Development of Emergency Preparedness Training Curriculum for Long-Term Care Facilities

Eleanor J Duren

DePaul University

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Master of Public Health Program
Statement of Academic Integrity
Capstone Thesis

I, Eleanor Duren, do attest that the work contained herein is original and represents my best adherence to DePaul University's policies on academic integrity. Furthermore, this work is intended to fulfill the requirements of the Capstone Thesis for the Master of Public Health Program, College of Liberal Arts and Social Sciences, DePaul University, Chicago, Illinois.

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Abstract

Introduction. When public health emergencies strike, there is often a large disparity among the populations that are most drastically affected. One of the most vulnerable populations in a public health emergency is older adults. Long-term care facilities house a portion of this population and therefore it is critical that they are prepared for emergencies. **Approach.** Training curriculum was created that is intended for facility administrators and staff. The curriculum contains content about emergency preparedness basics. **Outcomes.** A PowerPoint presentation was created that contains all of the training information. Along with the training presentation, both an evaluation questionnaire and a pre/post-test were created to assess the effectiveness of the training curriculum. Additionally, a draft of an implementation guide was created to provide Chicago Department of Public Health employees with the information needed to continue the project. **Conclusion.** Including long-term care facilities in the discussion around emergency preparedness is essential to protecting this vulnerable population. With the implementation of these trainings the hope is that these facilities will be better prepared for the next public health emergency.

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Introduction

When public health emergencies occur, all facets of the population must be prepared, especially those who make up vulnerable populations. Public health emergencies include natural disasters, extreme weather, acts of terrorism, or disease outbreaks. During such emergencies, those in vulnerable populations, such as older adults, are at much higher risk for adverse outcomes. Emergency preparedness is an essential part of ensuring that older adults, and other vulnerable populations, are more able to respond when a public health emergency happens. Long-term care facilities house a sizable portion of this nation's older adults, and therefore they must be well equipped to respond to a disaster. The Chicago Department of Public Health is working to bring the idea of emergency preparedness to more long-term care facilities in the city of Chicago and to help them build and strengthen their Emergency Operations Plan for their facilities. This goal is achieved through training curriculum created specifically for long-term care administrators and staff that covers the basics of emergency preparedness and introduces them to preparedness networks within the city. The training aims to instill in these staff members the importance of emergency preparedness for their facilities and to connect them with valuable resources that will aid in their education. In addition to the training curriculum itself, the project also aimed at creating an implementation guide to help ensure the continuation of the project. This guide aims to make the project easy to continue and to ensure that these trainings are conducted correctly. Overall, the goal of the project is to ensure that trainings surrounding emergency preparedness are created to target the specific needs of long-term care facilities.

Community Health Assessment

Background Information

The Chicago Department of Public Health (CDPH) has a mission to protect the health of and work on behalf of the entire city of Chicago, with a particular focus on the city's vulnerable populations. Because CDPH is tasked with serving the whole city, the Bureau of Emergency Response and Public Health Preparedness also services the whole of Chicago. The area that CPDH serves aligns with the city's official borders, which can be viewed in Figure 1. This area only includes the city itself, and not the surrounding suburbs. The Bureau of Emergency Response and Public Health Preparedness also works within the entirety of Chicago, as they are a part of CPDH. The Bureau, while servicing all residents of the city, tends to have a more central focus on vulnerable populations. This focus is because there is often a disparity among these vulnerable populations when a disaster hits. Some of these susceptible populations include the homeless, prisoners, and the elderly. One of the projects going on at the moment at the Bureau is focusing on the population of residents located in long term care (LTC) facilities. This population consists of adults who are 65 years old and older who are residing within the city of Chicago and are considered to be a vulnerable population. These vulnerable populations, including older adults, have faced particular vulnerability in disasters; for example, "of those who died due to the 2005 Gulf Coast hurricanes, 71% were over age 65 years, and approximately 50% were over age 75 years" (Grizzle et al., 2010). In Chicago, this is true as well, especially when it comes to weather-related disasters. For example, "In the midst of a heat wave in 1995, the Chicago area recorded more than 700 deaths from heat-related illness in five days. Those who died were disproportionately elderly, poor, and African-American" (Madhani, 2019). During a snowstorm, older adults face a particular set of challenges, such as "need[ing] help

shoveling in front of their homes…get[ting] relatives to a hospital… [and] others had oxygen tanks and [are] afraid of being trapped" (Klein, 2019). This history of being particularly vulnerable to disasters is why the Bureau of Emergency Response and Public Health Preparedness has chosen to target the elderly population in Chicago.

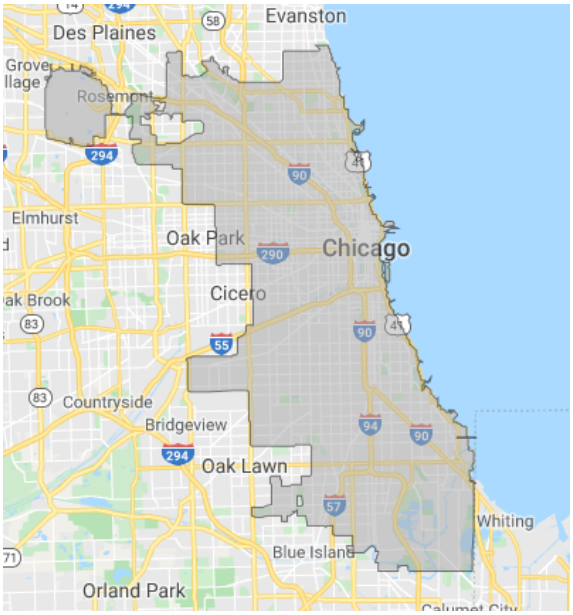

Figure 1: City of Chicago Official Borders. Reprinted from *City of Chicago*, https://www.chicago.gov/city/en/depts/doit/dataset/boundaries_-_city.html

When it comes to the population size of the city of Chicago, the number is continually changing due to the movement of the residents. According to the United States Census Bureau, their 2013-2017 American Community Survey 5-Year Estimates for the city of Chicago puts the population at 2,722,586 people. This population size is only representative of those who live within the borders of Chicago and not any residents in various suburbs. According to this same report, of those almost 3 million Chicago residents, 317,502 of them are 65 years of age and older. Therefore, the older adult population within Chicago makes up about 11.7% of the total Chicago population (United States Census Bureau, 2017). This percentage is a significant portion of the population in Chicago, and if they are unprepared for a disaster, then they could face significant health impacts when one does hit.

The population of those who are 65 and older is a fast-growing sector of the United States. According to the US Census, they estimate that by 2030, the population of those who are over 65 will grow by 30%. This increase in the over 65 population in Illinois is the fastest growing in the region, and Chicago ranks ninth in the number of new older adults. To add to this increase, the number of older adults between the ages of 65 and 84 living in the Chicagoland area is expected to double by 2040. The number of residents over 85 is expected to triple. In terms of settlement, the majority of older adults in Chicago report that they own their own homes at 57%, and 38% of older adults report being renters. There are also many options for older adults when it comes to alternative housing options, such as assisted living and co-op communities. A considerable concern for this population is the neighborhood in which they are living and the amenities it has. They are looking for neighborhoods where they are located close to things like stores, parks, transportation, and some social support. Additionally, long-term care facilities in the United States house about nine million residents each year (Harris-Kojetin et al., 2016). In terms of commerce and industry, this population consists mostly of those who are no longer working or are working in part-time positions. However, older adults still express lots of interest in activities that allow them to be a part of the community, such as volunteering and political activism (Johnson et al., 2013). Chicago also has a significant number of those over 65 who are foreign-born. According to the United States Census Bureau (2017), 26.8% of the older adult population in Chicago was not born in the US.

When it comes to the older adult community in Chicago, one of the most significant leaders in the community throughout the United States is the American Association of Retired Persons (AARP). AARP provides a large variety of services to older adults throughout the nation, in areas such as healthcare, advocacy, finances, insurance, and many more. As an

organization, their mission is to "empower people to choose how they live as they age" (AARP's Mission, Vision, Advocacy, Community Service & Products, n.d.). Each state had its own AARP branch and governance. In Illinois, the State Director for AARP is Bob Gallo, and the State President is Rosanna Márquez (DeMonnin, 2015). This organization is one that many old adults in Chicago utilize to help them in all aspects of their life and provide a great deal of support to those residents. Another entity is the Illinois Council on Long Term Care. They are "a professional healthcare association representing nearly 200 long term care facilities, providing care and services to more than 37,000 nursing home residents in Illinois" (Illinois Council for Long Term Care, n.d.). They work to ensure the best care is being given to residents in long term care facilities and partner with many other entities to do so. They are significant advocates for the older adult population in Chicago. In addition to the Council, many long-term care facilities are members of the Chicago Healthcare System Coalition for Preparedness and Response (CHSCPR). This coalition helps to aid long term care facilities with preparing their residents for disasters.

Demographic Information

The demographic information for older adults in both the United States and Chicago can provide some background on the population as a whole. Overall in the United States, the majority of the elderly population is White at 79%. For people of color in the elderly population, Blacks accounted for 9%, Hispanics 7%, Asians 4%, and other people of color 1%. In terms of gender, 56% of older adults are female, and 44% are male in the United States (Administration on Aging, 2018). Another critical demographic for US older adults is mobility constraints. 38% of elderly adults have some mobility disability, with other significant areas being difficulty dressing (10.5%), hearing difficulty (15.4%), and vision difficulty (7.1%) (Johnson & Appold,

2017). In the United States, older adults are generally placed into three age groups, 65 to 74 which encompasses 58.3% of the older adult population, 75 to 84 years old which makes up 29% of the population, and 85 years and older which is 12.8% of the population (Roberts et al., 2018). When looking specifically at Chicago's older adult population, the largest racial group is White at 50.3%, followed by Black or African American at 36.4%, Hispanic or Latino at 17%, and finally Asian at 6.4%. In Chicago, 58.6% of the older adult population is female, and 41.4% is male. For a comparison between Chicago and the United States' older adult population demographics see Table 1. Within the city, educational attainment level with the largest population of older adults is high school graduates at 28.7%, followed by less than high school graduate at 26.9%. The median age of this population within Chicago is 73.3, and 37.8% of them are living with a disability (United States Census Bureau, 2017).

Table 1

Demographics of Older Adults

Demographic	United States	Chicago
Race		
White	79%	50.3%
Black or African American	9%	36.4%
Hispanic or Latino	7%	17%
Asian	4%	6.4%
Gender		
Male	44%	41.4%
Female	56%	58.6%

When examining the income of households of those who are 65 years of age or older, one must consider that most of these adults are no longer holding full-time jobs or any jobs at all. When examining the median income of older adults in the United States, there is a clear gender difference. In 2016 the median income for males was $31,618, whereas it was $18,380 for females. Households that had an older adult at its head reported a median income in 2016 of

$58,559 (Administration on Aging, 2018). In Chicago, the median income is much higher than across the nation. In 65 year and older adult households in Chicago, the median income is $205,575 a year. This is much higher than other older adults across the nation, which reflects on the wealth that resides in Chicago but does not mean that all older adults in Chicago are wealthy.

When examining households that were headed by older adults, about 5% of families in the United States had incomes less than $15,000, which is considered to be lower-income, and 73% had incomes of $35,000 or more, which is considered to be higher income. In terms of older adults' income, the most substantial percent, at 23%, of adults 65 and older reported having an income of $15,000-$24,900. 22% of older adults reported having an income of $50,000 and over (Administration on Aging, 2018). In Chicago, while there is great wealth, there are also those who are living in poverty. For older adults in Chicago, 16.2% live below 100 percent of the poverty level, and 13.4% live 100 to 149 of the poverty level. 70.4% of older adults in Chicago live at or above 150 percent of the poverty level (United States Census Bureau, 2017).

Health Indicators

Health status and health issues are things that are very important when working with older adults. Many older adults have health problems that need special consideration, and most older adults have at least one chronic health condition of some kind, and many may have multiple conditions. In 2015 the top five chronic conditions that affected older adults were hypertension at 58%, hyperlipidemia around 48%, arthritis (31%), ischemic heart disease (29%), and diabetes (27%). Many of these health conditions are related, and multiple can occur in one person (Administration of Aging, 2018). When it comes to disaster response, "frail older adults — defined as those with serious, chronic health problems — are more likely than the healthier or younger population to need extra assistance to evacuate, survive, and recover from a disaster. At

least 13 million older adults (aged 50 years or older) in the United States have said they would need help to evacuate during a disaster, and about half of these would require help from someone outside their household" (Aldrich, & Benson, 2008). The chronic illnesses from which many older adults suffer put them in a compromised position when it comes to being able to prepare for, respond to, and recover from a disaster. These top five chronic conditions require those that suffer from them to have specific treatment interventions and may limit their reactions times to disasters. They also may constrain their ability to seek help in times of public health emergencies. All of these factors combined mean that older adults, particularly ones who have chronic conditions, have increased vulnerability to the negative impacts of emergencies. (Bayraktar & Dal Yilmaz, 2018).

For older adults, all health issues are cause for concern. Specifically, hypertension, diabetes, and arthritis are major concerns within the population. One of the reasons that hypertension is a significant concern for the elderly population is the pattern of blood pressure changes with age, which increases the likelihood of developing hypertension. They are at much higher risk for hypertension and the morbidity and mortality that comes with it. Hypertension is so significant because it occurs in more than two-thirds of individuals after the age of 65. Data can be drawn from the Framingham Heart Study, which saw that men and women who were hypertension free when they reached 55 years of age still have significant risks for the development of hypertension through the time they are 80 years old. The risk for men is 93% and 91% for women. This means that even if an individual is hypertension free at 55, they are more than 90% likely to develop the condition within their lifetimes. (Chinnakali et al., 2012). Diabetes is another significant health risk for older adults as it can have an impact on cognitive abilities in the population. One study found that "diabetes was associated with a faster decline in

perceptual speed and verbal abilities over time and prediabetes was associated with lower performance and…decline in memory" (Marseglia et al., 2017). This poses a significant risk for old adults, as 27% of the population has the disease, and therefore could struggle with cognitive problems. Lastly, arthritis affects every aspect of an older person's life and can cause them significant amounts of pain and impact their ability to do daily tasks. The most significant impacts that arthritis has on those who have it are joint swelling, joint pain, and the limitations of activity. These factors affect both the ability to complete daily tasks, as well as infringe upon the quality of life of those who have the condition (Mazzuca, et al., 1987). Overall, these health issues can have significant impacts on older adults who suffer from them. These health issues also can play a significant role when it comes to disaster response and recovery in the older adults that suffer from these diseases. In terms of recovery from major disasters, those older with chronic diseases are at higher risk of significant health issues to do the lack of treatment for their disease. According to one research study, "inadequately controlled chronic diseases may present a threat to life and well-being in the immediate wake of natural disasters, but their treatment traditionally has not been recognized as a public health or medical priority. In interviews with medical personnel in hurricane-affected areas, a leading concern expressed was the urgency of treating people with chronic diseases such as diabetes, cardiovascular disease, hypertension, and kidney disease" (Ford et al., 2006). Older adults who face one of these health issues are put more at risk for adverse outcomes for disasters than older adults who do not have these health indicators. Because those who suffer from hypertension, diabetes, and arthritis are often on strict medication regimens, this presents another layer of complications in their response to a disaster. These populations that rely heavily on medication or care workers need to have special attention paid to them in preparing for a disaster (Barney et al., 2009). For example, with COVID-19

"31% of cases, 45% of hospitalizations, 53% of ICU admissions, and 80% of deaths associated with COVID-19 were among adults aged ≥65 years" (CDC COVID-19 Response Team, 2020). Additionally, older adults tend to be more at risk for COVID-19 and have worse health outcomes after contracting the disease (Cascella et al., 2020).

One of the most significant social determinants of health for the elderly population is socioeconomic status and insurance coverage. One of the most important aspects of having access to adequate health care is being able to pay for it, and for many older adults, this can often present a challenge. They often do not have the resources to receive all of the care that they need due to no longer having full-time jobs, and therefore limited access to health insurance. The cost of health care for the elderly is also increasing. For example, in 2006, older adults paid $4,331 in out-of-pocket medical expenses. However, in 2016, the population paid $5,994, which is an increase of 38%. This is also more than the rest of the population, which averages around $4,612 in out-of-pocket healthcare costs. Older Americans also spend more of their total expenditures on healthcare, at 13.1%, than the rest of the population at 8%. Older adults do have access to Medicare, and Medicare covers 93% of older adults. However, Medicare predominantly covers acute healthcare services and only covers about half of the care, which requires that the older adults using Medicare to pay for the other half differently (Administration on Aging, 2018). If older adults are not able to pay the other half of their Medicare expenses, then they most likely will not be able to receive treatment for the conditions mentioned above. It is essential to point out that long term care facilities can also be quite expensive, and Medicare may not pay for the full cost of an older adult living there. Therefore, older adults who are of higher socioeconomic statuses will most likely be able to afford better long-term care facilities than those of lower socioeconomic statuses. When it comes to public health emergencies, socioeconomic status also

plays a significant role in disaster response and recovery. Socioeconomic status may provide even more challenges for older adults when it comes to preparing for and responding to a public health emergency. For example, “poverty limits the older person’s ability to acquire resources necessary to maintain their well-being. For example, impoverished older people may not be able to afford fuel, food, or clothing to keep them warm in extremely cold weather or may have limited access to services and resources for post-disaster rehabilitation, including accommodation, clothing, or transportation” (Chau et al., 2014). Another issue that arises with the older adult population that is living in poverty is that they tend to live in areas that are more prone to disaster (Chau et al., 2014).

Issues, Goals, and Strategies

For the older adult population, there are many worries and issues that they face in their daily lives. One thing that is very important to the community is access to transportation, as many of them cannot drive on their own or chose not to. Overall, physical activity in older adults is heavily impacted by the built environment surrounding them. It has been found that making their surroundings more accessible and more comfortable to walk can impact their habits around physical activity and can help increase their activity levels and wellness (Chen et al., 2019). In Chicago, there are many aspects of transportation that can help the older population get around the city. For one, there are already sidewalks in place in most locations and are relatively well maintained. There are also large amounts of walking paths along the lake and parks around the city that can aid in seniors getting more exercise. In terms of getting around the city itself, one of the most significant assets is the CTA, which has many routes for both trains and buses. The CTA is also making strides to have more access for those with disabilities. More elevators are being added at stops, which aids in the issue of those older adults who need that type of

assistance. There is also a program that those who are 65 or older, an Illinois resident, and are enrolled in the Illinois Department on Aging's Benefit Access Program, can receive free transit on specific CTA, Metra, and Pace routes (CTA Reduced Fare & Free Ride Programs, n.d.). However, some older adults have expressed concern at the lack of transportation in some neighborhoods and wish that there were more options (Johnson et al., 2013). When it comes to emergency preparedness and response with the older adult population, transportation of this population out of a disaster area is also of great concern. Because many of these adults will need special assistance in an evacuation scenario, providing transportation to them is essential. If they are not provided with this transportation, they can suffer significant consequences in the aftermath of a disaster. Fortunately, the government has several policies that provide extra support, such as transportation, to vulnerable populations during disasters (Elmore & Brown, 2007).

Another issue that is important to the older adult population is social participation. This includes joining book clubs, churches, senior centers, and other neighborhood locations that provide socialization and interaction for older adults. They find this to be very important because older adults often feel isolated, which can lead to depression and anxiety among the population. Some barriers are that not every neighborhood has these types of activities for older adults, and they are not always accessible. One strategy that is currently being used by neighborhood organizations is that churches often offer volunteer programs, community dinners, and transportation services. Many senior centers around Chicago offer activities that allow the population to connect and participate in events that encourage both physical and mental activity (Johnson et al., 2013). Social isolation is an incredibly important issue because those seniors who are socially isolated have an increased risk of developing chronic diseases. They are also at

higher risk for some mental health conditions and often have a high dependency on primary and secondary care services (Ige et al., 2019). Social isolation can also cause older adults to have much worse outcomes when it comes to disasters. All older adults are particularly vulnerable in disasters, and "among the most highly vulnerable segments of this population are homebound individuals, who present with multiple chronic conditions combined with the physical, sensory, and cognitive changes that generally accompany aging. Partly because of their decreased mobility, these individuals can often become isolated in their homes, leading to decreased communication and interaction with their local communities, including their health care providers" (Wyte-Lake et al., 2018). This isolation can cause these older adults to struggle with evacuation in a disaster or with getting the resources they need to survive. To try and mitigate this issue, strategies need to be used to increase the amount of social interaction that older adults have. Unsurprisingly, the utilization of group social activities has been found to be a great way to help reduce social isolation among older adults. However, it is sometimes hard to persuade this population to participate, and so strategies to increase motivation to participate must be utilized (Vargheese et al., 2016). This could be done by advertising various senior centers in each neighborhood and encouraging the residents to sign up (Johnson et al., 2013).

Lastly, another significant area of concern for the elderly is access to the health services they need. Among older adults, there are many concerns about the rising of health care costs and changes that are being made in the geography of healthcare delivery, such as the increase of telemedicine. Access to health services is especially relevant when a public health emergency comes about. During the aftermath of a public health emergency, older adults struggle with getting access to needed medical and health services, such as refilling prescriptions or accessing clean water (Krishnan et al., 2019). Currently, many older adults are taking advantage of a

variety of programs surrounding health care and community support services, including home physicians, PACE transportation, Concordia. This allows them to get support services for their healthcare and have better access to the types of care that they need (Johnson et al., 2013). AARP also provides a substantial amount of support and information to the older adult population regarding topics on healthcare and how to sign up for Medicare. These are vital services, and more advertising for them may help to increase the number of older adults utilize the services. Many services aim to aid the older adult population in the aftermath of a disaster by providing them with support. These services include organizations like Meals on Wheels and programs that help continue medical services for those affected by a public health emergency (Krishnan et al., 2019).

Technology always presents a substantial barrier to older adults as they tend to be less inclined to use it or may not understand it. This may hinder their willingness to adopt new healthcare practices that involve technology or be involved in initiatives like telemedicine. These telemedicine efforts also may add to the older population's issues of social isolation, as these types of systems have been criticized for their lack of understanding of the significance of social activities and connections amongst the older adult population (Vargheese et al., 2016). As the technology age continues to expand, this population must not get overlooked or left behind, as this could have severe implications for their health. Older adults' difficulty with using technology can also put them in a more vulnerable spot when it comes to disaster response and recovery. In all phases of a disaster plan (pre-event, warning period, response, and recovery), technology is often used to disperse information to the public more quickly and effectively regarding the status of the disaster situation. While this is not the only way that information is released, it may mean that older adults are not informed as quickly of an imminent disaster or be

less aware of the locations where they can access care or assistance (Rowland et al., 2007). In this digital age, it is critical to remember that there are significant portions of the population who are unable to use technology to receive vital information. To support these populations, including older adults, it is essential to continue to provide the best type of services for them, even if that means limiting the amount of technology being used.

Organizational Assessment

History

The history of the Chicago Department of Public Health is deeply intertwined with the history of the city itself and the need to address the public health problems that the ever-growing city was facing. CDPH is considered to have been formed in 1834 when there was a temporary board that started to help fight cholera in the city. The founding of this board is when the first steps of implementing city-wide public health measures began. In 1835, there was a permanent seven-member board that was founded by the State Legislature. They were put in charge of addressing the public health needs of the city, which consisted mostly of tackling cholera. By the mid-1850s, the board's powers were condensed because smallpox and cholera seemed to be under control, and so the board was deemed not to be needed. This decline in power led to 1857 when the Board of Health was ended. It was concluded because it was viewed as a luxury to have and unnecessary for the city. During this time, when the board was abolished, all of the powers of the Board of Health were shifted to the police. The New Board of Health was reestablished in 1867 to once again address the issue of cholera (Salem, 2013). During the time between 1850 to 1920, there were still public health efforts being set in motion, despite the reduction of the Board of Health's powers. During this time, there was an emphasis on sanitation, which brought about reform around sewers, water, food, and even dairy (Salem, 2013). There was also a mandate that all contagious diseases had to be reported, and the river was reversed to try and aid in improving the health of the public (Salem, 2013). Beginning in the 1880s and up to the 1950s, there was a significant focus on what is known as the Hygiene Movement. This movement was mainly focused on the hygiene of the population (Salem, 2013). This was when services were focused on dental and venereal diseases, as well as home visits

(Salem, 2013). This period also saw the first infant mortality campaign that the city worked on. In the 1950s, the main focus was healthcare services, and specifically personal healthcare services. There was also a growing concentration on the low-income populations within the city (Salem, 2013). From there, the Department continued to grow in power and size to transform into what is today known as the Chicago Department of Public Health.

The Chicago Department of Public Health is a large organization with many people who work in and around it. The current number of people that work at CDPH is 530. However, around 50 people from CDPH retired in November 2019, as the city offered substantial incentives to retire to help deal with the budget crisis. Following these retirements, the number of CPDH employees was reduced to below 500, which is small for the organization. This number is also affected because there was a hiring freeze going on within the city in 2019 due to the budget crisis. Because of this freeze, many positions within CDPH are vacant, including at least six positions within the Bureau of Emergency Response and Public Health Preparedness and one within the Planning and Training Branch. These positions were not able to be advertised until the hiring freeze ended, and now have to go through the extensive hiring process that the city has. In the Bureau of Emergency Response and Public Health Preparedness, there are 43 staff members. Within the Planning and Training Branch of the Bureau, there are eight staff members and one intern.

Organizational Structure

The organizational structure of the Chicago Department of Public Health is complicated; because of the size of the organization it has many levels of operation. Due to the ever-shifting political climate, and with a new mayor who took office in 2019, there have been some recent changes to the chain of command within the Chicago Department of Public Health. The

members of CDPH are considered to be defined by their employment status and the organizational structure of the Department. The leaders of the Department are those who oversee portions of the Department. These leaders have different responsibilities depending on which level they are located. The Commissioner of CDPH is Dr. Allison Arwady, who was the Chief Medical Officer of CDPH previously. Dr. Arwady was confirmed by the city alderman in early 2020. She answers directly to Major Lightfoot concerning the whole of the Department. Under the Commissioner are four principal officers, the Chief Medical Officer, First Deputy Commissioner, Managing Deputy Commissioner, and the Chief Program Officer. Under those four are six smaller deputy commissioners who oversee the various departments. The Chief Medical Officer, Dr. Jennifer Layden, oversees Health Promotion and Health Protection, which the Bureau of Emergency Response and Public Health Preparedness falls underneath. Directly below, the CMO is the Deputy Commissioner of Public Health Protection, Maribel Chaves-Torres. She oversees Emergency Preparedness, Disease Control, and Environmental Protection. See Figure 2 for an organizational chart of the whole of CDPH.

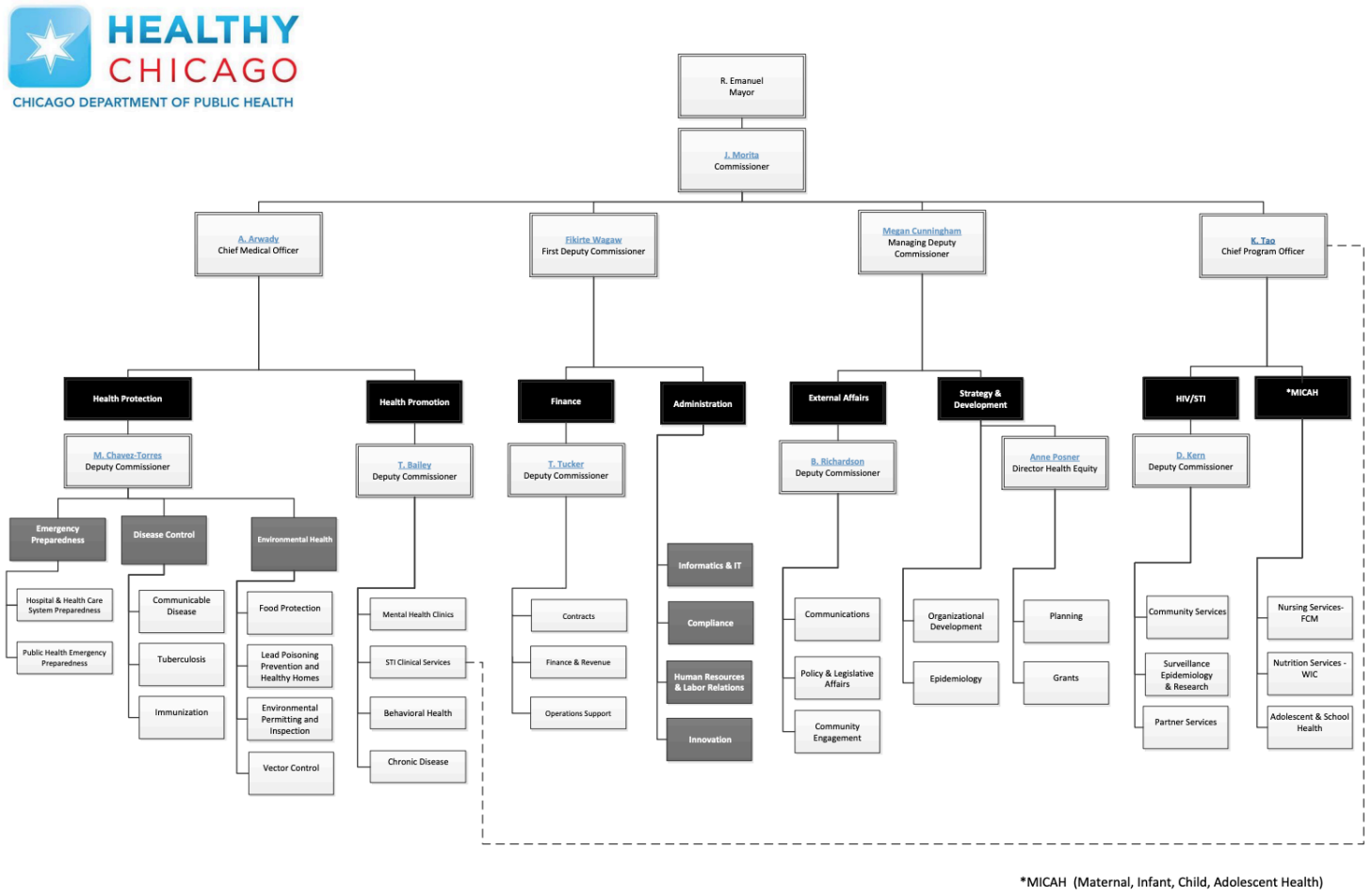

Figure 2: Chicago Department of Public Health Organizational Structure. Reprinted from *Public Health - Our Structure*. Chicago Department of Public Health, 2016. Retrieved from https://www.chicago.gov/city/en/depts/cdph/auto_generated/cdph_our_structure.html

Christopher Shields is underneath Chaves-Torres as the Assistant Commissioner of Preparedness. Shields oversees the whole of the Emergency Preparedness Bureau. Under Shields are the many branches of the Bureau, including the Planning and Training Branch. Frankie Shipman-Amuwo is the Director of Planning/Research and Development and the head of the branch. Within the branch, some members work full time at the Training Center, which comprises the Training Unit and is located in the Lincoln Park neighborhood of Chicago. Those staff members are Projects Administrator Darnell Thomas, Psychologist Nikoleta Boukydis,

Training Officer Julia Grimmett, and Administrative Assistant Ed Moy. Three branch staff members work at the CDPH main office, which is located in downtown Chicago. Those staff members are Senior Emergency Management Coordinator Micah Burkey, Public Health Administrator, José González, and Grants Research Specialist Regina Meza-Jimenez. These eight members make up the Planning and Training Branch and oversee all of its activities. See Figure 3 for an organizational chart of the Bureau of Emergency Response and Public Health Preparedness.

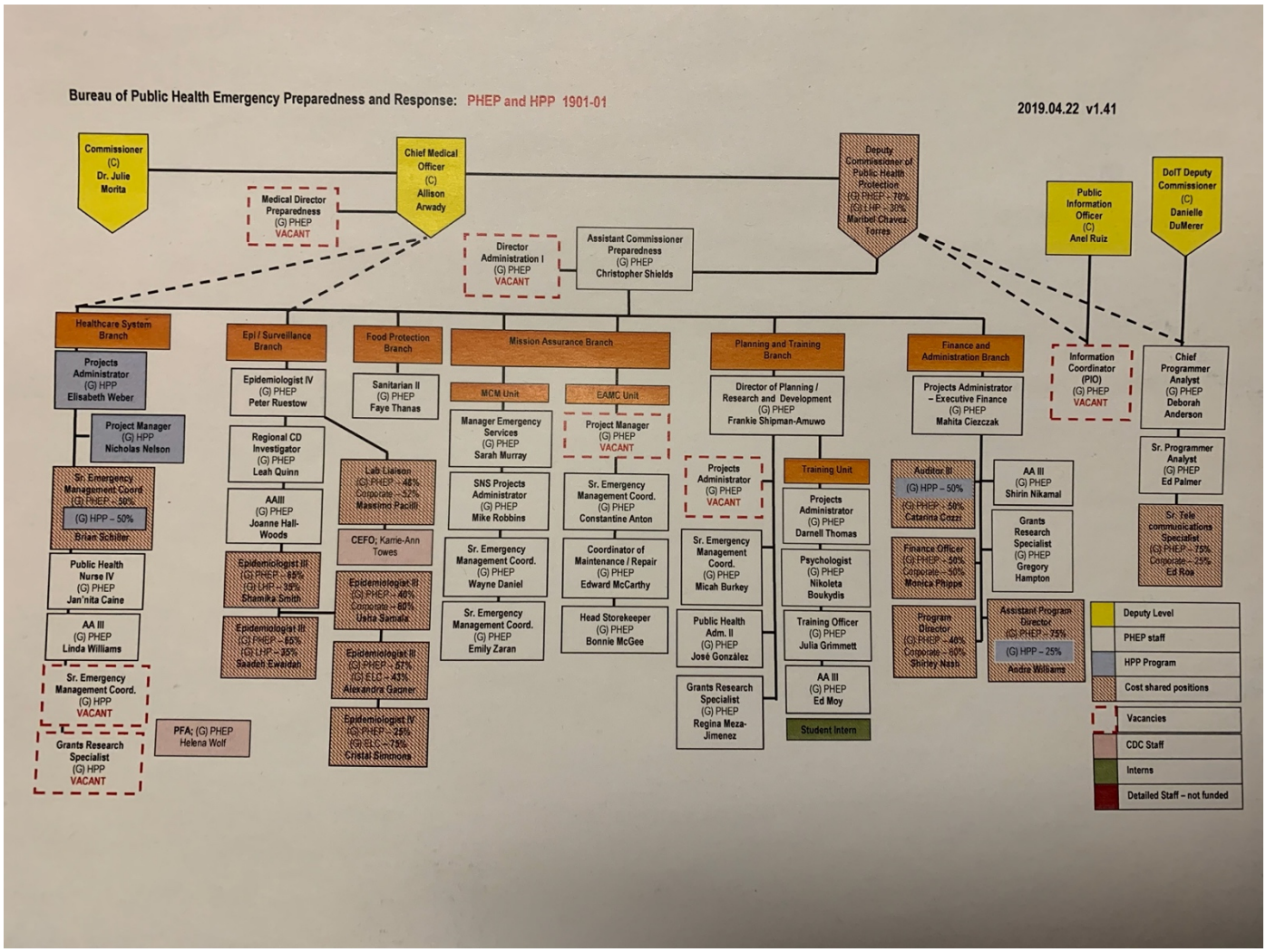

Figure 3: Organizational Chart of the Bureau of Emergency Response and Public Health Preparedness. Reprinted from *Hospital Preparedness Program (HPP) and Public Health Emergency Preparedness Program (PHEP)*. (n.d.). Chicago Department of Public Health.

Funding

The Chicago Department of Public Health and the Bureau of Public Health Preparedness and Emergency Response have different sources of funding, but both derive their funding from multiple sources, which are critical in providing the support they need to complete their projects. CDPH, as an entire entity, gains its' funding from three primary sources, the City of Chicago's corporate fund, community development block grants, and other grant funds (City of Chicago, 2015). Over the last decade, the Department has seen a decrease in the amount of flexible local funding and an escalation in the amount of restricted grant funding, and the Department's funding now consists of over 70% of restricted grant funding (Chicago Department of Public Health, n.d.).

The Bureau of Public Health Preparedness and Emergency Response's funding comes solely from 2 major grants that are dedicated to the Hospital Preparedness Program (HPP) and the Public Health Emergency Preparedness Program (PHEP). These grants are the only source of the Bureau's money, as the city does not provide them with additional funds. Currently, this is a point of contention as the rest of the city of Chicago is on a hiring freeze, the Bureau feels that they should not be subjected to that as they have their source of funding (D. Thomas, personal interview, September 26, 2019). The PHEP grant is funded directly from the Center for Disease Control (CDC), and the HPP grant comes from the Office of the Assistant Secretary for Preparedness and Response (ASPR). These two grants are then broken down further into seven smaller awards that designate how specific amounts of money are used. The smaller grants consist of PHEP Base, PHEP CRI, HPP, HPP Ebola Part A, PHEP Base No Cost Extension, PHEP CRI No Cost Extension, HPP No Cost Extension. These seven grants make up a total budget of $17,453,767 that the Bureau operates on ("Hospital Preparedness Program (HPP) and

Public Health Emergency Preparedness Program (PHEP)", n.d.). Most of the 17.5-million-dollar budget for the Bureau is dedicated to the salaries of the staff that are working on the projects related to these grants (F. Shipman-Amuwo, personal interview, September 20, 2019). Because the people are the ones that are creating and implementing the programs, most of the money is spent on paying them.

Besides the budget that they derive from the grants, the Bureau also has valuable resources and assets. One of the best sets of resources the Bureau has is that they have four delegate agencies within the city of Chicago. These delegate agencies receive money from the Bureau to perform services for CDPH, such as being the main Ebola centers within the city. These delegate agencies are Illinois Health and Hospital Association, Northwestern Memorial Hospital, Rush University Medical Center, and Ann & Robert H. Lurie Children's Hospital of Chicago. These agencies are relevant because it allows the city to have stakeholders in various parts of the city that will perform services for them. It provides very beneficial relationships and makes CDPH's job easier when it comes to knowing where patients can be sent in times of crisis. Another major asset that CDPH has comes in the form of its personnel. Dr. Darnell Thomas pointed out in his interview that CDPH is very lucky to have such a diverse team and that their various backgrounds and degrees bring new and vital perspectives to the Department. Dr. Thomas specifically pointed out that within the Bureau of Emergency Response and Public Health Preparedness, there is both a psychologist and a pharmacist on the team that brings new perspectives and ideas to the team. Overall, Dr. Thomas thinks that this diversity is what allows CDPH to thrive when presented with different types of situations.

Issues, Goals, and Strategies

Both the Chicago Department of Public Health and the Bureau of Emergency Response and Public Health Preparedness have missions to ensure that the city is as well taken care of as possible, and these missions drive the objectives and projects of CDPH and the Bureau. The Chicago Department of Public Health's mission is "To promote and improve health by engaging residents, communities and partners in establishing and implementing policies and services that prioritize residents and communities with the greatest need" (Public Health-Mission, n.d.). Because of this mission, CDPH provides an extensive list of services to the city of Chicago to help them achieve this mission. CDPH has eight main programs with services falling under each of these leading programs. Their main programs are Healthy Communities (Environment, Healthy Chicago 2.0, Healthy Chicago 2025, Vector Control), Health Data and Reports (Board of Health, Epidemiology, Data Request Forms, Grants/Bid Opportunities, HIV/STI Surveillance, IRB, Medical Records), Healthy Homes (Bed Bugs, Lead), Health Inspections (Food Protection), Healthy Living (Adolescent Health, HIV, Obesity, Tobacco, Substance Use, Violence Prevention), Healthy Mothers and Babies (Nursing and Support, WIC), Health Protection and Response (Communicable Disease, Emergency Preparedness, Immunization, Tuberculosis), Health Services (Breast Health, HIV Testing, Mental Health, Primary Care, WIC). These programs and services encompass all that CDPH does for the community. Within the Bureau of Emergency Response and Public Health Preparedness they have a mission to "help the City of Chicago prepare for, respond to and recover from emergencies in order to protect the public's health and minimize adverse effects on residents, visitors, and the healthcare system" ("Hospital Preparedness Program (HPP) and Public Health Emergency Preparedness Program (PHEP)", n.d.). To achieve this mission, the Bureau has six focus areas that are Community Resilience,

Incident Management, Information Management, Countermeasures and Mitigation, Surge Management, and Biosurveillance. These focus areas connect directly to the Hospital Preparedness Program (HPP) and the Public Health Emergency Preparedness Program (PHEP) and the work that is trying to be accomplished within those programs. Since two particular grants fund the Bureau, the HPP and PHEP programs are the two projects that the Bureau spends all their time focused on.

When it comes to new projects, the Bureau has a difficult time branching out from the very set standards of its funding grants. These strict restrictions on the use of grant funds mean that while Bureau staff may want to branch out to new projects, they are very limited in what they can and cannot do (D. Thomas, personal interview, September 26, 2019). The only leeway that they have is taking the grant project and tailoring it to the city's needs to make sure they get the most out of the grant. While they cannot do much in the way of new projects, one of the things Dr. Thomas did mention that he would like to see is a better use of the knowledge and skillsets of those who work in the Bureau. There is a large variety of talents and advanced degrees that are held by those in the Bureau, and he would like to play more into these skills. For example, they are beginning to work on a faith-based training program around preparedness, and Dr. Thomas believes there is much room to grow and utilize one of the team member's background in faith-based work to gain a better insight into how to best prepare this community. He would like to see more use of employee's previous knowledge in helping to tailor the grants to the city of Chicago.

Even though there is not as much flexibility when it comes to new projects, there have been many significant accomplishments that the Bureau has had. Recently the Bureau has been leading up to performing a full-scale Points of Dispensation (POD) drill with the whole

Department in October 2020 to practice the procedures for an emergency that would require a POD, such as an anthrax attack. In late August 2019, the Bureau and, more specifically, the Planning and Training Branch ran a smaller scale drill called Crimson Contagion. This drill was to practice one aspect of the October 2020 drill and was a significant milestone in preparing for the exercise. Overall, Crimson Contagion was very well received by the Department, and the Planning and Training Branch had lots of feedback centered around the fact many people now feel better prepared and understand their role in an emergency much better. This feedback is auspicious news leading up to the drill in October 2020 and shows that the branch is on track with their planning and training of the whole Department. Another major accomplishment for the Bureau that stems from the Crimson Contagion drill is the establishment of the Alpha and Bravo teams. This new initiative is so that the Bureau is split up into two different groups that respond at various times during an emergency. This division allows people to get rest and have breaks in case of an emergency and keeps the team fresh. These teams are something that they are very excited to have implemented, as it will help the Bureau be better prepared for an emergency.

Despite having many accomplishments, there are still significant areas of concern that the Chicago Department of Public Health and the Bureau of Emergency Response and Public Health Preparedness face. One major issue that is a concern for CDPH is staff hiring and turnover. There is a lengthy city hiring process and delays, which extends how long positions are vacant. The recent hiring freeze also left many positions vacant, which will take a while to fill. For Dr. Thomas the primary concern is that because there are many positions open now within the Bureau, they are going to have to make do without people in those positions, and he does not want the expectation to become that those positions do not need to be filled (D. Thomas, personal interview, September 26, 2019). Dr. Thomas feels that the longer the posts stay open,

the more likely that those in charge will think that the positions do not need to be filled since others are doing their tasks. Because most of this concern has to do with the city, it is more challenging to try and address it but they hope that through effective communication with city officials they can stress the importance of filling these positions ("Hospital Preparedness Program (HPP) and Public Health Emergency Preparedness Program (PHEP)", n.d.). Another major area of concern specific to the Bureau is that the Training Center's lease is not being renewed, and the Training Center will have to be moved. The Training Center is where four PHEP staff work and is the location of the Public Health Emergency Operations Center. It also is the location of the Training Unit and where trainings are hosted for the rest of the Department and community partners. The major problem is that the site is being demolished to make way for the new Lincoln Yards development and so all businesses in the area are forced to relocate. CDPH and the Bureau must find a new building to house the Training Center so that there is not a disruption in the services that the Training Center offers (F. Shipman-Amuwo, personal interview, September 20, 2019). The primary concern is that they have not yet found a building for the new location. However, CDPH does have a strategy to approach the issue. They are looking for a building either that the city already owns or a new building to buy. This way, they can make any needed upgrades and overall make better use of the Training Center (D. Thomas, personal interview, September 26, 2019). Lastly, another major area of concern for the Bureau is the subject of finance and how they track the use of grant funds. The major problem is there are inconsistent fiscal processes and lack of understanding of timely close-out of grants, which has put their grants from the CDC and ASPR at risk ("Hospital Preparedness Program (HPP) and Public Health Emergency Preparedness Program (PHEP)", n.d.). To try and address this issue and to not risk losing the grants, CDPH is using a system called PARS, which is how they are

monitoring how the time and money allocated for the grants are being used. Employees have to log their time and expenses according to this system to track how everything is being used. The goal of this new system is to keep everyone accountable for their time and funds and to show the CDC and ASPR that the money is being spent effectively and efficiently.

An additional issue that the Bureau of Emergency Response and Public Health Preparedness is aiming to address is the connection between CDPH and the long-term care facilities in the city of Chicago. There has not always been a solid connection between CDPH and the LTC facilities due to the lack of funding and staffing. This is something that several staff members with the Bureau are aiming to address. Dr. Thomas has worked on strengthening that connection through a variety of project ideas, however as that is not his full-time position, he is often unable to work on these projects due to budgetary and time constraints. In addition to Dr. Thomas, Elisabeth Weber also works on strengthening the connection between Chicago LTC facilities and CDPH. She does this through the Chicago Healthcare System Collection for Preparedness and Response, of which she is the Co-Chair. She aims to bring more LTC facilities into the Coalition to both strengthen the relationship between LTCs and CDPH, while also granting the facilities access to more emergency preparedness resources (E. Weber, personal interview, September 27, 2019). However, because both Dr. Thomas and Weber have other roles and responsibilities within the Bureau, their time can not always be focused on LTC facilities. Additionally, there is not team or position within the Bureau that is specifically focused on emergency preparedness for LTC facilities, which presents a challenge as this is an extremely vulnerable population during a disaster.

Organizational Context

One of the most significant ways that the Chicago Department of Public Health and the Bureau of Emergency Response and Public Health Preparedness can work towards achieving their missions is through partnerships with other organizations in the city of Chicago. The Chicago Department of Public Health is an entity that covers lots of services, so many organizations within the city address the same issues that they do. Specifically, for emergency response and public health preparedness, many organizations do similar work to CDPH, and that work towards ensuring that the city is prepared in the event of an emergency. One of the best examples of this is that CDPH is the lead of the Chicago Healthcare System Coalition for Preparedness and Response. The Coalition is made up of over 600 members that work to ensure that the city is prepared for emergencies. Other members include the Illinois Department of Public Health, The American Red Cross, and the Chicago Fire Department. The Coalition is made up of hospitals, response agencies, associations, long term care facilities, Hospice, dialysis centers, Federally Qualified Health Centers (FQHCs), home health agencies, and ambulatory care. Together they work to ensure that the city can respond to a disaster. Many faith-based organizations also work to ensure that their populations are better prepared for a disaster. One of the goals of the Bureau is to establish stronger relationships with these organizations so that CDPH can help to train their members, as well as gain better insight into how preparedness can work within these types of organizations. They hope to gain more community partners with these faith-based organizations, and the Bureau is currently working on a training campaign and video to help promote the collaboration with these faith-based organizations. Another sector that the Bureau is hoping to establish better relationships with is with Long Term Care (LTC) facilities. These facilities play an essential part in the healthcare system in Chicago and also house a

vulnerable population, the elderly. The Bureau is working on creating and implementing trainings for these LTC facilities on how they can prepare for emergencies and provide them with the tools they need to ensure that their residents are safe in the event of a disaster. The partnership with LTC facilities is important to the Bureau at the moment because it can often be more difficult to convince these organizations to join the Coalition, and they are significant members of the healthcare community. However, as previously noted, there is a lack of staff who are able to dedicate a significant amount of time to this project. Due to the strict nature of the grants the Bureau receives, it is not always possible for them to fund the projects they want, such as working with LTC facilities.

Some of the most important relationships that CDPH has are with other governmental agencies. Because CDPH is a department within the city government, it works very closely with the city and its' agencies. Since it is a part of the city government, they are subject to the turmoil that comes with city government. In the interview with Dr. Thomas, he mentions that he feels lucky that the new Mayor and Commissioner of CDPH are both preparedness aware and think that it is crucial. He said that this is a good thing for the Bureau because they will receive more of the support they need. However, he said that it also could easily go the other way and have someone come in who does not deem preparedness as necessary as others (D. Thomas, personal interview, September 26, 2019). When it comes to the state government, CDPH works closely with the Illinois Department of Public Health to ensure that Chicago is ready to respond to any emergency. CDPH also works very closely with the Centers for Disease Control and Prevention (CDC) locations that are in the city. The CDC and CDPH co-led the Crimson Contagion drill because CDC would play a significant role in aiding in disaster relief, should an emergency happen. Therefore, CDC and CDPH must work closely together to develop plans for response.

The Bureau has a monthly meeting with the CDC to discuss what the Bureau has been working on and how it is using grant funds. Dr. Thomas spoke about the difficulties that come with working so closely with the federal government. He mentioned that working with the CDC can be hard because the Bureau tends to have to wait for a long time to receive their funding for their projects, and when the money is released, they often only have a short amount of time to spend the funding. He also discussed there is a lot of bureaucracy and paperwork that has been completed when dealing with the federal government and that it can often be anxiety-inducing (D. Thomas, personal interview, September 26, 2019). There is also some occasional tension between the Bureau and the CDC, which often consists of who should be the lead agency. There was some tension between the Bureau and CDC during the Crimson Contagion drill over who was the lead, and therefore where the headquarters of the drill should be housed. This disagreement, while not very worrisome in a drill, could cause a problem if a real emergency were to arise. If the two agencies cannot decide who is in charge, there could be confusion over directives in a real emergency that would affect each organization. This confusion could cause friction in the everyday work the two organizations do together.

Being such a significant player in something like the coalition and city government has its strengths and opportunities. One opportunity is that the Chicago Department of Public Health is a large, well-respected entity. Because of this, CDPH has a lot of talented, smart people working on these projects, which makes it easier for them to achieve their goals and objectives. These staff members are instrumental in making strides towards reaching CDPH's mission and being a significant public health player brings much strength to the organization. They also have robust partnerships with hundreds of health organizations throughout Chicago, which ensures that there is a vast network of knowledge and assistance at their fingertips. The Coalition is something that

provides the Bureau with an enormous amount of opportunities to work with and gain insight from organizations that have different knowledge sets than they do. For example, it is currently the primary way that CDPH connects with the long-term care facilities in Chicago. Having access to these organizations also allows the Bureau to make more advancements in their goals and objectives. One way that they use these partnerships to their advantage is through the Community Communication Network (CCN). The CCN was set up through a partnership with the Cook County Department of Public Health (CCDPH) and is a way that CDPH and CCDPH can spread their messages through other community partners (F. Shipman-Amuwo, personal interview, September 20, 2019). They share messages and updates on various health topics through the CCN, which allows CDPH and CCDPH to distribute relevant messaging through trusted community partners. The CCN enables messages to reach more people and have a stronger impact than if CDPH or CCDPH were acting alone.

One of the biggest challenges that the Bureau faces while trying to achieve their goals is being so intertwined with all levels of government. While being part of such a large entity does bring a higher amount of qualified staff and respect from other organizations, it also means that the Department is at the whim of the city government and its ever-changing tides. Another challenge is that their funding comes directly from the CDC and ASPR. The budget of the CDC is dependent on the federal government and the funding that they award to the CDC. The budget for the CDC is dictated by the President, with the assistance of the Office of Management and Budget (OMB) that helps formulate the federal government's annual budget proposal that is submitted to Congress every year (Fischer et al., 2017). The way that funding for public health is decided on is through an examination of several aspects, such as "administration's goals and priorities, constituent interests, current pressing public health concerns, and the political

environment" (Fischer et al., 2017). The final budget decision is in the hands of Congress, who decides how much funding each agency gets and can put perimeters on what the funding can be used for, and then the President must approve it. This procedure can be a very long and complicated process that can tie up much of the CDC's money, which in turn affects the funding for the Bureau at CDPH. For example, when the budget for CDC gets reduced this can lead to a lowering of funding for CDPH. This turmoil can put stress on the employees in the Bureau, as they are often waiting for their funding and cannot do the work that they are hoping to do without it. Additionally, this connection may lead to a restriction on the projects that CDPH can put funding towards. As previously mentioned, this is a specific barrier when it comes to strengthening the relationship between CDPH and long-term care facilities in Chicago. Overall, while there are advantages to working for a governmental agency, there is also more paperwork, red tape, and bureaucracy issues that must be faced. All of these hurdles present challenges to the work that the Bureau of Emergency Response and Public Health Preparedness is trying to do.

Project Plan

Introduction

As mentioned, a key interest area for the Chicago Department of Public Health is strengthening its relationship with long-term care facilities within the city of Chicago and ensuring that they are accessing emergency preparedness resources. Unfortunately, CDPH is unable to have a full-time position dedicated to working with LTC facilities due to the restrictions placed on their funding. While it is an area that they want to improve in, the advancement of this relationship is hindered by the lack of staff dedicated to the project full-time. CDPH has noted that this a population that is vulnerable during a public health emergency and needs more emergency preparedness support to help ensure they are ready for a disaster. The combination of the lack of previous projects focusing on long-term care facilities and the vulnerable nature of the population that resides in them is why the project was first established by the Bureau of Emergency Response and Public Health Preparedness. Moreover, the project was established to be completed through the use CDPH interns, which allows them to complete the project without having allocate funding for a full-time position. Ultimately, the goal of the project was to develop emergency preparedness trainings relevant to the context and specific needs of long-term facility care facilities through a practicum student led effort.

Literature Review

Staff of long-term care facilities are not typically involved in the emergency preparedness process of the facility in which they work (Cuadra, 2018). There is an apparent disconnect between the staff that works at long-term care facilities and their knowledge of their facility's emergency plans. These facilities need to institute more comprehensive emergency preparedness and response training for their staff so that they are more informed about what emergency

preparedness entails (Lane & McGrady, 2016). There is a clear need for more coordination between long-term care facilities and other entities, in both the public and private sectors, in their communities that could provide support during a disaster (Lane & McGrady, 2016). These entities include local health departments, emergency management agencies, and networks of other long-term care providers, such as healthcare coalitions (O'Brien et al., 2009). This coordination provides a more holistic approach to emergency preparedness that can help improve both planning and response in long-term care facilities (Pierce et al., 2017). Working collaboratively with other agencies also allows long-term care facilities to develop more effective emergency operations plans, as these agencies can provide support to facilities as they are creating these plans (Hyer et al., 2010).

There are several relevant issues regarding long-term care facilities and emergency preparedness. The most critical of these issues is the lack of knowledge that healthcare staff have regarding emergency planning (Kaykisiz et al., 2019). This lack of knowledge may be due to a shortage of training being provided to staff members. For example, the staff of long-term care facilities have either undergone no training for emergencies or have received very little training in regard to emergency preparedness and response (Parra Cotanda, 2016). This lack of training has partially to do with the shortage of time that facilities have to devote to emergency preparedness training (Hipper et al., 2015). Another aspect of why there is a deficiency in training for long-term care facility staff is that they have historically not been the target audience for previous emergency preparedness education and training efforts, and therefore have been left out of said trainings (Cuadra, 2018). Typically, previous work on emergency preparedness and response has mostly revolved around hospitals and emergency medical services due to their direct involvement in emergencies. Long-term care facilities have often been left out of the

conversations and trainings because they are often viewed as businesses rather than healthcare facilities (Eiring et al., 2012). Additionally, long-term care facilities often do not feel as if they have sufficient connections with governmental agencies concerning emergency preparedness (Eiring et al., 2012). Many long-term care facilities feel they are not getting adequate support from the emergency preparedness groups in their communities, which mostly involves various government agencies. This is particularly worrying due to how much long-term care facilities often rely on these entities for help when it comes to planning for and responding to a disaster (Lane & McGrady, 2016). Overall, these issues pose a significant problem in ensuring that long-term care facilities are adequately prepared for a public health emergency.

One of the most significant controversies that always emerge after any disaster is the lack of planning for the emergency and the lack of response following the emergency. Large disasters like Hurricane Katrina exposed many deficiencies in the country's planning and response to public health emergencies. One such deficiency that emerged from the aftermath of Hurricane Katrina was that there were many long-term care facilities that, despite having emergency plans written out, did not execute their emergency operations plans during the hurricane. Some long-term care facilities did not execute them efficiently, entirely, or in some cases, at all (Eiring et al., 2012). In part due to the lack of readiness by long-term care facilities, and their inability to respond appropriately, there were about 70 older adult residents of long-term care facilities that ended up perishing in the facility in which they lived (O'Brien et al., 2009). Many contributed this lack of response to an absence of synchronization and communication about the nature of the emergency operation plan to long-term care administrators from those who created the plans (Eiring et al., 2012). Because the administrators were not directly involved in the creation of the plan, they lacked sufficient knowledge in its' elements. There are also those who argue that the

deficiency to respond appropriately stems from the scarcity of agencies involving long-term care facilities in their planning and response efforts (Lane & McGrady, 2016). With so many people in vulnerable populations dying in every disaster, many think we are still not doing enough to prepare and respond to public health emergencies.

The most significant policy that shows promise for this project is the Centers for Medicare and Medicaid Services' Emergency Preparedness Rule. This regulation went into effect in 2016 and established the guidelines for what long-term care facilities must do to prepare for an emergency (Emergency Preparedness Rule, 2019). This rule requires all facilities to have written emergency operation plans and that they must train the staff that works there periodically on emergency preparedness (Brown et al., 2007). The Centers for Medicare and Medicaid Services also created an emergency preparedness checklist that they advocate all healthcare facilities should use when creating their emergency operations plans (Lane & McGrady, 2016).

Training is another best practice that is often used when it comes to long-term care facilities and emergency preparedness. Training that incorporates information on emergency preparedness basics, the various types of hazards that have the greatest impact on their specific facility and a review by the staff of the facility's emergency operation plan tend to be more successful in preparing staff of long-term care facilities for a disaster (Pierce et al., 2016). It has also been found that more frequent training and trainings that are accompanied by a form of exercise or discussion also ensures that long-term care facilities are prepared in the event of an emergency (Kaykisiz et al., 2019). Additionally, trainings that are provided to long-term care facilities on-site are more favorable because more staff can attend and learn the material (Hipper et al., 2015). In terms of a training program for long-term care facilities, "PREPARE: Disaster and Emergency Preparedness Training for the Long-Term Care Workforce" has been successful

in increasing the knowledge of long-term care staff on topics of emergency preparedness. The program is provided to numerous specialties that work within long-term care facilities, whereas previous trainings have only focused on administrators (O'Brien et al., 2009). Finally, creating a relationship between the local health department in New York City and primary care associations in the city increased the amount that those associations prepared for emergencies (Williams et al., 2017). A similar connection would likely help to increase the emergency preparedness of long-term care facilities as well. Overall, regulations and trainings, as well as partnerships, increase the amount of emergency preparedness that is happening at healthcare facilities.

Healthcare staff often feel under-trained when it comes to emergency preparedness. Despite the regulations surrounding emergency preparedness in healthcare facilities, they still feel underprepared. One of the causes of this feeling of being underprepared may be due to the lack of time that is allocated for training staff on emergency preparedness topics (O'Brien et al., 2009). There is also a shortage of contact between long-term care facilities and government officials in the emergency preparedness realm (Lane & McGrady, 2016). The lack of contact means that facilities are likely unprepared for a disaster and unaware of how the government could help them during an emergency. This affiliation between the government and long-term care facilities was also damaged because, for a time, long-term care facilities were disregarded entirely in terms of their needs for emergency aid during a disaster. For a long time, hospitals were the only facilities that were acknowledged as needing assistance (Hyer et al., 2010). This disregard of long-term care facilities in preparedness is due to the facilities being considered to be businesses and not traditional health care providers like hospitals (Eiring et al., 2012). Because of this previous indifference, there is a great need to bring long-term care facilities back into the discussion about emergency preparedness. The gaps in training and contact between

governmental and long-term care facilities are ones that need to be addressed in order to ensure that these facilities are prepared for disasters.

Project Background

The Chicago Department of Public Health has a mission to ensure that every citizen of the City of Chicago has their health protected. The Bureau of Emergency Response and Public Health Preparedness has goals to help achieve this mission. One of the main goals of the Bureau is to ensure that the vulnerable populations of the City of Chicago are adequately prepared for an emergency. One of these vulnerable populations that they like to focus on is older adults. The student project helped contributed to that focus by enabling long-term care facilities to have more knowledge on preparedness and therefore are more able to protect their older adult residents.

In terms of the significance of the project for the community, the older population is typically one of the most at-risk populations during a disaster. The older adult populations often also have health problems that prevent them from responding quickly to an emergency. These health issues put them at higher risk of adverse health outcomes in the event of a disaster. Long-term care facilities are often the ones caring for this population, and those older adults who do live in long-term care are often the ones who require the most help in an emergency and are therefore the most vulnerable. Long-term care facilities not only have to take care of this population, but they also often feel as if they are left out of discussions regarding emergency preparedness. This project brings those facilities back into the conversation and allows them to have a better understanding of the emergency preparedness efforts in Chicago.

The project was first conceived by Dr. Darnell Thomas, Project Manager, in the Planning and Training branch of the Bureau of Emergency Response and Public Health Preparedness.

After seeing the lack of preparedness by long-term care facilities, he wanted to create a project that would bring them back into the preparedness conversations. However, Dr. Thomas has a variety of projects that he oversees and so there is no full-time staff dedicated to this project within CDPH. Throughout the project's history, Dr. Thomas has had the opportunity to have several interns who have worked with him on furthering the project goals. Unfortunately, because the project is only able to progress when there is an intern available to work on it, the project has not been able to continuously move forward. Additionally, in the world of emergency preparedness and response, situations often arise that require the immediate attention of the Chicago Department of Public Health staff. An example of this would be COVID-19, where CDPH staff had to put all projects on hold to respond to the outbreak. There are often many competing priorities for the Bureau of Emergency Response and Public Health Preparedness and so progress can sometimes be slow as higher priority events come up and other projects must come to a halt.

The decision-making process for implementing this project started with the idea that came from Dr. Thomas and others within the Bureau about how this would help long-term care facilities and the relationship CDPH has with them. Due to this idea, they decided to proceed with the project with the use of interns. However, due to the other projects and tasks that Dr. Thomas and others at CDPH have, the project was not able to be a top priority. CDPH also is unable to hire someone to be dedicated to the project full time. Due to all of these factors, the decision was made that it would be best for interns to complete the work when available.

The basis of this project was created in 2008, before the student begun the practicum period. However, because this project is only worked on by interns, the materials for the training, and project as a whole, needed to be updated and restructured for the new project goals. At its

conception, the project focused mostly on basic preparedness information and how long-term care facilities should fill out their emergency operations plans. However, there has been a new initiative to bring long-term care facilities into the conversation around emergency preparedness as a whole. These trainings are now being viewed as a stepping stone for these facilities to become more involved in the emergency preparedness community in Chicago. One aspect of the training that has greatly changed with these new goals, is that there is now a longer discussion about what the Chicago Healthcare System Coalition for Preparedness and Response is and how being a member can benefit long-term care facilities. The goal for these trainings is now to be an introduction to emergency preparedness in Chicago and viewed more as a first step into emergency preparedness, rather than a onetime event. The student's role was to rework the existing training materials and add in the additional needed information, as well as update the contact information for all long-term care facilities in Chicago. The student's role focused on updating the training presentation and supplemental materials, as well as creating an implementation guide for the project. Initially the project also including conducting the trainings with the long-term care facilities, but due to the COVID-19 outbreak, the project goals were adjusted. The role focused mostly on program development, as the new goals for the program meant that much of the previous materials had to be reworked.

Project Goals and Objectives

The goal of the student project was to develop emergency preparedness trainings relevant to the context and specific needs of long-term facility care facilities. The objectives for the project can be viewed in Table 2.

Table 2
Project Objectives

1. By March 2020, curriculum will be created and adapted for Chicago area long-term care facilities administrators and staff trainings regarding emergency preparedness.
2. By March 2020, a complete implementation guide will be created regarding the outline for the project overall and future long-term care facility emergency preparedness trainings.

Project Activities

The project consisted of a training PowerPoint that contains relevant information for long-term care facilities and emergency preparedness, as well as supplemental materials given out during the training. The content of the training presentation covers the basics of what public health emergencies are and what emergency preparedness entails. It also covers information regarding the laws that long-term care facilities must obey in regard to emergency preparedness. The PowerPoint also goes over best practices for long-term care facilities when it comes to responding to an emergency. Some examples of the content include previous emergency preparedness efforts by CDPH and the advantages and disadvantages of both evacuation and sheltering-in-place. Another major topic that the training includes is an in-depth discussion and demonstration of how facilities can conduct Hazard Vulnerability Analyses for their specific facilities. Much of the training covers the basics of Emergency Operation Plans and the requirements for completing one. Finally, the training covers information regarding various networks available to long-term care facilities to provide them with more support. These networks include the Chicago Healthcare System Coalition for Preparedness and Response and the Health Alert Network. This a central part of the new training, as the Chicago Department of

Public Health wants to involve more facilities in emergency preparedness activities and networks.

The process of creating this training curriculum involved many steps. First, all existing training materials for long-term care facilities were examined. This included previous trainings and supplemental materials. The old training material was examined and discussed with the supervisor about the needed updates. One of the most substantial updates was shifting the material to incorporate more information about the various emergency response networks that long-term care facilities can get involved in. The training presentation was reworked to include more information about these networks, such as the Health Alert Network and the Chicago Healthcare System Coalition for Preparedness and Response. Additionally, new content was added to the existing presentation about defining what a public health emergency is, what emergency operations plans the city of Chicago has in place, and the suggested National Incident Management System (NIMS) command structure. For the new content, research was conducted into each component to ensure accurate information was represented within the training. This research included discussions with CDPH staff and completing NIMS trainings. Once the draft of the training curriculum was completed, it went through several rounds of review and edits from CDPH staff before it was finalized.

Handouts will also be distributed at the trainings that give relevant information about the Health Alert Network and the Chicago Healthcare System Coalition for Preparedness and Response. These handouts will provide the staff at long-term care facilities with information covered in the PowerPoint regarding the support networks that exist in Chicago surrounding emergency preparedness. The trainings are planned to be hour-long sessions that are offered in person at the long-term care facility, in person at the Chicago Department of Public Health

Training Center, or via online webinar. Those who are asked to attend the trainings are the facility's administrator, along with those staff them deem necessary to complete the training. These trainings are perfect for group discussions regarding the staff's readiness for a disaster, and so there is an abundant element of discussion to the training. The staff that attends the training will complete both a pre-test and a post-test to assess the knowledge that they gain. These pre/post-tests are identical and consist of information that is contained within the training. They will be asked to complete both of the tests, anonymously, and the tests will be compared at a later date to assess how much knowledge was learned by the staff. The staff who attended will also be asked to complete an evaluation of the training so that the training may be improved.

Both the pre/post-test and the evaluation have been reworked to be more pertinent to the new project goals. Once the training presentation was completed, the pre/post-test was changed to reflect the changes in the training curriculum. The test asks questions regarding specific information within the training. Both the pre/post-test and the evaluation also went through several rounds of revisions from CDPH staff before they were finalized.

At the beginning of the student project, in addition to creating and adapting the project materials, one of the objectives of the project was to have the student analyze the pre and post-tests in order to evaluate the effectiveness of the training. The hope was to have several trainings completed before March 2020 and begin to analyze the data then. However, this objective was taken out of the project due to the outbreak of the COVID-19. This outbreak began at the end of 2019 in Wuhan, China, and on January 24, 2020, the first case in Chicago was announced. Due to this outbreak, the Chicago Department of Public Health activated a Public Health Emergency Operations Center (PHEOC), and the Bureau of Emergency Response and Public Health Preparedness began their response efforts. This response became the primary obligation of the

Bureau and impacted all of the employee's daily tasks. Bureau employees staff the PHEOC seven days a week, with a rotating schedule. Due to this shift in obligations, the student project is unable to move forward at the previously projected speed. From January-March 2020 when at the practicum site, the student intern had duties related to the response and aided in essential functions of the PHEOC. Additionally, the student project had to end early at the end of March due to COVID-19. Due to the nature of the project, and the dedication of CDPH staff to the COVID-19 response, remotely working on the project was not an option and the student's involvement in the project came to an end. Due to the student's involvement in the COVID-19 response, there was limited time that was dedicated solely to the project after the response began. However, the student activities became more focused on ensuring that all materials were adapted and that a clear plan for the long-term care facility trainings is in place. This preparation will allow the training to continue at a later date after the response efforts to COVID-19 have concluded.

Project Approach

The project's priority population is focused on older adults, and more specifically, those who live in long-term care facilities, such as nursing homes or rehabilitation centers. While some who live in these homes are under the age of 65, most of their population centers around those who are 65 years of age and older. The most considerable concern for the older adult population is the various health issues that make it harder for them to prepare for and recover from disasters. This includes health issues such as diabetes, hypertension, and arthritis. These various health issues that are extremely prevalent in the population put them at higher risk for adverse outcomes during and after a public health emergency.

As stated in the Community Health Assessment, those who are over 65 years of age are some of the most vulnerable during public health emergencies. They are those who suffer the most from adverse outcomes following disasters. This is due to factors such as social isolation, lack of access to transportation, and a variety of health issues that create complications. Long term care facilities have also historically not been as prepared for public health emergencies when compared to other healthcare facilities. Unlike at other types of healthcare facilities, long-term care facilities have not always thought about emergency preparedness as a priority (Strauss, 2017).

The project was designed to provide more training to long-term care administrators and staff to help them gain more knowledge surrounding how to better prepare their vulnerable populations for an emergency. This training aimed to provide them with the knowledge they did not previously have and to have them create Emergency Operations Plans (EOPs) that lay out their plans for their elderly patients in the event of an emergency.

Project Theory

The theory that best informs the project is the Health Belief Model. This model best informs the project because of the six components of the theory. Those components are perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy. The Health Belief Model is typically applied to a patient's behavior; however, the principles can be applied to larger entities (Lynch & Jackson, 2019). The way that this theory is applied to the project is mapped out in Table 3. Perceived susceptibility has to do with the belief that the person or entity holds regarding if they will be affected by the problem that the project is aiming to address. Perceived severity has to do with how serious not addressing the problem being faced by the person or entity is. Perceived benefits encompass

what the favorable outcomes of completing the health action are for the person or entity. Perceived barriers pertain to what barriers the person or entity faces in completing the health action. Cues to action are elements that prompt people or entities to act in relation to the health problem. Finally, self-efficacy refers to the confidence that a person or entity has that they will be able to complete the desired health action (Rosenstock, 1974). All of these factors come together to indicate whether or not a person or organization follows through on a health action.

Typically, this theory has been applied to interventions surrounding preventive health behaviors. One of the health behaviors the theory has been used to target is vaccination, specifically the behaviors around getting the flu vaccine. Another health behavior that the theory has been used for is screening behaviors and understanding why people choose to get screened for various diseases. Another type of intervention that the Health Belief Model has been applied to is risk-factor behaviors and attempting to stop individuals from participating in these behaviors (Janz & Becker, 1984). Overall, while the Health Belief Model has historically been used in individual intervention, this model can be applied to groups of people or entities as a whole.

Table 3

Health Belief Model and Project Components

Theoretical Component	Project Component
Perceived Susceptibility	During the training, administrators are informed about previous public health emergencies in Chicago. This is to explain the variety of emergencies that could occur within the city and how that could greatly impact the long-term care facility's patients. This portion of the training covers events such as the 2019 polar vortex and the snowstorm of 2005.
Perceived Severity	During the background portion of the training, information is also given about the number of people who were affected during these disasters in Chicago. The training also covers how long-term care facility patients are particularly susceptible to adverse outcomes after a disaster.
Perceived Benefits	The training covers how facilities creating an Emergency Operation Plan and taking this training is demonstrating their compliance with the Centers for Medicare and Medicaid Services' Emergency Preparedness Rule. The benefits of being prepared for emergencies is also covered and how having a plan can greatly improve their residents' outcomes in the wake of a disaster. The training also goes over the various networks in the Chicago area that can help LTCs with their plans and emergency preparedness trainings.
Perceived Barriers	The training discusses the specific barriers that LTCs face when it comes to both sheltering in place and evacuation of patients. The training also addresses the difficulties that come with drafting an EOP and preparing their facilities for a disaster. One of the critical pieces that the training does is connect LTCs to the Coalition. The Coalition offers a variety of other trainings and aid when it comes to ensuring that LTCs are prepared for an emergency.
Cues to Action	The training itself is a cue to action for the administrators and staff to begin to think about emergency preparedness and how it applies to their facilities. The Coalition also sends out reminders to LTCs about upcoming preparedness opportunities.
Self-Efficacy	The training incorporates a workshop in which staff have the opportunity to begin drafting their Emergency Operation Plans. The training goes through the first section and explains each of the elements that are needed. This allows the staff to feel more comfortable with the act of creating an EOP.

Assessment of Outcomes

The most significant outcome for the student project is the training curriculum, which is a PowerPoint presentation with the content of the training. This outcome contains the process of

curriculum development. Another project outcome is an implementation guide of how to execute the curriculum, including suggested email templates and how long the training should be. Finally, the last deliverable includes the development of the evaluation questionnaire and a pre/post-test that will be completed during each of the trainings. The curriculum was put through several stages of revision, including feedback from the student's direct supervisor, and the Director of Planning, Research, and Development. After the content was created, it was sent to the student's direct supervisor for feedback. The supervisor and student reviewed together, and revisions were made to the curriculum. Once those revisions were finalized, the content was sent to the Director of Planning, Research, and Development for additional feedback and suggested revisions. The multiple rounds of revisions ensured that the content was of high quality and helped to assess the strength of the curriculum.

Additionally, the foremost way that the project will be assessed is through the pre/post-tests, as well as the evaluation sheet that all participants are asked to complete. These items are project deliverables; however, they are also designed to assess the effectiveness of the trainings themselves. The participants of the training will be given a pre-test that contains questions that are pertinent to emergency preparedness in long-term care facilities. They will fill this test out prior to the start of the training. They will then fill out a post-test at the end of the training that contains the same questions as the pre-test. These will then be analyzed to determine how each participant's knowledge changed after the completion of the training. The analysis of the pre and post-test scores will help determine how much knowledge is being gained during the trainings and, therefore, how effective the trainings are in increasing the knowledge of long-term care facilities' administrators and staff. Furthermore, each participant will be asked to complete an evaluation questionnaire about the training itself. This questionnaire asks the participants about

the training experience, as well as how they think the training may be improved. Questions in the evaluation guide aim to assess what new knowledge and skills the participants gained, as well as how valuable they believed the training to be. This evaluation is also an incredibly valuable tool in assessing the project, as it will give insight into how participants of the training feel about the content. Through the process of many rounds of revisions, the pre/post-test analysis, and the evaluation questionnaire, there are many excellent ways that the project outcomes are being assessed.

Similarly, for the implementation guide, it is recommended that an evaluation for the implementation guide is also developed. This evaluation would consist of a survey that would be dispersed to key CDPH staff, such as members of the Public Health Emergency Preparedness (PHEP) team and members of the leadership team for the Bureau of Emergency Response and Public Health Preparedness. The evaluation questionnaire would consist of questions regarding the content of the implementation guide and questions regarding how easy it is to use. Once this feedback is gathered, any needed adjustments can be made to the guide to ensure all CDPH employees would be able to use it. This evaluation survey is not a part of the student project; however, it is recommended to be implemented as it would help to evaluate the implementation guide's effectiveness among staff.

Logic Model

The overarching goal of the student project is to develop emergency preparedness trainings relevant to the context and specific needs of long-term facility care facilities. From this goal, two primary objectives appear. The first objective is that by March 2020, a training curriculum will be created and adapted for Chicago area long-term care facilities administrators and staff regarding emergency preparedness. The second objective is that by March 2020, a

complete implementation guide will be created regarding the outline for the future long-term care facility emergency preparedness trainings. In order to meet the goal and objectives of the project, there are several components of the project that must be examined. When beginning a project, it is always essential to examine the resources or inputs that one has available to them. In this project, the most significant resources are the previous curriculum developed for emergency preparedness in long-term care facilities, and the Chicago Department of Public Health staff members assisting in the project. To create the project outputs, the previous curriculum was reviewed and assessed for which areas need to be updated based on the new project goals. To aid in the creation of the new curriculum, stakeholders such as the Public Health Chair and the At Large Member for the Chicago Healthcare System Coalition for Preparedness and Response were consulted. These meetings provided more information that needed to be added to the training materials. Additionally, other CDPH staff members added in the revision of the curriculum by providing feedback on the training materials. This process of consulting the stakeholders and revising material based on their suggestions is the process for both of the project objectives. For the two project objectives, the outputs of the project are a PowerPoint training presentation, along with a pre/post-test and evaluation questionnaire for all training participants, as well as a project implementation guide to help guide the project's future. All of these outputs lead to achieving the project's short-term, medium-term, and long-term outcomes.

Emergency Preparedness Training in Long-Term Care Facilities

				Outcomes		
Objectives ⇨	Inputs ⇨	Activities ⇨	Outputs ⇨	Short-Term (Psychosocial) ⇨	Medium-Term (Behavioral) ⇨	Long-Term (Change in the Problem)
By March 2020, curriculum will be created and adapted for Chicago area long-term care facilities administrators and staff trainings regarding emergency preparedness	-Student intern -Bureau of Emergency Response and Public Health Preparedness staff -Previous long-term care curriculum -Materials from CHSCPR	-Locate and review current LTC training curriculum, -Consult with stakeholders, such as the Chairs of the CHSCPR -Adapt previous content and create new content where needed for the curriculum -Submit for feedback to supervisor and head of the branch -Revise based on feedback	-One LTC facilities Emergency Preparedness curriculum (PowerPoint Presentation) -Pre/Post test -Evaluation questionnaire for participants -10 LTC trainings, planned for after the conclusion of the COVID-19 response	-Increase knowledge about emergency preparedness in LTC administrators and staff	-Increase compliance by LTC facilities with the Emergency Preparedness Rule	-Increase the level of preparedness among LTC administrators and staff for public health emergencies
By March 2020, a complete implementation guide will be created regarding the outline for the project overall and future long-term care facility emergency preparedness trainings.		-Consult with supervisor about the needed steps to implement the trainings -Create a planning document -Submit to supervisor and head of branch for feedback -Revise based on feedback -Add to shared drive so that all CDPH staff have access -Communicate the guide to relevant staff within the Bureau	-Project implementation plan	-Increase knowledge among CDPH employees on how to implement these trainings	-Increase ability and comfort level among CDPH employees to give trainings to LTCs -Increase number of preparedness trainings for LTC conducted by CDPH staff	-Increase involvement of LTC administrators and staff in preparedness activities -Increase collaboration between CDPH and LTC facilities

⇩

Ultimate
Increase the ability for LTC administrators and staff to effectively response to public health emergencies.

The first project objective again is that by March 2020, curriculum will be created and adapted for Chicago area long-term care facilities administrators and staff trainings regarding emergency preparedness. To accomplish this objective, the project focused on the creation of the curriculum itself for the trainings. The trainings are intended to provide more basic information on what emergency preparedness is and why long-term care facilities need to think about it. The ultimate goal for this project is to increase the ability for long-term care facilities to effectively respond to public health emergencies, and implementing these trainings helps to achieve that goal. With the recent COVID-19 outbreak, CDPH hopes that this encourages more long-term care facilities to get involved with the emergency response and preparedness efforts that are happening in the city. The trainings are delayed while the response efforts continue; however, the hope is that following the response, LTC facilities will see the importance of learning about emergency preparedness and will be more open to participating in these trainings. For this objective, the short-term outcome is focused on psychosocial aspects and therefore is to increase knowledge about emergency preparedness in long-term care administrators and staff. The immediate outcome from the implementation of the trainings is that the knowledge of what emergency preparedness is would increase in the LTC staff. This increase in knowledge would be achieved through the training sessions, in which the new curriculum would be implemented. The medium-term outcome is aiming to impact behavioral aspects and is to increase compliance by LTC facilities with the Emergency Preparedness Rule, which requires all facilities to have written emergency operation plans and train their staff on emergency preparedness. The assumption is that following the participation in these trainings, LTC facilities will better understand the necessary tasks to comply with the Emergency Preparedness Rule and feel more able to complete them. This increased awareness and ability to comply with the Rule, will

hopefully, in turn, increase the ability for these facilities to respond to a public health emergency. Finally, the long-term outcome intends to change the problem, and therefore the outcome is to increase the level of preparedness among LTC administrators and staff for public health emergencies. The assumption is that through the fore mentioned efforts overall emergency preparedness will increase within the facilities that receive the training.

The second project objective is that by March 2020, a complete implementation guide will be created regarding the outline for the project overall and future long-term care facility emergency preparedness trainings. This short-term outcome for this objective is to increase knowledge among the Chicago Department of Public Health's employees on how to implement these trainings. This increase in knowledge is achieved by sharing the implementation guide via the shared drive that all CDPH employees have access to. It will also be emailed directly to all relevant staff, such as all members of the Public Health Emergency Preparedness (PHEP) program. Through these measures, CDPH employees will have access to the guide and therefore increase their knowledge on how to implement the program. The medium-term outcomes are to increase ability and comfort level among Chicago Department of Public Health employees to give trainings to long-term care facilities and to increase the number of preparedness trainings for long-term care facilities conducted by the Chicago Department of Public Health staff. Overall, the implementation guide is very straightforward for staff and, therefore, does not require extensive training for its use. Staff should be adequately prepared to complete the trainings by merely reading the implementation guide and reviewing the materials. If there are any questions or concerns that come up as staff review the materials, Dr. Darnell Thomas, Project Administrator, and Frankie Shipman-Amuwo, Director of Planning, Research, and Development, will be available to address these. Finally, the long-term outcomes for this

objective are to increase the involvement of long-term care administrators and staff in preparedness activities and to increase collaboration between the Chicago Department of Public Health and long-term care facilities. The use of the implementation guide by staff will help CDPH to create effective trainings that ensure that the same information is given to all facilities and that future collaboration will hopefully be encouraged. The goal of these trainings is to provide information to LTC staff and to encourage these facilities to become more involved in the emergency preparedness efforts in the city. All the outcomes from both objectives contribute to the ultimate outcome of the project, which is to increase the ability for LTC administrators and staff to effectively response to public health emergencies.

Gantt Chart

Task Subtask	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Draft training curriculum								
Meet with stakeholders regarding previous curriculum								
Adapt and create PowerPoint								
Get feedback from supervisor								
Make revisions								
Submit for a second round of feedback from Director of Planning, Research and Development								
Make final revisions								
Draft data collection and evaluation materials								
Adapt pre/post test and evaluation guide								
Get feedback from supervisor								
Make revisions								
Submit for a second round of feedback from Director of Planning, Research and Development								
Make final revisions								
Draft implementation plan and guide								
Create guide								
Get feedback from supervisor*								
Make revisions*								
Submit for a second round of feedback from Director of Planning, Research and Development*								
Make final revisions*								
Submit final curriculum packet*								
Combine materials and submit for final review*								

*Planned but did not occur due to COVID-19

Four significant tasks made up the student project initially. These include the creation of the training curriculum, the data collection and evaluation materials, and the implementation plan and guide. Finally, all of these items together were planned to create the curriculum packet that was going to be added to the Department's shared drive to provide access to the trainings for all employees. However, due to the COVID-19 outbreak, only the training presentation and evaluation materials were finalized. The implementation guide was submitted as a completed draft to the site supervisor. Due to the nature of the creation of content, most of the project consisted of drafting the content and then submitting for revisions from both the supervisor of the student and the Director of Planning, Research, and Development. Before creating the content, there were several meetings held with stakeholders in the Department to discuss the nature of the project and the project goals. Once these meetings were held, the creation of the curriculum could begin. For all of the content being created, the process is very similar. The first draft of the content was created. Once the first draft was created, then the content was submitted to the supervisor, Dr. Darnell Thomas. He then provided feedback regarding the content, and revisions were made. Following these adjustments, the content was submitted to the Director of Planning, Research and Development, Frankie Shipman-Amuwo. She then provided her feedback regarding the content and suggested needed revisions. Once those revisions were made, the final product was then submitted for approval. Again, only the training presentation and evaluation materials were able to be finalized. Finally, all of the content was planned to be combined into one file packet for easy use and access.

A critical aspect of the curriculum creation process is that at the Chicago Department of Public Health, there are multiple levels of approval that any curriculum must go through in order to be approved for use. In this case, both the student intern's supervisor and the Director of

Planning, Research, and Development needed to review the curriculum before final approval. This process helps to ensure that the highest quality of content is being produced but can also provide challenges to project as it is often a timely process. Occasionally during the curriculum creation process, the project had to wait for revisions before any progress forward could be made. While this process of feedback did slow the creation of the curriculum down, it allowed for multiple perspectives in the revision process and allowed for more content to be edited. Overall, the creation process of the content is fundamental to the overall outcome of the final project. As this is a project aiming at providing content for future trainings, it is essential that the content created provides the most support to staff in the future who are conducting the trainings.

Outcomes

The overall goal of the project was to increase emergency preparedness in long-term care facilities in the Chicagoland area. To accomplish this goal, training curriculum was developed to help educate long-term care facilities' administrators and staff on emergency preparedness protocols. A brief overview of all materials that were created can be viewed in Table 4. The primary substance of the training curriculum consists of a PowerPoint presentation that will be given as an oral presentation to the facilities. The training is designed to be offered in-person at the facility's site, in-person at the Chicago Department of Public Health's Training Center, or via live webinar. The presentation covers the basics of what a public health emergency is and why long-term care facilities must prepare for them. It also covers the basics of what emergency preparedness is overall and details emergency preparedness efforts that have been conducted by CDPH so that facilities have an idea of what is being done currently in Chicago. A substantial portion of the training discusses Emergency Operations Plans (EOP) and how to develop one. The basics of an EOP are discussed, as well as why facilities are required by law to have one. Additionally, during this portion of the training, the staff are asked to begin thinking about what they would include in their EOP and to discuss how their facility handled previous emergencies. The training then goes on to cover what a Hazard Vulnerability Analysis is and gives an example of how to conduct one. The presentation also covers the National Incident Management System (NIMS) and the Incident Command System (ICS). This information is contained within the presentation because staff must have an understanding of the model of the national system of responding to an emergency. This information helps them to begin to think about how their facility could similarly structure themselves. Additionally, NIMS offers many courses that staff can access for free to enhance their overall emergency preparedness knowledge. This section of

the presentation aims to provide the staff with another pathway to expand their emergency preparedness knowledge. Following that, the participants are asked to partake in an exercise that involves a temperature-related emergency and asks them to apply the knowledge they just received to think about how their facility would respond. Following that exercise, more information is given about how they can continue to be involved with preparedness throughout the year. Three primary ways to stay involved are covers, the Health Alert Network (HAN), the Community Communication Network (CCN), and the Chicago Healthcare System Coalition for Preparedness and Response (CHSCPR). For each of these networks, background is given on what each one does, as well as all information for how facilities can sign up to be members of each one. This information is a significant part of the presentation because it provides the facilities with more ways to connect with emergency preparedness in Chicago, which will, in turn, increase the facility's ability to respond to a disaster.

In addition to the training presentation itself, a pre/post-test and an evaluation questionnaire were created. The pre/post-test was created to be administered at the beginning and end of the training session to assess how the knowledge of the participants changed after participating in the training. The tests inquire about information from each section of the presentation and are formatted to include multiple-choice, true/false, and fill in the blank questions. An evaluation questionnaire was also developed to receive feedback on the training presentation from the participants. The questionnaire asks about how much information they learned from the presentation, as well as if they feel that it was valuable for their institution. It also contains a section where participants are asked if they have any suggestions for improvement in the training curriculum so that it could be adjusted in the future to be even more tailored to long-term care facilities.

Finally, the project intended to include an implementation guide as a final product in addition to the training presentation. However, due to the outbreak of COVID-19, the implementation guide was unable to be finalized. The implementation guide has been fully drafted with all the planned sections completed and was submitted to the supervisor for revision. Due to COVID-19, the review and editing process was unable to be accomplished, but a completed draft was submitted to the site supervisor for future review. The implementation guide in its current form contains background on the training project, as well as the objectives for the trainings. It also contains contact information for all of the critical contacts that are involved with the project. The most significant sections of the implementation guide are the list of tasks that must be done in order to hold successful trainings, as well as the resource list that includes email templates for setting up trainings and where necessary information is located. The intention of the project was to complete a finalized version of this guide to dispense to critical CDPH staff so that the project would be able to continue on more smoothly in the future. However, during the time it was being developed, CDPH began its response to COVID-19, and all projects were put on hold. The completed draft of implementation guide is available and can be built upon in the future by CDPH staff. It would be recommended that moving forward, an evaluation questionnaire be developed so that feedback on the implementation guide could be gathered from key CDPH staff.

Table 4

Training Materials Developed, with a Brief Description of Each

Item Developed	Brief Description
Training PowerPoint	An hour to an hour and a half training presentation that consists of information on the basics of emergency preparedness and why it is important for long-term care facilities.
Pre/Post-Test	An assessment tool used to analyze how much the participants learned during the course of the training.
Evaluation Questionnaire for Training	A questionnaire administered to participants to receive feedback on the training content.
Implementation Guide	A guide for CDPH staff to utilize to understand the overall training project. Includes a list of important tasks to complete.

Discussion

Emergency preparedness is essential for long-term care facilities and providing trainings to these facilities helps to introduce them to these topics. As shown in previous chapters, providing trainings to staff members of LTC facilities helps to improve their overall ability to respond to a public health emergency. As a result of the completed training curriculum, emergency preparedness trainings will be able to be held with long-term care facilities. These trainings will increase their knowledge of emergency preparedness, and therefore their ability to respond to future public health disasters will increase. In addition, each component of the Health Belief Model is covered within the training presentation and utilizing this model will aid in the participants' ability to increase their ability to respond to a disaster. Ensuring that each part of the Health Belief Model was incorporated into the various aspects of the training ensures that the trainings will be successful.

A significant strength of this project is that the curriculum has been designed to specifically help long-term care facilities become involved in the emergency preparedness world. Explicitly targeting these facilities within the curriculum is essential because they do not often get specialized trainings or exercises for how a long-term care facility should be preparing for public health emergencies. Another major strength is that the project had insight from key stakeholders in the LTC community. Specifically, during the creation of the curriculum, there were meetings held with both an LTC administrator and the co-chair of the Chicago Healthcare System Coalition for Preparedness and Response. Both of these stakeholders were able to provide valuable insight into what information should be included within the trainings, and how they should be structured. These meetings brought essential information to the curriculum development.

One major limitation is that the project was unable to be fully completed due to the COVID-19 outbreak. While the training curriculum was finalized, the inability to complete a final version of the implementation guide is a significant limitation to the overall goal of the project. Due to the nature of the Bureau of Emergency Response and Public Health Preparedness, sometimes projects must be put on hold in order to respond to any public health emergency. In this case, the COVID-19 outbreak occurred, and the Public Health Emergency Operations Center at CDPH was activated in January 2020. This shift in priorities meant that the entire Planning and Training Branch, including the student intern, focused on the COVID-19 response that was being conducted. Due to this activation, all other projects were put on hold, and the implementation guide draft was not able to be reviewed or finalized. While the guide was not finalized, it does exist in draft form and would be able to be reviewed once the COVID-19 response has concluded.

Emergency preparedness trainings for long-term care facilities is essential not only in the Chicagoland area but across the United States and the world and it is an important part of the public health field. In terms of the impact this project could have on the public health field, this curriculum could be given to any LTC facility across the United States, with only a few minor adjustments based on location. The information that is contained within the presentation applies to any facility across the United States and could be utilized to reach a wide range of facilities which would increase emergency preparedness across the country. This extension would greatly help the public health field by allowing more facilities to access emergency preparedness training and increasing the preparedness within this vulnerable population. The only information that would need to be adjusted is that different local jurisdictions have different ways for LTCs to submit their Emergency Operations Plans. This information could be changed based on the

location, or as a general rule, facilities could be instructed to contact their local health departments for information on where to submit. Additionally, the exercise scenario could be changed based on the typical public health emergency that each region of the country faces (i.e., extreme cold or heat, fires, etcetera.). Overall, this training curriculum could be used to train long-term care facilities across the country which would help the public health field prepare this vulnerable population for future emergencies.

Moving forward with the project, it is vital to complete a final implementation guide. The completion of this would be beneficial to those giving the trainings and working on the project so that there is a clear direction to the project. It would also be critical to develop an evaluation questionnaire for this guide so that there would be a mechanism in which CDPH staff can provide feedback on the effectiveness of the guide itself. Another recommendation would be to perform the trainings at as many LTC facilities in Chicago as possible and gather the evaluation questionnaire from all participants. This would provide valuable information on how the trainings could be improved and updated. The analysis of the pre/post-tests would also provide valuable information on the change of knowledge in the participants after completing the training. All of these next steps would provide valuable insight into the effectiveness of the training curriculum and how it could be improved.

This project will have an enormous impact both on the long-term care facilities in Chicago and on the Chicago Department of Public Health. For long-term care facilities, it will bring them into the world of emergency preparedness and provide new knowledge on how better to prepare their facilities for a public health emergency. It will also encourage them to participate in more emergency preparedness trainings and exercises in the future. Overall, this project will help to make sure that long-term care facilities are more readily prepared for public health

emergencies and that they can better protect their residents. For the Chicago Department of Public Health, this project will help them to create stronger ties with the LTCs in Chicago. There has not always been the most robust relationship between CDPH and LTCs in Chicago, and this project will help to further their connection. Additionally, this training has the potential to be created into a national format and perhaps via online webinar disseminated to facilities across the United States. It is clear, especially in the time of COVID-19, how critical emergency preparedness is, and this training could help to provide some basic knowledge to LTCs across the country. Having emergency preparedness trainings be a part of the LTC facilities' mitigation measures after COVID-19 will help them both with their short-term decision making following the outbreak, as well as their long-term preparation for future public health disasters (National Research Council, 1991).

In order to continue with the vital work that this project is doing, some considerations need to be taken into account. A significant resource that would be needed to further the project would be continuous access to student interns. Because the student intern mostly drives this project, it is vital to the project's continuation that a practicum student is there to move it forward. Without an intern there to work on the project, it is most likely that no trainings will be able to be completed, and therefore the information would not be presented to the LTCs. It would be critical that these students understood the fluidity of emergency preparedness and be able to adjust as things that might affect their project arise, like the COVID-19 outbreak. In order to advance the goals of this project, the student would need to be able to work within this dynamic and ever-changing field.

On a broader scale, additional funding going towards emergency preparedness would drastically help projects such as this. Legislation that helps to protect emergency preparedness

funding would also greatly help these efforts. Currently, long-term care facilities are required by law to have an emergency operations plan, however there is not much funding provided to help them achieve this. Additional legislation to increase funding for emergency preparedness training is needed to help them comply with the law. In this case, having a policy is not enough unless the necessary support is provided to enable the facilities to follow the law. Funding training initiatives is critical to helping prepare long-term care facilities for public health emergencies. Additionally, policies could be implemented that require facilities to host these types of trainings to help ensure that all facilities are receiving this knowledge. Overall, the more resources that are put toward this project, the more facilities would be able to benefit from the training curriculum.

When looking at the future of this project, the most important thing is for these trainings to take place once COVID-19 allows. These facilities must receive this information as soon as possible after this outbreak when emergency preparedness is fresh in their minds. Completing training after a public health emergency, such as COVID-19, can be an important step in the recovery from a disaster (National Research Center, 1991). Additionally, a next step for this project would be to design further training presentations that go beyond the basics of emergency preparedness and into more specific topics for LTC facilities. There is a vast realm of information that would greatly aid facilities in the capacity to respond to a public health emergency, and designing additional, more advanced trainings would help these facilities protect their vulnerable populations.

Conclusion

In the world today, it is becoming incredibly clear how important emergency preparedness is and how being adequately prepared for a disaster is essential to save lives. In the age of the COVID-19 outbreak, the world has been forced to become more aware than ever about how public health emergencies effect the most vulnerable in the most significant ways and how it is essentials to do what can be done to protect those most at risk. While the outbreak is affecting people across the world in an unprecedented way, it is also showcasing just how vulnerable those over 65 and more specifically those residing in long-term care facilities are. There are gaps surrounding emergency preparedness in long-term care facilities that need to be addressed in order to help these facilities across the world prepare for another emergency. Unfortunately, COVID-19 will not be the last public heath disaster that these facilities will face, and it is more important than ever that they be prepared. Following this outbreak, many more people will be more aware of the importance of emergency preparedness and that will hopefully inspire much more work in the area. Additionally, it will bring more recognition to emergency preparedness which is needed in order to increase funding for the work to continue. Throughout the completion of this project, it has become clear how training on the basics of emergency preparedness allows the participants to think critically about how capable they would be to respond effectively when presented with a disaster. It also provides them with the basic tools that could make all the difference when they are dealing with a public health emergency. This project has also shown the dynamic and fluid nature of the emergency preparedness field, and that a disaster could strike at any time and shift the focus of the field. To work within the emergency preparedness field, one must be able to adapt to any situation that may arise. Overall, it is clear that there is a great need in the world overall for a better understanding of emergency

preparedness, especially surrounding vulnerable populations. Through continuous work and training efforts, perhaps the world will be more prepared for the next public health emergency.

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