



Public Health and Disaster Preparedness of Vulnerable Populations in Houston

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INTRODUCTION

Executive Summary

September 11, 2001, and Hurricane Katrina were watershed events that altered the national response to emergency preparedness. The federal government, along with state and local governments, began to invest in preparation at the community level as the basis for the security of the country and the well being of its residents. As communities recognized the possibility of public health emergencies arising, they became more concerned about taking preparedness actions and looked for guidance. The Department of Health and Human Services of the City of Houston (HDHHS, COH), Texas, determined to assess the levels of “awareness of, preparedness for, and ability to recover from, public health emergencies” in Houston in order to address the community’s needs in advance of an emergency. The COH contracted with St. Luke’s Episcopal Health Charities (SLEHC) to conduct a targeted assessment of some of Houston’s “particularly disadvantaged population groups” in four city neighborhoods. Experienced SLEHC researchers were employed to utilize a community-based participatory research approach that would engage community members in each step of the assessment process in order to insure the best possible outcomes. The research protocol was approved by the St. Luke’s Episcopal Health System Institutional Review Board, and the informed consent procedure was conducted with each group. Investigating the levels of awareness, preparedness and resiliency of disadvantaged populations provides an opportunity to develop tailored emergency preparedness strategies and proper support systems prior to the occurrence of a public health emergency.

In Houston, as in other cities, vulnerable populations tend to live in higher concentration in a few neighborhoods. These neighborhoods were identified for the assessment by the COH and include: Gulfton, Sunnyside, the Third Ward, and the Fifth Ward. SLEHC, assisted by the formal collaboratives developed within these communities, recruited thirteen individuals from the communities and trained them in focus group facilitation in order to collect qualitative data regarding emergency preparedness and quantitative general demographic information. Facilitators ranged in age from nineteen to seventy-eight; they are African American and Hispanic; they include long-time community activists, VISTA and Ameri-Corp workers, students, and two ministers; two are disabled. These facilitators helped recruit participants for thirteen focus groups from among the most vulnerable populations of these four neighborhoods.

The community team went through a two-day facilitator’s training, gave input on study design and implementation, recruited and conducted the community groups, and gathered and analyzed data. The groups’ tasks were to articulate local knowledge regarding awareness, state of preparedness, actions taken or planned, and barriers to actions they would assume in cases of a public health emergency. Facilitators organized discussion around three general, open-ended questions: 1) What is an emergency—to determine what constituted an emergency for them, where they turned for information, and what they based decisions about actions in; 2) What do you do in an emergency—to identify steps taken and support and resources utilized; and 3) What worked and what didn’t—to determine their awareness of available resources, barriers to accessing resources and support, and suggestions for more effective support. Facilitators were assisted by co-facilitators and teams of note takers.

The study period was approximately six weeks in duration, with research that was concentrated and intense. The thirteen groups, with 119 participants, included African Americans, Latinos, seniors, mothers, immigrants, refugees, a disabled group and blind and vision impaired individuals. Economic status of nearly all participants, including the facilitators, was at or below the federal poverty level, or near 200 % of the federal poverty level. The diversity of experience among participants ranged from life-long neighborhood residents who have experienced the destructive force of flooding and hurricanes first hand, to immigrants and newly arrived refugees, who have no experience of such catastrophic events and expressed confusion and anxiety regarding expected behaviors.

Most participants, when asked about their experience of emergencies, first described emergencies in personal terms relating to the on-going emergencies in their own daily lives or in their immediate neighborhoods. For example, income insecurity, food insecurity, and experience of violence in the community or within the household were frequently cited as emergencies. When asked about community-wide emergencies, participants cited hurricanes and floods; there was little or no discussion of most of the other conditions that the COH considers the most severe public health emergencies, based on the Center’s for Disease Control and Prevention (CDC) and Homeland Security guidelines.

Participants clearly rely on existing communication pathways such as television, radio, and the internet for information. Suggestions had to do with ways to improve these pathways, to make the information more specifically applicable to their population group. For example, the visually impaired want television alerts presented orally as well as visually, the

handicapped want to know of resources and shelters geared toward their needs for trained support personnel and uninterrupted electrical support, the homeless want to be able to distribute information flyers themselves within their community, seniors want information made available through the agencies and organizations they know and trust, as do new immigrants and refugees. Most agreed they could get fairly adequate information through major media venues, but most wanted more specific information that addressed their particular needs and wanted it to be delivered through sources they trusted, such as churches, schools, and social service organizations in their communities. They consider these community-based support services and organizations their primary resources, as part of their network of family and friends.

Data were analyzed by population subgroups and by neighborhoods. Key themes that emerged from the data are below:

- While emergency preparedness is understood to be a necessary step in vulnerable people’s lives, many feel they are operating on their own to determine the best course of behavior. For example, those who have evacuated during previous storms have tended to make decisions based on the availability of help from family, friends, and neighbors rather than help from City resources, which they assume to be limited and not readily available to them.
- Poverty often determines the number of options available to people in all subgroups. Emergency preparedness—e.g., the ability to buy food and medications ahead of time, to have money for car repairs and gas, and the availability of alternative housing—is ultimately based on the ability to have available funds. Since most participants are unable to adequately fund their daily lives, they believed that being able to fund an emergency situation was impossible.
- Disability, including vision impairment, homelessness, and limited mobility due to illness or old age, impairs people’s abilities and choices in the event of a public health emergency. Those who live with disabilities and depend on a steady source of power and personal support feel more vulnerable in the event of power, communication, and support services failure.
- Representatives of Houston’s homeless community, who comprised one of the focus groups, appear to be resigned to managing on their own. They report feeling forgotten when attention is focused on survival of the community. The conditions in which they manage are restricted to but a few modes of survival—the streets and the shelters.
- People who are new residents feel at a distinct disadvantage when it comes to experience-based preparation and behavior in case of a public health emergency.

People whose primary language is not English have difficulty understanding common communication regarding alerts or other warnings. Most of the refugees and immigrants who participated in the study expressed anxiety and confusion about how to best prepare. Many depend on calling 9-1-1 in case of any emergency and getting help from their neighbors, who are likely to be poorly prepared as well.

- Most participants in the groups expressed an underlying fear that they would be forgotten in the event of an emergency. They believed that no one would come for them, to rescue them. Most felt they had no one, beyond family and neighbors, to turn to for what little help they could offer.

There are twelve primary recommendations regarding planning, the media, transportation and information. These recommendations call for the establishment or development of the following:

Planning

1. **A task force of community residents representing vulnerable populations who can best advise on the planning and development of useful mechanisms for information and assistance.**
2. **Coordinated action plans delivered through local churches, other places of worship, schools, community centers, and neighborhood groups.**
3. **Plans that are neighborhood specific, including locations for staged evacuation, that also include the specialized needs of subgroups in the neighborhood and are delivered through neighborhood agencies and organizations.**
4. **Plans that acknowledge and recognize the fear of residents about being left behind in case of evacuation.**
5. **Plans that address the common fears of running out of water, food, medications, and other basic necessities.**

Media

6. **A rich multilingual educational outreach using video and other means of blending personal experience with recommended courses of actions, especially for people who are new to Houston.**
7. **Consistent use of media-based information that will deliver the same messages regarding the emergency and the recommended actions through foreign language television stations, radio stations, and newspapers.**
8. **Media information that is useful and accessible to all vulnerable populations, including the disabled, the deaf and the blind.**

Transportation

9. **Clear and well-marked transportation-related information and action plans since City buses and Metrolift are a lifeline for most of Houston’s vulnerable populations.**

Information

10. **A neighborhood-based resource database identifying specific information that is appropriate to the needs of local, vulnerable population groups.**
11. **A way to disseminate shared information on Safety Net health clinics and other health resources close to the community, such as the SLEHC Project Safety Net web site, www.projectsafetynet.net.**
12. **Public health emergency referral when someone calls 9-1-1.**

St. Luke’s Episcopal Health Charities

St. Luke’s Episcopal Health Charities (SLEHC) is a grant-making, public charity affiliated with the St. Luke’s Episcopal Health System and the Episcopal Diocese of Texas. Its mission is to increase opportunities for health enhancement and disease prevention, especially among the medically underserved, and to make measurable improvements in neighborhood health status and individual well-being. SLEHC grant making activity is strongly linked to its community-based research and a process of sharing web-based vital community-health information with members of the community, researchers, policy makers, and other funding organizations.

The Center of Excellence in Community Based Research (CE:CBR) is a part of St. Luke’s Episcopal Health Charities that is dedicated to research. It serves to further The Charities’ mission of *Advancing Community Health: Body, Mind, and Spirit* by promoting excellence in community-based participatory research practices. By putting into action the Charities’ operating values: Informed Action, Collaboration and Empowerment through community participation, innovative research, and community training, the CE:CBR serves as a vehicle for amplifying and documenting the community’s voice.

Recent increased attention of national and local health funders to unresolved health disparities, along with the limited participation of underserved communities in research protocols, have led to new participatory requirements in community-based research requests for proposals. Founded on the community-based research expertise of The Charities, the CE:CBR’s primary goal is to facilitate the development of equal partnerships between the community and academic researchers who are seeking funding for their work in eliminating health disparities. These partnerships are based in equal participation of the community in every level of the research process from planning to application,

data collection, implementation, analysis, dissemination of knowledge and evaluation. Traditionally, research has not engaged communities in these comprehensive processes.

City of Houston (COH) Contract

Acting as a contractor for the City of Houston Department of Health and Human Services (HDHHS), St. Luke’s Episcopal Health Charities’ Center of Excellence in Community Based Research undertook the task of assessing the levels of (1) awareness (2) preparedness and (3) resiliency of disadvantaged and vulnerable populations who may be involved in a public health (PH) emergency.

The goal was to acquire information from samples of the City’s most vulnerable populations so that their voices can be included in policy development. Populations with special needs have been defined as the disabled, homeless, children, frail elderly, non-English speaking, minority groups, people with severe mental illness and individuals that are incarcerated (See Appendix B). This information was readily provided by the participants in these community groups as they expressed their desire to assist the COH in developing appropriate emergency preparedness strategies and proper support systems prior to their need for them. As sample groups were gathered in four specific neighborhoods, and consisted of individuals that included young mothers, immigrants, refugees, elders, disabled and the blind or visually impaired, the assessment was guided by the following concerns:

1. Enhancement of the awareness of 15 Centers for Disease Control and Prevention (CDC)-defined PH emergencies and of a need for a plan for safety and response to each.
2. The translation of knowledge of expected behavior in response to one of those emergencies.
3. Identification of barriers (perceived and actual) to proper action taken by members of community.
4. Identification of internal and external (perceived and actual) resources present to deal with the PH emergency.
5. Exploration of trusted information pathways currently in use, or potentially developed for specific groups within the target communities and the methods by which information is to be transmitted.
6. Determination of how is the community is assessing its risk and vulnerability to PH emergencies.

BACKGROUND

Public Health Emergencies

One of the stated purposes of the COH for this assessment was the identification of the degree to which residents were aware of the 15 conditions that constitute a public health emergency (Table 1.1 below). These conditions were identified by the City of Houston and are based on recommendations made and published by the CDC. Most of Houston's residents have had some experience with hurricanes, floods, mosquito-borne disease threats, and occasional toxic or gas exposure. The most vulnerable populations in the city often tend to have greater exposure to such emergencies, as poorer neighborhoods are located in environments that are closer to the sources of risk, have older and less protected structures, are more vulnerable to flooding and other destructive forces, or are severely crowded.

Public Health Emergencies in Houston

Houston's importance to the national economy, its geography, and its size, all increase its vulnerability to a public health disaster. The recent past indicates, however, that Houston is able to organize to manage single events, even when they are catastrophic in size.

Flood History of Harris County

Floods are frequent PH hazards taking place in Houston. There are four major floodplains in Harris county: valley to the northwest, major river in the northeast, a shallow floodplain that covers most of the area, coastal floodplain in southeastern corner of the county. A fifth factor involves intensity of rain, with often too much rainfall in a short amount of time. These create five potentially damaging rainfall scenarios in Harris County. According to The Harris County Flood Control District, all the target neighborhoods within this study are in the shallow floodplain (http://www.hcfd.org/ME_whct.html).

Between 1836 and 1936, the county underwent more than 16 floods. At the time, Houston was poorly equipped to drain large amounts of water. Between the creation of the Flood Control District in 1937 and 2001, about 30 more floods occurred. For most of these, the damage was somewhat limited. Tropical Storm Allison, however, in May 2001, caused extreme damage. Rainfall during this storm alone accounted for 80% of the region's annual rainfall (<http://www.hcfd.org/hcfloodhistory.html>).

During the 1970s, Sims Bayou flowed out of its banks; this was followed by a large storm in June 1975, which caused widespread flooding. Brays Bayou was affected by a major storm in June 1976. Another storm in April 1979 affected several Harris County bayous and caused major flooding. Tropical Storm Claudette in July 1979 caused several hundred million dollars worth of damage and brought 43 inches of rain in 24 hours. In the 1980s Hurricane Alicia in August 1983 caused nearly one billion dollars in damage (mostly wind-related) in Galveston and Harris Counties. Major flooding also occurred in Brays Bayou in September 1983. A May 1989 storm involved widespread flooding throughout the county. During the 1990s, Tropical Storm Frances, in September of 1998, caused White Oak Bayou and others to be out of their banks. October and November 1998 brought storms that caused flooding mostly in northern Harris County. Tropical Storm Allison caused the evacuation of 1,100 families in June 2001.

Flood Risks in the Target Neighborhoods

Areas described below as 0.2% annual flood risk may be areas at greater risk for flooding depending on average depth, drainage areas, and presence of levees.

- **Sunnyside** – Sims Bayou cuts through the southern boundary of this area and constitutes the most at-risk regions. The peripheral regions of the bayou have 0.2% chance of annual flooding. Several areas, especially the southwest corner of the neighborhood, have a 1% chance of flooding. One eastern point of the neighborhood has a 1% chance, with base flood elevation undetermined (all other 1% regions described have base flood elevation determined). The remainder of this neighborhood seems low-risk, with an annual flood chance of less than 0.2%.
- **Gulfton** – Brays Bayou forms the major watersheds of this area. The “stairstep” region of Gulfton, bounded generally by Fournace Street, Bissonnet Street, and Bellaire Boulevard has been designated as a flood zone. The southeastern part of this neighborhood has a 1% annual flood chance, the peripheral region having a 0.2% chance. The rest of Gulfton is largely low-risk.
- **Third Ward** – Brays Bayou is just south of this neighborhood but does not actually enter it. Almost the entire superneighborhood has a flood risk of less than 0.2% annually. The southeastern-most corner where Wheeler Street approaches the railroad has a 0.2% chance, and one area may have a 1% chance.
- **Fifth Ward** – Buffalo Bayou forms part of the southern boundary of this region. The land surrounding it is mostly 0.2% chance annual flood, though a few areas are 1%. The rest of the region is largely low-risk. The streets Jenson to the east, Collingsworth to the north, and Liberty cutting through, form a triangular segment at the northeastern part of the region that has a 0.2% flood risk (Tropical Storm Allison Recovery Project website http://maps.tsarp.org/website/tsarp_firm/viewer.htm).

The City has been working on flood control improvements. Since February 2008 flood control work has been done on Brays Bayou. The creation of a basin to hold storm water that flows from the bayou is designed in order to reduce flooding incidences in Gulfton. In February 2008 concrete storm sewer and detention basins were built in Sunnyside (<http://www.swmp.org/swprojects/projectmaps.asp>).

Mosquito Borne Diseases: West Nile Virus

Floods and low areas of pooled water present a serious health hazard. Houston is a site of recent infection with mosquito-borne West Nile virus (WNV) that may have

lasting outcomes. The most commonly reported symptoms include fatigue, weakness, depression, personality changes, difficulty walking, memory deficits and blurred vision, according to findings from an ongoing study funded by the National Institutes of Health recently presented at the International Conference on Emerging Infectious Diseases in Atlanta. Dr. Kristy O. Murray, lead investigating scientist from The University of Texas Health Science Center, considers the Houston experience with West Nile Virus to be “a virus that is likely to continue to be an important global emerging pathogen.” She noted that those who are at greatest risk are people who have the most severe form of disease. Of the 108 patients infected with WNV in the Houston area in 2002, reported by Dr. Murray, fifty-four patients (50 percent) presented with encephalitis, 32 (30 percent) with meningitis and 22 (20 percent) with uncomplicated fever. About 60 percent of those who were infected had symptoms one year following the infection. Five years after infection, 42 percent of subjects still had symptoms related to WNV (Megan Rauscher, New York Reuters Health, Mon. March 17, 2008).

Accidental Contamination of Air

Some forms of accidental emissions occur in Houston on a weekly basis. On June 5, 2006, for example, 13 industrial facilities in the 13-county Houston region reported unauthorized, or accidental, releases of air pollution during the previous week. The 19 so-called upsets released an estimated 159,674 pounds of pollution, according to preliminary filings with the state (CLEAN www.cleanhouston.org/index.htm) Most accidental releases are limited and do not require action on the part of local populations. Given Houston and Harris County's large petrochemical industrial base, however, the potential for accidental or intended release (as in terror attack) of contaminants into the air is a serious concern for all living and working in the community.

Vulnerable Populations in Houston

Prepare Now is a California organization offering online information to “vulnerable populations,” which they define as “people who feel they cannot comfortably or safely access and use the standard resources offered in disaster preparedness, relief and recovery.” They include but are not limited to those who are physically or mentally disabled (blind, deaf, hard-of-hearing, cognitive disorders, mobility limitations), limited or non-English speaking, geographically or culturally isolated, medically or chemically dependent, homeless, frail/elderly and children (www.preparenow.org/pop.html).

The growing diversity of Houston's population brings together people from most regions of the country and the world. Many of those who now reside in Houston are at greater risk of suffering the adverse affects of a PH disaster by virtue of their poverty status or other barriers to

Table 1.1 15 National Disaster Planning Scenarios

Nuclear Detonation	10-Kiloton Improvised Nuclear
Biological Attack	Aerosol Anthrax
Biological Disease Outbreak	Pandemic Influenza
Biological Attack	Plague
Chemical Attack	Blister Agent
Chemical Attack	Toxic Industrial Chemicals
Chemical Attack	Nerve Agent
Chemical Attack	Chlorine Tank Explosion
Natural Disaster	Major Earthquake
Natural Disaster	Major Hurricane
Radiological Attack	Radiological Dispersal Devices
Explosives Attack	Bombing Using Improvised Explosive Device
Biological Attack	Food Contamination
Biological Attack	Foreign Animal Disease (Foot and Mouth Disease)
Cyber Attack	

Source: <http://www.globalsecurity.org/security/library/report/2004/hsc-planning-scenarios-jul04.htm#toc>

available resources, such as lack of language facility, mobility constraints, lack of health insurance or lack of access to trustworthy and reliable information. This study samples some of Houston's most vulnerable populations in order to determine what commonalities exist in their lack of knowledge of and need for assistance. Their common awareness of potential risks and existing resources in PH emergencies, as well as the diversity in their knowledge and responses will be useful in developing mechanisms that reduce the vulnerability of all Houstonians to PH and other emergencies.

Low Vision and Blindness

It is estimated that about 1.3 million people in the U.S. are legally blind. Legal blindness refers to central visual acuity of 20/200 or less in the better eye with the best possible correction, or a visual field of 20 degrees or less. It is estimated that as many as 10 million Americans are blind or visually impaired. **Of all blind and visually impaired Americans, approximately 80% are white, 18% are black, and 2% are from other races. Eight percent are of Hispanic origin and could be of any race.**

There are 5.5 million seniors in the United States who are either blind or visually impaired. Studies show that over the next 30 years aging baby boomers will double the current number of blind or visually impaired Americans. Just 1% of the blind population is born without sight. The vast majority of blind people lose their vision later in life because of macular degeneration, glaucoma, and diabetes.

Among working-age blind adults 70% remain unemployed, despite the federal and state annual rehabilitation expenditures of over \$250 million. There are 93,600 blind or visually impaired school age children in the U.S. No visual access to computer technology is an ever-increasing challenge for the blind. Most educational and employment opportunities are now, and will continue to be, dependent on the blind individual's ability to access and use a full range of computer and Internet technology (Fact Sheet, The National Federation of the Blind 1800 Johnson Street Baltimore, Maryland 21230 Phone: 410-659-9314. Email: nfb@nfb.org.).

People with Disabilities

In 2006, the Census reported about 243,000 people with a disability in Houston, Texas, or about 13 percent of the population. Of them, females outnumber males by approximately one third, and most live at or above the federal poverty level. However, nearly 28 percent of disabled males, and 31 percent of disabled females in Houston live below poverty level (U.S. Census Bureau, 2006 American Community Survey).

Texas Disability Statistics

Selected general Texas disability statistics:

- Percent of Texas population with a disability:
 - Aged 5 - 17 : 6.7%
 - Aged 18 - 64: 11.9%
 - Aged 65 +: 47.7%
- Percent of Texas population 5 years and older with a Disability by Race:
 - White: 14.8%
 - African American: 17.1%
 - Asian/Pacific Islander: 7.1%
 - American Indian/Alaska Native: 25.4%
 - Hispanic: 12.2%
- Percent of Texas population 5 years and older with a Disability by Gender:
 - Male: 13.9%
 - Female: 15.2%

www.pascenter.org/state_based_stats/state_statistics_2005.php?title=Disability%20Statistics&state=texas)

Homeless Population

Houston's homeless population declined by 13 percent from 2005 to 2007, indicating that a new strategy emphasizing permanent housing and supportive services is working. A January 2007 survey of shelters and streets counted 10,363 homeless people, down from 12,006 in 2005.

Demographic and social characteristics of the homeless changed little, with most being African-American men suffering from severe mental illness, addiction or both. Almost 30 percent were military veterans. The reduction in the homeless population, according to Anthony Love, Executive Director for the Coalition for the Homeless, reflects more effective efforts by local agencies to keep people in transitional and permanent housing, more intensive case management to monitor the progress and the needs of homeless people receiving services, and a general shift in approach and philosophy.

(www.homelesshouston.org/hh/CoC_News_EN.asp?SnID=486316718;mike.snyder@chron.com)

Houston's growth, including its increasing immigrant and refugee populations (Houston was recently declared to be the number one refugee-resettlement site in the country, according to a National Public Radio report), the size of its disabled community (with the potential for an expanding vision-impaired population, for example), its particularly vulnerable homeless population, and the socioeconomic disparities of communities such as the ones included in this study point to the critical importance of developing mechanisms that reduce the vulnerability of all Houstonians to PH and other emergencies. Such disparities and diversity also highlight the need for community input in developing appropriate and effective mechanisms that communities can support and sustain. Below we describe the method used in this study to obtain community input.

STUDY METHODOLOGY

COH Determination of Target Neighborhoods

The City of Houston's DHHS predetermined the communities to be included for this study. These neighborhoods were to provide the best representation of vulnerable populations in Houston and included four target communities. The communities share a predominance of poor, uninsured, or otherwise underserved residents. Of these neighborhoods, three are historic African American neighborhoods (Third Ward, Fifth Ward, Sunnyside) that have been undergoing demographic shifts during the past decade due to the influx of Hispanic residents or the gentrification process. Newly arrived immigrants and refugees largely populate the fourth neighborhood, Gulfton. The US Census reports that the predominant language in the Gulfton community is Spanish, although local schools and neighborhood stores reveal a much wider international presence (for example, more than 40 different languages are spoken by the students at Lee High School).

Participatory Group Facilitators

Thirteen community facilitators were recruited by the Charities' research staff in collaboration with community partners. They were chosen based on their affiliation within the target neighborhoods. There were 11 female facilitators and two males, with the median age between 51 and 60 years of age. Representing the target neighborhoods, ten of the 13 facilitators were African American, with 11 USA-born and two foreign-born. The primary language spoken was English, and all 13 had a high school diploma/GED or higher. Only four of the facilitators were employed. Most of the facilitators reported low, annual, household incomes, under \$30,000. The facilitators were also trained as note-takers. They were compensated \$25 per hour for facilitation work and/or note-taking.

Target Neighborhoods

The assessments were conducted with 13 participatory focus groups, with each group having an average of nine members. Groups had the following characteristics:

Within the four target neighborhoods (Gulfton, Sunnyside, Fifth Ward, Third Ward), COH asked that participant groups include:

- Older adults (60+ yrs of age) interviewed in at least three racially/ethnically or nationality specific groups, as applicable and appropriate for the targeted area.
- Adults of any age/race/sex/ethnicity living at or below the poverty level.

- Adults of any age/race/sex/ethnicity who live with a disability and/or are the principal care givers of such persons who are not institutionalized (disability = blind, deaf, wheelchair-bound, bedridden, mentally disabled).
- Groups at risk of, or experiencing, linguistic isolation (especially new immigrant households, and undocumented immigrants).

The community team trained as facilitators worked to recruit groups in their neighborhoods, and local community leaders within the target areas also helped to identify appropriate vulnerable groups within the specific neighborhoods and locations. At the beginning of each group, facilitators conducted informed consent procedures, explaining to the focus group participants that participation was voluntary and could be concluded at any time without negative outcomes to the individual or to the community organization. Participants in the participatory focus groups each received a gift certificate of \$25 to a local grocery store chosen by community members for their two-hour contribution to the study.

At the beginning of each focus group, participants were given two copies of the informed consent form (which had been approved by the St. Luke's Hospital Institutional Review Board (IRB), See Appendix G). The facilitators read through the consent with the participants, and all questions regarding the study and study participation were answered. The participants signed both copies in order to become participants in the study. Once the consent forms were signed, the investigators retained one copy, and the participants retained the other copy.

Participant names were not used in the collection of data. In order to honor confidentiality, participant names and other identifying information was kept in separate locked files from the data. Consent forms were also kept separate. Only the investigators had access to those files. Databases were accessible only with a secure password. Data presented in the final report is aggregated data containing no individual identifiers.

Descriptions of Neighborhoods

Fifth Ward

The Fifth Ward is located approximately one mile north-east of Downtown Houston with its origins by Buffalo Bayou. Historically, the Fifth Ward has been a primarily African American community. Economically the Fifth Ward peaked in the 1950s, and at that time its population had the highest family income of all African Americans in Houston. However, in recent decades, economic decline, freeway construction, desegregation, and African American flight to the suburbs has changed the nature of this neighborhood. Many neighborhood revitalization efforts are currently occurring in the Fifth Ward, with much of the effort being led by the Community Development Corporation. Today, the area's population is approximately 67% African American and 30% Hispanic, with approximately half of the household incomes below \$15,000. The student population of Wheatley High School is 50% Hispanic, indicating a significant ethnic shift for the area.

Demographic Information

- The population is 22,211, with 67% African American and 30% Hispanic.
- Half of the household incomes fall below \$15,000. Only 18% of household incomes fall between \$15,000 and \$25,000, indicating less than a third of the households have an income over \$25,000.
- One-person households are evenly split between male and female; however, there is a 4.2:1 ratio between female householder with no husband and male householder with no wife.
- Forty-three percent of the population does not have a high school diploma. This ranks the Fifth Ward as 9th from the bottom of all Houston Super Neighborhoods for percent of persons with less than a high school diploma.
- The infant mortality rate of 12.1 is nearly double that of Houston's average of 6.5.
- Aggravated Assault, Burglary, Auto Theft, and Narcotic Drug Laws are the cause of the majority of Arrests in the Fifth Ward.
- The elderly account for 12% of the Fifth Ward's population, which is higher than the city's percentage, and there are nearly twice as many elderly females as there are elderly men.



Map 1 The Fifth Ward of Houston

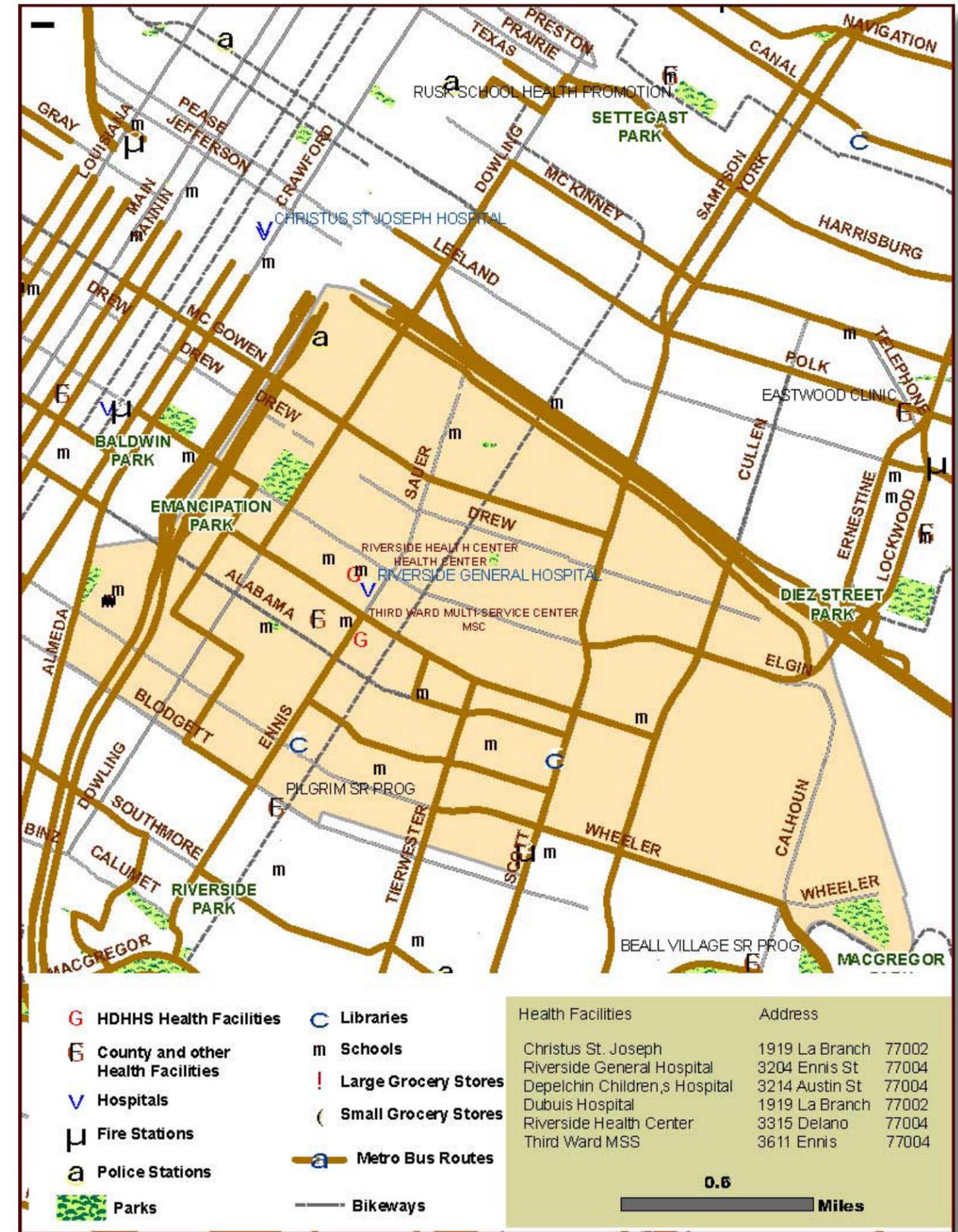
Map source: The City of Houston

Third Ward

The Third Ward is a Super Neighborhood located inside the 610 Loop, southeast of Downtown Houston. Historically, the Third Ward has been a predominately African American neighborhood, with some Hispanic presence. The Third Ward contains many institutions that are vital to the African American community in Houston, including Texas Southern University and many churches. Since the 1950s, neighborhood income in the Third Ward has not kept up with income in Houston and has caused a decline in both commercial and real estate development in the area. Some recent revitalization efforts have been occurring in the southern and western areas of the Third Ward.

Key Social/Demographic Information:

- The population is 15,463, with 79% African American and 10% Hispanic, establishing the Third Ward as one of the hearts of the African American community in Houston.
- It contains approximately half of Houston's student residents who are housed in college dormitories, due to the presence of Texas Southern University and the proximity of the University of Houston.
- One-person households are evenly split between male and female; however, there is a 4.6:1 ratio between female householder with no husband and male householder with no wife.
- Twenty-three percent of the Third Ward's population has not received a high school diploma.
- With 63% of the Third Ward's population with a household income of below \$25,000, 38% of the population lives below the poverty line.
- The elderly compose approximately 11% of the Third Ward's population.



Map 2 The Third Ward of Houston

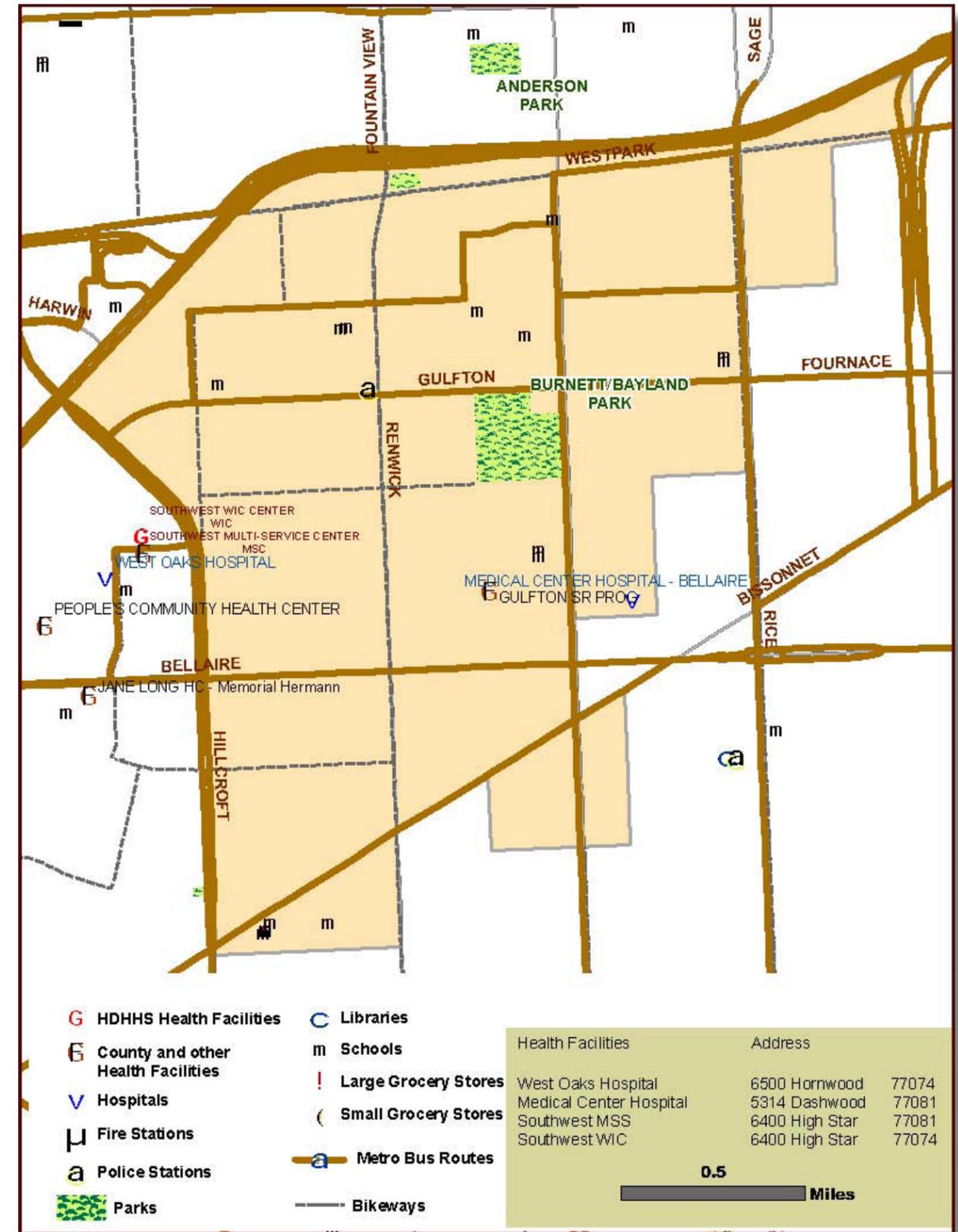
Map source: The City of Houston

Gulfton

Gulfton is located in southwest Houston, just south of the intersection of Highway 59 and the 610 Loop. Early in the 20th century, the area was a rural subdivision called Westmoreland Farms. It was purchased for airport land in the 1940s and was sold again to a developer about fourteen years later. At this time, the rural-style, wide-spaced land setup made the building of sprawling apartment complexes possible. These complexes dominate Gulfton today, although there are a few single-family homes as well. In the 1980s, as the economy fell into a recession due to the lack of oil availability, rent in Gulfton became cheaper, prompting Mexican and Latin American immigrants to settle there. Today, Gulfton is the highest populated area of Houston and the most diverse.

Demographic Information

- Hispanics make up 74.2% of the area, compared with 37.4% in the city of Houston. Non-Hispanic whites comprise 10.8% of the population, which is 46,369.
- Hispanics make up the largest group with a high school education, with white alone as the second largest group. White alone has a slightly higher proportion than Hispanics of those with some college education but no degree.
- The ratio of males to females is 1.21:1.
- Of all institutionalized residents, none are in correctional institutions, nor in nursing homes, which is unusual overall for the city. Among non-institutionalized residents, none are in college dorms or military housing. In Houston, about 30% are in college dorms.
- Of one-person households, there are a higher proportion of male-only households than female. In Houston, by contrast, male-only households are slightly less common than female ones.
- The most populous age bracket among families is 25-34 years, unlike the rest of Houston, where 35-44 years is the most common age group.
- Households with one or more people of 65+ years make up 17% of Houston, but comprise only 5% of households in Gulfton.
- Thirty-eight percent of families have an income of \$10,000-24,999, with 32% making slightly more \$25,000-49,999. Asians have the highest median family income, but non-Hispanic whites' per capita income significantly surpasses theirs.
- Hispanics comprise 82% of individuals living in poverty.



Map 3 The Gulfton Community of Houston

Map source: The City of Houston

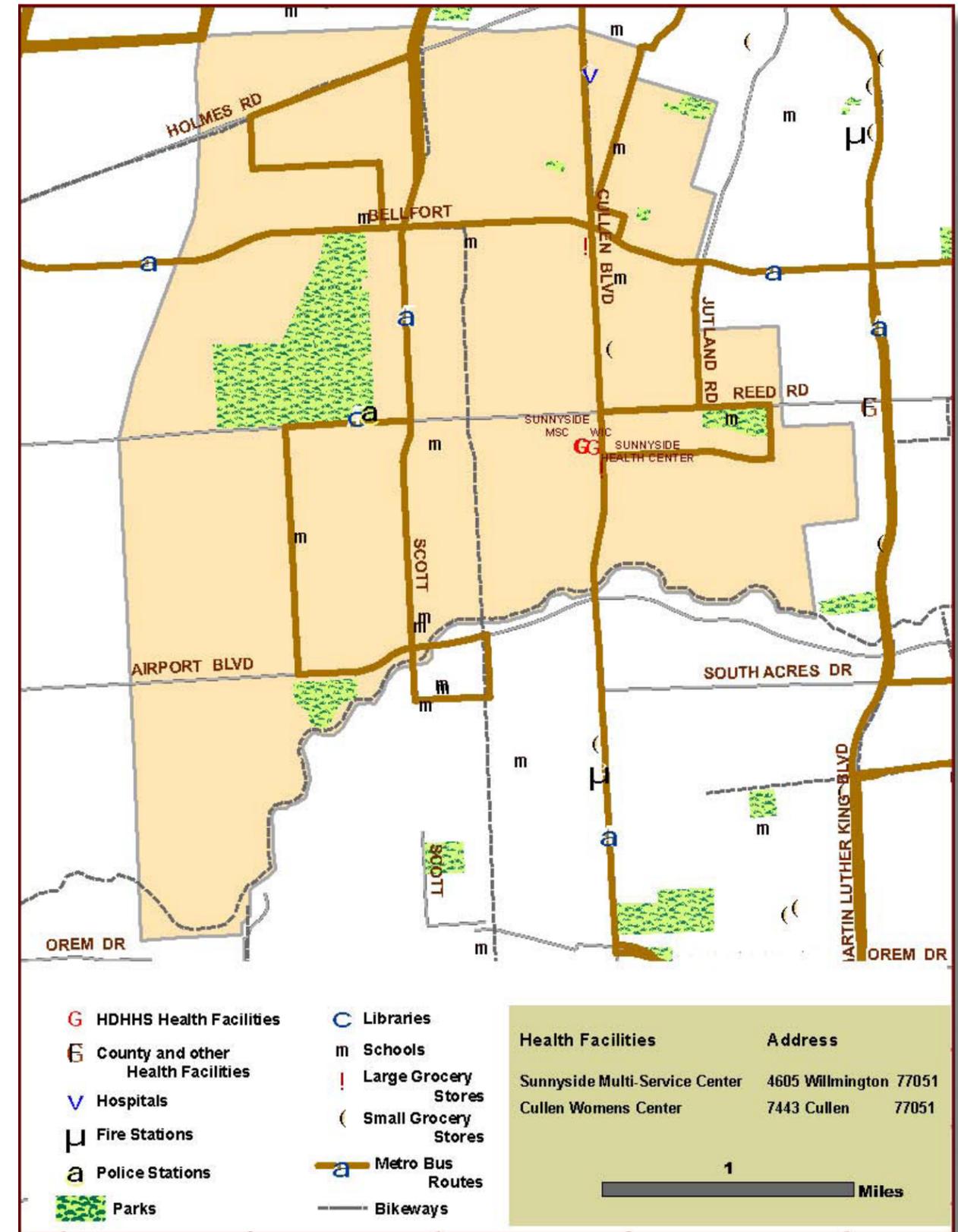


Sunnyside

Located in South Houston, Sunnyside forms the southeast corner of the intersection of Highway 288 and the 610 Loop. It is the oldest African-American community in this area of Houston. The face of the neighborhood generally consists of frame homes and churches, which were originally part of the neighborhood, and more-recently built tract homes. Land use in Sunnyside has been in part for trash disposal purposes, as shown by a huge landfill in central Sunnyside. Since at least 2007, drug dealing, especially PCP, has been a problem in the area. Sunnyside has also been one of the target neighborhoods for a city effort to spread awareness about STD's due to a 2007 syphilis outbreak in Houston. Recent developments, such as a health center on Cullen and the rebuilding of drug dealing houses into homes on Knox St., have improved the neighborhood.

Demographic Information

- Non-Hispanic Blacks make up 93.4% of the 18,629 population within this area, compared with 25% in Houston. The second most populous group is Hispanics, at only 3%, compared to 37.4% in the city
- The ratio of males to females is 1:1.2.
- Of institutionalized residents, all are in nursing homes. Of non-institutionalized residents, all are in quarters other than military housing or college dorms.
- Of family households, 37.5% are married couples and 62.4% are not, whereas the numbers are almost reversed for the city. The ratio of families to non-families is more than double that of Houston. The ratio of male householder with no wife to female householder with no husband is 1:6.4.
- Households with residents over the age of 65 are 37.9% of households, compared with 17% in Houston.
- Most of the yearly family income is evenly split between <\$10,000, \$10,000-24,999, and \$25,000-49,999 brackets. The second bracket is the most common by a small margin.
- Blacks account for 93% of individuals living below the poverty line. However, overall non-Hispanic whites seem to have the lowest family and per capita income.



Map 4 The Sunnyside Community of Houston

Map source: The City of Houston

Community-Based Participatory Research (CBPR)

Investigating the levels of awareness, preparedness and resiliency of disadvantaged populations provides an opportunity to develop tailored emergency preparedness strategies and proper support systems prior to the occurrence of a PH emergency. HDHHS of The City of Houston and SLEHC CE:CBR appreciate the importance of information gathering within specific cultural and demographic contexts. In investigating perceived vulnerability to potential PH threats, and understanding of resources, outcomes are likely to take on different meaning for each of the population subgroups identified above. Qualitative methodology offers the best option for exploring and articulating local knowledge and is the basis of this study. SLEHC has acquired rich experience in conducting participatory community-based research in underserved communities and has built a reputation by involving the community in these processes.

Community-Based Participatory Research (CBPR) refers to an approach to qualitative research in which members of the community assume a primary role in determining the health concerns, priorities, and assets found in their communities. A variety of methods are possible under this approach, and they all share an adherence to basic principles of equality, respect, and shared benefits between community members engaged in the research, and academically prepared or other professional members of the team.

As mentioned above, based on the scope of this study, SLEHC trained 13 residents, most from the target neighborhoods, to facilitate special focus groups and to gather

Sampling

The COH's aim was to ensure that the most vulnerable population groups residing within the four target neighborhoods would be included in the assessment. The City requested that the following groups be included:

qualitative data, in a method first developed by Denise Caudill, PhD, and later modified by researchers at SLEHC. In this assessment the locally trained facilitators brought 13 focus groups with an average of nine individuals per group together. Each facilitator was assisted by a trained co-facilitator and each group had two trained note-takers who were responsible for data collection, which included capturing specific information, recording discussions and vote tallies, and keeping all other records for each focus group. These notes and records collectively comprise the raw data that is then examined, categorized, analyzed, and interpreted by staff of SLEHC and some members of the community facilitators' team. Following the focus groups, data was compiled and summarized for this report. Ideally, the community facilitators' team would be part of the dissemination plan, as well.

Every effort was made to adhere to the matrix of indicators that the COH specified for the sample. Priority, however, was given to vulnerable groups identified by local facilitators who were most familiar with the specific neighborhoods. Therefore, groups of blind individuals and homeless persons were added to the original indicator list. Response to recruitment by a person known and trusted in the community was effective and energetic. Community members were eager to participate and expressed gratitude for the opportunity to have their voice heard.

Approval for this investigative process was received from the Institutional Review Board (IRB) of St. Luke's Episcopal Health System, following an application for expedited review.

The study was able to capture the desired mix of population as specified by the COH, as well as attend to the recommendations of the community-trained facilitators who wanted to include vulnerable groups such as the homeless and the vision-impaired.

Table 1.2 Matrix of Population Subgroups as Identified by COH

Older Hispanics (any race)	Older non Hispanic Blacks	Older non Hispanic Whites
Older Asians & Others	Adults living below poverty	Adults living with disability/with care giver
Undocumented immigrants	Isolated adults due to linguistic or other barriers	Refugees

Table 1.3 The Composition of the Focus Groups and Locations

Sunnyside	Gulfton	5 th Ward	3 rd Ward & others
Mothers (South Central FQHC)	Immigrant women (ECHOS)	Seniors (Payne Chapel)	Homeless (Bread of Life)
Seniors Group I (Sunnyside Park)	Immigrant women (Barnett-Bayland Park)	Mothers (5 th Ward Missionary Baptist Church)	Mothers (3 rd Ward MSC)
Seniors Group II (Sunnyside Park)	Refugee women (Alliance for Multicultural Services)	Seniors (Pleasant Hill)	Vision Impaired (City wide held at The Lighthouse)
			Disabled (City wide held at Houston Center for Independent Living)

The first critical step in using a Community-Based Participatory Research (CBPR) approach is to find, train, and engage individuals who can serve as facilitators and note-takers. As both members of the community and co-investigators, they helped in recruitment and in assembling the focus groups within each neighborhood. The facilitators were able to establish trust quickly among the members of the community and were effective in eliciting discussion and participation in focus groups' activities. Their deep commitment to the project, and their desire to bring the voices of the most vulnerable people to the foreground, was their motivation in insisting that we include groups of people who were homeless and vision impaired.

Appendix E describes demographic indicators from the focus groups and demonstrates the diversity of the sample that participated in this study. A generic intake sheet was completed by each participant. The 119 participants in this

study represented vulnerable populations as residents of specific neighborhoods. Population sub-groups that were represented in this study included people who live at or well below poverty level, such as mothers, homeless, immigrants, and refugees. Most of the participants (85%) reported an annual income of less than \$30,000. Twenty-four percent of the participants were male and 76% were female. The ages of the participants ranged from under 20 years old to over 80 years old. The race/ethnicity of the participants was as follows: 69% were African American, 17% Hispanic, 9% White, Non-Hispanic and 5% Asian. Regarding primary language spoken by the participants, 83% spoke English, 13% spoke Spanish and 3% spoke other. Only 34% of the participants were employed, with 44% having a high school diploma/GED, 17% having some college and/or attending a trade school and 17% graduating from college. Seventy-nine percent of the participants were born in the United States and 21% were foreign-born.

Estimated Federal Poverty Levels (FPL) among Focus Groups Participants*

A key indicator of vulnerability is poverty. As noted above, the economic well-being was generally low for the sample of focus group participants. Of all groups, seniors, mothers, homeless, immigrants and refugees reported conditions at or below the federal poverty level, generally with incomes around \$10,000 a year. The blind and disabled groups reported only slightly greater economic levels. It should be noted that this data may only serve as a guide, due to the self-reported nature of the source information.*

* Important Notes:

1. Percent of poverty as presented here is calculated using the federal calculator for each person on the basis of self-reported annual income category, and the number of adults and children in the household.
2. Federal Poverty level for the group was determined by computing the median within the group. The method, therefore is a representation of the general condition of the group.
3. Not all participants completed the questionnaire, which asked for income, household members, and zip codes; missing data was excluded from calculations.
4. According to the 2007 Federal Guidelines, at 100 percent of poverty one individual has an annual income of \$10,210, while a family of 4 has an annual income of \$20,670.

Table 2.1 Poverty Level by Target Neighborhood

Neighborhood	Population	Average FPL
5th Ward	Seniors (Group 1)	70
	Seniors (Group 4)	146
Sunnyside	Seniors (Group 2)	140
	Mothers (Group 3)	27
3rd Ward	Mothers (Group 8)	61
	Homeless (Group 6)	56
Gulfton	Immigrants (Group 5)	74
	Immigrants (Group 9)	27
	Refugees (Group 10)	33
City Wide	Blind (Group 11)	203
	Blind (Group 12)	203
	Blind (Group 13)	146
City Wide	Disabled (Group 7)	203

Calculation source:

<http://www.safetyweb.org/resources/misc/fplcalc.asp>



ANALYSIS

Narrative data from all 13 of the focus groups was collected, transcribed and prepared for analysis by note-takers. Research staff, as well as a group of the facilitators, who are members of the target community, performed an initial level of analysis. Following the initial categorical analysis, data was aggregated by population sub-groups and by neighborhoods in order to examine the relationships and common themes that may exist.

Discussion in all groups revolved around the following four key questions:

1. What is an emergency or disaster?
2. What did you do in an emergency?
3. What worked?
4. What did not work?

Each group's discussion evolved in ways that reflected the group's composition, individual and community experiences, and facilitator skills. Although each group is unique, they shared some expressions and concerns. The findings below represent one way to display a summary of the data, by population sub-groups and by neighborhoods. A more complete listing of responses can be found in the Appendix under the heading "Responses to Focus Group Questions." The following is an overview of aggregated findings about the issues that groups expressed in response to the issues raised.

Emergencies and Disasters

Table 3.1 demonstrates that common themes of understanding of what constitutes emergencies are based on personal experiences. Vulnerable populations, by their very definition, live in emergency situations, daily, so this is what they talk about first—inability to pay the bill collector, having your power turned off, substandard housing, gunshots outside your front door, the filth in your own neighborhood, the indifference of the police. Also, more immediate situations of personal loss, illness, and isolation claim their attention. One woman's daughter had been shot while driving on the freeway; another woman had had emergency surgery. Many of them hardly feel able to be prepared for their own lives, much less a public emergency. As one young mother said, "Having a baby is an emergency!" The rest of her group agreed with her. One individual in the seniors group described a disaster as, "when you don't have what you need and you don't know where to go." In general, events that cause major dislocation of life's normal flow are considered by the participants as an emergency. Before being able to discuss hurricanes, tornadoes and floods, participants quickly expressed their own personal definitions of a disaster.

Neighborhood characteristics, as well as individual life experiences, are apparent in the definition of what

constitutes an emergency. Seniors included the death of family members or not being able to pay rent as an emergency, while mothers considered their children's illnesses to be an emergency. Women and immigrants talked about violence and sexual abuse as an emergency, but no other group did. Others also discussed crime and the lack of safety due to gangs and drugs within the community. For the homeless, who live in a perpetual state of emergency (by their own definition), variations in temperature can be a serious source of distress, and while they learn to rely on their own abilities to survive, they expressed vulnerability, felt forgotten, and had distress about being separated from their peers during evacuation.

Vulnerability is also expressed through the definition of an emergency, as the disabled population notes. For example, losing electrical power can be a serious matter for those dependent on mechanical means for life and mobility. Additionally, for the disabled who cannot get their medication, they considered that to be an emergency. For those with a loss of vision, threats from a violent external world are considered an emergency, as well as not knowing where the sidewalks are located.

Actions Taken and Success

There is no discernable pattern related to neighborhood or even population group when it comes to actions taken during emergencies or disasters. Most likely, this represents the fact that many factors contribute to the decisions regarding action. Some people left home, others stayed. Some spent time with family members, others opened their homes to neighbors, some admitted to being panic-stricken or at a loss to do anything except to simply pray. A common theme, however, for most groups, was that they turn first to family—e.g., immigrant women said they would ask their husbands first to determine if a situation was an emergency; African American participants said family resources (such as money, housing availability, transportation options) determine their actions first, as well as their own responsibility for children and elderly family members, and then their neighbors' resources (who still has power, who has a car, who will take them in).

There is a good deal more agreement on what works in the event of emergency. Participants in all groups talked about the value of being prepared, knowing what to do ahead of time, organizing medications, food, water, and important documents, and gathering family. Most, however, felt unable to be prepared, primarily because they were unable to have cash on hand (e.g., one group laughed at the idea of having the suggested \$500 on hand for evacuation) or caches of

food or water standing by when they were struggling with having enough food to regularly feed their families. While everyone talked about the importance of getting the latest information, the homeless, seniors and vision impaired groups also noted that past experience taught them that information in the media came too late for them. With the recent evacuation difficulties with Katrina/Rita still fresh

in their minds, they were unsure whether they could trust city plans for evacuation. Refugees, because of their recent orientation sessions, believe calling 9-1-1 is the first solution to any emergency; they are unaware of other options. Some, however, agreed that calling was not helpful in some cases. Several said they did not know what a hurricane was and so were unsure what would work.

Table 3.1 Common Themes Among Discussion Topics

Population group	Emergency	What they did	What worked	What didn't work
Seniors	Fire, floods, hurricane, no supplies, not knowing where to go, not having rent money, death of family, serious illness, falling	Stayed home, left home, took in people, prayed, went to hospital, called police, called 2-1-1	Pay attention to media, contact neighbors, follow rules, stay alert, wait for help, use common sense	Not having plan, no gas for car, no water, car breakdown, low income, couldn't get information, evacuation disorganization
Mothers/women	Hurricanes, and severe weather, child illness, apartment break-ins, sexual assault, unsafe community (drugs, crime)	Got scared, prayed, called 9-1-1, moved, stayed with family	Stay prepared, stay informed, keep medication list, keep critical phone numbers, get together with neighbors, learn what to do (education) stay calm, report abuse	Calling 9-1-1, panic
Immigrants	Domestic violence, sudden illness, missing people, fire, accident, separation from family, deportation, evacuation	Stayed home, didn't know what to do, got together with family, got together with neighbor, called 9-1-1 (for fire)	Being prepared, having transportation ready, know first aid, have phone numbers, listen to media	Not being prepared, no food or gas, no medication for children, not asking for help, not knowing where you are going before you leave, nerves, not speaking English
Refugees	Floods and heavy rain, sick people needing CPR, choking, robbery, fire, someone entering the house by force, fighting	Called 9-1-1, called refugee assistance program, went to hospital, took people away from fire	Food stamps, churches help, schools, laws that protect women, stay at home, buy dry food, call 9-1-1, go someplace nearby	Need information at all bus stations
Disabled	Having alert announced, Hurricane bigger than cat. 1, when I am in danger, fire, when there's no help, falling	Evacuated, called a friend, got out of danger, collaborated with neighbor, called 2-1-1 for transportation	Call family, bring own medication, have travel list and people to stay with, plan	City needs to have a designated place with high ground for disabled, have preparedness drills, track disabled
Homeless	Storms, war, natural disaster, temperature, bio-terrorism, constant state of emergency, racism, no address, no one looking for us	Sheltered, evacuated to a shelter, weathered it out, stayed under the bridge, stayed with family	News coverage helped get attention, camaraderie, looking out for others, stay in shelter	Being scattered all over Houston, nobody checked on us, panic, poor planning, food shortage, facilities too far, not getting weather information, unable to buy food, gas or hotel
Blind/Vision impaired	Fire, hurricane, floods, break-in, rapes and murder, crime, losing vision, house break-ins, epidemics, when phone is out	Was stranded in flooded area, called 9-1-1, planned evacuation	Planning, gather food, money, and supplies, knowing the city well, staying calm, had full tank of gas and water	Need more time to do things, all evacuation routes were packed, waiting for others to make decision, waiting for media advisory, 9-1-1 put you on hold

Participants' Recommendations to Improve City in Preparedness

In all groups the participants had messages for the COH. Some were motivated by frustration, but many suggestions were based on specific experiences with the intention of

helping to address the issues that caused barriers for them in the past.

Table 3.2 Recommendations

Mothers/Women	Don't wait until the last minute to inform, provide hurricane packets, allow pets in shelters, share information/disseminate
Disabled	Specialized shelters, appropriate housing, panic buttons, assure mobility, assist deaf in getting emergency messages (communication plan), provide medications in shelters,
Immigrants	Emergency bags would help, canned food, better media information, education about emergency, better transportation
Seniors	More meetings like this with city officials, plan a route for evacuation, keep drains clean, more efforts like 2-1-1 and 3-1-1, build beltway, CERT training, more cooperation from police, battery operated radios, media accuracy
Refugees	Have schedules and list of all stops on the bus route, need help knowing how to find a close clinic
Blind	Better escape routes, registration for transportation by phone, one number to call for specific disability, better alerts, including audio alerts on the T.V., better communication specific to disability, fix streets, sidewalks and ditches, better technology to alert disabled
Homeless	Alert system, help them to achieve the "American Dream," greater awareness of homelessness, communication about shelters

Findings by Neighborhoods

Due to the limited sampling within each neighborhood for this study, caution is advised regarding conclusions drawn about geographically based needs or characteristics. Examination of the data by neighborhood reveals that there are more similarities within population groups than within neighborhoods. Thus, elders have very different perceptions and needs from mothers, even if they live in the same neighborhood, such as the Fifth Ward or in Sunnyside.

Add paragraph here about how they get information: There are exceptions to this observation, however. For example, most participants identified the media as the common source for information on disasters. Mothers, seniors, immigrants, even the homeless referred to their reliance on media sources for information on how, when, and where to direct their response to impending disasters. Staying informed through the media was repeatedly mentioned under the "what worked" category of discussion. Participants also mentioned their concerns about media coverage, questioning media accuracy and the timeliness of messages. The visually impaired asked for audio alerts in addition to the visual alerts given at the bottom of television screens. The homeless asked for a meeting with a city representative through existing shelters and support agencies

and informational flyers they could distribute themselves. Newer immigrants and refugees would benefit from information in their languages, which could be distributed by existing support agencies. However, it remained clear that population groups across neighborhoods consistently relied on the media as their primary source of information. Family, friends, church leaders, or other more personal contacts might help determine their disaster response, but media information was an important part of what they ultimately decided. They essentially identified ways to improve existing communication strategies so that they could access information that was less generically geared to the mainstream population and at least somewhat modified to include information specifically geared to their particular population.

The exception to this observation, however, is in the lessons drawn from the experiences of recent hurricanes and floods. Some neighborhoods were severely affected by flooding, while others were not. Those who experienced evacuation during Hurricane Rita appeared to come from all neighborhoods and all subgroups, except the newly arrived refugees. They reported lessons for future action that were mixed, and were based on the stress they experienced.

In neighborhoods where vulnerable individuals live in larger numbers, the data suggests, there is a greater demand for attention to specialized needs. For example, seniors, the disabled, and mothers with young children have all articulated requests for development of neighborhood shelters that provide medication, food, and equipment connection (power wheelchair, etc). Of the targeted neighborhoods in this study, Sunnyside and the Fifth and Third Wards have such concentrations of vulnerability.

OBSERVATIONS : Answering The Questions

Based on the study's findings, the observations that were made by the researchers and the trained facilitators will be organized so as to address the questions posed by the COH, as follows:

1. *What is the awareness of the 15 Centers for Disease Control and Prevention-defined public health (PH) emergencies and of a need for a plan for safety and response to each?*

There is minimal awareness of most of the conditions that constitute a PH emergency list. Most people are aware of flooding due to hurricanes, and the destructive effects of tornadoes, but their definitions of emergencies tended to be personal and based on their individual observations and experiences. The potential threat to the larger community was rarely a conscious awareness by most participants. This is in part due to the disadvantageous conditions affecting the participants or target populations, such as poverty, food insecurity, and personal safety. For many of the participants, their daily existence constitutes an emergency; it is also unlikely that they have the luxury of planning ahead for a potential emergency much less a known emergency such as an approaching storm. People who were directly affected by Hurricane Katrina were more aware than most about the larger impact of a disaster.

Participants cited the need to become more aware, organize their papers and prepare emergency supplies. Their knowledge of how to go about this organization, or the next steps to be followed, was uneven across the groups. Katrina-experienced individuals were knowledgeable, while newly arrived refugees were unaware of what action to take, with the exception that they should call 9-1-1 with any emergency.

2. *Knowledge of expected behavior in response to any one of the emergencies was largely based on personal experience or direct observation.*

While people noted that they depend on the media to alert them to an emergency, they also reported that they have not felt secure with the information they

Gulfton, on the other hand, has a need for attention to linguistically isolated populations of both immigrants and refugees. Some members of these groups expressed a great deal of stress involved in learning to live in the city, and while they may have survived wars and other atrocities in their home countries, they had no idea about the need to prepare for floods, loss of power, or some of the other PH emergencies that were cited by the COH.

have received, and at times made decisions contrary to recommendations. The homeless and some of those with vision impairment appear to have strong needs for communication alerts, and to help them connect with other people who may understand their specific needs. Those who are not fluent in English would benefit from a trusted public source of information in their own language to reduce confusion and anxiety.

No one was discussing bioterrorism, epidemics, or any of the other public health emergencies, and what response they may possibly develop. One or two mentioned having a family member experience a toxic waste situation. While there is an understandable desire to reduce anxiety about the potential for such events, perhaps local discussion groups – by population group – may generate some interest in developing local plans in each neighborhood, that are coordinated at the level of the DHHS. We recommend the employment of local neighborhood participants for these and other similar tasks of knowledge translation and information sharing.

3. *Identification of barriers (perceived and actual) to proper action taken by members of the community was based on the individuals' own experience of surviving Hurricanes Rita and Katrina. Some have said they would evacuate again. Their traumatic experiences in leaving the area when traffic flow, transportation, gas, and food were inadequate to manage timely departures are a barrier that must be overcome. The COH efforts to address these barriers can be made more transparent and involve community members who will advocate more effectively for changed behaviors with their peers.*

Barriers to communication were identified as well. As mentioned above, specific populations experienced specific barriers: the visually impaired wanted disaster alerts given orally on television, rather than just through a visual crawl; handicapped wanted information on shelters equipped to deal with their needs (e.g., generators to keep their respirators running, personnel

trained in working with the handicapped); new immigrants and refugees would prefer alerts in their language, distributed through social service agencies they already know and trust; seniors were appreciative of existing efforts (e.g., CERT training, media alerts, 211) and suggested they could be better publicized; homeless wanted a targeted update, provided through the shelters and agencies they trust; young mothers wanted information, disaster packets, and disaster-related resources made more readily available to them through the agencies they know and trust

4. *Identification of internal and external (perceived and actual) resources to deal with the PH emergency were evaluated.* Most participants in the focus groups were capable and self-reliant. Despite suffering from disability, poverty, and other barriers, most participants are able to plan and modify their lives to deal with potential threat. They need good and timely information and some need technological advances to help them with communication. Many participants talked about the value of remaining calm, trusting in God, and relying on family and friends as well as neighbors as their secondary resources. Churches and other faith-based providers were repeatedly noted as trusted resources by the participants. Participants felt comforted by their faith practices and by information and services received at churches and places of worship. In general, however, people did not seem to rely on public sources, agencies or organizations in times of emergency or disaster with the exception of some of the seniors and disabled individuals.

About half of the participants knew about the 2-1-1 resources, although some confused it with 3-1-1. Nearly everyone knew about 9-1-1 in case of emergency, and among the refugees, it was the single most frequently cited resource. Of all groups, those who were homeless discussed self-reliance in times of emergency as a matter of necessity most frequently. Individuals with disabilities, however, were keenly aware of their dependence on external resources for safety and survival at times of emergency.

5. *Exploration of trusted information pathways currently in use, or potentially developed for specific groups within the targeted communities and the methods by which information is to be transmitted.* There is not a single way that people reported getting information. Some relied on T.V. and radio in their language, while others read the paper. Some people checked the web regularly for weather and other information. Not all preferred sources of information are local. Further, the information people will need will depend largely on their abilities and needs, therefore, information pathways should be developed along parallel lines to fit the needs of multiple population subgroups.

6. *How is the community assessing its risk and vulnerability to PH emergencies?* Based on this very small sample, it can be said that the only emergency that people are aware of and prepared to deal with is a weather-related event. No other discussion took place on any of the other potential threats, with very few exceptions. Therefore, the first order of development should include a campaign to raise awareness of other threats and the common and different ways that each dictates a public response.

Generally, this study highlighted the similarity that populations groups have to one another across neighborhoods. Seniors in Sunnyside and the Fifth and Third Wards, for example, have more common needs for emergency preparedness, than with other groups, such as individuals who are disabled.

Study Limitations

This assessment provides a small snapshot of the conditions of vulnerable populations in four neighborhoods in Houston and among the homeless and vision-impaired groups. This study was completed in about six weeks, a period inadequate for a deep or more complete understanding of the conditions that exist among the most vulnerable of Houston's residents.

Only a small number of participants were included (n=119) which does not represent the diversity of the groups with needs for special consideration in cases of disaster. Absent from this assessment are groups of Latino men, and Anglos who are poor and older. No subpopulation of low-income Asians took part in the study primarily because they are not represented in significant numbers even among minority groups in the target neighborhoods.

Resources to help participants prepare for emergencies include: better communication, educational materials, lists to help prepare for evacuation and more detailed transportation information. While some of the City's emergency preparedness information was provided at the time of the focus groups, more information could be disseminated to the participants as they shared their knowledge. Participants wanted information to be available in Spanish, Urdu, Arabic, and other languages, as well. Many knew of the existence of emergency preparation packs or kits and wondered if the City could make them more readily available to communities.

As mentioned earlier, the facilitators were selected from the targeted neighborhoods. This is a critical component to the study design and the findings. They served in a very important role since they recruited appropriate focus group participants. Their selection was remarkable and instructive. The community facilitators not only enlisted the focus

groups, they also learned facilitation and note-taking skills, and participated in the analysis. The community facilitators felt empowered to help vulnerable participants have their voice heard by the City. Not only were the facilitators

paid for their work, but also they now have a new skill set. Their enthusiasm and their commitment to better the community served as a great example of what is possible.



Recommendations

There are twelve primary recommendations regarding planning, the media, transportation and information. These recommendations call for the establishment or development of the following:

Planning

1. A task force of community residents representing vulnerable populations who can best advise on the planning and development of useful mechanisms for information and assistance.
2. Coordinated action plans with local churches, other places of worship, schools, community centers, and neighborhood groups.
3. Plans that are neighborhood specific, including locations for staged evacuation, that also include the specialized needs of subgroups in the neighborhood.
4. Plans that acknowledge and recognize the fear of residents about being left behind in case of evacuation.
5. Plans that address the common fears of running out of water, food, medications, and other basic necessities.

Media

6. A rich multilingual educational outreach using video and other means of blending personal experience with recommended courses of actions, especially for people who are new to Houston.
7. Consistent use of media-based information that will deliver the same messages regarding the emergency and the recommended actions through foreign language television stations, radio stations, and newspapers.
8. Media information that is useful and accessible to all vulnerable populations, including the disabled, the deaf and the blind.

Transportation

9. Clear and well-marked transportation-related information and action plans since City buses and Metrolift are a lifeline for most of Houston's vulnerable populations.

Information

10. A neighborhood-based resource database identifying specific information that is appropriate to the needs of local, vulnerable population groups.
11. A way to disseminate shared information on Safety Net health clinics and other health resources close to the community, such as the SLEHC Project Safety Net web site, www.projectsafetynet.net.
12. Public health emergency referral when someone calls 9-1-1.

APPENDIX A

Public Health and Disaster Preparedness Survey of Vulnerable Populations in Houston

Qualitative Assessment

General Scope (partial document)

The City of Houston Department of Health and Human Services (HDHHS) is interested in assessing the levels of awareness of, preparedness for, and ability to recover from public health emergencies and natural disasters among particularly disadvantaged population groups. The purpose of this assessment is to acquire sufficiently detailed information on the areas of need in these vulnerable groups in order to develop appropriate emergency preparedness marketing strategies and to foster appropriate support systems to address those needs in advance of an emergency.

HDHHS will identify four geographic areas of need defined as having high concentrations of older adults (60+ years), disabled persons of any age, populations reported as linguistically isolated, and persons living at and/or below the federal poverty level.

The Contractor will conduct assessments of emergency public health and disaster preparedness in the targeted geographic areas during the contractual period. The assessments will cover the following domains of interest:

- Awareness of 15 CDC-defined public health emergencies
- Awareness of a need for a plan for safety and response
- Determination of what residents would expect to do in the event of a public health emergency or natural disaster
- Group-specific barriers to preparation for, and response to, emergencies
- Group-specific resources available to support the recovery process after a public health emergency or natural disaster
- Group-specific communication pathways and preferences for receiving information (best communication methods in the event of an emergency, most and least trusted individuals or entities to deliver information, whom the group would contact to confirm information or ask questions, and the preferred way(s) in which information should be presented).
- The assessments will be conducted by way of multiple focus groups having the following characteristics:
 - Older adults (60+ years of age) interviewed in at least 3 racially/ethnically or nationality-specific groups, as applicable and appropriate for the targeted area (for example, non-Hispanic Black, non-Hispanic White, Hispanic [any race], Asian, etc.)
 - Adults of any age/race/sex/ethnicity living at or below the poverty level
 - Adults of any age/race/sex/ethnicity who live with a disability and/or the principal care givers of such persons who are *not institutionalized* (disability = blind, deaf, wheelchair-bound, bedridden, mentally disabled, etc.)
 - Groups at risk of, or experiencing linguistic isolation (especially new immigrant households, and undocumented immigrants)
- At least one (1) focus group for each of these population types must be organized in each of the four (4) targeted geographic clusters (that is, ~6 focus groups x 4 clusters = 12 focus groups).
- The Contractor will identify persons/groups/institutions in leadership roles in the targeted areas that have the capacity to collaborate with HDHHS in the effective transmission of public health preparedness messages to the groups addressed by this study.

The Contractor will perform and complete qualitative analysis of all focus group interview data collected during the project period to meet the deliverables for this project.

APPENDIX B

Idaho's Plan to Work with Preparing Vulnerable Populations

Template for District Health Department (DHD) Health Preparedness Coordination with Populations with Special Needs in Idaho

Scope of Work II.F.2.

Contract activity: The DHD will identify representatives of populations with special needs and document activities that could be implemented to communicate with and provide prophylaxis and/or treatment to special populations that include, but are not limited to, people with disabilities, people with serious mental illness, minority groups, the non-English speaking, children, the homeless, and the elderly.

Indicator of completion: Complete coordination with special needs population template (to be provided at the annual IDHW Health Preparedness Program meeting during Fall 2004).

Note: Each DHD will be required to fill this survey out twice for the reporting periods ending 11/30/04 and 08/30/05. The second time each DHD will be asked to fill this out (for the reporting period ending 08/30/05) the DHD will only need to provide updated information to what was submitted for the reporting period ending 11/30/04.

Background

The guidance for the Centers for Disease Control and Prevention (CDC) and Health Resources and Services Administration (HRSA) Cooperative Agreements on Health Preparedness and Response to Bioterrorism includes the directive to coordinate preparedness planning with populations with special needs. Both the Idaho Department of Health and Welfare (IDHW) and District Health Departments (DHDs) are being asked to include populations with special needs in the preparedness planning and implementation process. Populations with special needs have been identified as: people with disabilities, homeless, children, frail elderly, non-English speaking, minority groups (as identified in the 2000 census), people with severe mental illness, and individuals that are incarcerated.

Objective

To accomplish the goal of meeting the needs of populations with special needs in Idaho, the Health Preparedness Program developed a survey that the DHD will use to gather information on the identified special needs populations. The questions have been formulated to identify the following:

- the agencies working with populations with special needs,
- preferred communication methods,
- potential barriers to communicating effectively, and
- unique preparedness planning issues.

Instructions

For each special needs population, please complete section "A" once. Complete Sections "B"- "D" for each agency in your district that works primarily with and/or represents this special needs population (i.e., if there are two such agencies in your district that work primarily with and/or represent a particular special needs population, you will need to fill these sections ["B"- "D"] out twice.). Certain survey questions may require input from the agency working with the special needs population.

DHD Health Preparedness Coordination with Populations with Special Needs in Idaho
Version 9/26/2004

APPENDIX C

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APPENDIX D.

Aggregated Data from Focus Group Questions

Aggregated comments made by members of all 13 focus groups are organized by question, as follow:

- a. How do you define emergency or public health disaster?
 - b. What did you do in disaster or emergency?
 - c. What worked?
 - d. What did not work?
1. **MOTHERS AND WOMEN** - In the Third Ward and Fifth Ward, as well as Sunnyside, young women or mothers were gathered in focus groups and offered the following responses:
- a. Definition of Emergency? Their initial responses were of large weather disasters:
 - Hurricane
 - Tornado
 - Flood
 - Fire
 - Evacuation
 - Gun Shot
 - Illnesses and Accidents
 - Car Accident
 - Heart Attack
 - Having a Baby

Following reflection, women began to include other causes of emergencies that were typically found in their closer environment and daily lives:

- Gangs
 - Filth
 - Lack of Protection
 - Drugs
 - Child Neglect
 - Sexual Assault and Abuse
 - Murder
 - Teen Pregnancy
 - No Phone Services
 - Disease Outbreak (Meningitis, Food Poisoning, Pink Eye, Skin Diseases)
 - Being Laid off
 - Not paying Bills on Time
 - No Food
- b. What they did in case of emergency? Their responses included:
 - Got Scared

- Got Worse
- Cried and Prayed
- Called 911
- Hide
- Got Together With Family
- Moved to Another Apartment
- Stayed Home
- Panic

- c. Women stated what they thought, based on their experiences, would work in case of emergency:
 - Stay Prepared
 - Have a Storage Area by the Door
 - Store Information
 - Keep a List of Medications
 - ICE List
 - Set Aside Cash/Money
 - Have a Phone Tree
 - Keep a Gun Under the Bed to Protect Family
 - Put Information in Fridge for EMT’s
 - Education About First Aid
 - Know Law Enforcement
 - Have a Plan and Contact Information
 - Prayer
 - Neighbors Came Together
 - Sharing Telephone Numbers
 - Having an Evacuation Plan
 - Have a Fire Safe and Flood Safe in the House
 - Stay Calm, Follow Plan
 - Defending Yourself (with a gun)
 - Reporting Abuse
 - FEMA
 - Used Church for Shelter
 - Open Home to Shelter Others
 - d. When they were asked what did not work in these situations their list was short:
 - Calling 911
 - Panic
 - Always Takes Longer for Police
 - Insurance Agents Didn’t Want to Come Because of Dangerous Area
 - e. The women and young mothers wanted to let the City know the following:
 - Do Not Wait to Prepare Until the Last Minute
 - Provide Red Cross’s Hurricane Packets
 - Allow pets in shelters
 - Disseminate information better
2. **PEOPLE WITH DISABILITY** included persons with mobility impairment, or other severe chronic diseases or conditions that caused some degree of dependence on equipment or assistance by others. These individuals met at the West Gray Multiservice Center.

a. This group defined an emergency in the following ways:

- Alert (Having an Alert be Announced)
- Get Out of Danger
- Taking Action
- Move Quickly, Hurry Up or Leave
- Danger / When I am in Danger
- Unplanned Event
- Fire
- Hurricane (Category Bigger Than 1)
- No Help (i.e. Falling on Floor and Can't Reach Anyone)
- Brownouts or No Electricity (to Power Life Saving Equipment)

b. What Did You Do?

- Left Home/Evacuated
- No Place To Go to Restroom/Get Food
- Called a Friend
- Collaborate with Neighbors
- Call 2-1-1/Emergency Transportation

c. What Should the City Do to Help?

- Community Shelters/Specialize Shelters for people with special needs
- Recognize Different Disabilities and Their Different Required Action
- Appropriate Housing
- Have Panic Buttons to Reach Someone
- Assurance for Physical Mobility
- GPS Tracking
- Help For People Who Cannot Hear Radio
- Training and Planning
- Increase Security to Avoid Gangs and Looters
- Have Information on Service Dogs

They also suggested some of the following advice:

- Shelters Should Have Medication on Hand
- Have a Communication/Action Plan for Different Disabilities

d. Participants were asked if they have a Personal Plan.

- Call Family
- Bring Your Own Medication
- Get Food/Supplies/Medicine
- Have a Travel List / Have a List of People To Stay With
- Have a Plan

3. **IMMIGRANTS GROUPS** included two groups of immigrant women who were primarily residents of Gulfton. Although men were contacted and invited to participate, the men's group could not be assembled within the study's timeframe.

a. Immigrant women defined emergencies and disasters in the following ways:

- Domestic violence
- Shooting
- Sleeping in the Street (during Rita)
- Illness/sudden Illness
- Salmonella
- Missing People
- Fire
- Accident
- New Baby /Child Care /Children's Emergency
- Evacuation
- Not Knowing Where Family is
- Deportation

b. What did you do during the emergency?

- Stayed at Home
- Didn't know what to do
- Neighbors helped
- Gathered Family
- Called 911/Fire Department

c. What Worked in your actions?

- Being Prepared
- Having Transportation Ready
- Know First Aid
- Loading Car with Gas
- Do Not Run From Immigration
- Have Emergency Phone Numbers Ready
- Use Instincts
- Listen to Media
- Gave a Report to the Cops

d. What Did Not Work in an Emergency?

- Not Be Prepared /no Food or Gas
- No Medication for Children
- Had to Take Kids to Hospital
- Had to be Sheltered in Church Because Had a Stroke / Inappropriate Shelter
- Did Not Ask For Help Because They Were Illegal Immigrants
- Lack of Fairness for Immigrants
- Smoke Detectors are not Tested Correctly (in apartments)
- Not Knowing Where You are Going Before Leaving
- Not Having Bags Packed With Important Items
- Not Having Candles/Flashlights
- Calling the Police – they don't arrive in time
- Economy, (What to Buy)
- Evacuation
- Communication, People Didn't Know Where to go
- Not Having Communication with neighbors

- Language Barrier
- Not Acting, Not Taking Action
- Not Speaking out
- Nerves

e. Immigrants wanted to offer the following Advice:

- Look for Bags for Emergency
- Have Canned Food
- Have Emergency Phone Numbers Ready
- Be Prepared in Case of Fire
- Look for Media Information
- Education about emergencies
- Transportation

4. **HOMELESS** men were gathered at Bread of Life church and served as the focus group representing this sub-population.

a. Defining what is an emergency for people who are largely in the streets:

- Storms
- War
- State of Danger
- Disaster / Natural Disaster
- Bio-terrorism
- People Fall Out From Heat and Can't Get Medications
- Temperature (heat or cold)
- Life or Death Situation
- Call an Ambulance
- Constantly in a State of Emergency
- Elements (Bugs)
- Can't Stand on Sidewalks (Getting Tickets and Fines, No Job to Pay For Them)
- Country in Recession, Cant Get Job
- People are Seen as Trash, Not Human Beings
- Can't Get a Good Night Sleep
- Still Deal With Racial Issues/Racial Profiling
- No Address
- No One Looking Out For Us

b. What did you do in event of an emergency or disaster?

- Went to Star of Hope Shelter and was taken to Dallas
- Didn't want to Evacuate so They Gave a Dollar and Stayed Under a Bridge
- Stayed and Roughed it Out / Weathered It Out Under Bridge
- Someone Took me Far Away – High School (isolated place)
- Could have Gone to Mother's / Stayed with Children/ Stayed with Brother in Houston
- First Time Forgot About us, Then News People Came

- When You Can't Run From it, be Prepared

c. What Worked in your actions?

- News Team Showing Up – (help followed the news)
- Brought us Together, Looking out for Others
- Learned Lesson: Leave Next Time
- Only Thing I Did Was Shelter

d. What Did Not Work during the emergency?

- Homeless People were Scattered All Over Houston
- I Was Hit By Tree
- Nobody Check on us
- Facilities Too Far Away or Closed
- Panic
- Poor Planning
- Shortage of food
- Evacuation
- Media Came Too Late
- Should've Been Dealt With Earlier
- Lack of Positive Action
- Wasn't Prepared
- Not Enough Time
- Not Getting Right Weather Information
- Unable to buy Gas, Food, Hotel Rooms
- Stuck on Highways With No Food
- Waited Too Late to Evacuate Us
- There is no Special Preference for Women on the Street, They are Often Treated Worse

e. This group was asked what they would wish for if they had 3 Wishes

- Alert System (to let them know about impending danger)
- People From High in Office Come Talk to Us
- Use Abandoned Buildings for the Homeless
- More Awareness of Homeless Life
- Leave to plans to God
- Grow As A Nation
- American Dream (nearly every participant identified this as a wish)
- House and Home
- Abolishment of Homelessness

f. In offering advice for the future they included the following:

- Sponsor All Homeless People,
- Give Homeless a Designated Zone to be in Safety in Hurricane Season
- Alert System, Drill

5. **REFUGEES** reside primarily in large concentration in SW Houston. One group was gathered in Gulfton for this

focus group. They included recent arrival (55 days) and those who have been in Houston a few years. They came from Africa, Asia, and the Middle East and many have escaped war, famine, and other disaster. In general they were grateful to be here. Their comments include:

a. Defining Emergency or Disaster included the following:

- People Having Problems
- People Being Sick
- Floods and Heavy Rains
- Car Accidents
- Choking and Needing CPR
- Robbery with a Gun or a Knife
- Someone Entering the House by Force
- Fire
- If Someone is Fighting
- If I Lose my Way and Cannot Find my Way Home

b. What did you do?

- Call 9-1-1 (all participants identified this response)
- Call the Alliance (Refugee Resettlement Organization)
- Take Person to Hospital
- I Helped People in my Country – I Can Take People to the Hospital
- I Take People Outside When Fire Comes
- When my Child is Sick I Find Someone to Take us to the Hospital

c. What works?

- We get Food Stamps
- Churches can Give us Food
- We Learned from Community Where to Get Help. The Schools Help. And Alliance, They Help with Jobs and Everything -- Furniture Clothes
- Alliance Helps - They Find a job / They Teach me How to Speak English and Drive
- Man beats wife. She needs freedom. Your caseworker explains how you can go. Explains how you can stay in America

d. If there is a flood what will you do?

- Stay at home
- Go Somewhere near home
- Buy dry food. Save food at home
- Alliance is closed on weekends
- Not familiar with hurricanes/ only heard it on the news
- People go to another state
- Call 9-1-1

e. When asked what they thought they would need, the participants said:

- I want to be strong for myself. Take everything from my home –my passport – Kids. Go to neighbor.
- Is (storm) very near to my house I must stay. If not I could go somewhere.
- For me I would go somewhere.

One of the participants said: “That’s what I need to know from you. What should we do? We have no experience whatsoever. We are all new. Our houses are made of wood. At home they are made of brick. They could catch fire. We know nothing about here. We hear about robberies. What should we do? How do we react?”

f. Participants were asked how they learn about a hurricane or other conditions of emergency.

- Local news
- CNN
- Fox News
- Radio
- Don’t listen much
- Internet – I check the weather everyday
- English language newspaper (also Spanish, Chinese and Arabic paper)
- We talk together
- Phone a friend
- Talk to a neighbor before calling 911

g. When asked what they thought the City could do to help, the Refugees main request was for information regarding transportation and health care:

- “I live on Bissonnet. I ride the bus. Some stations have nice schedules. Some have no information. We need information at all stations.”
- “ I live on Gessner It is difficult to take the bus. They tell me school bus is free but, every morning I take my daughter. I have to pay every time...”
- Just tell us where is a clinic around our house? When I go they ask do you have appointment. I say no. They say you have to wait.
- “I didn’t get service. Last month I got ultrasound. Then they wanted to give me appointment for September (4 months).”
- “We arrive as refugees. It takes three weeks. What if something happens? We have never heard of these clinics.”

6. SENIORS OR ELDERS were gathered in the Fifth Ward, Third Ward, and Sunnyside. Their responses were aggregated in this analysis.

c. What is an Emergency?

- Fire
- Flood
- Hurricane
- Stolen Identity
- Not Having Supplies
- Not Knowing Where to go
- When People Come Unannounced (evacuees)
- Being Stranded
- Death/Losing Family
- Illness, Heart Attack
- Falling and not getting help
- Heat in Summer
- Not Knowing Where to go
- Without God
- Handicap
- Homeless
- Losing Power, No Water
- Elevators Not Working
- Violence, Burglaries
- Not Having Rent Money

b. What did you do during an emergency?

- Stayed Home
- Left Home
- Took in People
- Prayer
- Neighbor Took Me To ER / went to hospital
- Faith
- Phone Lines, Call Family
- Called Police
- Called 211
- Call City Hall for Pickup
- Evacuate
- Find a Safe Place
- Assist the Handicapped

c. What Worked?

- Paying attention to media
- Contact neighbors
- Follow the rules/directions
- Be alert
- Wait for Help if Power is Out
- Don’t Take it For Granted
- Use Common Sense

d. What Did Not Work?

- Not Having a Plan
- Not Enough Gas for the car
- Water Shortage
- Car Breakdown
- Leaving Home
- Low Income
- Evacuation/Evacuation Plan
- Couldn’t Get Information
- Everyone Leaving at the same time and Going Same Direction

- False Alarms

e. Seniors were asked what Will Work and what advice they would give, based on their experiences:

- Keep Batteries
- Keep Water and Non-perishable Foods
- Have Medication and Money
- Have Gas
- Make Sure Car is in Good Condition
- Prayer
- Know Neighbor and Community
- More Meetings (like this) with City Officials
- Plan a Route for Leaving/Evacuation Plans / Prepare Roadmap
- Know Friends Houses
- Stay at Home
- Keep Drains Clear / Keep Bayou Clean
- Be Prepared Now
- More Efforts like 211 and 311
- Build Beltway
- CERT training
- More Cooperation with Police
- Battery Operated Radio’s
- Media Accuracy
- Need to Have a Contact Person in Another Area
- Need Survivor Kit/First Aid Kits
- More Education
- Protect Our Possessions
- Handicapped Should Live on 1st Floor

7. PEOPLE WHO ARE BLIND or VISUALLY IMPAIRED

stated that they are often left out of planning or other population-based activities. In large part, their disability and limitations are misunderstood. At the Houston Lighthouse, we conducted three focus groups with vision impairment persons. Their aggregated input follows:

a. Answers to the question of what constitutes an emergency included the following:

- Fire or hurricane. Flood.
- Someone breaking into my home / Home invasion.
- Rape or murder / Fighting and violence
- Gangs and drugs /crime
- Something that involves calling for immediate help or you’re whole life is disrupted.
- Something bad that happens in the neighborhood or home
- A life or death situation / heart attack or hit by car
- Being blind / losing vision at age 12
- When you don’t know what’s coming next
- Diabetic attack / missing a dialysis treatment
- Cancer and treatment of a family member.
- Severe damage to the infrastructure of the

Demographic Indicators of Focus Group Participants

Source: <http://www.globalsecurity.org/security/library/report/2004/hsc-planning-scenarios-jul04.htm#toc>

COH EP: DEMOGRAPHIC SURVEY																
Categories	Facilitators	Group 1 Seniors 5th Ward	Group 2 Senior Sunnyside	Group 3 Young Mother Sunnyside	Group 4 Senior 5th Ward	Group 5 Spanish - Gulfton	Group 6 Homeless Men 3rd Ward	Group 7 Disabled - Gulfton	Group 8 Young Mother 3rd Ward	Group 9 Spanish - Gulfton	Group 10 Refugee - Gulfton	Group 11 Blind 3rd Ward	Group 12 Blind 3rd Ward	Group 13 Blind 3rd Ward	Total	%
Gender																
Male	2	2	1	0	5	0	8	4	0	0	0	2	3	4	29	0.243697479
Female	11	9	16	7	4	8	1	5	12	8	9	4	4	3	90	0.756302521
Total	13	11	17	7	9	8	9	9	12	8	9	6	7	7	119	1
Age																
Under 20 Yrs	1	0	0	3	0	0	0	0	1	1	0	0	0	0	5	0.042016807
20-30 Yrs	1	0	0	2	0	2	0	0	2	0	3	0	0	1	10	0.084033613
31-40 Yrs	2	0	0	2	0	5	0	1	5	3	3	0	0	1	20	0.168067227
41-50 Yrs	2	1	0	0	1	1	6	3	1	3	2	0	1	2	21	0.176470588
51-60 Yrs	4	4	0	0	0	0	2	1	2	1	1	3	3	1	18	0.151260504
61-70 Yrs	1	2	4	0	6	0	1	4	1	0	0	1	2	1	22	0.18487395
71-80 Yrs	2	3	11	0	2	0	0	0	0	0	0	2	1	1	20	0.168067227
Over 80 Yrs	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3	0.025210084
Total	13	11	17	7	9	8	9	9	12	8	9	6	7	7	119	1
Race																
African American/Black	10	10	17	7	8	0	8	5	12	0	3	5	5	2	82	0.68907563
Asian/Pacific Islander	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	0.050420168
Hispanic/Latina	2	1	0	0	0	8	0	1	0	8	0	0	0	2	20	0.168067227
White/Non Hispanic	1	0	0	0	1	0	1	3	0	0	0	1	2	3	11	0.092436975
Native American	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	13	11	17	7	9	8	9	9	12	8	9	6	7	7	119	1
Country Born																
USA	11	11	17	6	8	0	9	9	12	3	0	6	7	6	94	0.789915966
Other	2	0	0	1	1	8	0	0	0	5	9	0	0	1	25	0.210084034
Total	13	11	17	7	9	8	9	9	12	8	9	6	7	7	119	1
Primary Language																
English	12	9	17	7	9	0	9	9	12	3	5	6	7	6	99	0.831932773
Spanish	0	2	0	0	0	8	0	0	0	5	0	0	0	1	16	0.134453782
Other	1	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0.033613445
Total	13	11	17	7	9	8	9	9	12	8	9	6	7	7	119	1
Grade Completed																
Less than high school	0	1	2	0	2	0	1	0	0	2	0	0	1	0	9	0.075630252
Some high school	0	0	0	3	3	4	0	1	3	0	1	1	0	1	17	0.142857143
High school/GED	4	6	5	4	3	0	5	3	6	5	3	2	1	1	44	0.369747899
Trade School	3	1	1	0	0	0	3	0	1	0	1	0	1	0	8	0.067226891
Some College	7	2	5	0	0	3	0	0	1	0	0	0	0	3	14	0.117647059
College Graduate	3	1	4	0	1	1	0	5	1	1	4	0	0	2	20	0.168067227
Other	1	0	0	0	0	0	0	0	0	0	0	3	4	0	7	0.058823529
Total	18	11	17	7	9	8	9	9	12	8	9	6	7	7	119	1
Employed																
Yes	4	2	17	2	0	3	1	2	3	0	3	2	3	2	40	0.336134454
No	9	9	0	5	9	5	8	7	9	8	6	4	4	5	79	0.663865546
Total	13	11	17	7	9	8	9	9	12	8	9	6	7	7	119	1
Household income																
\$0-\$10,000	3	5	3	6	4	3	8	1	4	6	8	2	2	2	54	0.453781513
\$11,000-\$15,000	1	2	3	0	3	0	1	2	1	1	0	0	0	1	14	0.117647059
\$16,000-\$20,000	2	1	5	0	0	1	0	1	5	1	1	2	2	1	20	0.168067227
\$21,000-\$30,000	3	2	4	0	1	4	0	0	1	0	0	0	0	1	13	0.109243697
\$31,000-\$40,000	0	0	1	0	0	0	0	1	1	0	0	0	1	0	4	0.033613445
\$41,000-\$50,000	1	0	0	1	0	0	0	0	0	0	0	0	0	1	2	0.016806723
\$51,000-\$60,000	2	0	0	0	0	0	0	3	0	0	0	0	0	0	3	0.025210084
\$61,000-\$70,000	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.008403361
\$71,000-\$80,000	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0.016806723
\$81,000-\$90,000	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.008403361
\$91,000-\$100,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
More than \$100,000	0	1	0	0	0	0	0	1	0	0	0	0	2	1	5	0.042016807
Total	13	11	17	7	9	8	9	9	12	8	9	6	7	7	119	1

What are some community disasters?

All Groups Federal Poverty Level

Group	Zip	Disability	Adults	Kids	Total	Income	Median Income	FPL
1	99	99	1	0	1	99	99	
1	99	99	1	0	1	0-10000	5000	56%
1	99	99	1	0	1	0-10000	5000	56%
1	99	99	1	0	1	11000-15000	13000	146%
1	99	99	1	0	1	11000-15000	13000	146%
1	99	99	2	0	2	11000-15000	13000	108%
1	99	99	3	0	3	91000-100000	95500	635%
1	99	99	2	3	5	0-10000	5000	23%
1	99	99	1	4	5	21000-30000	25500	120%
1	99	99	2	4	6	0-10000	5000	20%
1	99	99	1	7	8	21000-30000	25500	83%
2	77033	0	1	0	1	0-10000	5000	56%
2	99	0	1	0	1	0-10000	5000	56%
2	77051	0	1	0	1	0-10000	5000	56%
2	77021	0	1	0	1	11000-15000	13000	146%
2	77033	0	1	0	1	11000-15000	13000	146%
2	77051	0	1	0	1	16000-20000	18000	203%
2	77047	0	1	0	1	21000-30000	25500	287%
2	77047	0	1	0	1	71000-80000	75500	852%
2	77051	0	2	0	2	11000-15000	13000	108%
2	77047	0	2	0	2	16000-20000	18000	108%
2	77033	0	2	0	2	16000-20000	18000	108%
2	77021	1	2	0	2	16000-20000	18000	108%
2	77051	0	2	0	2	21000-30000	25500	213%
2	77047	0	2	0	2	21000-30000	25500	213%
2	77021	0	2	0	2	31000-40000	35500	297%
2	77033	0	3	1	4	16000-20000	18000	99%
2	77047	0	3	1	4	21000-30000	25500	140%
3	77033	0	3	0	3	0-10000	5000	33%
3	77035	0	3	1	4	0-10000	5000	27%
3	77047	1	2	2	4	0-10000	5000	27%
3	77033	0	3	3	6	0-10000	5000	20%
3	77028	0	2	4	6	0-10000	5000	20%
3	77028	0	1	5	6	0-10000	5000	20%
3	77048	0	3	7	10	41000-50000	45500	124%
4	77020	1	1	0	1	0-10000	5000	56%
4	77020	0	1	0	1	0-10000	5000	56%
4	77020	1	1	0	1	0-10000	5000	56%
4	77020	1	1	0	1	11000-15000	13000	146%
4	77020	0	1	0	1	11000-15000	13000	146%
4	77020	0	1	0	1	11000-15000	13000	146%
4	77020	1	1	0	1	11000-15000	13000	146%
4	77020	1	1	0	1	11000-15000	13000	146%
4	77020	1	1	0	1	21000-30000	25500	287%
4	77020	1	1	0	1	71000-80000	75500	852%
5	99	0	2	0	2	0-10000	5000	41%
5	77081	0	2	1	3	0-10000	5000	33%
5	77074	0	2	2	4	21000-30000	25500	140%
5	77081	0	2	3	5	21000-30000	25500	120%
5	77081	0	2	3	5	21000-30000	25500	120%
5	77081	0	2	5	7	0-10000	5000	18%
5	77081	0	3	4	7	16000-20000	18000	65%
5	77071	0	5	3	8	21000-30000	25500	83%
6	77033	99	1	0	1	0-10000	5000	56%
6	77002	0	1	0	1	0-10000	5000	56%
6	77002	99	1	0	1	0-10000	5000	56%
6	77003	99	1	0	1	0-10000	5000	56%
6	77077	99	1	0	1	0-10000	5000	56%
6	99	0	1	0	1	0-10000	5000	56%

6	77002	0	1	0	1	0-10000	5000	56%
6	77003	0	1	0	1	0-10000	5000	56%
6	77035	0	1	0	1	11000-15000	13000	146%
7	77015	1	1	0	1	0-10000	5000	56%
7	77025	1	1	0	1	11000-15000	13000	146%
7	77025	1	1	0	1	11000-15000	13000	146%
7	77036	1	1	0	1	16000-20000	18000	203%
7	77030	1	2	0	2	>100000	100000	837%
7	77099	1	3	0	3	51000-60000	55500	369%
7	77081	1	3	0	3	51000-60000	55500	369%
7	77081	1	3	0	3	51000-60000	55500	369%
7	77036	1	3	3	6	31000-40000	35500	146%
8	77004	1	1	0	1	0-10000	5000	56%
8	77004	0	2	1	3	0-10000	5000	33%
8	77004	0	2	1	3	0-10000	5000	33%
8	77004	0	2	1	3	16000-20000	18000	119%
8	77004	1	2	2	4	16000-20000	18000	99%
8	77004	0	1	3	4	31000-40000	35500	196%
8	77004	0	3	3	6	11000-15000	13000	53%
8	77004	1	2	4	6	16000-20000	18000	74%
8	77054	0	2	4	6	21000-30000	25500	105%
8	77021	0	1	6	7	16000-20000	18000	65%
8	77012	0	2	6	8	0-10000	5000	16%
8	77021	0	2	7	9	16000-20000	18000	53%
9	77081	1	1	1	2	0-10000	5000	41%
9	77081	0	2	2	4	0-10000	5000	27%
9	77074	0	3	1	4	0-10000	5000	27%
9	77081	1	2	2	4	11000-15000	13000	71%
9	77092	99	5	0	5	16000-20000	18000	84%
9	77081	0	2	4	6	0-10000	5000	20%
9	77081	0	1	6	7	0-10000	5000	18%
9	77081	0	6	4	10	0-10000	5000	13%
10	99	0	1	0	1	0-10000	5000	56%
10	99	0	1	1	2	0-10000	5000	41%
10	77036	0	2	0	2	0-10000	5000	41%
10	77036	0	2	1	3	0-10000	5000	33%
10	77036	0	1	2	3	0-10000	5000	33%
10	77036	0	2	1	3	0-10000	5000	33%
10	77057	0	2	2	4	0-10000	5000	27%
10	77057	0	4	1	5	16000-20000	18000	84%
10	77036	0	4	2	6	0-10000	5000	20%
11	77092	1	1	0	1	99	99	
11	77004	1	1	0	1	0-10000	5000	56%
11	77086	1	1	0	1	16000-20000	18000	203%
11	77093	1	2	0	2	16000-20000	18000	108%
11	77058	1	2	0	2	61000-70000	65500	548%
11	77078	1	2	0	2	81000-90000	85500	716%
12	77004	1	1	0	1	0-10000	5000	56%
12	77088	1	1	0	1	16000-20000	18000	203%
12	77033	1	1	0	1	16000-20000	18000	203%
12	77445	1	2	0	2	99	99	
12	77025	1	2	0	2	>100000	100000	837%
12	77096	1	2	1	3	>100000	100000	665%
12	77092	1	2	4	6	31000-40000	35500	146%
13	77072	1	1	0	1	0-10000	5000	56%
13	77029	1	1	0	1	0-10000	5000	56%
13	77063	1	1	0	1	11000-15000	13000	146%
13	77074	1	1	0	1	41000-50000	45500	513%
13	77071	1	2	0	2	16000-20000	18000	108%
13	77039	1	2	0	2	21000-30000	25500	213%
13	77096	0	2	2	4	>100000	100000	552%

For disability question 1=yes 0=no and 99 is coded as missing through-out

- When the Red Hat Kaonina
- Epidemics
- Tornadoes and blackouts
- Get into a bathtub and put a mattress over it
- Loss of communication such as radio and TV
- Experienced a tornado with much destruction

St. Luke's Episcopal Hospital

CONSENT FORM

Institutional Review Board of St. Luke's Episcopal Hospital
St. Luke's Episcopal Health Charities: Protocol for Focus Groups
 3100 Main St., Suite 865, Houston TX 77002
 Ilana Reisz, Phone: 832.355.7001

Public Health and Disaster Preparedness of Vulnerable Populations in Houston

TO THE PARTICIPANT: You have the right, as a participant, to be informed about taking part in this study so you may make the decision whether or not you want to join. This disclosure is simply an effort to make you better informed so you may give or withhold your consent to participation in the study.

Participant: _____
Screening Number: _____
Date: _____

Principal Investigators: Ilana Reisz PhD, Kim Lopez DrPH

Background: Houston has experienced several events in recent years that are considered a public health disaster. The City of Houston would like to find out how community residents prepare and deal with the threat and actual events of an impending disaster. We are conducting this study for the City's department of Health and Human Services.

Purposes of study: You are invited to participate in a research study conducted by St. Luke's Episcopal Health Charities in partnership with the City of Houston. We would like to talk to you about:

- (1) Your awareness of public health emergencies and plans for safety and response to them
- (2) Any difficulty you, your family, or community members may find, in dealing with an emergency, and where you would look for assistance
- (3) Who you consider to be trusted sources of for important information to community members in preparing for emergencies.

Procedure: You will be asked to meet with no more than 9 other individuals from your neighborhood for about 2 hours. Two trained discussion leaders and 2 note takers will be present to direct the discussion and write down what is being discussed during the session. If we discuss any issues that you do not want to discuss, just tell us and you do not have to talk about them. If you want to stop your participation at any time, just tell us. You do not have to talk to us if you do not want to, and it will not affect you or your organization in any way.

The information you give us is confidential. Your name will not be used in any material that is made public. When we finish this study, the information we collect will be put into a report

SLEHC/COH EP Consent 6.20.08 Page 1 of 4

- Technology today is advanced and you could leave information with a Harris County organization and eliminate a lot of red tape. There could be a system to log into to know information so it couldn't get "lost"
- Keep neighborhood cleaner
- Have civic clubs in housing developments

where all the answers we collect are examined and analyzed. No names will be used with any of this information. The analyzed information will be submitted to the City of Houston who is working to develop ways to help anyone who may need assistance during an emergency. Information that has your name will be kept secure by the investigators in this study and will not be shared. It will not be possible to identify you or any other individual in this report.

Potential Risks: If you are uncomfortable when speaking with a group of neighbors in your community, there is some risk of your discomfort in this study. You are free, however, to talk only about topics with which you are comfortable. Other people in the group will also know who you are.

Potential Benefits: There are no direct benefits to this study. You may benefit indirectly by learning more about your neighborhood and about how others feel and deal with possible threat or emergency.

More Information: If you have any questions about this study, please call Dr. Ilana Reisz or Dr. Kim Lopez at 832-355-7701. If you have any questions about research subjects or your rights, you may contact the St. Luke's Episcopal Hospital Institutional Review Board at 832-355-3347.

Injury: In the event you suffer unanticipated injury as a result of your participation in this research project, you must notify the investigator. If you are injured because of this study, you will receive medical care that you or your insurance will have to the pay for just like any other medical care. You will not be paid for injury.

Payment: You will be given a total of \$25 in gift certificate, if you completed the study. This may help to offset the travel expenses and thank you for your time and shared knowledge

YOUR HEALTH INFORMATION/ PARTICIPANT'S RIGHTS
 We understand that information about you and your health is personal, and we are committed to protecting the privacy of that information. Federal law requires us to get your permission to use your protected health information for this study.

Protected health information includes all information about you collected during the research study for research purpose. The information collected may include your name, date of birth, address, social security number, and results of all the tests and procedures done during the study.

SLEHC/COH EP Consent 6.20.08 Page 2 of 4

USE AND DISCLOSURE COVERED BY THIS AUTHORIZATION

Who will disclose, receive, and/or use the information? The following people and organizations may disclose, use, and receive the information, but they may only use and disclose the information to the other parties on the list, to you or your legally responsible person, or as otherwise permitted or required by law.

- Investigators: Dr. Ilana Reisz, Dr. Kim Lopez, research coordinator, members of the research staff
- Study sponsor: City of Houston, DHHS and any people or companies contracted by the sponsor, which may include data monitoring committees, contract research organizations, and consultants who review study results (without participants' names)
- Members of the St. Luke's Episcopal Hospital Institutional Review Board (IRB)
- The United States Food and Drug Administration, Centers for Medicare and Medicaid Services, and other regulatory agencies

The receivers of the information may further disclose your health information. If disclosed by them, the information may no longer be covered by federal or state privacy regulations.

Information collected about you for purposes of this research study may be kept in a research study record separate from your medical records. You will not be able to obtain your research study record until the end of the study.

In order to participate in this research study, you must sign this authorization that gives permission to share your personal health information. However, you cannot be denied medical treatment unrelated to the research study because you did not sign this authorization.

The results of the study may be published in a medical book or journal, or presented at a meeting for education purposes. Neither your name, nor any other personal health information that specifically identifies you, will be used in those materials or presentations.

This permission to share your personal health information for this study does not have an expiration date. If you no longer want to share your personal health information, you may revoke (cancel) your permission at any time by writing to the study staff and/or the study doctor at the address below:

St. Luke's Episcopal Health Charities
3100 Main St. # 865
Houston, TX 77002
Phone: 832.355.7001

Even if you revoke your permission, the Researchers may still use and disclose the health information that they have already obtained as necessary to evaluate the study results. If you start the study and then revoke your permission, you will not be able to continue to participate in the study.

I have read this form and all of my questions about this form have been answered. I agree to participate in the study. By signing below I acknowledge that I have read and accept all of the above and have been provided with a copy of this authorization.

Signature of Participant or Legally Responsible Person Date / Time

Print Name of Participant or Legally Responsible Person

Signature of Person Obtaining Consent Date / Time

Print Name of Person Obtaining Consent

Signature of Note Taker Date / Time

Print Name of Note Taker

Signature of Investigator Date / Time

Print Name of Investigator



Institutional Review Board
832-355-3347

July 18, 2008

Ilana Reisz, Ph.D.
St. Luke's Episcopal Health Charities
3100 Main St., MC 3-206
Houston, TX 77002

Project #2902

"Public Health and Disaster Preparedness of Vulnerable Populations in Houston: Response to Proposal"

Dear Dr. Reisz:

The above protocol was reviewed and approved at the July 16, 2008 meeting of the Institutional Review Board of St. Luke's Episcopal Hospital.

This letter will serve as verification that the St. Luke's Episcopal Hospital Institutional Review Board operates in accordance with all applicable laws, regulations and guidelines for clinical trials and under Federal Wide Assurance No. FWA00002312, issued April 8, 2002. We maintain compliance with the FDA Code of Federal Regulations, International Conference of Harmonization (ICH) and Good Clinical Practice (GCP) guidelines.

Continued review will be required as follows:

- a. Annually
- b. Prior to any change in protocol
- c. Promptly after unanticipated problems (adverse events)
- d. After any other unusual occurrence

The method of review will be by written summary.

Sincerely,

A handwritten signature in black ink, appearing to read "Frank A. Redmond".

Frank A. Redmond, M.D., Ph.D.
Chair
Institutional Review Board

FAR/are

6720 Bertner Ave. MC 3-288 Houston, Texas 77030 www.stluketexas.com