

Running head: IS THE FREMONT FIRE DEPARTMENT READY FOR A

Is the Fremont Fire Department Ready for a Pandemic?

Ronald Maize

Fremont Fire Department, Fremont, California

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signature \_\_\_\_\_

## Abstract

The problem is the City of Fremont is located in an area of the country that is widely diverse and highly populated. Consequently, the citizens of Fremont and surrounding communities are vulnerable to a rapid spread of a pandemic flu epidemic. The purpose of this research project was to identify if the City of Fremont is prepared and equipped to handle a pandemic outbreak, and to compare Fremont's readiness model to recommendations of leading authorities. The descriptive research method was used to find out: a) What is the current capability of the Fremont Fire Department in handling a pandemic flu outbreak?, b) What percentage of the community is at the highest risk in a pandemic epidemic?, c) What are the recommendations of leading authorities on pandemic preparedness?, and d) Is Fremont in compliance with recognized recommendations?

Through literature review and personal interviews it was discovered that a large percentage of the Fremont community is considered in the high risk category for contracting the 2009 H1N1 virus. Although Fremont's Metropolitan Medical Response System (MMRS) and Medical Reserve Core (MRC) are current programs in the Department, recommendations in this study encourage the development of a pandemic preparedness plan and suggest enhancement on current capabilities of operational readiness by improving training and communications with employees and the public. Recommendations also include preparedness planning and activities that should be developed in collaboration with the local County Health Department, hospitals, and key stakeholders in the community.

Table of Contents

Certification Statement.....Page 2

Abstract.....Page 3

Table of Contents.....Page 4

Introduction.....Page 5

Background and Significance.....Page 6

Literature Review.....Page 8

Procedures.....Page 14

Results.....Page 16

Discussion.....Page 18

Recommendations.....Page 19

Reference List.....Page 21

## Introduction

Many experts in the medical community warn that an influenza pandemic is not only likely to happen, but it is currently developing in our country today. Currently, there is increasing concern over the H1N1 influenza virus, and the lack of vaccine to prevent it from spreading. H1N1 is known as a “novel” virus, which means the human body has no natural immunity to prevent infection. It is a fast spreading virus that can result in severe illness and death. The Centers for Disease Control (CDC) estimates that from April 1, 2009 to December 12, 2009, a total of 55 million H1N1 cases reported. Of that number, the hospitalization rate reached 246,000, and the death rate reached a total of 11,160. This virus reached pandemic status in 2009 and has the potential to have a profound impact throughout the country.

The problem is the City of Fremont is located in an area of the country that is widely diverse and highly populated. Consequently, the citizens of Fremont and surrounding communities are vulnerable to a rapid spread of a pandemic flu epidemic. The purpose of this research project was to identify if the City of Fremont is prepared and equipped to handle a pandemic outbreak, and to compare Fremont’s readiness model to recommendations of leading authorities. The descriptive research method will be used to find out: a) What is the current capability of the Fremont Fire Department in handling a pandemic flu outbreak?, b) What percentage of the community is at the highest risk in a pandemic epidemic?, c) What are the recommendations of leading authorities on pandemic preparedness?, and d) Is Fremont in compliance with recognized recommendations? The following research will address these four questions.

## Background and Significance

The San Francisco Bay Area is a metropolitan region that encompasses San Francisco, Oakland, and San Jose. It also includes smaller urban and rural areas and is known as the Bay Area. The Bay Area consists of 9 counties, 101 cities, and 7,000 square miles. These counties include Alameda, Contra Costa, Santa Cruz, Marin, Monterey, San Francisco, San Mateo, Santa Clara, and Solano. The combined population in the Bay Area is more than 7.3 million people, and is a very ethnically diverse region (Yi, 2008). Census information shows the San Francisco metropolitan area alone has over 112 different languages spoken, making it the fifth most linguistically varied metro area in the nation (Hendricks, 2005). The Bay Area is also host to 3 international airports and 2 major ports. As a popular tourist destination, local and international travel in and out of the Bay Area is high year round.

The City of Fremont is located in Alameda County and has a population of approximately 216,000 (City of Fremont, 2009). The city lies between the East Bay Hills and the San Francisco Bay and covers approximately 95 square miles. Its community is made up of 48% Asian, 32% White, 14% Hispanic, 4% African American, and 2% other (City of Fremont, 2009). The cities of Newark and Union City are adjacent cities to Fremont. The area including Newark, Union City, and Fremont is known as the Tri-City Area. The 3 cities have a combined population of approximately 333,274 (Union City, 2008). Each of these cities staff full-time career firefighters and provide Advanced Life Support (ALS) services. There are 11 acute care receiving hospitals in Alameda County, and 6 additional hospitals in surrounding counties that also receive patients from the Alameda County 911 system.

On a day-to-day basis, emergency resources in the Tri-City area are usually sufficient in handling the needs of the community. As the media reports information on the spread of the

2009 H1N1 virus, the question arises, “What does this mean for our communities and are there adequate resources to meet the public’s needs in a pandemic?” Medical experts believe that a catastrophic influenza pandemic is not only likely to occur, but it’s overdue. The Spanish flu of 1918 was an H1N1 avian virus that infected more than one-third of the world’s population and killed as many as 50 to 100 million people. It is believed that today, a pandemic with the same rate of infectivity and mortality would result in more than 2 billion infections with 180 million to 360 million deaths worldwide (Ryan, 2009). Could this happen again?

Currently, the novel H1N1 Flu (Swine Flu) has been reported in 168 countries, all 50 states in the U.S., and the District of Columbia. A total amount of 504 cases of H1N1 have been confirmed in Alameda County. Most of these cases have been mild to moderate as of January 2010. However, there have been severe cases that have resulted in 124 admissions to Intensive Care Units (ICU), and 32 documented deaths (Alameda County Health, 2010). In recent months there has been growing concern of whether Fremont and the Tri-City resources can meet the potential demands in a pandemic outbreak. This subject was studied by Fremont Fire staff in 2007 and a draft Influenza Response Plan was started, but not completed.

Based on available information and predictions from medical experts on the potential risk to the community, this author believes that evaluating the Fremont Fire Department’s operational readiness for a pandemic event supports the United States Fire Administrations fifth operational objective “to respond appropriately in a timely manner to emerging issues” (United States Fire Administration, 2005). Assessing the operational readiness and community risk factors are primary principles taught in the Executive Analysis of Community Risk Reduction (EACRR) Course at the National Fire Academy. A pandemic situation would have an impact on all 5 vulnerabilities to the community that are outlined in the EACRR course, which include: Human,

Economic, Social, Political, and Environmental (United States Fire Administration, 2009). Preparedness, capability, and emergency service should be studied to lessen these factors.

### Literature Review

Information in this literature review was obtained from the Learning Resource Center at the National Fire Academy, the local public library, personal interviews, and the Internet. Due to the fact that increased pandemic activity has been developing over the past 24 months, the Internet was used extensively to obtain the most current information available.

What is the current capability of the Fremont Fire Department in handling a pandemic flu outbreak?

In 2003, the City of Fremont faced significant budget challenges that led to layoffs, fire station closures, reorganization, and down sizing of command staff. Over a 9 year period the Department has been able to regain services that were originally lost, but unable to regain staffing levels. Currently, the Fremont Fire Department has 11 Fire Stations and is staffed with 132 full-time career firefighters. Minimum daily staffing levels consist of 1 Duty Chief, 2 Battalion Chiefs, and 39 suppression personnel (Fremont Fire Department, 2008), this includes 13 licensed paramedics and 26 Emergency Medical Technicians (EMTs). The Department's response time goal is to arrive to incidents in at least 5 minutes 95% of the time (Fremont Fire Department, 2003). Fremont's EMS system is supported through a two-tiered response system. Patients are treated and transported by a combination of Fire Department First Responder ALS units and private ALS ambulances from American Medical Response. The Fire Department operates with 11 engine companies, 2 truck companies, and a Special Operations Task Force

(SOTF) that mitigates hazardous materials incidents and technical rescue incidents (Fremont Fire Department, 2008). Fremont Fire participates in an effective California Master Mutual Aid (MUAD) system and is available for response through local and regional emergency management networks. The Department has a Community Emergency Response Team (CERT), a Medical Reserve Core (MRC), and a Metropolitan Medical Response System (MMRS). For the past 7 years, the Fremont Fire Emergency Manager position primarily oversaw the functions of the CERT, MRC, and MMRS programs. During that time period these programs were managed by one person due to staffing limitations. The Emergency Manager position has many responsibilities and requires a large amount of coordination for each program. Unfortunately, the functions, responsibilities, and expectations of these specialized groups were not widely known by suppression personnel. In June 2009, the manager of these programs retired without a successor.

What percentage of the community is at the highest risk in a pandemic epidemic?

Every year in the United States 5 to 20 percent of the population is stricken with a case of the flu. An average of 36,000 people die from flu-related causes, and more than 200,000 are hospitalized for flu related complications (Centers of Disease control and Prevention, 2010). The Centers of Disease Control and Prevention (CDC) has identified the most vulnerable groups to contract the seasonal flu are the young, the old, and people with special medical circumstances. To prevent contracting the virus the CDC recommends annual flu vaccinations for individual groups that have been identified as “high risk”. This would include: children 6 months to 19 years old, pregnant women, people 50 years of age and older, people of any age with certain chronic medical conditions, people who live in nursing homes and other long-term

care facilities, and people who live with or care for those at high risk for complications from flu (Centers for Disease Control and Prevention, 2009).

The seasonal flu virus is a contagious respiratory illness that is spread from person-to-person and can cause mild to severe illness, and in some cases, can lead to death. Flu season most commonly runs between November and April (Alameda County Health Department, 2009). Unlike the seasonal flu, the H1N1 virus has no season. The Los Angeles Public Health Department reports that the H1N1 pandemic of 2009 is currently the highest risk to the community at this time. People that have been identified in high risk categories differ from the seasonal flu demographic. H1N1 vaccinations are recommended for: pregnant women, people living with or caring for infants under six months of age, emergency medical services personnel and health care workers, children and young adults from six months through 24 years, and people aged 25 through 64 years with chronic medical conditions like heart or lung disease, asthma, diabetes, or weakened immune systems (County of Los Angeles Public Health, 2009). The H1N1 virus does not seem to be affecting people 65 years and older in the same way that seasonal flu does. Most people who have gotten sick from this virus have been younger.

Although less likely to be infected with H1N1, those 65 and older that do become infected are at greater risk of having serious complications from their illness and there have been severe infections and deaths in every age group, including older people (Center for Disease Control and Prevention, 2010). Based on 2006 U.S. Census information (City of Fremont, 2006), individuals at highest risk for contracting the seasonal flu in Fremont (ages 6 months to 19, and 50 and older) represent 62 % of the community. Individuals at highest risk for contracting H1N1 novel virus (ages 6 months to 24) is 32%. Although data is not available to

identify the number in the high risk group of 25 to 64 years of age with chronic medical conditions, it is likely this group is significant.

Kristine La Voy (K. La Voy, personal communication, October 20, 2009) is the Chief of Compliance Officer for Washington Hospital located in the city of Fremont. I was given the opportunity to interview Ms. La Voy on the topic of the H1N1 virus and the potential impacts to Fremont. Ms. La Voy has been providing informational seminars for community and business groups on the 2009 H1N1 pandemic for the past several months. She said the medical community is very concerned about the potential rapid spread of this novel virus in the targeted age groups and the possible impacts to the community. She confirmed this virus has already been declared a public health emergency, and it's projected that up to 50% of Californians will get the virus in some form. Ms. Voy believes that educating the community on basic preventative actions to avoid large scale spread of a virus is a proactive approach to protect individuals and lessen the impact to the business community and the economy.

In summary, the findings and observations guided this paper by providing clarity on the most recent information and defining the difference between past and present. Principals obtained, and suggested recommendations in this research will assist the Fremont Fire Department in enhancing operational readiness in response to pandemic preparedness.

What are the recommendations of leading authorities on pandemic preparedness?

Leading experts believe that preparation for influenza should focus on education and prevention. The Executive Director of the National Foundation for Trauma Care has been monitoring flu related surges in hospitals throughout the country. Executive Director, Connie Potter, reported that data from the spring breakout of the H1N1 virus shows many hospitals

experienced large surges of patients. Hospitals were not prepared and were found understaffed and had an inadequate supply of equipment or N-95 masks. Ms. Potter believes that excellent leadership and common sense at the local level is essential to manage disasters of any magnitude or type. Ms. Potter promotes preparedness and warns managers to not wait for state or federal government to come to the rescue (Silverberg & Kimeby, 2009).

The Department of Homeland Security (DHS) recommends a planning and preparedness approach in their best practices model. It is recommended that education should be provided to the general public prior to a pandemic breakout, and the public should be informed of potential limitations and interruption of public services during a pandemic event. It's also recommended that agencies establish a pandemic response plan that includes a prophylaxis program. The plan should be integrated with public health, emergency management, and healthcare entities. It is also recommended to establish planning meetings with key community stakeholders.

Stockpiling supplies and personal protective equipment (PPE) is important due to limited access in an emergency, and the possibility of delays with mutual aid requests. Organizations should anticipate impacts on normal operations due to an increase in employee sick leave. Staff should consider developing a return to work policy following illness, and practice an employee wellness screening model. Emphasis should be placed on a first responder wellness program to prepare employees physically (Homeland Security, 2007).

The City of San Jose's Pandemic flu preparedness plan reflects these recommendations in their policies and procedures. San Jose's plan contains disaster policies for sick leave, extended leave, vacation leave, flexible work schedules, telecommuting and workers' compensation issues (City of San Jose Fire Department, 2009). Like San Jose, several larger Fire Departments in the Bay Area have their pandemic preparedness plans or pandemic information available on their

websites. The cities of San Francisco (San Francisco Fire Department, 2008), Oakland (Oakland Fire Department, 2009), Santa Clara (Santa Clara County Fire Department, n.d.), and San Jose (City of San Jose Fire Department, 2009) all have information available for the public online. County Health Departments also have this information posted, but many members of the community look to their local fire departments to provide information.

The International Association of Firefighters (IAFF) has educational flu information available for their members on their website. This information is up-to-date and accessible. Preparedness and prevention information is also available in the Pandemic Flu Resources for First Responders (International Association of Firefighters [IAFF], 2009). A course is available on emergency preparedness planning for employees and their families. The emphasis for employees is a proactive approach, protecting them through wellness, training, and PPE. The emergency family plan provides a worksheet and check-off list which includes items to have on hand before an event (International Association of Firefighters [IAFF], 2009). It is important for employees to have access to current information on how to prevent contracting the flu, and what to do if the flu is contracted. The CDC recommends a 3-step process for preventing the flu:

- 1) Take time to get a flu shot,
- 2) Take everyday precautions (wash hands multiple times a day with an alcohol based hand cleaner), and
- 3) Take anti-virus drugs if your doctor recommends them (Centers for Disease Control and Prevention, 2009).

The seasonal flu and the H1N1 virus are most commonly spread through respiratory droplets. These droplets can be found on any surface and enter the body through mucus membranes. After contracting the virus, an individual can become contagious one full day before getting sick, and 5 to 7 days after. For first responders it's important to keep from spreading the flu virus to others. CDC recommends that

once an individual becomes ill, they should be isolated from work and social settings. In other words, stay home!

Is Fremont in compliance with recognized recommendations?

Despite staffing challenges, the Fremont Fire Department is known to be a professional and progressive organization. As one of the 4 MMRS cities in the San Francisco Bay Area, Fremont has focused training and preparedness for hazardous materials incidents, earthquakes, and terrorist disasters. Some of the recommendations contained in this research are already in place as part of the MMRS Program. Fremont has a prophylaxis program that has been centered on post nerve agent attacks (Fremont Fire Department, 2005). Employees receive 4 hours of infectious disease and workplace hygiene training annually (Fremont Fire Department, 2009), and flu vaccinations are offered on a voluntary basis. The department maintains a stockpile of emergency supplies, PPE, and N-95 masks as part of MMRS equipment requirements (Fremont Fire Department, 2005); however, the assessment of compliance to recommendations indicates Fremont is lacking in key areas of preparedness. The areas in need of further attention include: finalizing a pandemic preparedness and response plan, developing a pandemic training plan, publishing public education for preparedness, developing employee policies and procedures in times of disaster, and adopting a business disruption plan.

### Procedures

The collection of information for this research began while attending the Executive Analysis of Community Risk Reduction (EACRR) course at the National Fire Academy (NFA) in Emmitsburg, MD. Information was gathered from the Executive Fire Officer Policy and

Procedures Manual, the EACRR Student Manual, and periodicals were collected from the Learning Resource Center (LRC) at the NFA in August 2009. Literature was obtained from a public library, and the Internet was used extensively for research due to evolving information developing on the 2009 H1N1 pandemic. The majority of the information obtained from Internet sources were published within the past four months and offered the most current information on recommendations for pandemic preparedness. Since the seasonal flu and the H1N1 virus attack different risk groups, obtaining the most current information was critical. Personal interviews were conducted with the staff of Washington Hospital in Fremont. The intent of these interviews was to gather information directly from the local medical community and understand their specific concerns. Through the interview process, I learned that the age group at highest risk for contracting the H1N1 virus has the potential to cripple local businesses. Literature review was used to get historical background on pandemic activity and to gather information on how hospitals across the country have been impacted by the H1N1 Virus. This research was also helpful in identifying best practices for preparedness. I found through literature review that not all professionals are convinced that this virus will result in the magnitude reported; however, comparisons to annual flu related deaths were found compelling.

#### Definitions

Metropolitan Medical Response System (MMRS): An operational system at the local level to respond to a terrorist and other public health emergencies that create mass casualties or casualties requiring unique care capabilities.

Medical Reserve Core (MRC): An MRC is a volunteer organization that is organized, trained and ready to respond to public health emergencies. MRC Volunteers may be called upon to dispense medications and vaccinations, treat evacuees living in emergency shelters, or assist in many other ways. MRC Volunteers may be healthcare professionals (such as physicians, nurses, pharmacists, dentists, veterinarians, x-ray technicians, nurses aids, etc.), administrative professionals (such as medical office managers, clerical staff, etc.), or even lay persons who can help in many different ways.

## Results

Question 1: What is the current capability of the Fremont Fire Department in handling a pandemic flu outbreak?

The Fremont Fire Department has the operational capability to respond to large incidents. Fremont's MMRS Program has provided the Department with adequate equipment and varying levels of training to respond to terrorist attacks and large scale disasters but lacks in some areas of preparedness for dealing with a pandemic. The Fire Department has an ample stockpile of equipment and supplies, a prophylaxis and vaccination program, infectious disease training, and meets several of the recommendations for pandemic preparedness. The MMRS and MRC Programs have the potential to be very effective in a pandemic event, but require strong leadership and consistent training for both program members and suppression personnel. Currently, the organization does not have a dedicated manager for this program, or a pandemic preparedness plan.

Question 2: What percentage of the community is at the highest risk in a pandemic epidemic?

Based on 2006 U.S. Census information, local demographics, and the CDC, individuals at highest risk for contracting the seasonal flu in Fremont (ages 6 months to 19, and 50 and older) represent 62 % of the community. Individuals at highest risk for contracting H1N1 novel virus (ages 6 months to 24) is 32%. However, data is not available to identify members of the community that are in the high risk category of 25 to 64 with chronic medical conditions, in regards to the contraction of the H1N1 novel virus. The unidentified 25 to 64 age group represents approximately 68% of the community, which could prove catastrophic.

Question 3: What are the recommendations of leading authorities on pandemic preparedness?

The research in the study strongly recommended: a) the development of a pandemic preparedness and response plan that is created in partnership with the local public health department, and provide training to employees on a regular basis, b) have an ample stockpile of emergency supplies for disaster purposes, c) establish a return from illness policy for all employees, d) encourage employees to develop a family disaster plan, e) identify essential job functions and responsibilities and develop a business disruption plan, f) establish a location where employees and the public have access to the pandemic preparation and response plan.

Question 4: Is Fremont in compliance with recognized recommendations?

This study revealed that Fremont has several components of a preparedness and response model in place. The organization would benefit if a greater emphasis was placed on pandemic training in the MMRS Program. When comparing the recommendations to the organization's current "state of readiness", strengths and improvement opportunities were identified. The Fire Department is strong in several areas including: has established MMRS and MRC Programs, a

stockpile of equipment and supplies, a prophylaxis and vaccination program, and infectious disease training. The areas requiring improvement include: establishing a permanent emergency manager position (leadership), creating a pandemic plan with a training component, developing a return from illness policy for employees, encouraging employees to develop a family disaster plan, creating a business disruption plan, and making the plan accessible to employees and the public.

### Discussion

This research revealed that leading authorities focus on preparedness rather than response in a pandemic situation. Preparedness for agencies, individuals, and their families all play connected roles in preparation. Comprehensive preparation and training with the local Health Department, employees, key stakeholders, and the public will prepare a community for response. Rather than a “red lights and sirens” approach to a pandemic, the preparation and coordination to handle this type of an event must include professional and non-professional volunteers from the community.

Despite these warnings for preparedness, some are skeptical. Some of this skepticism is derived from warnings from the medical community in the past which proved to lack the magnitude expected. Gary Ludwig of the Memphis, TN. Fire Department wrote an article in Firehouse Magazine asking the question “is there reason to worry or is this media hype.” Mr. Ludwig compared the annual 36,000 seasonal flu deaths reported by the CDC to how many people died from the avian flu, tomatoes from Mexico, falling space junk, SARS, and killer bees. He warned readers that the numbers for H1N1 are not compelling enough to panic yet. When

comparing these events to media reports on H1N1, the actual numbers of infections are minimal compared to seasonal flu illnesses and deaths (Ludwig , 2009, p. 44). Is it media hype?

The World Health Organization (WHO) believes the 2009 pandemic is a threat. WHO coordinates the distribution of donated pandemic influenza vaccines to 95 countries. Representatives believe the world is going through a real pandemic and efforts to down play the importance of this event is wrong and irresponsible (World Health Organization, 2010). Mr. Ludwig's endorsement of a "wait and see" approach is compelling, but does not parallel the proactive recommendations of CDC, the WHO, or Local Health Officers. As stated earlier, Ms. La Voy reported "it's projected that up to 50% of Californians will get the H1N1 virus." The current population of California is 36,756,666 (United States Census Bureau, 2010). If one-quarter of Ms. La Voy's prediction is founded, there is not time for a "wait and see" approach.

Based on findings in this study 32 to 68% of the population of Fremont is considered high risk for contracting the H1N1 virus. Although the remainder of the population may not be at high risk, everyone is at risk to contract a novel virus. Whether the 2009 H1N1 pandemic will fully manifest or not, preparation and education to confront major disasters takes significant time. Efforts to prepare Fremont will be an investment today for the future.

### Recommendations

It was identified that the Fremont Fire Department and its neighboring cities have the capacity to handle the normal daily operational needs for the Tri-City area. When comparing research on proactive measures that should be addressed before a pandemic event, it was found that several areas of planning and preparation could be improved. Fremont has several programs in place that already coincide with recommendations found in this research. The annual

infectious disease training and flu vaccination program meet the top two recommendations of the CDC. Equipment stockpiles of PPE and N-95 masks meet the recommendation of the Executive Director of the National Foundation for Trauma Care as well. The prophylaxis program associated with MMRS could be easily expanded to administer vaccinations to the public if approved by authorizing agencies.

Based on this research, the specific areas where Fremont is not meeting the recommendations of leading authorities for a pandemic event is in the area of planning and preparation. The following are recommendations that would improve the operational readiness of the Fremont Fire Department in the event of a pandemic influenza: a) establish a full-time emergency manager position to provide strong program leadership, b) create a pandemic preparedness and response plan in collaboration with the Alameda County Public Health Department along with key community stakeholders, and provide training to employees on a regular basis, c) establish a return from illness policy for all employees, d) encourage employees to develop a family disaster plan, e) identify essential job functions and responsibilities and develop a business disruption plan, f) establish a location where employees and the public have access to the pandemic preparation and response plan.

In conclusion, if these recommendations are implemented, it is recommended that the “effective change method” be used that is endorsed in the Executive Development Program at the National Fire Academy which entails: analysis, planning, implementation, and evaluation (APIE) (United States Fire Administration, 2006).

## References

- Alameda County Health (2010). H1N1 (Swine) flu. Retrieved January 10, 2010, from <http://www.acphd.org/H1N1/>
- Alameda County Health Department (2009). Seasonal flu. Retrieved January 16, 2010, from <http://www.acphd.org/influenza/index.htm>
- Center for Disease Control and Prevention (2010). People 65 years and older and 2009 H1N1 flu. Retrieved January 30, 2010, from <http://www.cdc.gov/h1n1flu/65andolder.htm>
- Centers for Disease Control and Prevention (2009). CDC say "take 3" actions to fight the flu. Retrieved January 10, 2009, from <http://www.cdc.gov/flu/protect/preventing.htm>
- Centers for Disease Control and Prevention (2009). Key facts about seasonal influenza. Retrieved January 14, 2010, from <http://www.cdc.gov/flu/keyfacts.htm>
- Centers of Disease Control and Prevention (2010). Preventing the flu. Retrieved January 30, 2010, from <http://www.flu.gov/individualfamily/about/seasonalflu/>
- City of Fremont (2006). Fremont age profile. Retrieved January 18, 2010, from <http://www.fremont.gov/DocumentView.aspx?DID=841>
- City of Fremont (2009). Demographics. Retrieved November 15, 2009, from <http://fremont.gov/index.aspx?nid=184>
- City of Fremont (2009). Ethnicity. Retrieved December 21, 2009, from <http://fremont.gov/DocumentView.aspx?DID=843>
- City of San Jose Fire Department (2009). pandemic flu preparedness plan. Retrieved February 2, 2010, from <http://www.sanjoseca.gov/pdf/PANDEMICFLUPREPAREDNESSPLAN4-30-09.pdf>

County of Los Angeles Public Health (2009). Put this on your holiday to-do list: Get H1N1 vaccine. Retrieved January 30, 2010, from

<http://publichealth.lacounty.gov/phcommon/public/media/mediapubhpdetail.cfm?prid=765>

Fremont Fire Department. (2003). Standards of cover [Brochure]. Fremont, CA: Author.

Fremont Fire Department. (2005). MMRs inventory. Fremont, CA: Author.

Fremont Fire Department. (2005). Pharmaceutical plan. Fremont, CA: Author.

Fremont Fire Department. (2008). Administrative regulation - minimum staffing levels. Fremont, CA: Author.

Fremont Fire Department, (2008). *Response guidelines – special operations*. Fremont, CA: Author.

Fremont Fire Department. (2009). 2009/2010 training plan [Brochure]. Fremont, CA: Author.

Hendricks, T. (2005). 112 languages spoken in diverse region. Retrieved January 5, 2010, from [http://articles.sfgate.com/2005-03-14/bay-area/17364691\\_1\\_official-language-english-teacher-linguistically](http://articles.sfgate.com/2005-03-14/bay-area/17364691_1_official-language-english-teacher-linguistically)

Homeland Security (2007). Pandemic influenza best practices and model protocols. Retrieved December 14, 2009, from

[http://www.usfa.dhs.gov/downloads/pdf/PI\\_Best\\_Practices\\_Model.pdf](http://www.usfa.dhs.gov/downloads/pdf/PI_Best_Practices_Model.pdf)

International Association of Firefighters (2009). Preparing for a pandemic flu: what first responders need to know. Retrieved February 2, 2010, from

[http://www.iaff.org/et/pandemicflu/documents/Guide\\_PrepPandemicFlu\\_WhatFRNeedToKnow.pdf](http://www.iaff.org/et/pandemicflu/documents/Guide_PrepPandemicFlu_WhatFRNeedToKnow.pdf)

International Association of Firefighters (2009). Pandemic flu resources for first responders.

Retrieved February 2, 2010, from <http://www.iaff.org/et/pandemicflu/index.htm>

Ludwig , G. (2009). H1N1 - the next thing that is going to kill me. Firehouse Magazine, v.34, 44.

Oakland Fire Department (2009). Pandemic flu information. Retrieved February 2, 2010, from

<http://www.oaklandnet.com/fire/pandemicflu.asp>

Ryan, J. R. (2009). Pandemic influenza - emergency planning and community preparedness.

Boca Raton, FL: Taylor & Francis.

San Francisco Fire Department (2008). Flu home care guide. Retrieved February 2, 2010, from

<http://www.sf-fire.org/Modules/ShowDocument.aspx?documentid=1398>

Santa Clara County Fire Department (n.d.). Pandemic flu. Retrieved February 2, 2010, from

<http://www.sccfd.org/pandemic.html>

Silverberg, D., & Kimeby, A. (2009). The flu next time. Homeland Security Today Magazine, v6

, 21-2

Union City (2008). Alameda county population. Retrieved January 8, 2010, from

<http://www.ci.union-city.ca.us/about%20union%20city/Population.html>

United States Census Bureau (2010). Population of California. Retrieved February 5, 2010, from

<http://www.google.com/publicdata?ds=uspopulation&met=population&idim=state:06000>

[&dl=en&hl=en&q=current+population+of+california](http://www.google.com/publicdata?ds=uspopulation&met=population&idim=state:06000&dl=en&hl=en&q=current+population+of+california)

United States Fire Administration. (2006). Effective change method (3rd edition, 2nd print ed.).

Emmitsburg, MD: Author.

United States Fire Administration. (2009). Executive analysis of community risk reduction (1st

ed.). Emmitsburg, MD: Author.

United states Fire Administration. (2005). Executive fire officer policy and procedures - applied research guidelines. Emmitsburg, MD: Author.

World Health Organization (2010). WHO responds to allegations of conflict of interest and "fake" pandemic. Retrieved January 30, 2010, from <http://www.who.int/csr/disease/swineflu/en/>

Yi, M. (2008). Bay area population now more than 7.3 million. Retrieved November 10, 2009, from [http://articles.sfgate.com/2008-05-02/bay-area/17152978\\_1\\_new-population-numbers-california-s-biggest-city-bay-area](http://articles.sfgate.com/2008-05-02/bay-area/17152978_1_new-population-numbers-california-s-biggest-city-bay-area)