# **Public Health** and **Disaster Preparedness** of **Vulnerable Populations** in **Houston**

*November 2009*


ST. LUKE'S® Episcopal Health Charities

Prepared for the
**Houston Department of Health and Human Services**
Office of Surveillance and Public Health Preparedness
By **St. Luke's Episcopal Health Charities**
Center for Community-Based Research
Houston, Texas

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This project represents a collaboration in research between the Community Health Statistics, Office of Surveillance and Public Health Preparedness, Houston Department of Health and Human Services (the City) and St. Luke's Episcopal Health Charities, Center for Community-Based Research (the Charities) and its Community Research Team.

The Charities is a non-operating, public charity with 501(c)3 status, affiliated with the larger St. Luke's Episcopal Health System and Hospital and with a focus on public health and prevention in the area's most underserved neighborhoods. The Charities functions as a grantmaker and a research entity, with a Center for Community-Based Research that includes a Community Health Information System, an academy for training community research partners, and a program of Scholars in Residence, research assistants and associates, fellows, and interns. In the past thirteen years, the Charities has engaged in an array of neighborhood-based and population-based research projects, employing a Community-Based Participatory Research (CBPR) approach that includes quantitative and qualitative methods.

Health and Human Services is a department of the City of Houston municipal government (HDHHS), whose programs are supported by both city tax revenues and federal, state, and local grant awards. It is the chief public health agency in the city of Houston, with mandates to ensure accountability for the ten essential public health services within its jurisdiction. The Office of Surveillance and Public Health Preparedness (OSPHP), a division of HDHHS, leads the department's public health assessment, health indicator monitoring and evaluation, and community emergency preparedness responsibilities. Community Health Statistics (CHS) is a center within OSPHP that focuses on the investigation of local public health practice, on the development of collaborations in research that lead to improved understanding of local public health issues, and systematic dissemination of local public health data and information.

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Cover photo -- 9/12/08 - Jay Janner/Austin American-Statesman
*Ominous clouds form over downtown Houston on Friday evening Sept. 12, 2008, as Huricane Ike approaches.*

# Executive Summary

Presented in this report is the 2009 Public Health and Disaster Preparedness of Vulnerable Populations in Houston study, conducted jointly by the researchers of the Community Health Statistics, Office of Surveillance and Public Health Preparedness of the City of Houston Department of Health and Human Services (the City) and St. Luke's Episcopal Health Charities (the Charities). It is a follow-up to the 2008 pre-Hurricane Ike study, in which the City and Charities collaborated on the level of awareness of and preparedness for public health emergencies in four of Houston's most disadvantaged and underserved communities. One of the primary lessons learned post-Hurricane Katrina was, as reported in one Congressional report:

> *Failure to address the needs of low income communities and individuals, who are disproportionately affected by natural disasters, impedes hurricane recovery for all communities. Low income communities are disproportionately affected by natural disasters, and then are disadvantaged again when the recovery process does not take their unique needs into account. The goal of the assessment was to determine preparedness needs for vulnerable communities in order to assure their resiliency and recovery.*

The City engaged the Charities in a collaboration to conduct a community-based participatory research (CBPR) project to investigate public health preparedness issues in vulnerable populations in Houston. The Charities operates with a focus on public health and prevention and regularly engages in research partnerships with underserved communities to improve community health. The Charities' research protocol was developed through the Center for Community-Based Research and includes CBPR training for a team of community researchers recruited from the target neighborhoods. The Community Research Team recruits and facilitates participatory groups from the neighborhoods, gathering the data for the study and partnering with the Charities' research team to analyze and disseminate it. Charities' researchers work with the team throughout the process.

In the 2008 study, findings indicated that, across neighborhoods, participants are asking for preparedness plans and messages that are community-specific, delivered through local and trusted sources such as neighborhood churches and schools, and suitable for people of limited means and resources. Most believed the standard preparedness plans were for someone else, someone who could afford to follow them. They didn't envision turning to the City or other outside sources for help, since those resources were also for someone else, and they were accustomed to relying on themselves. Days after the study was completed, Hurricane Ike struck the area, creating a city-wide power outage that limited access to water, ice, and food

for anywhere from a few days to more than a month. New lessons were learned about preparedness for and recovery from public health emergencies. The City decided to fund a follow-up study, within the same neighborhoods and with the same study participants, asking the Charities to assess participants' experience before, during and after the storm and determine what had worked and what hadn't in terms of preparedness messages and plans.

The 2009 study findings support the 2008 findings and add what participants have learned about preparedness from the recent experience of Ike. Participants reiterate that, before the storm, within the context of media messages and warnings, their first real contact point for preparedness and planning is their own informal network of family, friends, and community. This is where decisions to evacuate or shelter in place are made, where they determine how best to stock up and with what, and decide who to call if an actual emergency arises. Most participants weathered Ike fairly well, with homes and property sustaining some wind damage but little or no flooding. It was the duration of the related power outage that defined the storm experience for them. After Ike, participants described a scenario in which they were without basic services and had to turn to outside sources for help. What they learned is that these outside sources often aren't much help. They describe difficulties with 211, FEMA, city services, and services and programs in their own neighborhoods. What they also learned is that, knowing what they know now of a public health emergency, they could create a workable preparedness plan for themselves. Study recommendations include their ideas for such a plan, based in their own evaluations of what worked and what didn't before, during, and after the storm.

*In the 2008 study, findings indicated that, across neighborhoods, participants are asking for preparedness plans and messages that are community-specific, delivered through local and trusted sources such as neighborhood churches and schools, and suitable for people of limited means and resources.*


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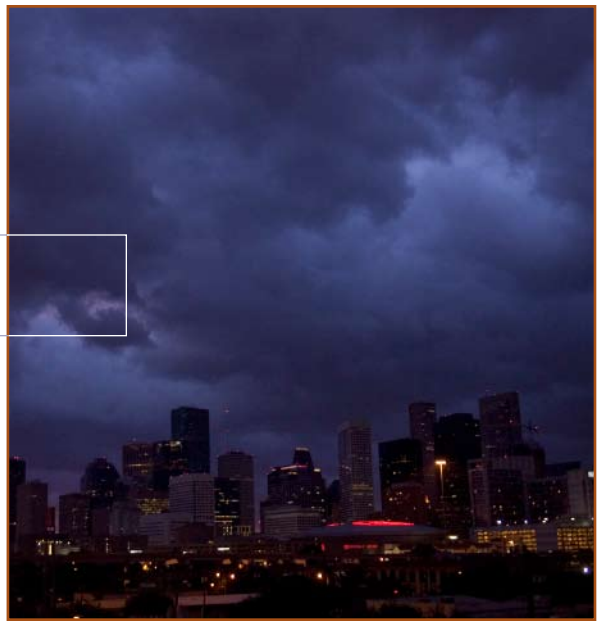
# Public Health and Disaster Preparedness of Vulnerable Populations in Houston

***November 2009***

## Intro and Background



Jay Janner/Austin American-Statesman

In the months after Hurricane Katrina, the country's costliest natural disaster, federal, state, and local governments scrambled to make sense of and learn from pre- and post-storm events. It became increasingly clear that the government, however you defined it, had failed to meet the needs of area residents hardest hit by the storm. The destruction wrought by Hurricane Katrina raised serious public policy issues about emergency management, environmental policy, poverty, race and unemployment. The storm's devastation also prompted a Congressional investigation, which placed responsibility for the disaster squarely on all three levels of government. The investigative committee reported that *"Many of the problems we have identified can be categorized as 'information gaps'—or at least problems with information-related implications…Better information would have been an optimal weapon against Katrina. Information sent to the right people at the right place at the right time"* (Congressional Report, p. 1). The committee also stressed the importance of *"situational awareness"* as essential for an effective response (p. 3). Over and over, first responders who followed media reports as their only source of information were misled in terms of requirements and resources. *"Disasters start and end at the local level,"* the investigators reiterated (p. 178), stating that disaster response cannot succeed without local knowledge to direct it. The federal Katrina Report had also concluded that *"issues of race and class were central"* to the disaster experience:

*The Washington Post, the Kaiser Family Foundation, and Harvard University also conducted face-to-face interviews with 680 randomly selected adult evacuees residing in Houston. When asked, "Has your experience made you feel like the government cares about people like you, or has it made you feel like the government doesn't care?" 61 percent reported they felt the government doesn't care. Additionally, the evacuees suggested an intersection between race and class: 68 percent of respondents thought the federal government would have responded more quickly if more people trapped in the floodwaters were "wealthier and white rather than poorer and black" (p. 19).*

Immediately post-Katrina, the federal government, along with state and local governments, began to invest in disaster preparedness assessment focused at the community level as the basis for successful disaster response. That investment led to the funding and partnership that made this study possible. In addition, the problems and issues identified by the investigations and reports following Katrina are echoed in the voices of the community participants in this study.

In the summer of 2008, the Community Health Statistics research team at the Department of Health and Human Services determined to assess the levels of "*awareness of, preparedness for, and ability to recover from, public health emergencies*" in Houston in order to address issues related to communication and situational awareness in advance of an emergency or disaster. The Community Health Statistics research team used geospatial cluster analysis to identify four disadvantaged Houston neighborhoods for assessment, according to indicators of vulnerability: race, poverty and linguistic and economic isolation. In Houston, as in other cities, vulnerable populations tend to live in higher concentrations in a few neighborhoods. The neighborhoods selected for the study were: Gulfton, Sunnyside, the Third Ward, and the Fifth Ward.

In the summer of 2008, St. Luke's Episcopal Health Charities (the Charities) collaborated with researchers from the Community Health Statistics, Office of Surveillance and Public Health Preparedness (the City), to conduct a targeted disaster preparedness assessment in the four specific Houston communities. The Charities brought expertise to the assessment in the consistent and determinate application of a CBPR approach to research questions. The study design is described in more detail in the Study Design section below.

## Ike

The final report on the 2008 study was submitted to the City at the end of August. On September 13, 2008, just days later and before recommendations could have been assessed and applied, Hurricane Ike hit the Texas Gulf Coast. Covering more than 425 miles from north to south, Ike followed Hurricane Gustav, which had hit twelve days before and Tropical Storm Edouard, which had hit a month before that. Ike, a really large storm, achieved Category 2 status early on, with sustained winds as high as 110 miles per hour. At its biggest, it would have covered the state of Texas. According to the National Weather Service (NWS), Ike ended up being the fourth costliest natural disaster in US history (after Hurricanes Katrina in 2005, Andrew in 1992 and Wilma in 2005). The NWS reported that, in Texas, its damage spanned more than 900 miles and impacted more than 29 counties, and is estimated to have cost $19.3 billion. Its storm surge inundated Galveston Island, and its wind field caused catastrophic damage to some inland areas.

> *Mandatory evacuations resulted in over a million people moving safely inland and helped save lives. The devastation left in Ike's wake is heartbreaking, 84 Texans lost their lives. Homes—many either uninsured or underinsured for storms such as this—erased from existence, businesses destroyed, roads torn from the ground, bridges demolished, miles of neighborhoods reduced to debris piles, a coastline crudely redrawn, and utilities rendered inoperable.*
>
> **"Texas Rebounds: Helping Our Communities Recover from the 2008 Hurricane Season,"**
> Governor Rick Perry, Judge Robert Eckels, and Brian Newby
> *November 2008*

In Houston, most residents sheltered in place. Thousands were left without electricity, water or food. CenterPoint Energy reported that 95% of its 2.2 million customers lacked power after the storm, due to the fact that 25% to 30% of the utility's transmission lines were knocked out of service. Entergy reported that 1.7 million customers were without electricity following the storm. According to a Texas storm impact report, *"These power outages effectively crippled the region, hindering recovery efforts, shutting down commerce, and keeping the lights out for the region's residents, schools, hospitals and businesses for an extended period of time."* In some areas, the complete restoration of the electrical service took more than four weeks. For those who sheltered in place, many were left without water and food as well. Numerous private and public water utility districts had no back-up generators to keep their systems operating, which left thousands without water and plumbing services. Thousands of individuals also lacked transportation, including children and the elderly, who were forced to walk to the Points of Distribution Sites (PODs) for food, water, and ice. In some areas PODs

were never set up, causing some local elected officials to scramble to provide food and water through other constituents.

The "Lessons Learned" section in a report submitted to the House of Representatives Select Committee on Hurricane Ike highlighted the significance of the vulnerable populations targeted for the City study:

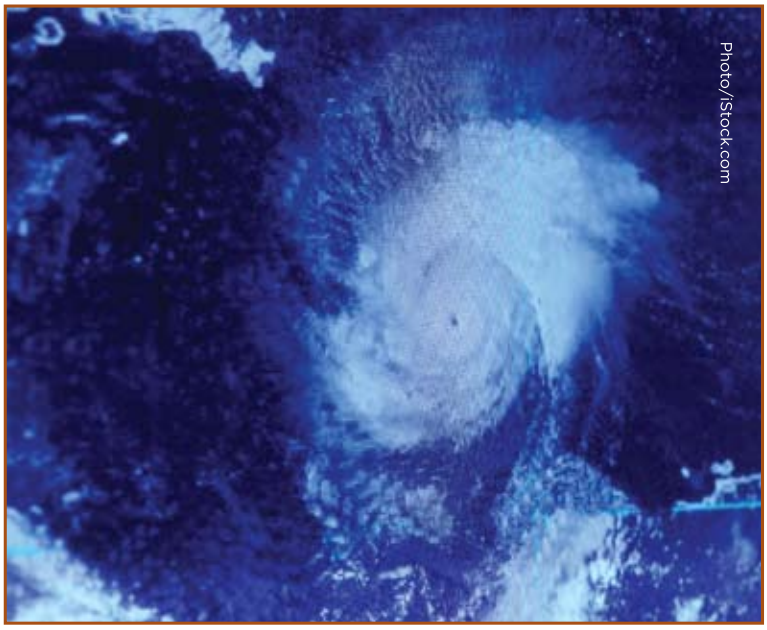
> *Failure to address the needs of low income communities and individuals, who are disproportionately affected by natural disasters, impedes hurricane recovery for all communities. Low income families and communities are disproportionately affected by natural disasters, and then are disadvantaged again when the recovery process does not take their unique needs into account" (pg. 4).*

Recommendations from several post-Ike impact reports also justified a continued focus on vulnerable populations to determine best disaster preparation and response practices. And Ike created a unique pre- and post-storm evaluation opportunity for the City of Houston's Health Department.

Historically, extensive research has not been conducted focusing on vulnerable populations and emergency preparedness. The Post-Katrina era has yielded more research in this area and results have come to similar conclusions, such as the importance of culturally and linguistically appropriate emergency preparedness materials, use of ethnic and culturally appropriate media sources, barriers to preparedness, opportunities for emergency preparedness education and training and the importance of including community in the planning process (Matthew & Kelly 2008). Andrulis, Siddiqui and Ganter (2007) state, *"The tragedy of Hurricane Katrina in August 2005 offers a graphic portrait of what happens when communities' unique needs are not part of preparedness planning and execution."* Vulnerability needs to inform inquiry, planning and implementation of programs and services needs to occur. Cutter (2003) argues that social vulnerabilities are in part yielded from social inequalities such as race, class, health status and age. A systematic review of the literature by Fothergill reveals that minority communities are more at risk during *"natural disasters, due to factors such as language, housing patterns, building construction, community isolation and cultural insensitivities"* (Fothergill, Maestras, and Darlington 2000). The aftermath of a public health emergency can be devastating to any community but particularly damaging to those vulnerable populations in our community. Further research is warranted to learn

Photo/St. Luke's Episcopal Health Charities

specifically for Houston's vulnerable populations what measures need to be in place to better support and facilitate preparedness and recovery.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## A Second Look: 2009 Study

By the summer of 2009, the City had decided *"to conduct a unique follow-up assessment of the same individuals and groups (taking into account those lost to follow-up) to examine the impact of Hurricane Ike upon those persons, and to learn from their experiences about improvements that may need to be made to better reach others like themselves with risk messages, and to better provide assistance in preparing for another disaster"* (Scope of Service). Again contracting with the Charities and using the same study design as the 2008 study, a second study was implemented and its results are the subject of this report.

## Design and Methodology

The 2009 study was designed as a follow-up assessment of the original summer-of-2008 study, using the same design approach and participants from the previous year. For the 2008 study, the City had selected four neighborhoods it considered most representative of vulnerable populations in Houston. These same neighborhoods participated in the 2009 study. The first three neighborhoods are predominantly African-American, the fourth predominantly Hispanic. The Gulfton neighborhood is predominantly Spanish-speaking and some of its residents are considered linguistically isolated. In addition, the Charities' Community Research Team suggested including members of the blind and disabled populations; these participants came from various areas of the city and were recruited through established service providers as these are not populations typically residing in one specific neighborhood.

The focus of the 2008 study was broad, intended to assess the awareness and preparedness of neighborhood residents for a range of 15 CDC-defined public health emergencies. The 2009 study focused more closely on community preparedness and response related to Hurricane Ike in 2008. The same four questions used in the 2008 study were asked during the participatory dialogue groups: ***1) "What is an emergency?" 2) "What did you do?" 3) "What worked?"*** and ***4) "What didn't work?"*** In addition to these

four questions, supplemental probes were included in the 2009 study to add depth of responses. Sample probes included questions such as: ***"What did you do before, during, and after Ike?" "Where did you go in your community for help?"***

The 2009 study also differs in the number of participants involved. The 2009 study is intended to be a follow-up assessment of the 2008 study; therefore only the 119 participants who had participated in the 2008 study were eligible for the follow-up. The recruitment of 2009 participants succeeded in engaging approximately 44% of the original participants in the follow-up study (52 participants; see Appendices for demographic data on participants). The reduction in the number of participants is partially explained by the vulnerable and transient nature of the populations targeted in this study. A majority of the study participants live in poverty conditions. Research suggests that poverty is a contributing factor in leading more transient lifestyles than would be expected with a middle-class population. We also know from contact information gathered in the 2008 study that many of those participants used pre-paid cell phones. Discontinued usage of these pre-paid cell phones is common and renders these community members lost to follow-up. Some of the participants contacted were not able to participate again due to personal and professional conflicts (e.g., one was attending a funeral, another had work).

On the other hand, follow-up participant rates were higher among seniors and those with disabilities. This result is explained, in part, by holding follow-up groups at locations at which the participants regularly gather. Having regular, established meeting times and programs in place contributes to participants being more accessible, especially for follow-up. Through these organizations, contact information for these participants is maintained more accurately and consistently.

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However, two groups that were held in 2008 did not materialize in 2009. The homeless men's group and the refugee and new immigrants' group were not held because original participants were not reachable. Every effort was made by the contact for the group to locate the participants; however, they could not be found. Refugees and new immigrants, for example, are expected to find work and move out into the community; our contact for this group said many of the original participants had done just that.

Photo/St. Luke's Episcopal Health Charities

The 2009 study, as in the 2008 study, utilized a CBPR approach. CBPR is a collaborative process of research involving researchers and community representatives; it engages community members from beginning to end, employs local knowledge in the understanding of health problems and the design of interventions, and invests community members in the processes and products of research. In addition, community members are invested in the dissemination and use of research findings and ultimately in the reduction of health disparities. CBPR is particularly suited to open-ended questions of disparities rooted in race; discrimination; breakdowns in social, environmental, and community conditions; and ongoing problems with access and quality of health. Engaging with communities in this way has also become more important to funders who have realized the enhanced, more sustainable success of interventions informed by local knowledge.CBPR is particularly appropriate for this study because subgroup disparities in knowledge about, preparation for and response to disasters is significant.

A CBPR-based qualitative study design, using a semi-structured participatory group model, was utilized in both the 2008 and 2009 studies. For both studies, the Charities received approval from the St. Luke's Episcopal Hospital's Institutional Review Board, and informed consent procedures were part of the convening of each group. A Community Research Team (the Team) was recruited by the Charities' Center for Community Based Research staff in 2008 from within the study target neighborhoods. All members of the Team meet the required demographic profile of the study participants requested by the City. The Team was trained in CBPR and qualitative methods through the Center for Community-Based Research. In 2008, the Team, working with organizations in the target neighborhoods, recruited participants and facilitated fifteen participatory groups (with a total of 119 participants). Each group recruited for the study met for two hours and each participant received a $25 gift card for their time. The Team partnered with Charities' researchers in the analysis of the data. In 2009, working with the same organizations in the target neighborhoods, the Team recruited participants and facilitated 13 participatory groups (with 53 participants). The Team again partnered with Charities' researchers in the analysis of the data, and City researchers joined the team.

# Data Presentation and Analysis

Each time a participatory group was convened, a facilitator, co-facilitator, and two notetakers were provided by the Team to collect data. Team notetakers were backed up by one or more Charities' notetakers as well. The notes recorded by the notetakers were the source of data utilized in the analysis. The analysis was conducted interactively between Team members and Charities' researchers, such that each set of data was analyzed by at least two Team members and at least two Charities' researchers to help establish validity and reliability.

Qualitative data analysis was based in the general principles of grounded theory. With grounded theory, researchers *"neither develop nor test hypothesis. Rather, the theory emerges through a close and careful analysis of the data"* (Lingard et al., p. 567). Two sets of instructions were used for data analysis, one for the Team and one for the Charities' researchers.

Photo/St. Luke's Episcopal Health Charities

The Charities' researchers used an analysis process based on traditional qualitative analytical methods. The analysis is comprised of a four stages: (1) develop codes from a line-by-line reading of the data; (2) develop categories based on what is significant and repeated from the codes; (3) identify synthesis terms, or themes, based on what is significant from the categories; and (4) relate the themes to the four research questions used in the data gathering process.

Similarly, the Team followed a four-stage process: (1) read each set of notes and record what seems significant to you; (2) review notes again, guided with specific questions (e.g., note what is repeated, what others agree with, what seems important, what was unexpected or unusual); (3) review your analysis and notes and determine if there are commonalities or categories that can be identified; and (4) summarize the categories under the four research questions used in the data analysis. The members of the Team did not review or analyze any notes from groups that they themselves facilitated. This was done to reduce bias in analysis of the notes so that facilitators would not identify themes that were not captured in the data. Team members were instructed to keep their themes anchored in specific supporting statements from the notes.

As the first step in analysis, the Team and the Charities' researchers separately identified themes, not only for each participatory group but also across all groups. Then, the Team and Charities' researchers met to review and to reach consensus on themes. Data analyses from both the Team and the Charities' researchers were merged to produce the following findings.

## What is an emergency?
## Finding #1: "Well, what about Ike?"

In 2008, participants demonstrated that what constitutes an emergency tends to be based in personal experience. Vulnerable populations, by their very definition, live in emergency situations daily, so their personal emergencies were what they talked about first. For example, one woman's daughter had been shot while driving on the freeway; another woman had had emergency surgery. One senior said, *"When you don't have what you need, and you don't know where to go."* In the 2008 study, the community hadn't experienced a hurricane for three years (Rita in 2005), and the immediacy of hurricanes was not prominent in their minds.

However, in 2009, their discussions turned almost immediately to Ike, because it was more recent and because of the suffering incurred during its extended aftermath. Consistently, in response to *"What is an emergency?"* residents responded, *"When lights go out," "Trees falling," "Food gone bad," "Stuff I can't control."* The effects of the storm are magnified for these disadvantaged populations. For instance, as one participant noted, when food goes bad, they don't have the resources to replace it--*"to waste 400-500 dollars of food, that hurts."*

In 2009, they're talking about a community-wide emergency, rather than a specific personal one. Yet their way of responding remains on a person-to-person level. They still look to each other and organizations within the bounds of their own community for help and support, as the findings below show.

## What did you do?
## Finding #2: "We weren't prepared enough."

A very common response to this question was *"we weren't prepared enough."* When probed, that response became, *"We weren't prepared enough for the duration of the storm."* As one participant said, *"We weren't prepared for the lights to be out for two and a half weeks."* Others said, *"We should have bought ice ahead of time." "We couldn't cook on our electric stove, and the heat was bad."* Hurricane Ike was not a major destructive event

comparatively, such as Tropical Storm Allison was, for the city. Ike moved more swiftly through the city, and rainfall drainage was more manageable. The National Weather Service reported widespread wind damage with limbs down, trees uprooted, shingle damage to some roofs—all consistent with wind gusts in the 70 to 90 mph range. Flooding was mostly confined to coastal regions with little or no flooding or damage to homes reported by participants. Most study participants experienced secondary damage, from storm winds. During the storm, most participants reported that they sheltered in place, sheltered with family, or found shelter in a nearby facility (e.g., a disabled couple sheltered in a neighborhood hospital). The storm itself was fairly uneventful for them. One senior woman reported, for example, that *"the storm passed while we slept."* However, no one felt they could have planned for the longevity of the aftermath. No one knew to prepare for what has been called the biggest power blackout in Texas history; such a situation demands a high level of resiliency.

According to the American Psychological Association, in comparing resilience across groups, researchers noted that resilience was greatly tested by the duration of the post-storm conditions and access to services. Everyone suffered from disrupted access to power, food and water for anywhere from a few days to over a month. The indicators that made it appropriate for these people to participate in the study are the very indicators that made it difficult to fare well after the storm. Poverty levels that lead to a lack of transportation, reliance on 211 services, less reliable food supplies, and inconsistent means of communication and information access reduced participants' sense of self-determination and their belief in their own ability to cope with and adjust to external hardships. Many studies show that the primary factor in resilience is having caring and supportive relationships within and outside the family. Relationships that create trust, provide role models, and offer encouragement and reassurance help bolster a person's resilience. Most participants in the 2009 study reported that their resilience emerged largely in support from families, friends, and neighbors to enable them to manage the storm's aftermath. As one participant said, *"You'd be surprised. Even neighbors who really didn't like each other helped each other."*

Resilience within special needs groups (e.g., individuals with disabilities, the elderly, those with limited English proficiency) requires additional support before, during, and after a disaster to maintain their independence and involvement in the community. Compared to other regions in Texas, the areas impacted by Ike have generally higher rates of these populations (FEMA Report). These issues are discussed below.

Part of the explanation for *"we weren't prepared enough"* is that Ike was not *"taken seriously enough, 'cause we've been through lots of other hurricanes."* Participants responded that news reports of Katrina were a factor in their decision to evacuate for Rita. Because they learned it had not been necessary to evacuate during Rita, people relaxed their hurricane vigilance and they stayed during Ike, skeptical of its dangers. *"When other*


*one [Rita] came I went to Austin, took 15 hours, so this one…I slept here, stayed."*

Pre-Ike, participants' expectations were based on their most recent previous experience with Hurricane Rita. Most planned to shelter in place and prepare as best they could with flashlights and affordable canned goods. They expected a fairly quick return to normalcy with fairly minimal inconvenience and insecurity. They would stay in touch with family and friends, their preparations dependent on the plans of those they felt closest to. Most seniors knew who in their neighborhoods might need help, such as those homebound by age or medical condition, and would include care for them in their plans. In the aftermath of the storm, young mothers actively discovered and saw to the needs of the seniors.

## What Worked?
## Finding #3a: "We went to each other"

In the four neighborhoods studied, the dominant mode of communication is between and among persons in the neighborhood–person-to-person, neighbor-to-neighbor, family member-to-family member. This is how meaningful, significant information is sent and received. Throughout the group participants' responses, the centrality of family and neighborhood networks is essential. Respondents suggested that outside agencies need to work with the community's primary mode of communication to deliver messages.

Participants repeatedly demonstrated their reliance upon family and neighbors before turning to neighborhood organizations and institutions. For example, seniors reported their reliance upon their sons for direction and support. *"You'd be surprised; even neighbors who really didn't like each other helped each other." "Neighbors helped each other. If they had food, they shared it. Some lent money to each other." "We didn't go to an agency. We went to each other." "Neighbors brought ice and water." "[My] son kept us supplied." "My son…goes to get a generator." "My son woke me up saying you got to get up, you can't sleep through it." "Every 30 minutes we were*

*checking on each other – do you need to leave, do you need to get out, you want to come over here?" "My son is my first contact, then church members."*

Beyond the effectiveness of the person-to-person communication, participants reported that they were also aware of preparedness messages, primarily through the media. Their responses to this question paralleled those of responders to the randomized digi-dialed survey conducted by Rice University researchers to assess hurricane experiences of Harris County residents. They relied on television broadcasts first, then radio, then internet before the storm.

However, they interpreted these media messages as less applicable to people of reduced means like themselves and less important because they did not plan to be part of a repeat of the Hurricane Rita evacuation experience. Additionally, participants believed that because *"nothing happened"* during Rita, they *"didn't think it [Ike] would be dangerous."* Research provides some evidence for this, for example, see Lindell, et al. and Kang, et al.

Most agreed they are aware of how to prepare but do not believe they are able to prepare *"properly"* because of their limited resources. They reinterpret "preparedness" to fit their means, feeling prepared to the best of their ability if they have flashlight and batteries, candles, and what canned goods they can afford. Their best preparation plan is to stay in touch with family and friends, to combine resources as necessary.

They have concerns about being unable to prepare *"properly."* For example, disabled, homeless, and senior participants fear they might be forced to evacuate, be taken somewhere they don't know, not have necessary support services, and be unsure of how they will get back. Many are unsure also about what support services there are or how to navigate support services related to preparedness, such as the transportation registry and 211.

Elderly and Spanish-speaking participants emphasized their reliance on sons in particular. Other participants had reported a reliance on family members, but these participants identified their sons as the directors of preparedness. A senior woman said, *"My son is my first contact, then church members."* Media preparedness messages become secondary to these senior and Spanish-speaking women.

## Finding #3b: **What** *would* **have worked...**

Often *"what worked"* crossed seamlessly over into recommendations, for the future—e.g., they could see, knowing what they know now, what ***would*** have worked. The Team, in the analysis process, labeled these *"good ideas,"* separating them from "what worked."

Participants identified how they understand preparedness now, post-Ike. *"Save up for a generator,"* one said, and others agreed. *"Have the items we need—canned goods, flashlights, and stuff,"* others said. They agreed they need to make sure their gas cans are filled but their refrigerators aren't—*"To waste $400 worth of food for the year—that hurts!"* Others said, *"Get extra water," "Fill up my truck," "Have cash on hand because the ATMs weren't working," "Have a bunch of coolers," "Make sure you have a land line."* Many of these messages are part of regular preparedness messages, but their value has been brought home.

As might be expected, many reiterated that helping each other would be primary. *"Help thy neighbor again,"* one said. Others agreed they would want to *"know my neighbors' information, what medications they needed."* Preparedness messages could include this as part of the plan.

They agreed that a preparedness message, targeted to their vulnerable neighborhoods, could include how better to deal with the loss of power. One significant concern was the availability and use of battery-powered equipment. Many participants have battery-powered radios, even televisions, but the batteries did not last for the duration. Some suggested bringing a *"charging truck"* into communities on a regular schedule so that residents could get a variety of essential batteries charged (e.g., cell phones and radios).

Still others suggested that a good preparedness list would include advance notification of the location of and rules for distribution services. Many neighborhoods have vacant buildings or already existing multiservice centers or schools that could be equipped to be central disaster management centers, with special interest devoted to managing resources for the most vulnerable populations. This would allay fears of scarce resources and fears of being evacuated to unfamiliar places. These could also be *"central cooling stations"* for seniors, medically fragile, and infants and new mothers.

Finally, one participant asked, *"Why don't we have more of these meetings?"* -- referring to the participatory groups for this study. Others agreed, reiterating the idea that having facilitated, neighbor-to-neighbor meetings is a useful way to *"get the word out."* Group conversations indicate that participants have learned about preparedness from Ike and from the experience of it in their own neighborhood. They would like their experience to be shared and built on, to create preparedness messages that have meaning and usefulness for people like them and neighborhoods like theirs.

Participants also turned attention to the usefulness of pathways that are already in place—from programs that are known and trusted--such as the Community Emergency Response Teams (CERT), neighborhood-based programs such as Fifth Ward Missionary Baptist's Revere Team, and the VISTA program. The visually impaired rely on the Federation for the Blind; handicapped participants are part of the Center for Independent Living. Some seniors mentioned their participation in programs at the Sunnyside Multiservice Center.



Photo/iStock.com

Many mentioned their reliance on neighborhood-based schools and churches for information, identifying them as natural pathways for communication. Some of the most-trusted individuals in their communities are people associated with schools and churches. Least-trusted individuals were not identified, though the data indicated that most-trusted messages come from people most like them, who understand their challenges and the difficulties they have accessing services. People in traditional positions of power in the city are not necessarily trusted, e.g., some participants indicated that firemen are trusted more to provide unconditional support than police.

When respondents do turn to organizations, they turn to places close by, such as churches, shelters, and institutions. What makes a place close by is that it is walkable, easily drivable, or on a bus route, "any place that might be available." They expect places close by to be of some help, especially in time of disaster. Churches are one of the first places they turn to. Outside of churches, University of Houston and Texas Southern University are identifiable and respected points of distribution to turn to: "Churches, major landmarks or [a]school." "University of Houston and Texas Southern University, [for] anyone living in the Third Ward, are good places to go, better than hospital centers."

## What didn't work?
## Finding #4a:
## "Shouldn't be discriminating about who you give help to."

Among some respondents, a sense of injustice surfaced. For example, food stamp distribution, 211 support, and FEMA registry all proved difficult. They felt discriminated against, in a systematic way, because they perceived that their special needs were not addressed. The blind and disabled, in particular, harbored fears about being moved into places with which they had no familiarity and wouldn't know when, or if, they would be returned to their familiar surroundings. *"The services need to be brought to us." "It would be better to remain in familiar surroundings with proper resources." "I'll be frank, if you are blind, you can't remember where the restroom is and you don't want to have to ask every time 'Will you take me to the bathroom?"*

While churches were viewed by many as an important organizational source of help and resource in the neighborhoods, problems also arose. They could not have known, for example, that a church in their own neighborhood would restrict food distribution to those residing in certain zip codes. *"Churches not helping those who live in the neighborhood but not within the churches' zip code; church should not do this."*

Long-standing experiences with social injustices led many participants to view the hardships suffered due to the duration of the storm as another manifestation of social injustice. Being without power for as long as they were, they found empty grocery store shelves, no gas, no way to prepare food if they had it,

no drinkable water, interrupted information resources, and neighborhoods sunk in a total darkness that invited looting and vandalism all seemed part of injustice as usual. In the face of a public emergency, they hadn't planned to have to defend their own safety, meet their own basic needs for survival, and re-create their own sense of normalcy,

## Finding #4b: "The most able will get to the PODs first, the least able won't even get there."

Participants also identified, under "what didn't work," three specific services. One was the PODs' distribution policy and location. Two was the ineffectiveness and inefficiency of FEMA. Three was the perceived failure of 211.

The city had established several central distribution points throughout the neighborhoods in this study. No planning could have prepared residents for the difficulties of learning the location of and getting to PODs without transportation. Many respondents mentioned the seemingly arbitrary restrictions on the distribution of such basics as water and ice. One example was the ineffectiveness of the POD policy of providing food, ice and other products for only one family in one automobile. Because there is so much person-to-person, neighbor-to-neighbor dependence for help, often people would join together to go to the distribution point, or a family might take one or more blind, disabled or seniors to get supplies. *"I was going to lines in the parks for food and supplies and some lines would only let you go through once. I had three senior neighbors in my truck." "I had to go through lots of lines. I almost ran out of fuel." "They wouldn't let you go through if you were walking. I saw a lady not in a vehicle, pushing a Fiesta basket with a baby, and another baby on her back. She couldn't get food, so I gave her mine after I got it."* The policy was that only one family could get supplies. This didn't work for the most vulnerable–the blind, others with other disabilities, and seniors. *"Most people [among the blind] didn't get anything [food/supplies] because you had to go a long way to get it."* What resonated among the blind and disabled groups is that services needed to be brought to them. *"Call us to see if we are distressed…, need water, or need to come out of area."*

Photo/St. Luke's Episcopal Health Charities

The Federal Emergency Management Agency (FEMA), participants reported, was difficult to deal with, prompted a lot of disapproval and provided little support. Money provided was considered to be poorly allocated, not getting to the most needy, and the amount was considered insufficient. *"FEMA did not work. FEMA money was inappropriately spent; not given to people who need it most." "Three hours in line, got there and they said they were out of forms." "Didn't help. Whoever is over that money, it doesn't belong to*

*them, and here were people who really needed it, but didn't help them." "Problem is with the storm, many people used it [FEMA money] badly during Katrina, so the government clamped down for Ike." "FEMA's money needs to go back. If you do the crime, have to do the time."*

Finally, 211 failed in this time of emergency. Participants reported that there were cut off times for 211. They would call at the designated time and were often put on hold or left to hear a busy signal. People believed that if they signed up for the transportation registry through 211, they would be called. They were disappointed when they did not receive a call. *"Too many people calling." "If people had registered with 211, it would be great for them to be called, checking on them from time to time." "I did (call), they gave me a number to call… you know I live alone, where are you going to take me? I don't know."*

The need for nonprofit services—particularly housing, food, health, mental health and social services--typically increases after a major disaster. Though the need had increased, some organizations failed. *"No agencies were reliable. Instead had to depend on one another." "We didn't have an agency to go to; even the civic club broke down."* Vulnerable populations are most affected by disruptions in nonprofit services. This is precisely when informal neighborhood networks become particularly important.

Photo/St. Luke's Episcopal Health Charities

# List of Community Recommendations:

The following recommendations are grounded directly in the participants' responses to the topic of preparedness contained in the data.

## *(a) what to include in risk communication messages,*

- Shelters and evacuation sites should be identified in risk communication messages and should be located at trusted, accessible neighborhood locations when possible (elementary schools, newer churches etc.).

- Resource distribution points should be identified in risk communication messages and should be at trusted, accessible neighborhood locations.

    - Community multi-service centers, schools, churches or apartment offices could serve as resource distribution points, information centers, battery charging stations, and "cooling centers" for the elderly, young mothers and infants, the ill, etc.

    - "Charger trucks" could come to neighborhoods to allow residents to charge cell phones and other necessary battery-operated devices, such as radios and TV's.

- Neighborhood safety issues should be included in risk communication messages (e.g., if the power is off, how are they and their property to be protected?).

- It is important to remember that a perceived sense of injustice exits among manyinvulnerable communities and resentment is sustained by an inadequate response from outside resources (e.g., they continue to believe that these resources are not for them). Therefore, future risk communication messages should strive to provide clarity on FEMA, 211 Transportation Registry and the food stamp distribution system.

    - Perceived FEMA inefficiency and ineffectiveness (can be rectified by less complicated paperwork, and more rapid response).

    - 211, Transportation Registry, and food stamp distribution remain confusing for participants; they need more help in knowing what is available and how to navigate it (case managers could help here or church volunteers).

### *(b) Through which preferred media and mechanisms to transmit messages,*

- Existing neighborhood programs could be utilized to distribute preparedness messages and plans, including VISTA, CERT, and local clubs and groups.

- Neighborhood and population specific preparedness messages are needed (e.g., preparedness plans that are affordable, preparedness plans for the blind utilizing their trusted organizations like the National Federation for the Blind's Newsline and disabled as well as seniors and those not English proficient).

- It would help to have a database for information on those who are most in need of help in their neighborhoods (e.g., special needs, medication needs, etc.).

- "Why don't we have more meetings like this?" Preparedness planning meetings could be held at central community locations, and community concerns and interests could be discussed.

### *(c) Ways to employ vulnerable groups in actually transmitting pre-event messages as part of public health preparedness efforts.*

- Community input must be included in planning for resource distribution; otherwise, it can seem inequitable and ineffective when it doesn't allow for lack of transportation, disabilities, seniors, homebound, ease of hours and access, those dependent on the help of others, etc.

- The dominant mode of communication is between and among persons in the neighborhood (e.g., family, friends, trusted others). Outside agencies need to work with the community's existing modes of communication.

    - When selecting agencies and organizations to assist with planning and recovery select those that are close by (e.g., walkable, drivable, on bus routes) as they are the most useful and the most trusted for information and support (e.g., schools, churches, nonprofits).

- Participants are willing to be information distributors and resource distributors for those most vulnerable in their neighborhoods—the homebound, the disabled, the elderly, the chronically ill, etc. (It is part of their culture, religion, and nature to do so, they reported.)

# Appendix A

| Group Name | Group Number | Gender * | Age | Zip Code | How Long Have You Lived in Harris County? | Race/ Ethnicity | In What Country Were You Born? | Primary Language | Highest Educational Level Completed | Disability | Employed | Adults | Kids | Total | Self Reported Annual Income | FPL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunnyside South Central Young Mothers | 1 | 1 | 31-40 | 77028 | 33 | African American | America | English | Some high school | No | No | 2 | 5 | 7 | 298 | 1% |
| | 1 | 1 | 41-50 | 77047 | 30 | African American | America | English | Some College | Yes | No | 2 | 3 | 5 | 7000 | 27% |
| 5th Ward Payne Chapel Seniors | 2 | 1 | 71-80 | 77016 | 41 | African American | America | English | High school graduate/GED | No | No | 1 | 0 | 1 | 14,171 | 131% |
| | 2 | 1 | 80+ | 77026 | 41 | African American | America | English | College Graduate | No | No | 1 | 0 | 1 | 1,006 | 9% |
| | 2 | 2 | 51-60 | 77051 | 38 | African American | America | English | College Graduate | Yes | No | 1 | 0 | 1 | 9000 | 83% |
| City-Wide Center for Ind. Living | 3 | 2 | 61-70 | 77099 | 29 | White | America | English | College Graduate | Yes | Yes | 3 | 0 | 3 | 100,000 | 546% |
| | 3 | 1 | 61-70 | 77081 | 8 | African American | America | English | High school graduate/GED | Yes | No | 2 | 0 | 2 | 15,600 | 107% |
| | 3 | 99 | 61-70 | 77081 | 8 | African American | America | English | High school graduate/GED | Yes | No | 2 | 0 | 2 | 15,600 | 107% |
| | 3 | 99 | 51-60 | 77022 | 52 | African American | America | English | High school graduate/GED | Yes | Yes | 1 | 0 | 1 | 7,680 | 71% |
| | 3 | 1 | 61-70 | 77036 | 4 | African American | America | English | Other- Grad School | Yes | No | 1 | 3 | 4 | 9,900 | 45% |
| | 3 | 1 | 31-40 | 77007 | 99 | African American | America | English | Other- Grad School | Yes | No | 1 | 0 | 1 | 7,000 | 65% |
| Sunnyside Park Seniors | 4 | 1 | 99 | 77051 | 54 | African American | America | English | Less than high school | No | No | 2 | 0 | 2 | 99 | N/A |
| | 4 | 1 | 80+ | 77047 | 50+ | African American | America | English | Some College | Yes | No | 3 | 0 | 3 | 52,000 | 284% |
| | 4 | 1 | 61-70 | 77033 | 46 | African American | America | English | Some College | Yes | No | 2 | 1 | 1 | 20,000 | 185% |
| | 4 | 1 | 80+ | 77047 | 54 | African American | America | English | College Graduate | No | No | 2 | 0 | 1 | 99 | N/A |
| | 4 | 1 | 71-80 | 77033 | 59 | African American | America | English | College Graduate | Yes | No | 1 | 0 | 1 | 607 | 6% |
| | 4 | 1 | 71-80 | 77051 | 55 | African American | America | English | High school graduate/GED | No | No | 3 | 0 | 3 | 130,025 | 710% |
| | 4 | 0 | 71-80 | 77047 | 6 | African American | America | English | Some College | No | No | 3 | 0 | 2 | 99 | N/A |
| | 4 | 1 | 71-80 | 77059 | 50 | African American | America | English | High school graduate/GED | No | No | 1 | 0 | 1 | 1,360 | 13% |
| | 4 | 1 | 71-80 | 77033 | 75 | African American | America | English | Some high school | No | No | 2 | 0 | 2 | 1,200 | 8% |
| | 4 | 1 | 80+ | 77021 | 72 | African American | America | English | Some College | No | No | 1 | 0 | 1 | 10,500 | 97% |
| | 4 | 1 | 71-80 | 77021 | 55 | African American | America | English | Some College | No | No | 2 | 0 | 2 | 99 | N/A |
| | 4 | 2 | 71-80 | 77021 | 55 | African American | America | English | Some College | No | No | 2 | 0 | 2 | 99 | N/A |
| 3rd Ward Mothers | 5 | 1 | 51-60 | 77004 | 60 | African American | America | English | Some College | No | No | 1 | 0 | 1 | 99 | N/A |
| | 5 | 1 | 31-40 | 77021 | 33 | African American | America | English | Some College | No | Yes | 1 | 3 | 4 | 26,400 | 120% |

*continued on page 24...*

# Appendix A

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5 | 1 | 61-70 | 77004 | 40 | African American | America | English | College Graduate | No | Yes | 2 | 1 | 3 | 1,700 | 9% |
| | 5 | 1 | 31-40 | 77004 | 39 | African American | America | English | High school graduate/GED | No | No | 2 | 0 | 1 | 1,500 | 14% |
| City Wide Lighthouse for the Blind | 5 | 1 | 41-50 | 77004 | 43 | African American | America | English | Some high school | Yes | No | 2 | 1 | 2 | 674 | 5% |
| | 6 | 1 | 51-60 | 77086 | 30 | Other | America | English | High school graduate/GED | Yes | Yes | 1 | 0 | 1 | 10,000 | 92% |
| | 6 | 1 | 61-70 | 77088 | 15 | African American | America | English | Trade School/Vocational Training | Yes | No | 1 | 1 | 2 | 1,100 | 8% |
| | 6 | 2 | 71-80 | 77033 | 50 | African American | America | English | Less than high school | Yes | No | 2 | 0 | 99 | 99 | N/A |
| | 6 | 2 | 51-60 | 77025 | 30 | White | America | English | Other- Grad School | Yes | No | 2 | 0 | 2 | 99 | N/A |
| | 6 | 1 | 20-30 | 77072 | 29 | African American | America | English | College Graduate | Yes | No | 1 | 0 | 1 | 9,000 | 83% |
| 5th Ward Missionary Baptist | 6 | 1 | 71-80 | 77078 | 15 | African American | America | English | College Graduate | Yes | No | 3 | 0 | 3 | 95,000 | 519% |
| | 7 | 1 | 51-60 | 77013 | 20 | African American | America | English | College Graduate | Yes | Yes | 2 | 0 | 2 | 26,000 | 178% |
| | 7 | 1 | 20-30 | 77026 | 21 | African American | America | English | Some College | No | Yes | 4 | 0 | 4 | 99 | N/A |
| | 7 | 1 | 41-50 | 77093 | 41 | African American | America | English | College Graduate | No | Yes | 2 | 4 | 6 | 65,000 | 220% |
| | 7 | 1 | 41-50 | 77026 | 49 | African American | America | English | College Graduate | Yes | No | 2 | 2 | 4 | 50,000 | 227% |
| | 7 | 1 | 41-50 | 77014 | 44 | African American | America | English | College Graduate | No | Yes | 2 | 2 | 4 | 75,000 | 340% |
| | 7 | 1 | 20-30 | 77020 | 27 | African American | America | English | Some College | No | Yes | 2 | 0 | 2 | 99 | N/A |
| Burnett-Bayland Gulfton Spanish | 7 | 1 | 71-80 | 77020 | 55 | African American | America | English | Some College | Yes | No | 1 | 0 | 1 | 15,000 | 139% |
| | 8 | 1 | 31-40 | 77081 | 14 | Hispanic | Mexico | Spanish | Some high school | No | No | 2 | 3 | 5 | 27,000 | 105% |
| | 8 | 1 | 41-50 | 77074 | 21 | Hispanic | El Salvador | Spanish | Some high school | No | Yes | 2 | 2 | 4 | 16,000 | 73% |
| | 8 | 1 | 31-40 | 77081 | 8 | Hispanic | Mexico | Spanish | Some high school | No | Yes | 3 | 4 | 7 | 19,000 | 57% |
| | 8 | 1 | 41-50 | 77081 | 11 | Hispanic | El Salvador | Spanish | High school graduate/GED | No | No | 2 | 3 | 5 | 17,500 | 68% |
| ECHOS Gulfton Spanish | 8 | 1 | 31-40 | 77053 | 1 | Hispanic | El Salvador | Spanish | Some College | No | Yes | 2 | 3 | 5 | 31,650 | 123% |
| | 9 | 1 | 51-60 | 77074 | 27 | Hispanic | El Salvador | Spanish | Less than high school | No | Yes | 4 | 99 | 99 | 99 | N/A |
| Pleasant Hill Seniors | 10 | 1 | 51-60 | 77020 | 4 | African American | America | English | High school graduate/GED | Yes | No | 2 | 1 | 3 | 574 | 3% |
| | 10 | 99 | over 80 | 77020 | 99 | African American | America | English | College Graduate | Yes | No | 1 | 0 | 1 | 10,284 | 95% |
| | 10 | 2 | 61-70 | 77020 | 58 | African American | 99 | English | Some highschool | Yes | No | 1 | 0 | 1 | 99 | N/A |
| | 10 | 2 | 71-80 | 77020 | 60 | African American | America | English | Trade School/Vocational Training | Yes | No | 1 | 0 | 1 | 16,000 | 148% |
| | 10 | 2 | 71-80 | 77020 | 35 | White | 99 | English | Some high school | Yes | No | 1 | 0 | 1 | 30,000 | 277% |
| | 10 | 99 | 61-70 | 77020 | 70 | African American | America | English | High school graduate/GED | No | No | 1 | 0 | 1 | 99 | N/A |

**Gender 1= Female 2= Male 99= blank*

# Appendix B

## Contact List

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Appendix C


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*Failure to address the needs of low income communities and individuals, who are disproportionately affected by natural disasters, impedes hurricane recovery for all communities...*

*-- Texas House of Representatives*
*House Select Committee on Hurricane Ike Devastation to the Texas Gulf Coast*
*Interim Report 2008*

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