Miscellaneous NV-MRC Promotional Materials

Various other promotional items were designed and produced to increase recruitment and meet strategic plan objectives #1 and #3. A recruitment banner was created to advertise the NV-MRC at various locals, such as local colleges, outside NVHD, and at the local fire

department. NV-MRC pens were created with appropriate recruitment information to be distributed at schools, senior centers, health fair events, and other local community gatherings. NV-MRC t-shirts and lanyards were designed to reward volunteers after completing their third training session – a strategy implemented to meet strategic plan objective #4. Miscellaneous NV-MRC promotional items produced are represented in Appendix E.

Section C: Training and Credentialing of NV-MRC Volunteers

In order to qualify for Connecticut state funding and various other grants and insurances, NV-MRC members must be credentialed through a series of specific trainings. “Training” topics are semi- negotiable with state officials, and can be altered to best fit the needs of each individual MRC organization. During field experience hours, the following cyclical training schedule was produced to train and credential NV-MRC volunteers over a 9 month period.

- Training 1:** Personal Preparedness (Completed September, 2012)
- Training 2:** Bloodborne Pathogens (Completed October, 2012)
- Training 3:** CPR/HCP (Completed November, 2012)
- Training 4:** Sheltering (Completed January, 2013)
- Training 5:** Psychological First Aid (Completed February, 2013)
- Training 6:** Mass Dispensing of Vaccinations/Medications (Coming March, 2013)
- Training 7:** Firefighter Rehabilitation (Coming April, 2013)
- Training 8:** Search and Rescue (Coming May, 2013)
- Training 9:** Review of CT-Train courses**

***Three online, self-study courses are to be completed by each NV-MRC member throughout the training process. These courses are “work at your own pace,” and must be completed by or during the ninth month of each member’s individual training program. These three courses are administered by the State of Connecticut Department of Public Health and are accessed at: <http://ct.train.org>. The three self-paced, NV-MRC courses are as follows:*

ICS 100.b: Introduction to Incident Command Systems

IS 200.b: ICS for Single Resources and Initial Action Incidents

IS 700.a: National Incident Management System (NIMS)

For each training session (aside from training 9), outside experts within the various disciplines are recruited to deliver one, 2-3 hour presentation to NV-MRC volunteers. NV-MRC members are given credit for each training completed, and are sworn in as official, state-recognized, NV-MRC members upon completion of the 9 month training cycle. Some members are not required to attend certain trainings and are automatically given credit, such as for training 3: cardiopulmonary resuscitation for healthcare providers, if previously completed through an alternative, reputable certifying organization. Outside training credit, as a replacement for NV-MRC trainings, is subject to NV-MRC board member approval. Periodically, “make-up” trainings are scheduled for those members who may have missed a meeting. New members are welcome to join the NV-MRC on a rolling basis, for trainings recycle at training 1, upon completion of the 9 month training cycle.

Section D: Extensive Involvement of NVHD with Training 6: Mass Dispensing of Vaccinations/Medications

A panel of NVHD employees has assumed the role of “outside experts” to deliver the presentation for training 6: Mass Dispensing of Vaccinations/Medications. This training, scheduled for March 2013, will discuss NV-MRC members’ biosecurity role in the context of the Cities Readiness Initiative, the Strategic National Stockpile, Managed Inventory, and Points of Dispensing.

Mass dispensing during an emergency situation is a highly regulated process on the federal, state, and local level. Government officials, emergency management personnel, public health officials, and emergency medical professionals are highly trained in individual roles within the mass dispensing process. NV-MRC members are to be trained on the overall, cohesive process of mass dispensing. In times of a bioterrorism attack or catastrophic emergency, NV-MRC members may be deployed to act upon their mission statement – “to aid in public health initiatives and supplement existing response capabilities in time of emergency - thereby improving the health and safety of Naugatuck Valley community members and civilians of surrounding regions”. Sections D1-D4 will outline the topics of discussion for the upcoming NV-MRC member training session on mass dispensing of medications/vaccinations in the valley.

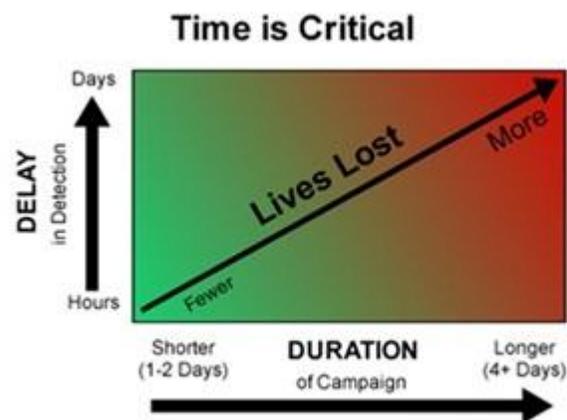
D1. Cities Readiness Initiative

The Cities Readiness Initiative (CRI) is a federal effort designed to increase bioterrorism preparedness in the nation’s largest cities. The goal is to save lives in these selected cities by rapidly dispensing medication to the entire population within 48 hours of the decision to do so. Since 2004, the CDC has provided special funding for the CRI through the Public Health Emergency Preparedness Cooperative Agreement. Funding is provided to enhance the mass dispensing capabilities of CRI metropolitan statistical areas, referred to as MSAs. There are 72 MSAs that will use this special funding to develop plans that support mass dispensing of drugs to 100% of the identified population within 48 hours of a decision to do so (Blanchard, 2008).

All states, including Connecticut, are divided into Mass Dispensing Areas, or MDAs. Naugatuck Valley Health District is a MDA covering the cities of Ansonia, Beacon Falls, Derby,

Naugatuck, Seymour, and Shelton. In the event of a bioterrorism attack, the NVHD is responsible for providing necessary medication and supplies to the total affected population within 48 hours of the decision to do so. If such an attack or event is to occur, members of the NV-MRC will be deployed to supplement existing response capabilities.

Figure 3.1. Graphical illustration of the critical time response effect on the number of lives lost when there is a delay in the detection of a public health emergency and the duration of the response campaign.



D2. Strategic National Stockpile

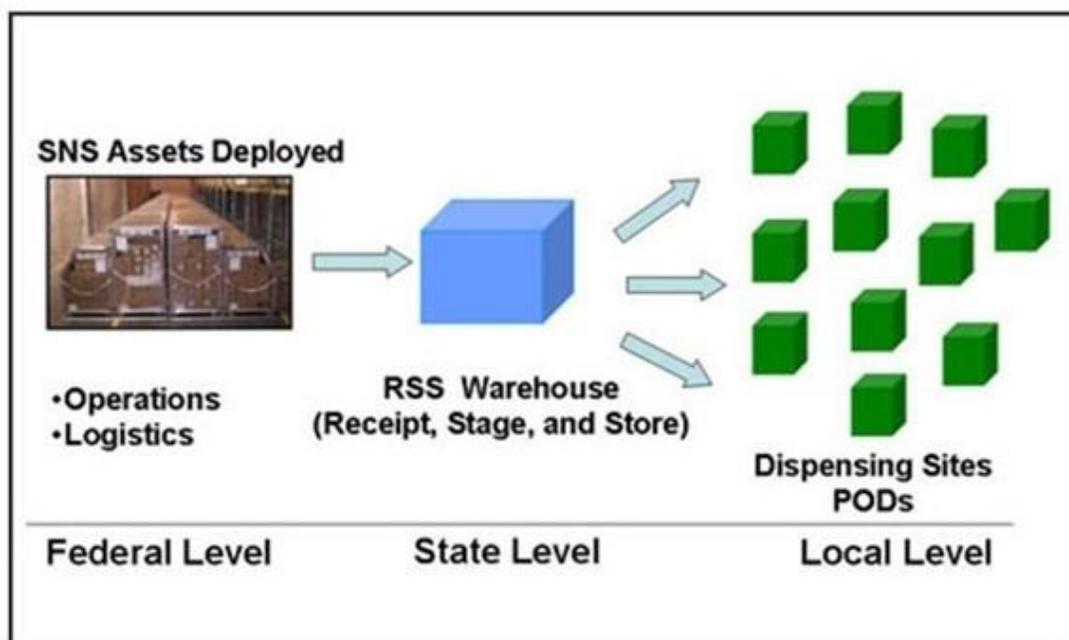
In the event of a large-scale bioterrorism attack, few state or local governments have the resources to create sufficient stockpiles on their own. Therefore, a national stockpile has been created, as a resource for all, and is referred to as the Strategic National Stockpile (SNS).

The CDC's Strategic National Stockpile is a large national repository of life-saving pharmaceuticals and medical supplies to protect the American public if there is a public health emergency (terrorist attack, pandemic influenza outbreak, natural disaster, etc.) severe enough to cause local supplies to run out. The SNS is not a first response tool. It is designed to

supplement, and resupply state and local public health agencies in the event of a national emergency anywhere and anytime within the United States or its territories (Blanchard, 2008).

In the event of a bioterrorist attack, or catastrophic event, the United States Department of Health and Human Services (HHS) will deliver SNS assets to pre-designated state warehouses. Each warehouse is referred to as a receiving, staging, and storing site, or RSS. Once SNS assets arrive at the designated RSS site, HHS will transfer authority for the material to state authorities. In a catastrophic event, requiring the distribution and dispensing of medications, state and local authorities will then begin the breakdown of the “12 hour push package”. The “12 hour push package” is a cache of pharmaceuticals, antidotes, and medical supplies designed to improve the rapid delivery of a broad spectrum of assets, for an ill-defined threat, in the early hours of an event. The 12 hour push packages are then positioned in strategically located, secure warehouses. They are ready for immediate deployment to a designated MDA within 12 hours of the federal decision to deploy SNS assets (Blanchard, 2008).

Figure 3.2. Graphical illustration of the 12 hour push package



(CT Dept. of Public Health, 2012)

D3. Managed Inventory

Managed inventory (MI) is a division of the Strategic National Stockpile which contains medications and medical supplies for highly specific threats. The MI can be shipped if the disease agent is known or as “follow-on material” to the 12 hour push packages during an ill-defined threat. MI takes longer to reach project areas (upwards of 24 – 36 hours), but can be tailored to a specific, well-defined threat, or disease agent (Blanchard, 2008).

D4. Points of Dispensing

Points of Dispensing (POD) are designated dispensing locations for persons who are currently healthy, but may have been exposed to a specific threat, and need prophylactic medication or necessary medical supplies. PODs can be thought of as a “temporary clinic”. Each mass dispensing area has local POD plans in place, in which a POD can be activated and operated within a 48 hour timeframe. PODs are the traditional method of providing prophylaxis in the Cities Readiness Initiative (Blanchard, 2008). These plans are updated annually.

The key to survival for most people affected by a bioterrorism attack or catastrophic event is to provide antibiotics/vaccines/critical medical supplies as soon as possible and/or before an individual begins to show any symptoms. Persons eligible to receive medications/vaccines/supplies will be determined by public health officials working within a unified command structure.

There are two types of PODs. An open POD is a clinic that is opened to the public specifically to get medication or necessary supplies to a large number of people rapidly. On average, an open POD, that is dispensing oral medication, can process 500 people or more per hour (Blanchard, 2008).

A closed POD is a private location where medications or necessary supplies are dispensed to a specific group of people (Blanchard, 2008). Closed PODs help to reach specific portions of the community more quickly – such as emergency responders, families of first responders, public health professionals, and NV-MRC members who will be aiding the population in crisis. Long lines and public anxiety can be reduced and resources can be used more efficiently when using closed PODs. Closed PODs are a benefit to public health, as they help with planning efforts and decrease the number of people at open PODs.

Chapter 4

Deployment and Evaluation of the NV-MRC

On October 29, 2012, one of the most catastrophic natural disasters in American history devastated the tri-state area of New York, Connecticut, and New Jersey. Superstorm Sandy ravished through the northeastern United States, flooding streets, tunnels, and subway lines, knocking down trees, communication wires and power lines, and utterly demolishing thousands of homes. It is estimated that damage from this disaster exceeds \$50 billion (Fontevicchia, 2012).

In Connecticut, Governor Dannel Malloy signed an executive declaration of emergency on October 28, 2012. This same day, President Barack Obama approved Connecticut's request for a declaration of emergency, and hundreds of National Guard personnel were immediately deployed to the area. On October 29, 2012, Governor Dannel Malloy signed an executive declaration to close all Connecticut state highways, effective immediately, and to order mandatory evacuations across the state.

On a more local level, the city of Shelton, CT, within the Naugatuck Valley municipality, was hit particularly hard by Sandy. An October 30, 2012 press release, by United Illuminating, reported 9326 Shelton homes or 53% of all households were without power (Malloy, 2012). This left tens of thousands of people without heat, while the five day weather forecast projected record low temperatures to come.

After meeting with local and state emergency preparedness professionals, public health officials, and authorities, Shelton Fire Chief Joseph Laucella formally requested assistance from NV-MRC volunteers with three designated tasks in the Shelton, CT, area. These tasks included

staffing an emergency shelter, mass dispensing of FEMA provided food and water at a local POD, and “door to door” distribution of emergency response information. The NV-MRC management formally requested deployment of NV-MRC volunteers to aid in these tasks on October 30, 2012. The various duties, performed by NV-MRC members during hurricane Sandy, mimic those which could occur during a bioterrorism event – including manning PODs, operating shelters, and assembling a team to disseminate necessary information to valley residents.

Section A: NV-MRC Emergency Shelter Staffing

With more than 53% of households in Shelton, CT, without power, and record low temperatures in the forecast, an emergency shelter and “warming station” was established at the Shelton Community Center. The setup process for this shelter was arranged and enacted by town and state officials in congruence with Shelton authorities. In his professional opinion, fire Chief Joseph Laucella, concluded that he did not have access to enough personnel to man this shelter. He thereby formally called upon NV-MRC volunteers to assist. From October 30 to November 5, 2012, several NV-MRC members took rotating shifts working the shelter. Duties included arranging cots in sleeping areas, providing FEMA supplied foods and water to patrons, and maintaining order amongst shelter guests. Valley residents were encouraged to seek shelter in the Shelton community center overnight, or simply to warm and take a shower.

Section B: Mass Dispensing of FEMA Provided Foods and Water at Shelton POD

An emergency POD was established at Echo Hose in Shelton, CT on October 30, 2012. The POD was stocked with “Meals, Ready-to-Eat” (MRE), bottled water, and ice – all of which were provided by FEMA via the SNS. The NV-MRC members manned this POD for several days by mass dispensing food, water, and ice to valley residents in need. Residents were allowed two MRE’s and one case of water per two people, per day.

Figure 4.1. Photograph of the Meals Ready-to-Eat that were provided by the Federal Emergency Management Agency via the Strategic National Stockpile to the Shelton, CT, Point of Dispensing in response to Hurricane Sandy recovery efforts.



Figure 4.2. Photograph of cases of bottled water and Meals Ready-to-Eat provided by the Federal Emergency Management Agency via the Strategic National Stockpile to the Shelton, CT, Point of Dispensing in response to Hurricane Sandy recovery efforts.



Section C: “Door to Door” Distribution of Emergency Response Information

NV-MRC members further assisted in hurricane Sandy disaster relief by working with emergency preparedness personnel to go “door to door” and inform Shelton, CT, citizens about the local shelter, and food/water POD. Roughly 500 homes in the hardest hit areas of Shelton were visited by seven NV-MRC volunteers and Echo Hose Ambulance personnel. Efforts to distribute necessary emergency response information took place for two days until focus shifted towards manning the local shelter and POD.

Section D: Evaluation of the NV-MRC Response to Hurricane Sandy

In early November 2012, a team of NVHD personnel, local authorities, and state public health professionals met to review the strengths, weaknesses, and lessons learned during the Naugatuck Valley Health District’s response to Hurricane Sandy. Topics discussed during this meeting were used by personnel at NVHD to construct a Hurricane Sandy After Action Report (AAR). The AAR is a comprehensive Hurricane Sandy response report focusing on the following capabilities: communications, environmental response, and volunteer management. Though not solely focused on the NV-MRC response, the NV-MRC is discussed often throughout this report.

Within this report, it was noted that a major strength to NVHD’s response to Hurricane Sandy was that “the newly formed Medical Reserve Corps (MRC) was activated for the first time in response to a real event [and there] was MRC representation for all requests made for volunteer assistance [by Fire Chief Joseph Laucella]”. It was however discussed that “a written

protocol needs to be developed and tested for communicating and monitoring Medical Reserve Corps Volunteers” (Shields and Spargo, 2012).

Four observations concerning NVHD volunteer management were noted as follows:

- The MRC was activated via notification to the state MRC coordinator and DEMHS region 2 coordinator. The process was quick and efficient.
- Prior to landfall, MRC volunteers were notified via email of the potential need for volunteer assistance after Hurricane Sandy. This was in an effort to determine who may be available to assist prior to hurricane landfall.
- The only communication system in place to contact MRC volunteers was an email contact list. Redundant communication systems need to be established. This will be coordinated with “Premier Global” for email, call and text capabilities.
- Although there were limited modes of communication to contact the MRC volunteers, MRC members did respond to requests made for commodity distribution, shelter operations, and dissemination of emergency response information. (Shields and Spargo, 2012).

When analyzing the aforementioned observations, it was concluded that having only email communication capabilities in place for MRC deployment is not sufficient. Future MRC protocol will include uploading all contacts into “Premier Global” (an automated emergency notification system) to quickly utilize blast communication in the form of email, phone calls, and text messages to NV-MRC members. As new individuals apply to join the NV-MRC, it is essential that their information be immediately uploaded into the Premiere Global blast communication system.

Many current NV-MRC members are emergency medical personnel. During an emergency situation, many of these people are required to work in their full-time job position and therefore are unable to assist with assigned volunteer NV-MRC relief tasks. This issue was

observed during hurricane Sandy. The NV-MRC management team agrees that there needs to be a push to all NVHD member municipalities to promote the MRC and recruit individuals from various professional disciplines to join (Shields and Spargo, 2012).

Chapter 5 Summary

By employing a multidisciplinary approach to public health (Appendix K), projects facilitated during field experience hours at NVHD aimed to implement community preparedness strategies through disaster and bioterrorism response outreach, food safety promotion, senior citizen emergency planning and radon awareness. This report demonstrates applications of knowledge and skill performance in the five core competencies of public health: biostatistics, environmental health, epidemiology, health services administration, and social and behavioral sciences, and the public health emphasis areas of food safety and biosecurity.

As a culminating experience with NVHD, the Naugatuck Valley Medical Reserve Corps was created to better prepare the valley community for future natural disasters, bioterrorism attacks, and any related public health emergencies, in which existing response operators become overwhelmed. A three year NV-MRC strategic plan, for 2013 – 2016, was produced to ensure that the NV-MRC is a stable public health organization for years to come (Appendix D). Because the NV-MRC was recently established, minimal data is currently available to assess NV-MRC progress towards meeting strategic plan objectives. Preliminary data shows a current NV-MRC enrollment of 40 active members as of January, 2013 and a 52.25% average rate of attendance for the first four meetings. With this data it can be concluded that, as of January 2013, the NV-MRC is 40% closer to meeting objective #1, and objective #2 has been met for the first four meetings. Data concerning objectives #1 through #5 is currently being collected on a rolling basis, and full evaluation of such data will take place in September 2013—one year from inception of the NV-MRC.

In response to Hurricane Sandy, the NV-MRC proved to be a necessary and useful community preparedness organization for residents of Naugatuck Valley. There were a sufficient number of NV-MRC volunteers available to assist with the local shelter, POD, and dissemination of necessary emergency response information; however, a push must be made to streamline deployment communications and increase recruitment of non-emergency medical volunteers.

References

Blanchard, B. Wayne (2008). Guide to Emergency Management and Related Terms, Definitions, Concepts, Acronyms, Organizations, Programs, Guidance, Executive Orders & Legislation. Federal Emergency Management Agency (FEMA). Retrieved from <http://training.fema.gov/EMIWeb/edu/docs/terms%20and%20definitions/Terms%20and%20Definitions.pdf>. Accessed January 2013.

Centers for Disease Control and Prevention (2012a). CDC and Food Safety. Retrieved from <http://www.cdc.gov/foodsafety/cdc-and-food-safety.html>. Accessed January 2013.

Centers for Disease Control and Prevention (2012b). *Listeria* (Listeriosis). Retrieved from <http://www.cdc.gov/listeria/index.html>. Accessed February 2013.

Centers for Disease Control and Prevention (2012c). Staphylococcal Food Poisoning. Retrieved from http://www.cdc.gov/ncidod/dbmd/diseaseinfo/staphylococcus_food_g.htm. Accessed February 2013.

Connecticut Department of Public Health (2012). Online Course: IS 200.b: ICS for Single Resources and Initial Action Incidents. Federal Emergency Management Agency (FEMA).

Division of Civilian Volunteer Medical Reserve Corps (2013a). Find MRC Units. Retrieved from <http://www.medicalreservecorps.gov/FindMRC>. Accessed January 2013.

Division of Civilian Volunteer Medical Reserve Corps (2013b). About the Medical Reserve Corps. Retrieved from <https://www.medicalreservecorps.gov/pageViewFldr/About>. Accessed January 2013.

Fontevicchia, Agustino (2012). Despite \$50B In Damages, Hurricane Sandy Will Be Good For The Economy, Goldman Says. *Forbes*. Retrieved from <http://www.forbes.com/sites/afontevicchia/2012/11/06/despite-50b-in-damages-hurricane-sandy-will-be-good-for-the-economy-goldman-says/>. Accessed February 2013.

Malloy, Dannel (2012). Superstorm Sandy: By the Minute. *Valley Independent Sentinel*. Retrieved from http://valley.newhavenindependent.org/archives/entry/hurricane_sandy_wires_down_everywhere/. Accessed January 2013.

Naugatuck Valley Health Department (2012). About the NVHD. Retrieved from <http://www.nvhd.org/about-us/>. Accessed January 2013.

Peterson, Nancy (2012). Food Safety Tips Make Fall Picnics, Tailgates Winners. *K-State Research and Extension News*. Retrieved from http://www.ksre.ksu.edu/news/story/food_safety083112.aspx. Accessed September 2012.

Redding et al. (2000). Health Behavior Models. *The International Electronic Journal of Health Education*, 3, 180 – 193. Retrieved at http://drzaius.ics.uci.edu/meta/classes/informatics161_fall06/papers/10a-Redding_HealthBehaviorModels.pdf. Accessed January 2013.

Reynolds et al. (2012). *The Community Health Profile: August 2012*. Derby, CT: Yale-Griffin Prevention Research Center.

Shields, A., Spargo, K., (2012). Hurricane Sandy After Action Report. *Naugatuck Valley Health Department*, 3-7.

United States Census Bureau (2012). *Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2012* [Data File]. Retrieved from <http://www.census.gov/popest/data/national/totals/2012/index.html>. Accessed January 2013.

United States Department of Agriculture Food Safety and Inspection Service (2012a). Barbeque and Food Safety. Retrieved from http://www.fsis.usda.gov/factsheets/barbecue_food_safety/index.asp. Accessed October 2012.

United States Department of Agriculture Food Safety and Inspection Service (2012b). “Spring Clean” your Kitchen to be Food Safe. Retrieved from http://www.fsis.usda.gov/news/NR_032411_01/index.asp. Accessed November 2012.

United States Department of Health and Human Services (2012). Keep Food Safe: Check Your Steps. Retrieved from <http://www.foodsafety.gov/keep/basics/index.html>. Accessed October 2012.

United States Environmental Protection Agency (2012a). Radon: Test, Fix, Save a Life. Retrieved from <http://www.epa.gov/oncampus/pdf/radonfactsheet.pdf>. Accessed December 2012.

United States Environmental Protection Agency (2012b). A Citizen’s Guide to Radon. Retrieved from <http://www.epa.gov/radon/pubs/citguide.html>. Accessed December 2012.

University of Colorado at Boulder (2012). Bloodborne Pathogen Training. Retrieved from http://www.colorado.edu/ehs/training/BBP_Training.pdf. Accessed September 2012.

Appendix A

Emergency Preparedness

Specific to Your Needs



*Naugatuck Valley Health District
98 Bank Street
Seymour, CT 06483
(203) 881 – 3255
www.nvhd.org*

Oxygen Therapy



- If you use oxygen, make sure there is a minimum 7-day emergency supply on hand
- Store a full backup oxygen cylinder that will last at least 48 hours in a location where it cannot topple and block access to any rooms
- Call your medical supply vendor now and ask what services they will provide in case of an emergency
- Consider buying your own emergency generator

Dialysis

- Gather and keep important medical information on hand
- Wear medical emblem at ALL TIMES
- If dialysis is received at home, contact power and water company to register for priority restoration of services
- Ask your doctor which meds should be kept as an emergency supply
- If evacuating to a shelter, make sure the person in charge knows about your medical condition
- If medical attention is needed, make sure nobody touches the dialysis access for anything other than dialysis
- If treatment becomes impossible to receive for a period of time, talk to your doctor about a special diet which may slow down the buildup of deadly toxins



Hearing Impairments

- Keep extra batteries in an emergency supply kit for the devices which help you hear
- Keep hearing aids in a place where you can easily find them during an emergency situation
- Have paper and pencils available to communicate in case of hearing aid malfunction

Appendix A (continued)

Visual Impairments

- Have extra glasses readily available in case of emergency
- Put security lights in each room to light walking paths
- Store high powered flashlights with wide beams and extra batteries where you can easily find them



Mobility Impairments

- Keep your emergency supply kit in a backpack attached to your wheelchair or scooter – or in a place which is easily accessible
- Make sure furniture will not get in your way if you need to get out of your home quickly
- Identify the best emergency escape route for your home, and the easiest way for you to get there

Diabetes

- Keep a spare 30 day supply of all diabetic medication. This includes insulin, oral anti-diabetic agents, and a glucagon emergency kit if prescribed by your physician
- Refill your prescriptions on the first day you are eligible to do so, don't wait until you run out
- Create an easily accessible reserve of blood glucose testing supplies (ie. Lancets, test strips, extra batteries for glucose meter etc)
- In your emergency kit, pack a source of carbohydrates to treat hypoglycemic reactions (ie. glucose tablets, orange juice, raisins, saltines, or hard sugar candies)
- In the event of a power outage, insulin can be safely kept at room temperature for up to 28 days – as long as it is not exposed to light



Most Importantly

Create a network of neighbors, relatives, and friends to aid you in an emergency. Discuss your needs, and make sure everyone in your network knows how to operate your necessary medical equipment.

Appendix B

Radon is a naturally occurring radioactive gas released in rock, soil, and water from the natural decay of uranium. While levels in outdoor air pose a relatively low threat to human health, radon can accumulate to dangerous levels inside buildings. You can't see, smell, or taste it, but an elevated radon level in your home may be affecting the health of your family. Radon is the leading cause of lung cancer deaths among nonsmokers in America and claims the lives of about 20,000 Americans each year. Exposure to radon is a preventable health risk, and testing radon levels in your home can help prevent unnecessary exposure.



JANUARY is Radon Action Month!

Radon from rock, soil, and water enters your home through:

1. Cracks in solid floors
2. Construction joints
3. Cracks in walls
4. Gaps in suspended floors
5. Gaps around service pipes
6. Cavities inside walls
7. The water supply

You can't see radon, but it's easy to detect a radon problem in your home!

- Purchase an inexpensive radon test kit at your local hardware store
 - Follow the test kit instructions carefully
- Contact your state radon office to enlist a qualified tester and consider fixing your home if test results are higher than 4pci/L

Tip! Information about testing your home for radon and finding a test kit is also available by calling 1-800-SOS-RADON.

The Good News:

You can fix a radon problem.

The cost of making repairs to reduce the radon level depends on several factors, including how your home was built. Most homes can be fixed for about the same cost as other common home repairs, like painting or having a new hot water heater installed. Look in your local phone book or call your state radon office to locate radon mitigators in your area if you find an elevated radon level in your home.

Radon presents a serious health risk, but it can be controlled easily and cost-effectively. Take action today. Encourage your friends and family members to do the same!



Source: www.epa.gov/radon

Appendix C



Naugatuck Valley Medical Reserve Corps

In partnership with the Naugatuck Valley Health District & Echo Hose Ambulance



NV-MRC Capacity Building Plan

NV-MRC Mission: To establish a dedicated team of volunteers that will be sustained over time to strengthen public health, emergency response, and community resiliency.

Goals:

1. For all MRC members to complete the mandatory trainings (as outlined in the NV-MRC training plan) within one year of applying for the NV-MRC.
2. To continuously engage MRC volunteers through trainings, exercises, and real-life events.
3. To background check, credential, and maintain records of all NV-MRC members and update annually.

Organizational Structure

The Naugatuck Valley Medical Reserve Corps unit (NV-MRC) is organized to serve the towns of Ansonia, Beacon Falls, Derby, Naugatuck, Seymour, and Shelton. This unit is located in DEMHS Regions 2 and 5. However, it has been assigned by the State of Connecticut to report back to DEMHS 5 for organizational purposes. The NV-MRC will coordinate with the preparedness plans and response of local member municipalities, the Naugatuck Valley Health District, DEMHS Regions 2 and 5, and the State of Connecticut. It will also coordinate with the Emergency Management Director of each member municipality.

The Naugatuck Valley Health District (NVHD) will serve as the Fiduciary Agency for the Naugatuck Valley Medical Reserve Corps Unit. The Executive Committee (EC) will consist of the Director of Health, who will serve as the Naugatuck Valley MRC Unit Leader, the Public Health Preparedness Coordinator for the Naugatuck Valley Health District, the Assistant Chief of Echo Hose Ambulance, the Credentialing Coordinator, the Training Coordinator, and the Division Leaders. There will be a minimum of four divisions by function as follows: 1) Sheltering, 2) Mass Dispensing, 3) Rehabilitation, and 4) Behavioral Health. Each Division Leader will be responsible for coordination with the NV-MRC Unit for policies and procedures, recruitment, credentialing, training, and activation, among other activities.

Appendix C (continued)



Naugatuck Valley Medical Reserve Corps

In partnership with the Naugatuck Valley Health District & Echo Hose Ambulance



Recruitment

Volunteer recruitment is an ongoing effort to continually enhance the NV-MRC team. The executive committee will recruit in the community at local events, hand out brochures and flyers. Recruitment will target current public health volunteers, students from surrounding Universities, EMT students, school nurses, medical practitioners, etc. Recruitment strategies will include, but is not limited to, social media outreach, brochure development, logos, press releases, and MRC gear. A medical reserve corps webpage within the NVHD website is in development.

Engagement

The NV-MRC will continuously engage volunteers through education and trainings [refer to NV-MRC training plan for more details]. A training log will be maintained to document MRC member capacity. MRC members will participate in monthly trainings, exercises and drills, and non-emergency events in the community.

Recognition

Each year, Naugatuck Valley Health District and Echo Hose Ambulance will host a MRC member's appreciation dinner. There will be continuous recognition of the unit as well as individuals through articles in monthly e-bulletins and newspapers, information on websites, etc. All NV-MRC activities will be highlighted on the national MRC website www.medicalreservecorps.gov.

Appendix C (continued)



Naugatuck Valley Medical Reserve Corps

In partnership with the Naugatuck Valley Health District & Echo Hose Ambulance



Retention

There will be ongoing opportunities for members to stay engaged in the program. Each member will be asked to share any skills or specific interests they have in order to involve members in activities of interest, and also utilize each member's expertise in the field. By scheduling a training session each month, there will be continuous interaction among unit members and leaders. Orientations will be scheduled quarterly for rolling volunteer enrollment, and each member will annually take the loyalty oath.

Screening and verification of professional credentials

All NV-MRC members will be credentialed using the salamander system. Salamander is a credentialing system that is used throughout the State of CT. A background check will be conducted through the Echo Hose system in place. The following list outlines the requirements to become a NV-MRC volunteer.

- ✓ Completion of volunteer form online:
<http://www.regonline.com/register/checkin.aspx?eventID-1131678>
- ✓ Completion of salamander form & applicant information form
- ✓ Attend orientation
- ✓ Completion of background check (Echo Hose system in place)
- ✓ Copies of pertinent medical licenses/certification documents are verified
- ✓ Complete/show documentation that all mandatory trainings are completed

Appendix D



Naugatuck Valley Medical Reserve Corps

In partnership with the Naugatuck Valley Health District & Echo Hose Ambulance



NV-MRC Strategic Plan 2013 – 2016

(Step 1: Mission Statement – include Purpose, business, values)

Mission: The mission of the Naugatuck Valley Medical Reserve Corps is to organize and utilize a network of public health, medical, and non-medical volunteers to aid in public health initiatives and supplement existing response capabilities in time of emergency - thereby improving the health and safety of Naugatuck Valley community members and civilians of surrounding regions.

(Step 2: Visions – describe what the units successes will look like)

Visions:

Vision #1: The towns of Beacon Falls, Derby, Ansonia, Naugatuck, Seymour, and Shelton will have a local asset of sufficiently staffed Medical Reserve Corps members ready when called who can adequately respond to all health hazard emergency events.

Vision #2: The Naugatuck Valley Medical Reserve Corps will be a widely recognized and respected community resource.

(Step 3: Situations – Determine situations (problems/issues) that the NV-MRC is trying to address)

Situations:

Situation Statement #1: A primary limitation of the NV-MRC is the lack of non-emergency services volunteers.

Situation Statement #2: NV-MRC recruitment has been steady, but a push needs to be made to diversify skill sets of MRC members.

Situation Statement #3: In emergency situations, the NV-MRC is not yet respected and recognized as a valuable, easily accessible community resource.

Situation Statement #4: Many community members are not yet aware that there is a NV-MRC to supplement existing response capabilities in time of emergency.

(Step 4: SWOT – Develop a SWOT diagram – Strengths, weaknesses, opportunities, and threats of current NV-MRC program)

Appendix D (continued)



Naugatuck Valley Medical Reserve Corps

In partnership with the Naugatuck Valley Health District & Echo Hose Ambulance



SWOT:

<p style="text-align: center;">Strengths</p> <ol style="list-style-type: none"> 1. Diversified formal training program 2. Strong management support 3. Steady influx of funds for supplies, equipment 4. Strong partnership with Echo Hose Ambulance and Naugatuck Valley Health District 	<p style="text-align: center;">Weaknesses</p> <ol style="list-style-type: none"> 1. Commitment/engagement of current volunteers 2. Lack of diverse volunteer skill sets 3. Lack of non-emergency medical volunteers 4. Little or no utilization as a community resource
<p style="text-align: center;">Opportunities</p> <ol style="list-style-type: none"> 1. Support of local and state government 2. Local partnerships with other community organizations (police, schools, senior centers, etc.) 3. High demand for public health support, especially during emergency situations 	<p style="text-align: center;">Threats</p> <ol style="list-style-type: none"> 1. Retention of current NV-MRC volunteers 2. Lack of unity amongst NV-MRC members 3. Competing local MRC programs 4. Inadequate integration of NV-MRC services into community plans

(Step 5: Goals – Develop Goals, or broad statements describing the desired long-term impact of your MRC unit)

Goals:

Goal #1: All NV-MRC members are to complete the mandatory trainings (as outlined in the NV-MRC training plan) within one year of applying for the NV-MRC to prepare to respond to local emergencies.

Goal #2: To continuously engage NV-MRC volunteers through trainings, exercises, and real-life events.

Goal #3: To background check, credential, and maintain records of all NV-MRC members (and update annually) to ensure adequate medical attention for citizens of Naugatuck Valley in the event of a situation that overwhelms the community's normal ability to provide emergency response care.

Goal #4: To provide trained, competent NV-MRC volunteers to staff community Points of Dispensing (PODs) in times of emergency.

(Step 6: Objectives – Determine Objectives, or specific, measurable statements of the desired immediate or direct outcomes of your MRC unit. Unlike goals, which capture the “big

Appendix D (continued)



Naugatuck Valley Medical Reserve Corps

In partnership with the Naugatuck Valley Health District & Echo Hose Ambulance



picture,” objectives provide the specificity needed to decide how best to dedicate time and resources)

Objectives:

Objective #1: Recruit a total of 100 active volunteer responders to assist in management of a public health emergency.

Objective #2: Maintain a 45% attendance rate of active members at each monthly meeting.

Objective #3: Increase the number of non-medical volunteers by 15% over current levels.

Objective #4: Ensure that 75% of active members have completed all required trainings within one year of MRC enrollment.

Objective #5: Initiate two hands-on, team-building, emergency preparedness drills per calendar year, and maintain a 45% MRC volunteer attendance rate at each.

(Step 7: Strategies – Determine Strategies, or practical ideas describing where to commit time and resources)

Strategies:

Objective	Strategies
<p>O #1: Recruit a total of 100 active volunteer responders to assist in management of a public health emergency.</p>	<ul style="list-style-type: none"> - Streamline the application process - Identify new recruitment methods - Enlist support of local partners to build community awareness - Learn what attracted current volunteers
<p>O #2: Maintain a 45% attendance rate of active members at each monthly meeting.</p>	<ul style="list-style-type: none"> - Keep constant, updated email contact with current members summarizing each meeting and prefacing future meetings - Update website regularly with meeting schedule, pictures, news articles, future events etc. - Hold two volunteer appreciation events per calendar year (1 Sponsored by MRC, 1 potluck style)

Appendix D (continued)



Naugatuck Valley Medical Reserve Corps

In partnership with the Naugatuck Valley Health District & Echo Hose Ambulance



	<ul style="list-style-type: none"> - Recruit popular/interesting guest speakers to meetings
<p>O #3: Increase the number of non-medical volunteers by 15% over current levels.</p>	<ul style="list-style-type: none"> - Enlist support of local partners to build community awareness - Learn what attracted current non-medical volunteers - Facilitate “recruitment booths” at local colleges and universities
<p>O #4: Ensure that 75% of active members have completed all required trainings within one year of MRC enrollment.</p>	<ul style="list-style-type: none"> - Offer opportunities to “make-up” missed classes. - Offer in-class versions of online classes – especially for older volunteers - Initiate system to reward training completion (Possibly a yearly banquet to honor those who have fully completed training)
<p>O #5: Initiate two hands-on, team-building, emergency preparedness drills per calendar year, and maintain a 45% MRC volunteer attendance rate at each.</p>	<ul style="list-style-type: none"> - Build strong contacts with local law enforcement, fire departments, shelters, senior centers - Incorporate the aforementioned organizations into hands-on MRC drills - Hold drills immediately before or after volunteer appreciation events to increase attendance

Appendix E



The Naugatuck Valley Medical Reserve Corps is a network of medical and non-medical volunteers who wish to supplement existing response capabilities in time of emergency in the valley.

BECOME A MEMBER TODAY!

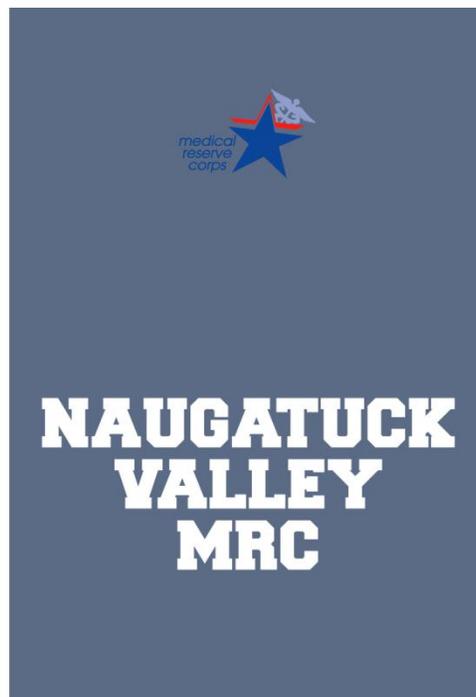
Visit www.echohose.com or call The Naugatuck Valley Health District at **(203) 881-3255** to join!



FRONT
IMPRINT SIZE: 3.75" w x 2.5" h



BACK
IMPRINT SIZE: 11" w x 3.2" h



Appendix F



Flowers are in bloom, birds are chirping – spring is in the air! With spring weather, comes spring cleaning. This season, the USDA encourages you to be food safe by giving your kitchen, refrigerators and freezers a thorough cleaning. It's a great time of year to throw out food items which are losing their quality or have spoiled and check for unnoticed spills. This spring, clean your kitchen, prevent cross-contamination, and reduce your risk for foodborne illness.

Here's some simple food safety tips for the spring season:



Keep the refrigerator as clean as possible. Wipe up spills immediately and clean surfaces thoroughly with hot, soapy water.



If spoiled food has left an odor in your refrigerator or freezer as a result of a power outage, wash and sanitize shelves, crispers, and ice trays, as well as all doors and gaskets. Leave the door open for about 15 minutes to allow free air circulation before restocking the refrigerator or freezer.



Sanitize refrigerator and freezer surfaces with a solution of 1 tablespoon unscented liquid chlorine bleach per 1 gallon of water. Restock by separating fresh/raw meats and their juices from fresh produce.



Cool the fridge to 40°F or below and use an appliance thermometer to make sure the temperature does not rise.

Spring Food TIP!

Once a week, make it a habit to throw away perishable food items that should no longer be eaten.

Appendix G



Fire up the grill, the dog days of summer are finally here! As you gather up your friends and family for a fun-filled summer barbeque, remember to practice good food safety to prevent foodborne illness.

Here's some simple food safety tips for the summer season!

Thaw Smart!

Use the refrigerator for slow, safe thawing. Completely thaw raw meats and poultry before grilling to promote even cooking. For quicker thawing, you can use the microwave for food that will be placed immediately on the grill.

Serve Smart!

When taking food off the grill, use a clean platter. Don't put cooked food on the same platter that held raw meat or poultry.

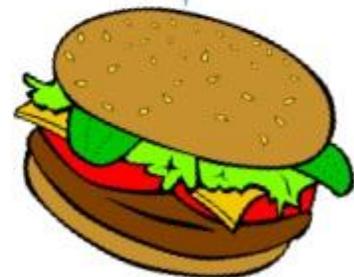


Marinate Smart!

Marinate food in the refrigerator, not on the counter. If some of the marinade is to be used as a sauce on the cooked food, reserve a portion of the marinade before putting raw meat and poultry into it. If the marinade used on raw meat and poultry is to be reused, make sure to bring it to a boil first to destroy any harmful bacteria.

Shop Smart!

When shopping, buy cold foods like hamburgers, hot dogs, and poultry last, right before checkout. Separate raw meats from other foods in your shopping cart and plan to drive directly home after the grocery store. Refrigerate perishable food within 2 hours or within 1 hour when the temperature is above 90°F. Freeze poultry and ground meat that won't be used within 1 to 2 days, and other meats within 4 to 5 days of purchase.



Store Smart!

Refrigerate any leftovers promptly in shallow containers. Discard any foods left out more than 2 hours or 1 hour if temperatures are above 90°F (including salads, pies, burgers, cheeses, etc).

Appendix H

Grab your favorite picnic foods, snacks and gear and head out to the game. It's tailgate season! Just remember, safe food is good food. With football season in full swing, it's important to keep food safe while tailgating, picnicking and enjoying the great outdoors. This season, the USDA seeks to target the issue of cross-contamination. Cross-contamination occurs when bacteria from one food is transferred to another. An error of such can result in dangerous food at fall potlucks, picnics and sporting tailgates. No need to worry, cross-contamination is preventable!



Here's some simple food safety tips for the fall season:

Ensure that juices from raw meat and poultry do not drip onto other foods; especially foods that will not be cooked again like fruits and veggies.



Use protective plastic bags to cover raw meats.



Place meat and poultry on the bottom of the cooler, so juices will not drip onto fresh fruits and vegetables.



Separate and store foods by category immediately upon returning home.



Thaw frozen meats and poultry at refrigerated temperatures. **Never allow meat to thaw on the counter!**



Dedicate separate utensils for each separate food item.



Keep raw foods separated from cooked foods.



If grilling meats and poultry on the same grill as fruits and vegetables, designate separate areas of the grill for each.

Serve Safe!

Cross-contamination can occur when plates, platters, knives and other serving utensils are used for both raw and cooked foods without being washed before and after each use.

Fall Food TIP!

Thoroughly washing the rind of a melon, before cutting into it, will greatly reduce the risk of transferring harmful bacteria from the outer shell to the sterile inside fruit!

Appendix I



The holidays are fast approaching! With so many different foods being prepared during the winter months, the holidays are an important time to practice good food safety. This season, remember four simple steps: Clean, Separate, Cook, Chill. Here at Naugatuck Valley Health District, we want everyone to enjoy a delicious and safe holiday season!

Here's some simple food safety tips for the winter season:

1. Clean

- Start with clean hands, cutting boards, and utensils
- Always wash your hands with warm water for 20 seconds before and after handling food
- Clean your cutting boards, knives and counter tops after preparing food

2. Separate

- Using the same cutting board for all foods can spread bacteria
- Use separate cutting boards and knives for fresh produce and meat/poultry/seafood/eggs
- Keep raw meat and poultry away from raw vegetables and other foods that won't be cooked
- Don't put cooked foods on platters that held raw meat

3. Cook



You cannot safely tell a food is done by how it looks. Cooking to the suggested safe temperature kills harmful bacteria



Using a food thermometer will promote safe food and prevent under/over cooking

Product	Minimum Internal Temperature and Rest Time
Beef, Pork, Veal & Lamb steaks/chops/roasts	145°F (62.8°C) and allow to rest for at least 3 minutes
Ground Meats	160°F (71.1°C)
Ham (Fresh or Smoked) uncooked	145°F (62.8°C) and allow to rest for at least 3 minutes
Fully Cooked Ham to reheat	Reheat cooked hams packaged in USDA-inspected plants to 145°F (62.8°C) and all others to 165°F (73.9°C)
All Poultry breasts/whole bird/legs/thighs wings/ground/stuffing	165°F (73.9°C)
Eggs	160°F (71.1°C)
Fish and Shellfish	145°F (62.8°C)
Leftovers	165°F (73.9°C)
Casseroles	165°F (73.9°C)

4. Chill

- Place all leftovers in the refrigerator within two hours of the meal
- Keep your fridge at a safe 40°F or below
- Use or freeze leftovers within 3 to 4 days

Source: <http://www.foodsafety.gov/keep/basics/index.html>

Appendix J

Come Join Us!

The **Naugatuck Valley Medical Reserve Corps** is a network of **medical** and **non-medical** volunteers who wish to contribute to **public health** initiatives and **supplement** existing **response capabilities** in time of **emergency** in the valley.



We're looking to recruit:

Doctors
Nurses
EMTs
Public Health Officials
Firefighters
Students
General Public

*Anyone with an interest in
serving their community
during an emergency
situation!*

FREE Trainings:

- Personal Preparedness
- Bloodborne Pathogens
- CPR/HCP
- Firefighter Rehab
- Points of Dispensing (PODs)
- First Aid/Medical Response

More TBA!

Meetings are held just once a month at Echo Hose Ambulance, 286 Howe Avenue Shelton, CT. Please visit WWW.ECHOHOSE.COM to sign up or contact **Amy Shields** of the Naugatuck Valley Health District at ashiels@nvhd.org or **(203) 881 - 3255**

Appendix K

Major Project	Public Health Competencies Employed
Senior Citizen Emergency Planning	Biosecurity Biostatistics Environmental Health Social and Behavioral Sciences
Food Safety Promotion	Food Safety Epidemiology
Radon Awareness	Environmental Health Epidemiology
NV-MRC	Biosecurity Biostatistics Environmental Health Epidemiology Health Services Administration Social and Behavioral Sciences

