Resilient Communities:

Empowering Older
Adults in Disasters
and Daily Life

PEOPLE WHO NEVER KNEW WHO-WAS-WHO IN THE NEXT APARTMENT CAME TOGETHER. WE NEEDED WATER AND TO HELP THE ELDERLY WHO COULDN'T GET AROUND. WE HELPED OUR NEIGHBORS. WE DIDN'T JUST BECOME RESIDENTS, WE BECAME FRIENDS, FAMILY. WE REALIZE FROM ONE DAY TO THE NEXT EVERYTHING CAN BE GONE. WE'RE ALL 1 NEIGHBORHOOD, REGARDLESS OF HOW PEOPLE TRY TO DIVIDE US, WE CAN ALL DEPEND ON EACH OTHER. PERIOD. THIS HAS MADE US BETTER NEIGHBORS, LIKE THE OLD DAYS. NEIGHBORS CHECKED ON EACH OTHER.

Lindsay Goldman, Ruth Finkelstein, Peter Schafer, Tracy Pugh

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"So what I did, I'm usually the oldest person in the building, so I cooked for the younger kids, I made [food]… and they came and they ate and we had a plan. If anything happens we go up to the fourth floor. The girl on the fourth floor left and left her door open for us. When we saw the water rising, we went up."

– Resident Focus Group Participant

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INTRODUCTION

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Acknowledgements

First and foremost, we would like to thank all of the people who so generously shared their Hurricane Sandy stories with us in the hope that others may not have to suffer so much next time. Thank you for allowing us to bear witness to your wisdom, pain, humor, and incredible resilience.

Executive Summary

Problem

New York City's 1.4 million people age 60 and over constitute 17 percent of the city's total population. This number is projected to increase by 50 percent over the next 20 years. The vast majority of older adults live independently, requiring little to no assistance under routine conditions.

Yet over the last 12 years, New York City has experienced multiple catastrophic events. The 2001 attack on the World Trade Center, the blackout of 2003, Hurricane Irene, and, most recently, Hurricane Sandy, posed significant challenges to older adults. A common denominator of these incidents was the loss of power and the disruption of systems and services upon which older adults rely, including but not limited to transportation, communication, health care, elevators, and social supports. As a result, tens of thousands of older adults were isolated in high-rise buildings and private homes, in need of food, water, warming or cooling, medical attention, and medication.

Efforts to increase individual preparedness among older people through the creation of "go-bags" and the stockpiling of supplies have been repeatedly undertaken but have not improved overall outcomes for older people following subsequent disasters in New York City. With extreme weather projected to increase, a new strategy is required to keep older adults, who are often among the city's most long-term, civically engaged residents, safe.

Approach

In conducting research and analysis and generating recommendations, The New York Academy of Medicine (NYAM) incorporated the experiences of those directly affected by Hurricane Sandy and the perspectives of multiple sectors that routinely engage with older adults. From the beginning, NYAM collaborated with the policymakers and leaders who would be instrumental in implementing recommended interventions and policy changes. NYAM assembled an Older Adults & Disasters Policy Advisory Committee with high-level representation from over 30 different institutions within the public, non profit, health care, and real estate sectors, as well as community-based organizations from within Sandy-affected neighborhoods, to advise on all aspects of the work.

Our methods included a review of existing literature; analysis of secondary data; mapping of areas with high concentrations of potentially vulnerable older adults; key informant interviews; and focus groups with older adults (60+) affected by the storm and frontline responders of any age from outside of the traditional emergency management sector, who assisted older people before, during, and after the storm.

A Community Resilience Framework provides a theoretical orientation for our thinking, as well as an organizational structure for our lessons learned and recommendations. The basic premise of the framework is that a neighborhood's response to and recovery from a disaster is largely determined by how that neighborhood functioned prior to the disaster. **The implications of this paradigm shift are profound: instead of investing in the colossal and questionably effective effort to get each individual prepared and equipped to face every type of disaster, resources should go toward enhancing communities' social networks, connectedness, and integration of assets long before disaster strikes.** This approach has the significant benefit of helping to strengthen communities whether or not disaster occurs.

Key Findings

The following themes emerged from NYAM's analysis of secondary data, key informant interviews, and focus groups:

Formal and informal social networks influenced decisions and facilitated access to information and assistance.

In taking preparatory actions and choosing whether to shelter-in-place or evacuate, older adults were likely to consider how their behavior would impact family, friends, and neighbors in close proximity, in addition to their own needs. When cut off from social networks due to loss of electricity and disruptions in communication, many older adults were unable to maintain situational awareness and obtain resources. Those with stronger and more numerous connections often reported having their needs met by individuals and institutions, whereas those with fewer and weaker connections were more likely to report having felt "abandoned."

Because older people had not been engaged in emergency planning, emergency services were often inadequate, inappropriate, or inaccessible to older people, and their basic and health care needs went unmet.

Many older people believed public shelters were unable to meet their needs and as a result, refused to evacuate. The process of distributing emergency food, water, medication, supplies, and information in building lobbies and at distribution centers proved difficult if not impossible for older people with mobility impairment, as well as those who were not mobility impaired but could not climb multiple flights of stairs in the dark, walk long distances, or stand on lines for extended periods. Finally, a lack of comprehensive planning to maintain the health status of older people led to the exacerbation of chronic conditions and the emergence of new conditions.

Older adults actively supported their communities before, during, and after Hurricane Sandy.

There is evidence to support that older people may be more psychologically resilient than their younger counterparts following a disaster, as a result of having become "inoculated" to stress over the years, and that older adults who exhibit this kind of adaptability can be ideal participants in response and recovery efforts. That the mean age of participants in frontline responders focus groups was 51, with ages ranging from 24-83, is a strong indicator of the contributions of older people during Hurricane Sandy. Older people utilized their professional skills to aid in the recovery, such as those who had worked in construction, as well as provided more general support, volunteering to manage donations, staff call centers, and enter data. Older people were especially valuable in understanding and helping to meet the needs of other older people.

The local neighborhood infrastructure was effective in meeting the needs of older people.

Within the frontline responders focus group, 73 percent of participants lived in the affected communities. Local institutions led response efforts, despite having sustained their own disaster losses. These organizations were especially critical when outside responders did not have the necessary capacities to address the needs of older people, including cultural, linguistic, and developmental competence. Across communities, local organizations cited their lack of integration into the city's emergency response plan and insufficient coordination as challenges that led to gaps and redundancies in service delivery.

Vision for Resilient Communities

In a more resilient New York City, neighbors talk to and check on one another. Institutions across sectors work together and are known and welcoming to all community members. And older people are seen as problem solvers rather than problems to be solved. The following recommendations present action steps to move toward this desired state.

Recommendations

1. Older adults in underserved neighborhoods should be trained to identify and link vulnerable people with community assets (e.g., health care, social services, benefits, food) under routine conditions and during emergencies.

2. Older adults and informal caregivers should be provided with access to and training on multiple forms of communication and technology.

3. Landlords with large concentrations of older adults and mobility-impaired people should be supported in developing plans to meet the needs of these populations in disasters.

4. Employees of city services, local businesses, cultural institutions, and others who routinely interact with older adults should be trained in identifying and providing appropriate local health and human service referrals to those who may be in need of assistance before, during, after, and outside of an emergency.

5. Communities should be assisted in organizing Community Resilience Hubs housed at the most appropriate and accessible institutions within each neighborhood to facilitate communal planning and multi-sector partnerships, and to serve as a central repository for information and supplies during an emergency.

6. Providers of essential services to older adults should develop contingency plans to ensure the needs of their patients and clients will be met during disasters and emergencies. The City should extend MOUs and set funding policies in advance to enable providers to expand their reach during disasters.

7. Systematically co-locate and coordinate mental health, spiritual care, and psychological first aid with non-stigmatized disaster response and recovery services.

8. Academia, city agencies, and community-based organizations should develop and implement appropriate metrics to indicate how vulnerable populations are affected by and assisted in disasters.

9. The City should consult older people, caregivers, and service providers on their experiences with and perceptions of the public shelter system.

10. The training for professional and volunteer first responders should include information on the needs of older adults in disasters, as well as on the cultural, linguistic, and developmental competencies that may be required to meet those needs.

11. New York State should enact a disaster pharmacy law to provide a regulatory framework for pharmacists and pharmacies to dispense medication when a state of emergency is declared.

12. New York State should enact bill S.4719/A.6530, which will require counties and cities to consult with home health care and hospice providers on emergency plans and to include provisions in those plans for the deployment of home health care and hospice personnel.

Next Steps

NYAM and the Older Adults & Disasters Policy Advisory Committee will work to disseminate these recommendations to all relevant actors and will conduct policy analysis and advocacy towards their implementation to increase community resilience within New York City and thereby improve future outcomes for older people in disasters.

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Problem

New York City's 1.4 million people age 60 and over constitute 17 percent of the city's total population.[1] This number is projected to increase by 50 percent over the next 20 years.[2] The vast majority of older adults[(i)] live independently, requiring little to no assistance under routine conditions.

Yet over the last 12 years, New York City has experienced multiple catastrophic events. The 2001 attack on the World Trade Center, the blackout of 2003, Hurricane Irene, and, most recently, Hurricane Sandy, posed significant challenges to older adults. A common denominator of these incidents was the loss of power and the disruption of systems and services upon which older adults rely, including but not limited to transportation, communication, health care, elevators, and social supports. Following these events, tens of thousands of older adults were isolated in high-rise buildings and private homes, in need of food, water, warming or cooling, medical attention, and medication.

There is evidence that older adults may be more psychologically resilient in the face of disaster than younger people[3–5] and should therefore be mobilized to assist in response and recovery efforts.[6] There is also evidence indicating that older adults may be more vulnerable in disasters due to a predisposition to one or more of the following factors: mobility and cognitive impairment, chronic health conditions, diminished sensory awareness, social isolation, and financial limitations.[3, 7–9] These findings are neither mutually exclusive nor contradictory but rather illustrative of a population that is multi-faceted, diverse, and covers a 30-year age range.

This report first conveys the assets and needs of community-dwelling older adults during disasters that result in power outages and service interruptions, drawing on literature, and with a special focus on Hurricane Sandy. The report then proposes strategies to strengthen and connect formal and informal support systems to facilitate improved future outcomes. Underlying our analysis is a "community resilience framework," which asserts that the best way to help communities prepare for and cope with disasters is to enhance their social networks, connectedness, and integration of assets long before disaster strikes.[10]

Older adults are not the only population that struggles during disasters; however, given their demographics in New York City (e.g., disability characteristics, English proficiency, income), older people have many overlapping concerns with other vulnerable populations, as well as their own unique issues that are a function of age and life stage. Throughout our research, policy analysis, and recommendations, we strive to identify subject areas and solutions that will meet the needs of older adults and can be extrapolated to benefit other vulnerable populations as well.

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i   There is no consensus around the age at which a person becomes an "older adult." For the purposes of this report, "older adults" are defined as people age 60 and over, in accordance with the New York City Department for the Aging's service eligibility criteria.

Goals and Organization of the Report

Goals

The goals of this report include the following:

- Present a new framework through which to view disaster preparedness and response for older people.

- Describe the community-dwelling older adult population of New York City and their disaster-related risk factors.

- Identify the specific and diverse needs of and roles played by community-dwelling older adults during Hurricane Sandy in New York City.

- Describe the challenges to and successes of frontline responders that attempted to assist older adults during Hurricane Sandy.

- Propose actionable recommendations to help assure the survival, comfort, and care of older adults during disasters and other prolonged disruptions to services and systems in New York City.

Organization

This report is organized into four sections: Background, Findings & Analysis, Recommendations, and References.

The Background section provides an overview of our work, including a brief summary of Hurricane Sandy; a discussion of our approach, underlying theoretical framework, and research methods; and a description of the population of New York City's community-dwelling older adults.

In Findings and Analysis, we provide a detailed account of the themes that emerged from our research with respect to disaster decision-making, immediate and ongoing needs, the responses undertaken to meet those needs, and the lessons learned as a result.

The Recommendations section presents action steps to address the aforementioned lessons. Recommendations are directed towards communities, service providers, government, and proposed legislation.

Finally, in the References section, literature and other sources referenced throughout this report are cited.

Hurricane Sandy

On October 29, 2012, Hurricane Sandy made landfall in New York City. In addition to flooding, damage, and destruction to tens of thousands of residential and commercial properties, two million people throughout New York City lost power.[11] Transportation infrastructure was severely compromised, and supply chain disruptions caused shortages of food, fuel, medications, and other necessities of daily life. Communication was challenging, if not impossible.

A survey of 509 residents (36% age 55 and over) in Evacuation Zone A[(ii)] following the storm found that despite a mandatory evacuation order, 63% of respondents did not evacuate, and 56% lost power for more than one week.[12] Of those who did evacuate, 78% stayed with family or friends, 7% went to a hotel, 3% left town, and 2% went to a public shelter.[12]

Of the 209,921 households within the storm surge boundaries during Hurricane Sandy, 67,967 contained at least one adult age 65 and over (32%).[13] Of the 44 reported deaths in New York City resulting from Hurricane Sandy, 31 (70.5%) were people age 55 and over.[14] The majority died by drowning at home *(see Table 1)*.

Table 1

New York City deaths due to Hurricane Sandy among those aged 60 years or older (n=25) by select characteristics		
Total	n / 25	%
Cause		
Drowning	22	88.0
Blunt injuries	3	12.0
Borough of Report		
Brooklyn	4	16.0
Queens	7	28.0
Staten Island	14	56.0
Place		
Home/Apartment	22	88.0
Other	3	12.0

Source: New York City Department of Health & Mental Hygiene, Bureau of Vital Statistics. February 25, 2014.

ii   A survey of 509 Evacuation Zone A Residents was commissioned by the NYC Office of Emergency Management and conducted by Global Strategy Group from January 25-29, 2013, based on lists of all adults residing in Evacuation Zone A, weighted by borough, age, gender, and race to resemble the Census 2010 adult population of Zone A. 18 percent of the respondents were age 55-64, and Eighteen percent were age 65+.

Approach

Origins of the Project

The New York Academy of Medicine has assisted New York City policymakers in developing approaches to complex problems affecting the health of the population for more than a century. Responses to natural and man-made disasters have been among the problems addressed. Following the attack on the World Trade Center in 2001, NYAM researchers produced the first population-level estimates of the prevalence of PTSD and depression, as well as the specific risk factors for these conditions.[15] This work helped to shape the mental health interventions offered by all levels of government and the Liberty Fund, among others.

Following Hurricane Sandy, the Assistant Secretary for Preparedness and Response (ASPR) at the U.S. Department of Health and Human Services, Nicole Lurie, MD, MSPH, asked The New York Academy of Medicine and the Institute of Medicine to jointly convene a meeting of health care leadership within the public and private sector to develop a set of research priorities, based on the Hurricane Sandy experience, to inform future preparedness, response, and recovery plans. The provision of services to populations impacted and preparedness among and impact on disadvantaged populations was identified as one of seven priority areas for research.

Soon after, The New York Community Trust and the Altman Foundation approached The New York Academy of Medicine to develop an evidence-based set of policy recommendations to improve disaster preparedness and response for older adults. This request capitalizes on NYAM's current leadership of Age-friendly New York City, a public-private partnership with the Office of the Mayor and the City Council to incorporate an "age in everything" approach to all public and private initiatives.[16,17] The engagement of multiple sectors—from business to clergy, architecture, planning, and health care—in the Age-friendly NYC initiative represents an ideal platform for the Older Adults Disaster Preparedness & Response Initiative.

Engagement of Stakeholders Across Sectors

NYAM's research, analysis, and recommendations are grounded in the experiences of those directly affected by the storm and the perspectives of multiple sectors that routinely engage with older adults. From the beginning, NYAM collaborated with policymakers and leaders who would be instrumental in implementing recommended interventions and policy changes.

NYAM assembled an Older Adults & Disasters Policy Advisory Committee with high-level representation from over 30 different institutions within the public, nonprofit, health care, and real estate sectors to provide ongoing guidance and lend an on-the-ground viewpoint to the work. The Committee, which also included community-based organizations from within Sandy-affected neighborhoods, advised on all aspects of data collection and analysis, as well as the generation of this report and its accompanying recommendations *(see Appendix A for the full committee list).*

NYAM also hosted, facilitated, and attended convenings at which experts across sectors and disciplines worked to devise creative solutions to increase community resilience. NYAM staff participated in over 40 Hurricane Sandy-related events, conferences, and seminars. At the request of the Municipal Art Society, NYAM facilitated multiple community consultations to inform the Mayor's *Special Initiative for Rebuilding and Resiliency* (SIRR), as well as the health care breakout session at "The Road Forward: Putting Resilience into Action," the conference that launched the SIRR report. NYAM was also invited to participate in a forum co-hosted by The Kostas Research Institute for Homeland Security at Northeastern University and The National Center for Disaster Preparedness at the Earth Institute at Columbia University on the Resilience of Health Systems and Services.

NYAM staff presented content on the needs of older adults in disasters to teams participating in the Rebuild by Design competition and testified before the Committee on Public Safety on a proposed bill (Int. 1065-2013) to create a citywide outreach and recovery plan to assist vulnerable and homebound individuals before, during and after certain emergency events. This bill was subsequently enacted as Local Law 60.[18] Other notable presentations included a Congressional briefing and a talk at Philanthropy New York. Finally, in partnership with HUD, NYAM facilitated a convening of 125 HUD-assisted senior housing property managers and owners to inform HUD as they revise the chapter on emergency preparedness in their multi-family housing handbook *(see Appendix B for the full list of events attended).*

The Community Resilience Framework

Resilient communities are able to leverage their existing social structures and networks to adapt to everyday stressors and large-scale catastrophes.[21] Research has shown that contrary to the common expectation that extreme social disorder will result from disaster, in actuality, local individuals, institutions, and resources can be highly effective in meeting the needs of survivors if they are connected and capacitated prior to the incident and are often more successful than outside agencies.[19, 22]

How a community responds to and recovers from a disaster is a reflection of how it functions under routine conditions.[19, 20]

The implications of this paradigm shift are profound: instead of investing in the colossal and questionably effective effort to get each individual prepared and equipped to face every type of disaster, emphasis should go toward enhancing neighborhood connectedness, integration of different service sectors, and encouraging the bridging between volunteer, service, business, and government entities.[23, 24] This approach has the significant benefit of helping to strengthen communities whether or not disaster occurs.[22]

A confluence of factors has led to a heightened interest in community resilience. In addition to the lack of evidence to support the efficacy of individual preparedness,[23] there are significant barriers faced by vulnerable urban populations in attempting to prepare. Barriers such as lack of funds,[9] transportation,[7, 8] and storage space,[25] as well as difficulty reading maps[26] and other preparedness content,[23] make preparing difficult if not impossible for many of the people most at risk of disaster-related illness or injury (e.g., older adults, poor people, mobility impaired). Simultaneously, the federal government, recognizing its own inability to singlehandedly address the multitude of needs following a disaster, has reoriented national policy to emphasize "an integrated, all-of-Nation, capabilities-based approach" to protecting the public from expected and unforeseen adversity, as stated in Presidential Directive 8: National Preparedness/Homeland Security.[27]

The Rand Corporation, informed by years of experience studying national and international disaster recovery operations, developed a framework for community resilience in the context of national health security,[28] grounded in research conducted throughout 2010.[10] The framework defines community resilience as

"The ongoing and developing capacity of the community to account for its vulnerabilities and develop capabilities that aid that community in:

1. *preventing, withstanding, and mitigating the stress of a health incident;*

2. *recovering in a way that restores the community to a state of self-sufficiency and at least the same level of health and social functioning after a health incident; and*

3. *using knowledge from a past response to strengthen the community's ability to withstand the next health incident."*

Figure 1

Figure 1

Levers of community resilience | Core components of community resilience

Wellness—Promote pre- and post-incident population health, including behavioral health
Access—Ensure access to high-quality health, behavioral health, and social services

Social and economic well-being of the community
Physical and psychological health of population

Community context

Education—Ensure ongoing information to the public about preparedness, risks, and resources before, during, and after a disaster

Effective risk communication information for all populations

Engagement—Promote participatory decisionmaking in planning, response and recovery activities
Self-Sufficiency—Enable and support individuals and communities to assume responsibility for their preparedness

Social connectedness for resource exchange, cohesion, response, and recovery

Ongoing development of community resilience

Partnership—Develop strong partnerships within and between government and nongovernmental organizations

Integration and involvement of organizations (govt/NGO) in planning, response, and recovery

Ongoing disaster experience

Ongoing activities

Quality—Collect, analyze, and utilize data on building community resilience
Efficiency—Leverage resources for multiple use and maximum effectiveness

Rand identifies five core components of community resilience (social and economic well-being, physical and psychological health, effective risk communication, social connectedness, integration of organizations) and posits that a community's response to and recovery from a disaster is largely determined by how effective that community is in maximizing these five components prior to the disaster.[10]

Increasing community resilience is therefore seen as an ongoing, non-linear process of strengthening a series of capacities. Rand identifies these capacities as the "levers" or "inputs" that act upon the "core components" or "outcomes" of community resilience *(see Figure 1*[(iii)]*).*[10]

This framework serves as a "roadmap" to guide local planning within the urban environment and easily allows for the translation of concepts into actions. Our methods, which included multi-sector partnerships and participatory research, were consistent with this approach, and our findings indicate that increased community resilience, rather than a continued exclusive focus on individual preparedness, is required to meet the needs of older adults under routine conditions and disasters. The recommendations at the end of this report suggest interventions to enhance each of the aforementioned levers of community resilience.

iii   Reprinted with permission http://www.rand.org/pubs/technical_reports/
      TR915.html

Research Methods

Review of Existing Literature

To develop a knowledge base about the needs and capacities of older adults in disasters and to formulate policy recommendations grounded in evidence, NYAM conducted a review of the existing literature. Using combinations of the keywords, "older adult, elderly, disability, disaster, emergency, preparedness, heat, hurricane, evacuation, risk, mental health, and community resilience," we searched the PubMed, AgeLine, and Google Scholar databases, and grey literature. Content was found in journals across disciplines, including gerontology, medicine, sociology, psychology, and disaster management.

Analysis of Secondary Data

Against a backdrop of description of the population from the U. S. Census American Community Survey,[1] we analyzed more targeted, disaster-related data, including NYCHA's Emergency Preparedness Resident Survey, Project Hope Crisis Counseling data, Community Solutions' canvassing data, New York State Disaster Case Management data, and DOHMH canvassing data *(see Appendix C for the detailed list of data sources).*

Interviews with Key Informants

We conducted 55 key informant interviews with experts across a wide range of fields. Key informants were identified by members of the Older Adults and Disasters Policy Advisory Committee, through the transcripts from the City Council hearings on Hurricane Sandy, through contacts made by networking at meetings and events, and through recommendations made by other key informants. We interviewed government employees, as well as leaders from the nonprofit, health care, and real estate sectors, volunteers from emergent and established organizations, and experts from other disaster-prone states *(see Appendix D for the complete list of interviews).*

Focus Groups

We facilitated focus groups with older residents and frontline responders in five areas where storm surge was significant and large numbers of older adults suffered for extended periods *(see Map 1, page 16).* Throughout August 2013, ten months after the storm, a total of 14 focus groups were conducted with 138 participants in English, Mandarin, and Spanish.

In the residents focus groups, participants were age 60 and over and affected by the storm. For the frontline responders focus groups, participants included people of any age, who assisted older adults in meeting their needs before, during, and after the storm but were not part of the formal emergency response sector (e.g., firefighters, police officers, emergency medical technicians). NYAM partnered with local community-based organizations for participant recruitment in each of the regions *(see Table 2).*

Residents focus group discussions covered storm preparation, experiences during and immediately after the storm, basic and health-related needs, disaster-related assistance, and community resilience. For responders, discussions

Table 2. Communities, CBOs, and Participants

Affected Community	Collaborating CBOs	Resident Participants (n=81)	Responder Participants (n=57)
Lower Manhattan	Hamilton-Madison House	23	15
Red Hook, Brooklyn	Red Hook Initiative	22	11
Far Rockaway, Queens	Jewish Association Serving the Aging (JASA)	11	17
Coney Island, Brooklyn	Shorefront YM-YWHA	12	9
Staten Island	Community Health Action of Staten Island	13	5

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covered personal storm experiences, specifics of their work as a frontline responder, perceptions of needs of older adults, observations about coordination of services, barriers to providing assistance to older adults, overall utility of service provision, notable service gaps, and community resilience. The NYAM Institutional Review Board oversaw the study process and consent procedures.

Among responders, the mean age was 51 (age range: 24 to 83). Most were female. Almost half were white, and almost one-quarter were black. Eighty percent worked as full-time responders immediately after the storm. Responder roles and responsibilities included, but were not limited to, property managers, superintendents, home health aides, nurses, translators, staff from community-based organizations and health centers, hub managers, and supply coordinators. Approximately 60% of responders worked for pay; 40% volunteered. Seventy-three percent of responders lived in the affected communities *(see Table 3)*.

Among residents, the mean age was 72 (age range: 47 to 99).[iv] Most were female, renters, and not working. Thirty-six percent of participants were white; 30% were Latino. Thirty-eight percent of participants reported good health. A similar proportion of participants reported living alone (38%) and living with a spouse (34%). Like most residents in the NYC evacuation zones,[12] the majority of focus group participants (61%) remained in their homes during the storm. Of those who did evacuate, a large share stayed with friends or families, while only a few went to a hotel or a public shelter *(see Table 4)*.

Almost all residents (87%) reported taking prescription medications daily, and close to 40% reported being on a special diet and/or use of medical equipment. **One-quarter of participants were caregivers, and 37% were care recipients** *(see Table 5)*.

The demographic data on focus group participants illustrates that the distinction between the residents and responders groups was, in actuality, somewhat arbitrary. With a mean age of 51, many of the responders were older and had been significantly affected by the storm. In the same vein, an analysis of the content of the residents

iv   CBOs were asked to exclude residents under age 60; however, a limited number of participants (n=7) were under 60.

Table 3. Participant Characteristics-Responders (n=55)

	%
Female	77
Race/Ethnicity	
Latino	14
White	44
Black	23
Asian	19
Work as Responder was...	
Paid; regular job	44
Paid; not regular job	18
Volunteer	38
Full time responder	80

Table 4. Participant Characteristics-Residents (n=79)

	%
Female	74
Race/Ethnicity	
Latino	30
White	36
Black	17
Asian	17
General Health	
Very good/Good	58
Fair/Poor	40
Live with	
Spouse	34
Child	23
Alone	38
Own pets	30
Rent	67
Not employed	90
Sheltered in place	61

Table 5. Health-Related Needs of Residents (n=76)

	Yes (%)
Require daily prescription medications	87
Require a special diet or medical equipment	39
Someone depends on you as a caregiver	25
You depend on someone in your household as a caregiver	24
You depend on someone outside of your household as a caregiver	13

Map 1

Five Communities Directly Affected By Hurricane Sandy Where Focus Groups Were Held

- Manhattan CD 3
- Queens CD 14
- Staten Island CD 2
- Brooklyn CD 13
- Census tracts for Red Hook: Kings County 53, 59, and 85

OEM Hurricane Evacuation Zones 2013

- 6
- 5
- 4
- 3
- 2
- 1

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Data sources: NYC Office of Emergency Management, 2013

focus groups indicates that while these participants were 60 and over and affected by the storm, many of them also played key roles in the response efforts. That older people simultaneously require help and desire the opportunity to help in a disaster is a recurring theme throughout this report *(see Appendix E for the full focus group report)*.

Recommendations

Our approach to developing recommendations was first to analyze the results of these wide-ranging consultations, the literature on older adults and disasters, and the reports and recommendations of other Hurricane Sandy-related task forces and commissions at the federal, state, city, and grassroots levels. We then generated recommendations, grounded in the community resilience framework, in collaboration with the Older Adults and Disasters Policy Advisory Committee.

Limitations

Through multiple data collection strategies, NYAM sought to acquire a comprehensive understanding of the needs and experiences of community-dwelling older adults in disasters, with particular focus on learning from people's experiences during Hurricane Sandy; nonetheless, limitations remain in the information we used. First, time and resource constraints prevented us from directly interviewing homebound older adults and people with cognitive impairment, though we did gain some insight into their experiences from secondary data sources and from reports of frontline responders and older adults in focus groups. Second, while we did have Russian speakers in the Coney Island focus group, we did not have monolingual Russian speakers as we only ran groups in English, Spanish, and Mandarin. Lastly, secondary data analysis was impeded by numerous data sets where age was not collected.

Description of the Population & Community Characteristics

Description of the Older Adult Population

As the Baby Boom generation ages and people live longer, the number of older New Yorkers who continue to live in their homes and participate in their communities has steadily increased in recent years. Though over 60% of adults age 65 and older have multiple chronic conditions, most older adults live independently, manage their health care needs, and generally function well. However, as the number of chronic health conditions often increases with an individual's age, limitations in activities of daily living also tend to increase.[30] As a result, the number of older adults living with restricted mobility who may become socially isolated also increases. The diverse needs and potential vulnerabilities of community-dwelling older adults must be broadly recognized and addressed, including in emergency preparedness and response.

Many older adults depend on multiple medications to control chronic health conditions, such as congestive heart failure and coronary artery disease, chronic lung disease, and diabetes, as well as mental health conditions including anxiety and depression.[31] Dementia, the leading cause of cognitive impairment among older adults,[32] affects 14% Americans 71 and over, with prevalence rapidly increasing with advancing age.[33] Eighty percent of adults 65 and over nationwide take prescription medication regularly compared to only 42% of adults under 65.[31] There are at least 100,000 New Yorkers who rely on visiting nurses and aides to meet medical or personal care needs at home.[10]

Associated with both age and poverty, poor health status is a significant indicator of vulnerability in a disaster.[31] A 2010 study of 1,000 randomly selected adults age 65 and over living in New York City public housing[(v)] found 79% of residents suffered from at least two of the following chronic conditions: diabetes, hypertension, high cholesterol, arthritis, or osteoporosis, and 29% struggled with activities of daily living,[34] rates consistent with those of other low-income, aging populations. However, multiple chronic conditions do not necessarily correlate with self-assessments of poor health. A NYAM survey of New York City Innovative Senior Center participants[(vi)] found that despite the prevalence of multiple chronic conditions (74% in this sample), a majority of those surveyed rated their health as "excellent," "very good," or "good." The most strongly associated factor for older adults to self-report "fair" or "poor" health status was a sense that the symptoms of their chronic conditions, particularly heart disease, lung disease, and diabetes, were not under control.[35]

v   A sample of 1,036 senior NYCHA residents, randomly selected from the 2009 NYCHA Tenant Data System.

vi   A convenience sample of 404 Innovative Senior Center (ISC) participants, approximately 50 from each of eight ISCs, were surveyed on their self-assessment of physical and mental health status, access to and utilization of health care services, use of preventive health screenings, management of health conditions, and social networks and social isolation.

Table 6. Number and percentage of those with disabilities by type and age group

	Hearing difficulty	Vision difficulty	Cognitive difficulty	Ambulatory difficulty	Self-care difficulty
% age 65+ in NYC with disability	10.5	8.3	11.3	27.1	11.5
# age 65+ in NYC with disability	106,000	83,000	113,000	271,000	115,000
% age <65 in NYC with disability	1.0	1.2	2.8	3.4	1.2
# age <65 in NYC with disability	69,000	90,000	201,000	243,000	87,000

Source: 2008-2012 5-year American Community Survey, US Census Bureau, 2013

The data presented here (and in more breadth and detail in the tables in *Appendix F*)[vii] are intended to provide context and reference points for the findings, analysis, and recommendations presented in the following sections of the report. The data describes demographic characteristics of older New Yorkers that are relevant to disasters and emergency preparedness, with more detail on the five Sandy-affected communities in which NYAM conducted research. It is important to note that these were not the only communities affected by Hurricane Sandy, but are generally considered the most severely affected.

Nearly 1.4 million New York City residents, or 17.0% of the total population, are age 60 or older, and roughly 1 million New Yorkers, representing 12.2% of the total population, are age 65 or older.[1] Across the five boroughs, the proportion of the age 65+ population ranges from 10.6% in the Bronx to 13.5% in Manhattan. However, there is a much broader range across the five Sandy-affected areas with age 65+ older adults representing from 9.1% of the overall population in Red Hook to 22.8% of the overall population in Coney Island *(see Map 2, page 21).*

vii Both the 2008-2012 5-year American Community Survey, and the 2009-2011 3-year American Community Survey PUMS compiled by the NYC Department for the Aging were used. In many cases the data sources differ with respect to the categories in which data are presented; in most cases the ACS 5-year provides an age 65+ category for older adults, whereas the ACS 3-year PUMS generally uses an age 60+ category. Another significant difference is in regard to the discrete geographic areas for which data are available. The ACS 3-year PUMS data is available by Community District, and that data is used to describe Coney Island (Brooklyn CD 13), Lower East Side / Chinatown (Manhattan CD 3), the Rockaways (Queens CD 14), and Mid-Island / East Shore (Staten Island CD 2). However, data for Red Hook, a much smaller area both geographically and in terms of population than the other Sandy-affected areas, is not available from the ACS 3-year PUMS. Instead, the three census tracts that comprise Red Hook (Kings County 53, 59, and 85) were aggregated using data from the ACS 5-year.

Among the age 65+ population in the city, 4.3% or 43,572 live in group quarters, (i.e., nursing facilities/skilled nursing facilities, inpatient hospice facilities, psychiatric hospitals, group homes, and correctional facilities). The remaining 95.7% are **community-dwelling**.

Among those age 65+, the **proportion living alone** is 31.3% for the city overall, ranging from 23.6% in Staten Island to 42.3% in Manhattan. Far more women than men live alone, approximately 225,000 women compared to 89,000 men in the city as a whole *(see Map 3, page 22).*

Disabilities can affect peoples' ability to receive and understand emergency communication regarding disasters, as well as their ability to evacuate, remain in shelters, and access resources to meet basic and medical needs. As presented in *Table 6*, age 65+ older adults experience various disabilities at four to ten times the rate of people under age 65, yet the numbers of those under age 65 with disabilities are also substantial.

Based on the aggregate Self-Care/Mobility Disability category used by the Department for the Aging, 26.5% of the age 60+ population of New York City falls in this category. Across the boroughs, the rate ranges from 21.2% in Staten Island to 32.9% in the Bronx *(see Map 4, page 23).*

For New York City overall, the **racial/ethnic group** composition among age 60+ older adults is 45.2% White; 21.6% Black; 11.1% Asian/Pacific; and 22.1% Other race or Multi-race; Hispanics/Latinos (of any race) comprise 20.5% of the age 60+ population.

Table 7. Older adult racial/ethnic composition and poverty rates in the five focus group communities

	Red Hook	Coney Island	LES/ Chinatown	The Rockaways	East Shore SI
% age 60+ White	28.2	79.4	22.3	54.5	81.3
% age 60+ Black	35.5	6.5	5.3	29.1	2.7
% age 60+ Asian/Pacific	2.0	6.6	46.7	1.7	9.9
% age 60+ Other or Multi-race	34.3	7.4	25.8	14.7	6.1
% age 60+ Hispanic / Latino (of any race)	45.6	7.1	24.1	12.8	5.9
% of age 65+ households in poverty (CEO method)	52	43	39	26	12

Sources: 2008-2012 5-year American Community Survey, US Census Bureau, 2013; and 2009-2011 3-year American Community Survey PUMS, US Census Bureau, compiled by DFTA, 2013

In regard to limited financial resources and financial stress, the proportion of age 65+ **households in poverty**, using the NYC Center for Economic Opportunity (CEO) method of assessing poverty,[viii] is 23.0% for New York City as a whole. Among the boroughs, the proportions range from 11.4% in Staten Island to 29.4% in Brooklyn. Among the Sandy-affected communities where we conducted focus groups, the proportions range from 11.8% to 52%[ix] *(see Map 5, page 24)*. See *Table 7*[x] for comparative data across the five focus group communities in regard to racial/ethnic composition and poverty rates among older adults in age 60+ households.

Medicare coverage for the age 65+ population ranges from 87.6% in the Bronx to 92.9% in Brooklyn, with the overall city rate 91.0%. **Medicaid** coverage for those 65 and older ranges from 15.0% in Staten Island to 35.5% in Brooklyn, with the overall city rate 28.6%.

The ability of a community's members to understand and speak English is an important consideration for disaster communication strategies and first responders, as well as being a factor in efforts to develop community resilience. Not surprising in a city where 55% of the age 60+ population is foreign-born, the proportion of 60+ older adults who **speak English "less than very well"** is 27.7% in New York City as a whole (calculated from those whose primary language is one of the eight most prevalent non-English languages spoken in New York City, i.e., Spanish, Chinese, Russian, Italian, French Creole, Greek, Yiddish, and French; detailed language-specific information is available in the tables in *Appendix F*). The proportion ranges from 10.3% in Staten Island to 33.1% in the Bronx. In two of the five Sandy-affected communities in which NYAM collected data, the percentages approached 60% (LES/Chinatown and Coney Island) *(see Map 6, page 25)*.

In regard to **housing**, buildings that have elevators, which are dependent on electricity to operate, present particular challenges for residents and responders in disasters. The *Special Initiative for Rebuilding and Resiliency* (SIRR) report[11] provides breakdowns of housing by building type for Sandy-affected areas. The areas for which data are available are larger than the areas that NYAM focused on for primary data collection; nevertheless, the information in *Table 8* illustrates the range and relative proportions of residential unit building types across Sandy-affected areas.

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viii   The NYC Center for Economic Opportunity (CEO) method for estimating poverty addresses shortfalls in the standard Federal Poverty Level by expanding the range of basic household expenses considered, along with accounting for non-cash resources households may receive to meet those basic household expenses. For more information, see http://www.nyc.gov/html/ceo/downloads/pdf/final_poverty_report.pdf. To see how poverty rates using the CEO method compare to the rates using the standard FPL method, please refer to the detailed tables in Appendix F.

ix   This is an approximation derived from adding the average 4 percentage point difference in the borough rates of poverty measured by the CEO method versus the traditional Federal Poverty Line (FPL) method to the 48.4% FPL rate for Red Hook.

x   The Red Hook figures are for the age 65+ population.

Table 8. Percentage of housing by type in SIRR-designated Sandy-affected areas

	Brooklyn-Queens Waterfront (including Red Hook)	Southern Brooklyn (including Coney Island)	Southern Manhattan (including LES/ Chinatown)	South Queens (including the Rockaways)	East Shore and South Shore SI
% 1-2 family	7	24	0	45	84
% multi-family walk-up	37	15	10	11	7
% multi-family elevator	28	51	41	41	8
% mixed use (residential / commercial)	28	10	49	3	1

Source: The Special Initiative for Rebuilding and Resiliency (SIRR) report, NYC Office of the Mayor, 2013

Many older adults reside in federally-subsidized, low-income senior housing, much of which was constructed within flood zones throughout New York City. Section 202 housing is low-income housing for people 62 and over. There are over 200 Section 202 buildings subsidized by the Department of Housing and Urban Development (HUD) with over 17,000 units of housing for seniors in New York City.[36] Over 80% of these buildings have elevators.[36] These buildings are not accountable to any city agency with respect to emergency planning and preparedness.

In addition, the New York City Housing Authority offers 42 exclusive senior developments and 14 mixed-family developments with buildings designated for seniors, which altogether comprise approximately 10,000 units.[34] These units are also primarily in elevator buildings. Older adults living in these senior-designated units account for approximately 17% of the 61,500 adults age 62 and older who live in NYCHA developments, with 83% of older residents living in buildings not designated for seniors.[34] Over one-fourth of older residents have lived in NYCHA housing for 40 years or longer[34] *(see Map 7, page 26)*.

People continue to work into their older adult years, with 25.4% of age 60+ older adults **employed** in New York City. This figure reinforces the capability of this population to mobilize itself in regard to disaster response and recovery. Nationally, more than 24% of people over 65 **volunteered** in 2012,[37] many examples of whom were found among our focus group participants and mentioned by key informants.

Map 2

Number of Community-Dwelling Older Adults

- 1 Dot = 100 Community-dwelling Older Adults (65+)

OEM Hurricane Evacuation Zones 2013

6
5
4
3
2
1

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Data sources: NYC Office of Emergency Management, 2013
US Census Bureau, American Community Survey 5 year Census Tract Estimates, 2006-2010

Community-Dwelling Older Adults Living Alone

• 1 Dot = 100 Community-dwelling Older Adults (65+) Living Alone

OEM Hurricane Evacuation Zones 2013

6 5 4 3 2 1

Data sources: NYC Office of Emergency Management, 2013
US Census Bureau, American Community Survey 5 year Census Tract Estimates, 2006-2010

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Map 4

Disability Characteristics of Community-Dwelling Older Adults

1 Dot = 100 Community-dwelling Older Adults (65+)

- Ambulatory Difficulty
- Self-Care Difficulty
- Cognitive Difficulty
- Hearing Difficulty
- Vision Difficulty

OEM Hurricane Evacuation Zones 2013

6
5
4
3
2
1

Data sources: NYC Office of Emergency Management, 2013

US Census Bureau, American Community Survey 5 year Census Tract Estimates, 2008-2012

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Community-Dwelling Older Adults Below the Federal Poverty Line

1 Dot = 100 Community-dwelling Older Adults (65+) Living Below the Federal Poverty Line

OEM Hurricane Evacuation Zones 2013

6
5
4
3
2
1

Data sources: NYC Office of Emergency Management, 2013

US Census Bureau, American Community Survey 5 year Census Tract Estimates, 2006-2010

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Map 6

Community-Dwelling Older Adults with Limited English Proficiency

1 Dot = 100 Community-dwelling Older Adults (65+) Who Speak English "Less than Well"

Primary Language

- Spanish
- Other European Languages
- Asian Languages
- Other Languages

OEM Hurricane Evacuation Zones 2013

6
5
4
3
2
1

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Data sources: NYC Office of Emergency Management, 2013
US Census Bureau, American Community Survey 5 year Census Tract Estimates, 2006-2010

Density of Public Housing for Community-Dwelling Older Adults

● NYCHA Developments and Buildings Exclusively for Older Adults

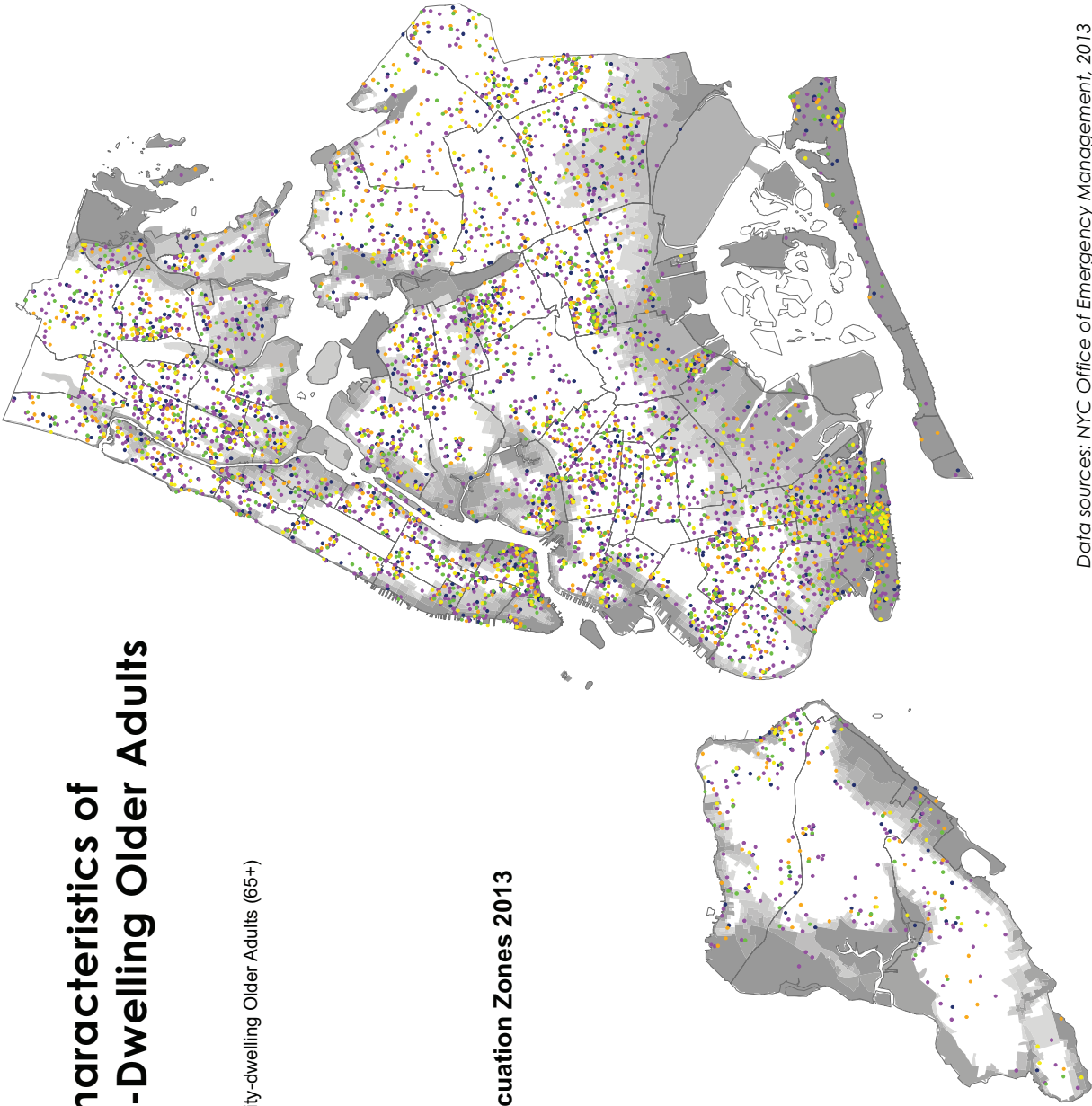● 202/811 Buildings

OEM Hurricane Evacuation Zones 2013

6
5
4
3
2
1

Data sources: NYC Office of Emergency Management, 2013
New York City Housing Authority
Furman Center's Subsidized Housing Information Project, 2012
NYC Department of Planning, PLUTO Dataset, 2012

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Community Characteristics Relevant to Community Resilience

Many aspects of New York City's geographic, social, and economic landscape influence disaster preparedness and response for older adults. Specific examples are discussed in the Findings and Analysis section of the report. Presented here are three broad themes to set a citywide context intended to undergird many of those specific findings.

New York City has a high rate of poverty among older adults

As previously noted, poverty is strongly associated with poor health status and therefore, increased vulnerability during disasters (e.g., need for medications, mobility impairments associated with chronic disease) due to limited resources to evacuate and meet basic needs.[9]

Using the standard Federal Poverty Level measure for which comparative national data are available, New York City stands apart from the rest of the nation in its rate of poverty among age 65+ residents. While New York City has higher than national average rates of poverty for all age groups, the discrepancy for older adults is the greatest: 18.5 percent in New York City compared to 9.4 percent nationally.[1] In light of the association between poverty and poor health, and poor health and increased vulnerabilities during a disaster, the prevalence of poverty among older adults in New York City reveals an important aspect of the scope of the challenge in disaster preparedness and response for older adults in New York City.

Differing levels of geographic isolation of communities

Geographic isolation in New York City is a product of geographic distance from central areas of relatively concentrated resources, and transportation linkages to those areas that are not particularly robust. Geographic isolation leads to increased vulnerability to transportation disruptions during disasters, hampering evacuation, response, and recovery; and in the case of a storm like Sandy, geographic isolation appears associated with communities' physical vulnerability to storm surge damage, as in Staten Island and the Rockaways.

Cited in the Community District Needs Statements of both Queens Community District 14 (The Rockaways)[38] and Staten Island Community District 2,[39] traffic congestion within the community district, the inability to easily and relatively quickly reach commercial and employment centers outside the community district, and difficulty in attracting working class and middle class residents are all attributed to the inadequacies of the local and city transportation systems. The deficits in these communities' transportation infrastructure, both internally and in connecting the communities to the rest of the city, had predictable results for response and recovery in the wake of Sandy.

"I deal with home delivered meals. On Wednesday, I came out to the Rockaways. [There were] large sand dunes-some were 20 feet high. We had to maneuver around them. The water was 5 feet [high], and [we] couldn't go any further. [We] had to be out of the Rockaways by 4 pm. There was a silent curfew. [We] only got about 40 of the 300-400 clients. The 7 miles of the Rockaway peninsula had no stores. When our drivers went out, people wanted the food."

–Frontline Responders Focus Group Participant

Range of functional capacity and connection to local service providers

Based on our consultations with service providers and older adults, we believe a useful conceptualization of the vulnerability of community-dwelling older adults in disasters is to consider four categories into which an older adult may fall. These four categories are the product of two variables: whether the older adult in normal circumstances can function independently and whether the older adult is connected to local service providers. This concept is illustrated by a simple 2x2 table:

Table 9. Older Adults' Functional Capacity & Connection to Local Service Providers

	Functions independently	Cannot function independently
Not connected to a local service provider	1.	2.
Connected to a local service provider	3.	4.

Cell 1. Functions independently and not connected to local service providers

Older adults who are capable of meeting all of their basic needs under routine conditions can be made vulnerable in disasters due to disruptions in residential electricity and water service, elevator service, communication or transportation infrastructure, or health care and medication management. These older adults will not be known to human services providers and have to rely on informal networks of friends, family, and neighbors to provide them with information, support, and assistance. Most older people fall into this category and, as a result, may be "hard to find" during disasters.

Cell 2. Cannot function independently and not connected to local service providers

Older adults who struggle with undiagnosed or untreated physical and mental health conditions, as well as older adults whose conditions are managed solely by in-office health care practitioners and informal caregivers, will not appear on lists of vulnerable populations. Special efforts must be made to locate them in emergencies. Once identified, depending on the specific condition and level of functioning, these individuals may or may not be able to articulate or take the requested steps to meet their needs.

Cell 3. Functions independently and connected to local service providers

Older adults who are capable of meeting all of their basic needs under routine conditions but choose to avail themselves of supportive or recreational services from a community or faith-based organization, such as a senior center or church, may become vulnerable in disasters due to the same factors listed above, but because they are already known to community groups, they are more likely to be readily identified as needing assistance. However, it should be noted that organizations vary in their information management capacity, as well as in their capacity to deliver services in circumstances of elevated need—both of which may be compromised in a disaster.

Cell 4. Cannot function independently and connected to local service providers

Older adults who require in-home supports to live in the community are vulnerable to disruptions in caregiving, home-delivered meals, and other in-home services, during a disaster, in addition to the aforementioned disaster-related vulnerabilities. These older adults may struggle with eating, toileting, and dressing without their caregivers. Service providers will have them named on lists as in need of assistance according to medical needs-based priority levels.

Identifying and planning for community members who fall into each of these categories in advance of a disaster has the potential to keep vulnerable populations safer, as well as to facilitate a more efficient and targeted approach to deploying resources should a disaster strike.

PEOPLE WHO NEVER KNEW WHO-WAS-WHO IN THE NEXT APARTMENT CAME TOGETHER.

WE NEEDED WATER AND TO HELP THE ELDERLY WHO COULDN'T GET AROUND. WE HELPED OUR NEIGHBORS.

WE DIDN'T JUST BECOME RESIDENTS, WE BECAME FRIENDS, FAMILY.

WE REALIZE FROM ONE DAY TO THE NEXT, EVERYTHING CAN BE GONE.

WE'RE ALL 1 NEIGHBORHOOD, REGARDLESS OF HOW PEOPLE TRY TO DIVIDE US, WE CAN ALL DEPEND ON EACH OTHER. PERIOD.

THIS HAS MADE US BETTER NEIGHBORS, LIKE THE OLD DAYS. NEIGHBORS CHECKED ON EACH OTHER.

Decisions and Actions Related to the Storm

The following sections synthesize data gleaned from primary and secondary sources to draw conclusions about the perceptions, behaviors, needs, responsibilities, and outcomes of community-dwelling older adults before, during, and after Hurricane Sandy. From these conclusions, recommendations are proposed at the end of this report to ensure the safety of older people in emergencies.

Older adults struggled to access information required to make decisions

In previous research conducted by the New York Academy of Medicine through the Age-friendly New York City Initiative, older adults frequently mentioned lack of information as a barrier to accessing services and care.[16] This is especially concerning as older adults are often the key decision makers for themselves and others for whom they have primary caregiving responsibilities, including young children and other older adults. The information individuals receive regarding a disaster and the ways in which they receive it influence how they perceive the oncoming threat, as well as how they can and will respond.

In residents and responders focus groups, participants reported significant barriers to accessing storm-related information. The most common sources of information were television and radio, as well as friends, family, and neighbors, which is consistent with the literature surrounding previous storms.[40, 41] However, these were not accessible to all, and maintaining situational awareness was challenging, especially within linguistically isolated communities.

"Watching news on TV is good, but some seniors who didn't understand English could not afford cable. So they could not watch Chinese channel, and they didn't know what's going on."

–Residents Focus Group Participant

"I didn't receive a note on my door. I depend on my neighbors for information, and my neighbors were gone. And I couldn't use the phone."

–Residents Focus Group Participant

Proactive modalities of communication that incorporated messengers familiar to older adults helped to mitigate informational barriers. Local service providers, who had relationships with older adult patient populations across various settings, were a particularly helpful source of information for disaster preparation. Key informants and frontline responders within the focus groups recalled working with their clients to help them understand the resources and support systems that might not be available during and after the storm and how they might be affected as

a result. One pharmacist we interviewed reported that when none of her older patients called for an emergency supply of pills prior to the storm, she ran a report of those who were due for a refill within the next six days and personally called all of these patients to ensure they received their extra medication.

However, even after experiencing Hurricane Sandy, many older adults remained uninformed as to how to access critical services in a disaster. The New York City Housing Authority conducted a survey eight months post-storm, which oversampled Evacuation Zone A, to assess the preparedness of its residents.[xi] Fifty-seven percent of households with a member 62 and over reported needing assistance in evacuating, yet 46% of households with a member 62 and over disclosed that they were "not at all familiar" with how to access help evacuating or getting to a shelter.[42]

xi In May-June of 2013, NYCHA conducted an Emergency Preparedness survey to a sample of 1824 households drawn from NYCHA's Tenant Data System; of these households, 540 had one or more persons age 62 or older.

Actions to Prepare

While the OEM survey[12] indicates that a large proportion of the general population (79% of respondents) that lived in evacuation zones felt prepared with adequate supplies (food, water, etc.), many older adults in the focus groups expressed that they felt somewhat or very unprepared. Some participants did not understand how to prepare, yet others made no efforts to prepare because they perceived no real risk from Hurricane Sandy.

"I didn't prepare for the storm. Because before that we had another storm and they said on TV that we had to evacuate and all and nothing happened. So we didn't prepare."

–Residents Focus Group Participant

The milder-than-expected Hurricane Irene was referenced multiple times in older people's explanations of their Hurricane Sandy decisions. Several frontline responders and key informants also noted that the exclusion of nursing facilities from the mandatory evacuation order sent mixed messages as to the severity of the risk to community-dwelling older adults.

Those who prepared by gathering or purchasing recommended supplies, including batteries, water, candles, and food, described their efforts as futile when faced with the extensive disruptions and damage Hurricane Sandy caused to their homes, buildings and neighborhoods.

"I thought it would last three days at most like it used to be, while it lasted more than 10 days and it was extremely devastating."

–Residents Focus Group Participant

Health and safety concerns influenced decisions to evacuate or shelter-in-place

Many older adults felt that evacuating would be detrimental to their health and safety. According to key informants and frontline responders, the older adults they worked with were concerned that shelters were unsafe or could not meet their needs. This sentiment was echoed by older focus group participants. As one residents focus group participant commented incredulously, "How can you take a 94-year-old to a shelter to sleep on a cot?" A Hurricane Sandy shelter operator reported that it was especially difficult to monitor the shelter at night when he had very few staff and volunteers and that older adults were rightfully frightened.[xii]

The heightened stress and chaos that surrounded storm-related decisions and actions were especially difficult for older people with mental health conditions and dementia. One clinical service provider noted that for some older adults, the experience or imagery of evacuation has terrifying associations and can lead to a reemergence of early life trauma. For instance, large crowds of people leaving may evoke experiences of war or emigration under duress. Several key informants noted that Hurricane Sandy was particularly challenging for Holocaust survivors, Russian-speaking elders, and other populations who had survived extended deprivation. When faced with this stress, older people were more likely to stay home where they felt the safest.

> *"One-third of the building refused to leave. A shelter was not a choice for many. 'A shelter? I might be killed there. I'd rather be killed here.'"*
>
> *–Residents Focus Group Participant*

The health-related needs of others also influenced decision-making and ability to take protective actions. A quarter of the older adults in the residents focus groups were caregivers for someone else in their household.

> *"My husband had open heart surgery. There was water around each entrance of the building. Some people left. We didn't go (evacuate) because we didn't feel good. After a few days I got shingles. Every day I had to walk from the 10th floor to get water."*
>
> *–Residents Focus Group Participant*

Within the residents focus groups, 30 percent of participants owned pets, which often provided a significant source of support and security. Several older adults mentioned the safety and needs of their pets as having influenced their decisions. One key informant who worked in disaster preparedness and response for pets reported instances of older people in shelters who refused temporary housing because it was not pet-friendly.

xii In accordance with the Americans with Disabilities Act, FEMA recommends that people with access and functional needs, including older adults, be served by general population shelters.[101] Yet, older adults, especially those with physical or cognitive impairments, may be at risk of falls, injuries, neglect, or abuse in such chaotic environments.[102]

Social Networks Influenced Decisions

"I'm a senior but I adopted a senior. She had a mental problem…I [knew] I had to get that woman out of the 7th floor apartment."

–Residents Focus Group Participant

For many, aging into older adulthood results in increased dependency and attachment to home, belongings and neighborhood, as one's world becomes smaller due to physical or cognitive impairment and diminished social networks.[43] As a result, the prospect or experience of losing access to community resources and remaining social networks even for just a few days can be especially daunting.

Consistent with several studies which found that social networks play a role in risk perception and decision-making,[44–47] focus group participants and key informants, particularly those who lived and worked in multi-family senior housing, reported incidents of collective processing of information and resolving to shelter-in-place.

"Three times I refused to leave. And of course my neighbors all said we'll stay. So that's it. Sink or swim, we're going to stay because actually there is no other place."

–Residents Focus Group Participant

Similarly, when asked by a volunteer why she still refused to leave her building after ten days without electricity, heat, or running water, one older tenant replied, "Because all of my friends are here."

"We need to connect with other people than those in the Rockaways. We need to identify resources and set up a network. We can't wait for the city."

–Frontline Responders Focus Group Participant

Immediate and Ongoing Needs of Older Adults

Older adults struggled to access relief

While the circumstances that resulted from Hurricane Sandy were difficult for every affected New Yorker, older adults struggled with unmet needs that were not experienced by all, and the emergency services provided to assist them were often inaccessible.

Food and Water

Older adults and other mobility impaired people who could not walk up and down the dark stairs of high-rise buildings were dependent on neighbors, volunteers, or a skeleton crew of building service workers to bring them food and water every day, rendering delivery uneven at best and nonexistent at worst. Post-storm canvassing operations conducted several weeks after the storm by the nonprofit Community Solutions[xiii] and FEMA/ National Guard personnel in partnership with DOHMH Sanitarians[xiv] found food and water to be a need in 33% and 24% of households, respectively.[48, 49] Hunger, dehydration, and nutritionally inappropriate diets can weaken older adults' immune systems, leading to higher incidents of infections and the exacerbation of chronic conditions.[50]

One key informant reported that in walk-up buildings, homebound and hungry older adults watched from their windows as emergency food delivery people drove away because they were unable to gain entry without electricity to power the door buzzers. Several resident focus group participants recalled that trucks delivering food block by block would honk their horns to announce they were there but wouldn't wait long enough for older adults to approach. To address this, some older adults worked in teams to look out for the truck, flag it down, and retrieve the provisions.

For older adults who lived in houses or on lower floors of buildings and were capable of leaving, transportation to food distribution centers and open supermarkets was a challenge. A post-storm survey conducted by the Associated Press-NORC Center for Public Affairs Research[xv] found that lower-income people were more likely to report having experienced difficulty due to disruptions in public transportation (63%) than those with higher incomes (46%).[51] On Staten Island, where many older adults lost their cars, walking to Miller Field, where emergency service providers were distributing supplies, was specifically mentioned as a problem, as well as standing in long lines without a place to rest. Similarly, in the Far Rockaway focus group, several older adults stated that the distance of distribution sites from their homes made accessing food and water difficult, if not impossible.

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xiii Using a modified CDC CASPER survey, Community Solutions surveyed 611 NYCHA households with a total of 1,293 household members (24% of members were 65+) in Coney Island, Far Rockaway, and Red Hook in the two weeks following the storm.

xiv A canvassing operation of high-rise buildings in Coney Island and Far Rockaway conducted by FEMA/National Guard personnel with NYC DOHMH Sanitarians from November 9-14, 2012 assessed urgent needs in 11,857 occupied units during the days the electricity was out, and 13,839 occupied units total. Twenty-four percent of 11,857 households needed food.

xv A post-storm, nationally representative survey conducted by the Associated Press-NORC Center for Public Affairs Research (April-June, 2013 via telephone) with 2,025 adults, including an oversample of 1,007 adults residing in the affected region in New York and New Jersey.

Low-income older adults who were reliant on the Supplemental Nutrition Assistance Program (SNAP; formerly known as food stamps), ranging from 9% of the older population in CD 2 of Staten Island (which includes the East Shore) to 45%[1] in Red Hook, reported having struggled to redeem their benefits[(xvi)] when local retailers did not have electricity to process their EBT cards and would only accept cash. While younger populations traveled to larger grocery stores outside of their neighborhoods that could accept EBT cards, many older adults and other mobility-impaired people were unable to make such trips. Without access to their benefits, and having sustained disaster-related losses, many older adults were unable to afford food.

To assist low-income Sandy survivors ineligible for SNAP, the New York City Human Resources Administration administered the federal Disaster Supplemental Nutrition Assistance Program (D-SNAP).[(xvii)] However, for some older adults and people with disabilities, the in-person application process was a barrier to enrollment due to the location of sites and the lack of special accommodations for people with mobility impairment.[52]

Focus group participants in both the residents and responders groups spoke about challenges associated with Meals Ready to Eat (MREs) which were distributed by agencies including the National Guard and the Red Cross. MREs contained excessive sodium, fat, and calories for many older adults[53] and did not meet the dietary restrictions of others, such as those who kept kosher. They were cited as particularly confusing for immigrants who did not speak English, some of whom ate them without adding the necessary water.

"At the Center, the National Guard gave MREs the 2nd and 3rd day and people couldn't read the instructions. It was like giving you a gift with a chain and a lock on it. They were okay if you could figure out how to open them and eat them."

–Residents Focus Group Participant

Alternatively, cooked food was identified as a source of comfort, social bonding, and hope for a return to normalcy. Deep appreciation was expressed by residents and front-line responders in focus groups and key informant interviews for the organizations and local businesses that provided cooked food and space for congregate meals and conversation.

Hygiene

Personal hygiene is key to preventing infectious diseases[54] and maintaining human dignity during a disaster. During Hurricane Sandy, the lack of potable water, flushing toilets, and bathing facilities created significant personal hygiene needs. According to the Associated Press-NORC survey, 13% of households in the affected areas lost water service, and 36% of those households lost water for more than a week.[51] Of the 611 NYCHA households canvassed by Community Solutions in the two weeks following the storm, 32% reported that their toilets were not functioning, and 21% reported needing a place to shower.[48]

Older adults struggled to use alternative toileting and washing methods. For those who sheltered in place, a common strategy was to retrieve water from the ocean, carry it up the stairs, and use it to flush the toilet. However, the majority of older adults did not have the capacity to do this. Senior housing providers reported deteriorating sanitary conditions within their buildings as a serious cause for concern. In Staten Island, residents spoke of the phys-

xvi   SNAP recipients who resided in one of 76 affected NYC zip codes at the time of the disaster had 50 percent of their October 2012 SNAP benefits automatically added to their EBT cards. http://www.fns.usda.gov/sites/default/files/Hurricane_Sandy.pdf

xvii D-SNAP provided a one-time benefit equal to a maximum monthly regular SNAP benefit depending on a household's size ($526 for a family of three) for households with income less than 250 percent of the federal poverty guidelines, residing in one of 12 zip codes. http://www.nyc.gov/html/hra/downloads/pdf/news/press_releases/2012/pr_december_2012/HRA_DSNAP_RELEASE_FINAL.pdf

ical difficulties experienced by older women in walking to and using portable toilets and expressed frustration that public park bathrooms near their homes were locked. Key informants and focus group participants reported that shelter bathrooms were crowded and sometimes inaccessible to people with mobility impairment.

Warmth

Hurricane Sandy occurred during a particularly cold time in the fall and was followed by a nor'easter a week later. Though some focus group participants and key informants reported receiving or distributing blankets, body warmers, space heaters, and generators, the general sentiment of older adults was that they were freezing. More than one quarter of the households surveyed by Community Solutions reported needing additional blankets.[48]

In cold temperatures,[xviii] some older adults may be at high risk of hypothermia due to their decreased ability to regulate body temperature.[55]

People devised alternative, sometimes dangerous, solutions to keep warm such as heating their homes with gas ovens, which can lead to carbon monoxide poisoning, a leading cause of post-disaster-related illness and death.[56] This technique was mentioned as especially popular in the Russian-speaking community. One frontline responder described tenants in a senior building who continued to burn gas even after they were given space heaters because they were concerned about the costs they would incur. Several other older adults reported staying in their own cars or in cars owned by frontline responders for weeks at a time when they did not have heat.

xviii   It should be noted that heat is actually a greater risk to older adults and causes more deaths annually than other weather-related events combined.[103] A recent analysis found higher rates of heat-related illness and death in New York City from 2000-2011 were associated with older age and neighbor-hood poverty, as well as chronic physical and mental health conditions.[103] In his study of the 1995 Chicago heat wave that killed over 700 people, most of them poor, community-dwelling older adults, sociologist Eric Klinenberg identified social isolation and unconnected communities as additional risk factors for heat-related death.[90]

Interruptions in health care exacerbated chronic conditions and created new health issues for older people

"I lived with my husband and my mother-in-law at that time. My mother-in-law was 101 years old [and] froze to death... I went through a lot too. I had to take care of both my husband and mother-in-law at the same time and didn't fall asleep for more than 10 days. One day I was too tired to walk downstairs to get the daily necessities and fell down on steps. My nose got terribly hurt and bloody [she showed pictures], and I felt pain around my heart. Later when I saw a doctor, I was told that I had internal hemorrhage from my fall."

–Residents Focus Group Participant

Project Hope,[xix] the FEMA-funded psychological first aid[57] program designed to provide crisis counseling to those affected by the storm, found that 9% of participants 65 and over reported the worsening of a health condition, which was three times the rate of those under 65.[58] Similar to those reported throughout the literature, commonly exacerbated conditions mentioned by key informants and focus group participants included diabetes, respiratory illnesses, and high blood pressure/cardiovascular diseases.[9, 59, 60] New conditions, including shingles, pneumonia, and other respiratory issues, also arose for previously healthy older adults.

xix   Project Hope Crisis Counseling, funded by FEMA and administered by SAMHSA, provides "emotional first aid services" to people affected by disasters. Individuals are identified through community and door-to-door outreach, referrals by community-based agencies, and phone calls to LifeNet. Of 162,352 Project Hope participants in New York City from November 15, 2012 – August 3, 2013, 25,159 or 15% were individuals age 65 or older.

"I developed a breathing problem after the hurricane. I had to run to the emergency room because I developed an embolism."

–Residents Focus Group Participant

As in other disasters, medical complications among older adults following Hurricane Sandy were caused by disruptions in medical care.[7, 9, 53, 60, 61]

Access to Health Care Providers and Routine Outpatient Services

Key informants and focus group participants reported difficulty accessing medical and mental health providers for advice, prescription refills, and referrals to alternate practitioners after the storm. In some cases, this occurred because older adults only had local phone numbers that had been compromised and were not rerouted to an answering service in an unaffected location. Yet in other cases, older adults lacked access to communication altogether; this is discussed in greater depth later in this section under "Disrupted Communications Systems."

Particularly in geographically isolated and underserved areas like the Rockaways, access to health care providers remained an ongoing challenge long after the storm. One key informant who worked in case management spoke of doctors who didn't return to the area until the spring or who permanently relocated, causing disruption in primary care for older adults who were reluctant to find new doctors. This informant also struggled to find home health aides who were willing or able to travel to her clients. Another key informant mentioned the closing of a community-based mental health clinic in June 2013 before the extent of Sandy-related mental health needs could be adequately understood or assessed.

Disruptions to routine outpatient services, specifically dialysis center closures, were also cited as a problem for older adults following Hurricane Sandy. In some cases, dialysis centers were closed, and patients did not know where their sister centers were located.[12] In other cases, key informants reported that dialysis centers were open and had the capacity to treat people, but didn't have the ability to transport them. Because 911 services could only take people to hospitals, dialysis patients and people in need of other services frequently visited the emergency room rather than an open outpatient facility due to lack of transportation.

Access to Caregivers

Before, during, and after Hurricane Sandy, many visiting nurses and home care professionals took extraordinary measures to ensure they could continue to care for their older patients. Key informants told stories of workers accompanying patients to shelters, moving in with patients prior to the storm, traveling for hours every day by bike or on foot, and in some cases, taking patients into their own homes. Focus group participants reported that home attendants working in multi-family housing often cared for their assigned patient as well as his/her neighbors. Several older residents said they had had their basic needs met by their neighbors' home attendants.

There were many instances when home care workers and informal caregivers were unable to reach care recipients because they were not granted the requisite priority access to roads or gas during the fuel shortage. Disruption in caregiving occurred throughout the city, not only in the most seriously affected areas, when caregivers were unable to reach care recipients due to compromised transportation or communication systems. Senior housing providers and social workers we spoke to reported having to fill in for absent home care workers in assisting older adults with activities of daily living and medical equipment. This generated concerns over personal and professional liability that persist for many as they re-evaluate their disaster plans.

Access to Medication

Syndromic surveillance from hospital emergency rooms after Hurricane Sandy indicate that people's greatest medical needs post-Sandy were related to medications.[62] From their experience canvassing affected neighborhoods, key informants highlighted cancer, hypertension, asthma, and diabetes as conditions for which older patients often needed medications.

"I couldn't get my pressure pills and my sugar pills. I couldn't get none of that. They had doctors come to your door, she [the doctor] said she'll be back to give me some but she never came back so I had to wait until the bus started running, and pharmacies opened. I had to wait. I did pretty good without it. I know how to stay away from certain [foods]."

–Residents Focus Group Participant

That this participant was able to use a non-pharmacological intervention to manage her condition while her medication was unavailable speaks to the importance of health literacy among older adults; however, there are some chronic conditions for which there are no such interventions. Interruption in medication therapy can have severe and potentially fatal consequences.[30]

Medication ran out, went bad due to lack of refrigeration,[(xx)] or was damaged or washed away. One canvasser recalled opening a door to find an incoherent, elderly woman trying to reach a bottle of pills floating in her flooded home several days after the storm. In some cases, older adults could not remember their dosage information or the names of their medications, and their doctors were inaccessible. This may have resulted in a lower standard of care delivered by medical frontline responders.[63]

Within the flooded areas, 100 retail pharmacies were damaged or closed for varying lengths of time.[11] However, even when pharmacies were open, many older adults said they were unable to make the trip due to lack of elevator service or transportation or simply because they felt too ill or tired. One key informant who managed a medical canvassing operation stated that in many cases, open pharmacies did not have adequate supplies of commonly needed medications.

Immediately after the storm, temporary guidelines to direct pharmacists in dispensing medications without a prescription or contact with a physician were issued.[(xxi)] However, due to gaps in the dissemination strategy, multiple key informants reported that many pharmacists did not receive the guidelines. Consequently, some pharmacists, concerned about liability, dispensed only a three-day supply of medication, while others dispensed a thirty-day supply of the same medication. There was also confusion over whether co-pays were being waived and for which beneficiaries. One pharmacy reported not charging any co-pays, and another required all patients pay co-pays. Several pharmacists noted they had "no one to call" with questions, and key informants outside of the pharmacy sector reported having to do a significant amount of advocacy with pharmacists on behalf of older adults in need of medications.

FEMA recommends keeping at least a week's supply of any medications taken regularly on hand in case of an emergency.[64] However, for many of those in seriously affected areas, a week's supply was inadequate. **Recognizing that individual preparedness is insufficient in ensuring continuity of medication management in disaster situations, other disaster-prone states, including Florida, Texas, Louisiana and thirty others, have established emergency pharmacy policies that go into effect when a state of emergency is declared to protect the public health.[65]**

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xx   According to the 2013 NYCHA Emergency Preparedness Survey, 33% of households with members age 62+ needed electricity to keep medication refrigerated. The difference between 62+ households with a disabled household member and 62+ households without a disabled household member in reporting the need for electricity to keep medication refrigerated (38% vs. 27%) was statistically significant.

xxi   These guidelines stated that whether or not a patient had evidence (e.g., prescription, label, empty bottle), limited quantities of maintenance medications could be dispensed at the discretion of the pharmacist. The NY State Board of Pharmacy disseminated these guidelines through its affiliated organizations, which then emailed their member pharmacists. http://www.nycps.org/myJSSImages/file/Emergency%20Access%20to%20Prescription%20Medications.pdf

Loss of Durable Medical Equipment

"My walker broke. It was destroyed and I have spinal [problems] and fibromyalgia. I spoke with the National Guard. The young man said he will look for it. I never got the walker until seven weeks [later] and none of them found it."
–Residents Focus Group Participant

Durable medical equipment, including colostomy bags, walkers, oxygen tanks, and lancets, was cited as a need by multiple key informants and focus group participants. In some cases equipment required electricity (10% of NYCHA households with a household member 62+ reported needing electricity for a motorized scooter or wheelchair[42]); while in other cases, durable medical equipment was lost, damaged, or left behind during an evacuation.

The NYCHA Emergency Preparedness Survey found that 18% of households with members age 62 and over needed electricity in order to operate life-sustaining equipment.[42] Key informants and frontline responders within the focus groups expressed confusion over where oxygen-dependent patients would be safest prior to and after the storm. These patients either had not received clear directions from their health care providers or did not understand the appropriate course of action in an emergency to manage their conditions. As a result, oxygen-related needs frequently led people to emergency rooms.[62] While in some cases, this may have been appropriate, in others, patients may have only needed a power source to charge a concentrator.

Disrupted communications systems created unmet needs and compounded isolation

"In case everything goes dark and I cannot communicate, remember that I am here please."

–Residents Focus Group Participant

The Associated Press-NORC survey found that favored modes of communication (i.e., landline, cell phone, email, social media, or in-person) during and immediately after Hurricane Sandy in the affected areas were associated with age.[66] Older adults were more likely to use landlines (between 12-18 percentage points higher), and adults 65 and over were least likely to report another form of communication, such as cell phones, email, or social media, in addition to landlines.[66] However, of the 611 NYCHA households canvassed by Community Solutions in the weeks that followed Hurricane Sandy, only 26% had a working landline telephone, whereas 53% had a working cell phone (though 18% reported they needed a place to charge their cell phone).[48] Email and social media, which played a critical role in connecting individuals and communities with resources during Hurricane Sandy, were

only used by 20% and 5% of older adults respectively.[66] Because it is difficult to predict what forms of communication will work in an emergency, having more options creates better odds of connection.

Of all age groups, older adults (65+) had the lowest rate of in-person communication during and immediately after the storm.[66] The Associated Press-NORC survey also found a correlation between use of in-person communication and pro-social behaviors such as sharing homes, food, and generators, all of which would have benefited older people. Many focus group participants reported feeling "isolated" and "abandoned" during and after Hurricane Sandy and expressed a desire for interpersonal connection. As one older resident stated, **"Our greatest needs were communication and moral support."**

Mental health needs were related to financial losses

"I feel unwanted and uncomfortable and no one can help me… I have no more clothes and I have no money to buy anything and I feel embarrassed to ask people to help me buy underwear because I can't speak English."

–Residents Focus Group Participant

As evidenced by the Hurricane Katrina findings, the Association for Geriatric Psychiatry identified the following vulnerabilities specific to older adults that may be associated with poor psychiatric outcomes following a disaster:[67]

- Advanced age or frailty

- Cognitive impairment (including dementia)

- Severe mental illness or chronic disability due to mental illness

- Poor physical health, complex medical illness, or mobility impairment

- Lack of close family caregivers or local social supports

Research also suggests that the economic and material losses of disaster may be more closely tied to negative mental health outcomes for older survivors than for their younger counterparts.[3, 68–70]

While the long-term mental health outcomes of Hurricane Sandy remain largely unknown, our findings may lend support to some of these conclusions. Older adults in our focus groups spoke of ongoing anxiety, depression, and insomnia related to the storm. They identified triggers common to natural disasters, such as rain, wind, and viewing destroyed structures and landscapes.[24, 50] For many, however, mental health symptoms were often attributed to the stress of financial losses. Throughout all of the communities, older focus group participants were concerned about finances, some bordering on hopeless. Other participants reported somatic symptoms associated with chronic stress.

With few exceptions, participants had not utilized traditional mental health services, and the focus group was their first opportunity to discuss their experiences. This is consistent with low mental health utilization rates among older adults under routine conditions, as well as following other recent disasters.[71, 72] Stigma was specifically mentioned as a barrier to seeking help in both the older Russian-speaking and Hispanic communities, both of which were underrepresented in the Project Hope crisis counseling program (4% and 5% respectively of the total population of older adults served) given their proportions in the affected communities.[58]

"I have Crohn's disease. My hair started falling out. I experienced weight loss. I was edgy, full of anxiety. I don't have enough money to rebuild. My health deteriorated. The doctor said all the stress was exacerbating my condition."

–Residents Focus Group Participant

Older adults on fixed or low incomes struggled to recover from financial losses

Expenses

The most frequently reported needs of clients age 55 and over served by the New York State Disaster Case Management Program[(xxii)] within New York City were Repair and Rebuild (45%) and Household Furniture and Appliances (both close to 40%), major expenses often required in combination.[73] Older adults who did not sustain structural damage to their property but experienced extended power outages reported substantial expenses incurred on food, batteries, and other supplies. One key informant working on the Lower East Side stated that the storm was the start of an ongoing debt cycle for many older adults.

Studies indicate that older adults receive less proportionate disaster aid than younger adults[4, 7, 74] and that the financial impacts of disaster are assumed to be long-term for older adults, as they are often unable to make up the difference between their insurance and/or FEMA reimbursements, other sources of aid, and their disaster losses.[7] Most focus group participants were on fixed incomes and tight budgets; others had lost their jobs or businesses, and one man reported having had to retire due to complications of pneumonia.

Of the older adults who suffered property damage within the Disaster Case Management sample (528), 7% had experienced contractor fraud.[73] One participant in the Staten Island residents focus group had $5,000 worth of copper pipes stolen which were never recovered. In addition to compounding financial devastation, news of these experiences spread quickly throughout the community and created a sense of hyper vigilance among older residents.

Housing

Within the focus groups ten months after Hurricane Sandy, older homeowners expressed anger and frustration over insufficient FEMA and insurance reimbursements. Some continued to pay mortgages on properties they could not live in or afford to repair, as well as rents on temporary accommodations, often depleting their entire lifesavings. A survey by Enterprise Community Partners, Inc.[(xxiii)] found that one year after the storm, only 52% of low-income households had all damage repaired, compared to 76% of non-low-income households.[75] Older people also grappled with the decision to rebuild without all of the information they needed regarding pending hazard mitigation regulations and potential increased flood insurance rates.[76]

The lack of affordable and accessible rental housing[(xxiv)] in New York City remains an enormous problem. As a result, many older adults were doubled up with family members, which is often uncomfortable and crowded and can cause significant strain on the family system.[77] Yet this may be preferable to relocating older adults to new neighborhoods where affordable units are available. At a City Council hearing, an older, low-income woman told NYAM staff of her situation: she had a mental health condition and had spent her whole life in the same house in Far Rockaway, which had been completely destroyed. In April 2013, she was still living in a hotel because the only apartment she had been offered by caseworkers was in the Bronx, and her family and health care providers were still in the Rockaways. Separating older adults from their formal and informal support networks post-disaster can lead to physical and psychological decompensation.[24]

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xxii   Funded by FEMA, the Disaster Case Management Program provides assistance to people with unmet storm-related needs by developing a disaster-recovery plan, facilitating access to resources, and assisting with FEMA and insurance claims and appeals. Of 3,512 clients enrolled in the Disaster Case Management Program across the five boroughs from December 3, 2012 – October 2, 2013, 1,388 or 39.5% were 55 and over.

xxiii   Enterprise surveyed 1,710 respondents for the tri-state area as a whole and a subset of 500 respondents for New York City.

xxiv   21,784 older adults within the affected areas were renters.[13]

Response

Formal mechanisms to identify, track, and address the needs of older adults were lacking in many areas affected by Hurricane Sandy. However, the response efforts that emerged organically, as communities improvised, helped to fill many of these gaps and mitigate the challenges faced by communities. Although there were variations, as each neighborhood had differing capacities, resources, and levels of damage, there were commonalities across the affected areas, particularly with respect to the critical roles played by older adults and local organizations in both formal and informal response activities.

Older adults actively supported their communities before, during and after Hurricane Sandy

"I wasn't afraid of what could happen worse than what I had already seen in my life… I was able to accomplish a few things and help a few people so I didn't think about the misery."

–Residents Focus Group Participant

Older adults, like the one quoted to the left, are a critical resource to the city. They are often among the most long-term, civically engaged residents, possessing an unparalleled knowledge of their communities' surroundings, assets, and vulnerabilities that can be called upon in disasters. For example, an older participant in one of the frontline responders focus groups had worked as a local crossing guard. Through her familiarity with so many residents, she directed other responders as to where people might be in need of attention.

There is evidence to support that older people may be more psychologically resilient than younger people following a disaster, as a result of having become "inoculated" to stress over the years,[4, 6, 68] and that older adults who exhibit this kind of adaptability can be ideal participants in response and recovery efforts.[6] **A strong indicator of the contributions of older people during Hurricane Sandy is the age of participants in frontline responders groups, where the mean age was 51, and ages ranged from 24-83.**

One key informant who worked as a volunteer coordinator reported that older people functioned as homeowner liaisons, safety officers, call center operators, and donations managers; they also assisted with data entry and general site support. Another key informant active in the rebuilding effort stated that older people with skills in demolition and sheet-rocking took on critical leadership roles, training, and managing teams of volunteers. Older people were particularly helpful in identifying and assisting their isolated neighbors.

"There are people who live alone. They are very scared people and can be timid. One of my neighbors lives alone and she never opens the door and I had to tell the responders. I had to go to her door and call out her name and then she opened the door because she knows me."

–Residents Focus Group Participant

According to the Project Hope sample, older people were interested in learning about ongoing opportunities for community participation after the storm. Thirty-four percent of group crisis counseling sessions for older adults focused on participating in community action compared to only 11% of sessions for people under 65.[58]

The local community infrastructure responded to the needs of older adults

Many faith and community-based organizations, local health care and social service providers, and tenant and resident associations, responded within their neighborhoods, despite having sustained damage to their physical infrastructure and staff having experienced personal losses. These organizations were especially critical when outside responders were delayed due to transportation disruptions and when they did not have the necessary capacities to address the communities' needs, particularly the needs of older people. Key informants from community-based organizations reported that they were often the first people older adults had seen in the days after the storm. **Within the responders focus groups, 73% of participants lived in the affected communities, and many said they decided to shelter-in-place rather than evacuate because they believed they would be needed to provide assistance to others.**

Of the response in Red Hook, one focus group participant said,

"We did a pretty good job of understanding who played what role after a week. The first week here was pretty intense and then after that we were able to coordinate and everything flowed better. We knew that medical services were at [this] clinic, we knew that food was being distributed out of [this CBO]…we all knew after a week where all the services were but it took a while for us to figure out. There was no agency that came in here and said "OK, You've been here for 11 years, you take over and handle it." No, it was a very community-oriented and organic [process]."

–Frontline Responders Focus Group Participant

According to a survey of the nonprofit response to Hurricane Sandy sponsored by the Human Services Council of New York,[xxv] community-based organizations provided material goods, case management, crisis counseling, financial assistance, and shelter/housing assistance to survivors during and after Hurricane Sandy.[78] In addition to these services, translation services were also mentioned by focus group participants and key informants as a need met by local organizations.

xxv   A survey of 104 organizations that self-identified as being engaged in Sandy relief and recovery efforts was conducted June-August 2013 by Baruch College School of Public Affairs on behalf of the Human Services Council.

"No one from FEMA spoke Chinese. They were stationed at the Chinese Benevolent Association, and no one can speak Chinese. It was a waste of resources. I was asked if I could send people down to translate so we did. There should be some thought to these needs before a crisis."
– Frontline Responders Focus Group Participant

Older adults who had connections with local organizations were more likely to receive assistance from them, as the organizations prioritized those they were responsible for and could easily identify through client lists, databases, and personal relationships. Some organizations, though not all, had the capacity to conduct outreach beyond their known constituents. One frontline responder reported:

"We checked on everyone whether they were members of the church or not. We gave them food, transportation, or referrals. We are still out there right now. We are committed to continue this process. We are working with other churches."

As a result, residents' experiences with faith and community-based organizations varied depending on whether they were connected with organizations and where they were located.

"But if you're not a member of anything [you don't get help]. You're on your own."

–Residents Focus Group Participant

"CBOs were a blessing but, unfortunately, there were certain buildings that if you weren't tied to some service by one of the local CBOs you were abandoned. They weren't able to go throughout the whole community and if you didn't have that link you would be screwed."
–Residents Focus Group Participant

Echoing this sentiment, multiple homeowners within residents focus groups described feeling "abandoned" by community organizations, which they believed had primarily focused response efforts on high-rise buildings. One key informant noted that many older adults were physically unable to clean and dehumidify their flooded homes but were unaware of the various groups that were providing voluntary cleanup services. Until these older people were connected with a volunteer group, which in some cases took months, they often lived in moldy conditions.

Within the focus groups and key informant interviews, frontline responders acknowledged the challenge of addressing the needs of every affected household. Lack of communication and coordination was most frequently cited as a significant barrier to effective response, leading to gaps and redundancies in services delivered.

"Some seniors were seen four times and some not seen at all. There is a problem with coordination. You have these wonderful services out there, but who is doing what? People need to share their emergency plans. We're trying to work on this with the people who are right around our area so we're not seeing the same people."

–Frontline Responders Focus Group Participant

Collaborative efforts were successful

In the aftermath of Hurricane Sandy, collaborations emerged to address the magnitude of the need, especially related to older adults and other vulnerable populations. At the level of individual practitioners, multidisciplinary teams of social workers and nurses were cited as a best practice in canvassing by those involved in response efforts. As many older people needed the specialized services of both professionals, knocking on doors together was far more efficient than knocking on doors alone.

Collaborations between outside and emergent response entities and local organizations served to gain the trust and meet the needs of affected communities. One key informant described a partnership between the local Rockaway Youth Task Force and the global Doctors Without Borders which allowed the effective delivery of medical assistance in conjunction with food, water, and supplies to older adults in high-rise buildings. A representative of Occupy Sandy attributed the success of their response to immediate community engagement, including supporting locally recognized leaders and stakeholders and holding nightly meetings with community members. In one of the frontline responders focus groups, a representative of a local organization who collaborated with Occupy reflected:

"One of the things about Occupy [Sandy] which I thought was extremely important is that they were willing to support and stand back, as opposed to other types of organizations who might want to come in and control the whole process."

Collaboration to Meet the Needs within Senior Housing

Partnerships were especially important for housing providers who were unprepared for the large number of older adults who chose to shelter in place. Focus groups, key informant interviews, and a convening of HUD-assisted senior housing providers indicated that many landlords, property managers, and superintendents found themselves thrust into new roles as responders with little knowledge of how to address the needs of their older residents, as well the considerable damage to many of their properties. Where emergency plans existed, they often only concerned evacuation and therefore did not incorporate or provide for adequate supplies, redundant commu-

nications, and alternative power sources for those people who refused to leave. As a result, a high level of need existed within buildings with a large concentration of older adults, including NYCHA and HUD-assisted properties, where residents are generally low-income and often lack access to resources.

"[There was] a dissonance between what was expected from landlords and what landlords have the skills to do. It wasn't a matter of money; [we] didn't have the skills to feed 4,000 people, didn't have access to emergency generators or a supply of flashlights. That's not what we do on a day-to-day basis. We were willing to provide money, but you need to provide [the] know how."

-Key Informant from Real Estate Sector

In this particular instance, a representative of the owner of the building first attempted to meet the older tenants' needs himself. Unfamiliar with the local infrastructure, he posted ads on Facebook for translators and tried to recruit unemployed financial analysts to canvass apartments. He then discovered there was a nearby community-based organization that provided services to many of the tenants in their native languages. The corporation that owned the building then channeled funds to this community-based organization that had the requisite structures in place to provide services to the tenants.

Lessons from Hurricane Sandy

In the wake of the World Trade Center attacks, many emergency preparedness initiatives emerged that were well-supported by government and philanthropy. After several years with no major emergencies, the focus dissipated, and the programs ended. Once Hurricane Sandy hit, most of the staff involved in these efforts had left their positions, and the response infrastructure had been lost.

The best predictor of how a neighborhood will respond to and recover from a disaster is how it functioned prior to the disaster.[19] To capitalize on the lessons and experiences of Hurricane Sandy and achieve sustainable gains, a reorientation to a community resilience approach centered on building capacity and connection within and between sectors, institutions, and individuals, independent of a focus on uncertain future disaster events, is required.

This section organizes key lessons learned from the Hurricane Sandy experience around core components of community resilience. The next section details recommendations for action. In this section, following each lesson, corresponding recommendations are indicated.

Core Components of Community Resilience:[10]
1. Social and economic well-being of the community;

2. Physical and psychological health of the population;

3. Effective risk communication for all populations;

4. Social connectedness for resource exchange, cohesion, response, and recovery; and

5. Integration and involvement of organizations (government, NGO, for-profit) in planning, response, and recovery

Social and Economic Well-being of the Community

Older adults were not connected to existing resources

Vulnerable populations require access to resources to best position them to withstand everyday stress and recover from catastrophic events. As older adults tend to be more medically and financially vulnerable, resources to promote better health and economic security are especially critical. Yet, many of the available resources remain underutilized due to lack of awareness and perceived stigma.

For example, in the five Sandy-affected communities, under-enrollment among older adults eligible for the Supplemental Nutrition Assistance Program (SNAP) is pervasive. According to an analysis by the Council on Senior Centers and Services, the under-enrollment rate ranges from 36% in Brooklyn CD 13 (Coney Island) to 83% in Staten Island CD 2.[79] The American Red Cross recognized the problem of food insecurity among older people and funded The Food Bank for New York City to partner with community-based organizations in some of these communities to educate and enroll older people in benefit programs including SNAP, SCRIE (Senior Citizens Rent Increase Exemption Program), Voluntary Income Tax Assistance (VITA), and a senior grocery initiative. In addition to increasing the food security of SNAP beneficiaries, should all of the eligible older people enroll in the SNAP program, millions of dollars are projected to be added to each community's local economy.

As previously stated in the "Response" section, older people who were not known to local community-based organizations prior to Hurricane Sandy felt they were at a disadvantage in receiving assistance from those organizations. Using trusted informal or semi-formal networks to bridge the gap between communities and formal systems of care and assistance is often key to the utilization of existing resources appropriate to the level of need. Many older adults are reluctant to seek assistance, viewing such assistance as charity or welfare.[7] Peer advocates for older adults can encourage other older adults to avail themselves of assistance in order to strengthen individual older adults and the communities in which they live. Because older adults frequently engage with the health care sector, health care providers are well positioned to refer patients and their caregivers to local organizations to decrease social isolation and improve older adults' well being. Through these efforts, older adults develop connections with local community-based organizations that may be able to assist them with everyday problems and emergencies and deploy them as volunteers.

The integration or co-location of more stigmatized services (e.g., mental health care, public assistance programs) into more normative services and structures may serve to increase service utilization.[71] One key informant reported that the majority of older people in the Disaster Case Management Program were not previously connected to other services and entitlements, though some certainly would have benefited from them prior to the storm. Through Disaster Case Management, perceived as a non-stigmatized service in response to a weather event, older people were connected to new organizations and resources that will hopefully continue to enhance their lives beyond the Sandy recovery period.

Several key informants involved in case management, legal assistance, and housing assistance were supportive of increased integration of mental health services within these services, and agreed such collaboration would be beneficial to both providers and recipients. One key informant who provided older adults with storm-related legal services reported that some older adults' grief and anger interfered with their ability to follow through with tasks associated with disaster assistance claims and appeals, such as returning phone calls, keeping appointments, and communicating clearly. These clients focused solely on meeting their housing and financial needs and refused mental health referrals. Yet, their considerable emotional distress obstructed their financial recovery. Immediate access to psychological first aid and/or crisis counseling

might have mitigated some of these challenges. Given the importance of faith among many older adults, interventions that nurture that source of strength, when possible and appropriate, should be leveraged and incorporated into routine services, as well as disaster response and recovery programs, in addition to traditional mental health capacities.[24]

Related Recommendations

1. **Community Resilience Corps of older adults**

2. **Increase access to communication and technology**

5. **Community Resilience Hubs**

7. **Co-locate mental health care within disaster services**

Physical and Psychological Health of the Population

Responders struggled to find older people in need

Our findings indicate that during a disaster, some of the most important needs of older people include maintaining situational awareness, accessing emergency services, maintaining continuity of health care, and connecting with formal and informal social networks. To meet these needs, communities must first consider the range in functional capacity among older adults and the services and systems that facilitate optimal functioning under routine conditions. Understanding who becomes vulnerable under what circumstances enables communities to effectively plan for the deployment of goods and services.

To this end, mapping areas with high concentrations of vulnerable populations utilizing GIS technology and data available through the US Census Bureau's American Community Survey and surveillance systems such as the Behavioral Risk Factor Surveillance System has been recommended.[8, 60, 80–82] While city planning departments, rather than individual communities, generally have these capabilities, the concept can be adapted to the local level using the simple 2x2 table first presented in the Description of the Population Section.

	Functions independently	Cannot function independently
Not connected to a local service provider	1.	2.
Connected to a local service provider	3.	4.

Community leaders (especially older ones), service providers, local businesses, housing providers, and faith-based institutions can collaborate with older residents to identify buildings and blocks where older people live and work. They can then attempt to categorize who may be vulnerable or become vulnerable, the kind of assistance they would require, and the people for whom more information is needed. This strategy is especially useful to identify those older people who cannot function independently and are not connected to services in advance of a disaster.

Because of their potential to expedite a targeted response, voluntary registries of vulnerable populations have been utilized in other disaster-prone localities.[(xxvi)] However, there is little evidence to support the efficacy of such registries.[83] Key informants involved in registry pilot programs in New York City over the years reported significant barriers to implementation and sustainability, including privacy concerns, cost, challenges to information management and maintenance, and inadequate staffing.

Especially in a densely populated region like New York, multiple strategies are required to identify, triage, and meet the needs of such a large and diverse group of older people rather than a one-size-fits-all registry. For older adults who cannot function independently and are already connected to services, consolidated client databases[(xxvii)] can serve to identify those for whom

interruptions to in-home services will be problematic and to enable responders to plan accordingly.[8] For older people who ordinarily function independently and are connected to local resources, a database could also distinguish households containing those who may become temporarily vulnerable due to emergency conditions, such as the loss of power. As this data is already collected for the provision of ongoing service delivery, it will likely be up to date in an emergency and will not require additional maintenance.

Related Recommendations

1. **Community Resilience Corps of older adults**
3. **Increased disaster planning for senior housing providers**
4. **Train informal networks**
5. **Community Resilience Hubs**
8. **Develop and implement appropriate metrics**

xxvi   NYS Law 23-A recommends that counties establish voluntary registries. Bill Number: S4759 seeks to amend the Executive Law by requiring every county to maintain a confidential voluntary registry. http://open.nysenate.gov/legislation/bill/S4759-2013

xxvii   Clients consent to having their information shared during an emergency.

Health care services were not adequately prepared or well positioned to respond

Contingency plans have been shown to facilitate continuity of care during emergencies[84, 85] and have been recommended by the Centers for Disease Control to meet the needs of older adults in disasters.[8] However, during Hurricane Sandy, contingency plans that had not incorporated ancillary services (e.g. transportation to alternate dialysis centers), and plans that had not been communicated to patients were not effective. In some cases, this inadequate planning contributed to the exacerbation of chronic conditions and the unnecessary flooding of emergency rooms.

According to focus group participants and key informants, emergency restrictions devised immediately after the storm to preserve public health and safety, such as the closure of roads and the temporary guidelines for access-

ing prescription medications, unintentionally functioned as barriers to those delivering and accessing care. However, in the absence of any other regulatory frameworks governing health care response in disasters, providers (e.g. doctors, pharmacists, homecare workers) had to abide by such restrictions. This limited providers' ability to reach patients and obtain medications and medical supplies.

Related Recommendations

6. **Disaster planning for all providers of essential services**
11. **Enact a disaster pharmacy law**
12. **Enact law to plan for deployment of home health care and hospice staff**

Effective Risk Communication for All Populations

Disaster risks have not been integrated into health literacy for older people

Many older people we spoke to did not have adequate information about Hurricane Sandy and were unable to maintain situational awareness throughout all phases of the disaster due to barriers associated with language, culture, mobility impairment, and income.

In-person efforts to educate older people as to the risks associated with the storm occurred immediately before the storm, as well as during, and throughout the dangerous conditions that persisted which, though necessary, may not have been the optimal time. According to many key informants and focus group participants, these discussions focused primarily on trying to convince older people to evacuate.

For older people, disasters pose a significant risk to physical health.[7, 8, 86] Interruptions in access to medical care and prescription medications can have serious con-sequences. Information about these effects should be integrated into routine interactions between health care providers and older adults and their caregivers in the context of awareness of preventive health measures, knowledge of medical conditions, and self-care instructions.[87] A more comprehensive understanding of individual health will enable older people to utilize messages from media sources and public officials to better assess the personal risks of an impending disaster.

Related Recommendations

6. **Disaster planning for all providers of essential services**

11. **Enact a disaster pharmacy law**

Traditional and nontraditional messengers needed training and support

"I was taken by six policemen from my home. I never thought it would be like that. I loaded up on a lot of food. They handcuffed me and took me out. I was worried about my dogs and four parrots. I didn't want to leave because of my animals."

–Residents Focus Group Participant

Though the example above is extreme, many older adults in our focus groups reported strained interactions with first and frontline responders who had a duty to protect them but varying views of exactly how that should/could be done. In some cases, the content of the responders' messages may have been lost in the style or tone of their delivery. In an emergency, when people are stressed and may already have more difficulty processing information, messengers need to tailor their messages accordingly. Understanding older people's life stage-related concep-tions of and concerns about independence, home, and social support can help to inform and improve communications during a disaster.

During Hurricane Sandy, nontraditional messengers who had trusting relationships with older people were often effective in communicating with them and responding to their needs. Porters, maintenance men, pharmacists, sanitation workers, and other older neighbors were mentioned by focus group participants and key informants as having helped older adults to understand risks and make storm-related decisions. To fully leverage the potential of nontraditional messengers, they must be provided with ongoing access to support, information, and training.

Related Recommendations

1. **Community Resilience Corps of older adults**

4. **Train informal networks**

10. **Train first responders about older people**

Social Connectedness for Resource Exchange, Cohesion, Response, and Recovery

Older adults were not adequately involved in planning for emergencies

The National Disaster Recovery Framework advises localities to plan *with* vulnerable populations rather than exclusively *for* vulnerable populations.[88] Many of the challenges faced by older people in accessing resources before and after Hurricane Sandy could have been avoided had older people been consulted on the plans for deployment and engaged in tabletop exercises and drills. Without consulting older adults and modifying emergency services accordingly, the same issues will likely emerge during the next disaster. For instance, the NYCHA survey conducted after Sandy found that of the households with a member 62 and over, 29.7% stated that they would not go to a public shelter during a mandatory evacuation, even if they had no other place to go.[42]

Key informants indicated that older adults are actively involved in the New York City Community Emergency Response Team (CERT) program,[xxviii] resident and block associations, and various advocacy groups. These organizations can help facilitate connections for participatory emergency planning. The perspectives of older adults across a wide spectrum of functional and language capacity are required to ensure plans work for everyone.

Related Recommendations

1. **Community Resilience Corps of older adults**

5. **Community Resilience Hubs**

6. **Disaster planning for all providers of essential services**

9. **Consult older adults and providers on shelters**

xxviii The CERT program is a national model of increasing the social capital of communities in emergency response and has operated in New York City since 2003 under the Office of Emergency Management. CERT volunteers train for 10 weeks to gain basic emergency response skills needed for fire safety, light search and rescue, disaster medical operations, and traffic control that allow them to assist first responders in an emergency and to provide preparedness education to the community. http://www.nyc.gov/html/oem/html/get_involved/cert.shtml

Social networks were strong for some and weak for others

As in other disasters, Hurricane Sandy brought people together, engendering feelings of community cohesion amidst shared vulnerability. In all communities, focus group participants living in multi-family housing commended their neighbors, reporting that neighbors more effectively responded to their needs during and immediately after Sandy than did outside agencies. The Associated Press-NORC study found that 47 percent of people within the neighborhoods most seriously affected by Sandy turned to nearby family, friends, or neighbors for assistance, and of those, the majority reported having received help.[51] Many participants spoke with enthusiasm about the new relationships they established.

"I couldn't walk down the steps and my neighbors brought me food. They are Asian and we have a language barrier. With signs and signals we were able to communicate."
                                        –Residents Focus Group Participant

"We didn't just become residents, we became friends, family. Even though it's all over now and when we see people you say, 'Hi, how are you? How was your day?' Because we realize from one day to the next, everything can be gone."
                                        –Residents Focus Group Participant

While the extent to which these relationships will continue remains to be seen, social connectedness is associated with positive outcomes for individuals and communities under routine conditions and in disasters.[89] This is especially true for older people who live alone, for whom social isolation in disasters can be fatal.[90] Older people who lack social networks may not know how to proactively seek assistance and may be more difficult to identify as in need of assistance. As the extent of social isolation within New York City has not been adequately quantified, it remains difficult to detect patterns and develop effective, large-scale interventions.[91] In April, *The New York Times* reported that an older man had just been found drowned to death at home in the Rockaways, increasing the Sandy death count to 44 a full six months after the storm.[92]

Older people prioritize connecting. According to a 2013 national survey of 4,000 people 60 and over, 40 percent rated "staying connected with friends and family" as the most important aspect to having a high quality of life in their senior years.[93] Staying connected was rated even more important than "having financial means" and "staying mentally active."[93] Facilitating opportunities for

increased social connection for older people is essential to increasing their resilience, enabling them to care for one another, and overcoming barriers of trust that can lead to self-protective refusal of disaster assistance.

"I'm probably more senior than any of you, okay… And my eyesight isn't as good as it used to be. When you look through that little keyhole, if there's any shadow… I don't know who that person is. I will not answer."

–Residents Focus Group Participant

Related Recommendations

1. **Community Resilience Corps of older adults**
2. **Increase access to communication and technology**
3. **Increased disaster planning for senior housing providers**
4. **Train and support informal networks**
5. **Community Resilience Hubs**
8. **Develop and implement appropriate metrics**
12. **Enact law to plan for deployment of home health care and hospice staff**

Technology was not fully maximized for older people

During Hurricane Sandy, older people's reliance on landlines and lack of redundant communications impeded their ability to access information and support systems. One key informant reported that many older people were not aware of the Federal Lifeline Support Program,[94] a federal benefit that provides discounted cell phones (or landlines) to low-income households, and that older people who had cell phones could have used some training on how to use those phones in a disaster.

Social media, while not widely used by older people, proved highly effective in disseminating information and crowd-sourcing volunteers and supplies in real time.[95] To fully participate in this new realm of social connectivity, older adults would benefit from increased access to and training on technology. However, older adults can also benefit from their existing social networks being linked to social media. One frontline responder recalled her use of social media to acquire food and medical supplies for older people:

"Not only did we get meals to the seniors this way… one time we needed diabetes…what do you call those? Lancets. I tweeted that we needed a handful and I got a box dropped off in 20 minutes in front of my door and got them to the residents… That's how social media worked."

–Frontline Responders Focus Group Participant

A key informant we interviewed worked with a Virtual Operations Support Team (VOST) in Suffolk County during Hurricane Sandy. Through a VOST, a group of people monitor and disseminate information via social media to provide communications support to government agencies or first responders.[(xxix)] This informant recalled a tweet she received from a woman in Florida who thanked her for providing online information she was then able to

relay to her elderly relatives on Long Island by phone. In considering the activation of a VOST, or other new technological approaches during an emergency in New York City, the potential benefit to older people should not be underestimated simply because fewer older people utilize social media.

Related Recommendation

2. **Increase access to communication and technology**

xxix   http://vosg.us/

The nonprofit sector wasn't adequately connected to the emergency response sector

According to the Human Services Council survey, while nonprofits frequently reported collaborating with other nonprofits (53.8%), FEMA (52.9%), the Mayor's office (37%), and houses of worship (37.5%), there was no consensus as to which government agency was "playing the leading coordinating role."[78] As a result, it was difficult for organizations both within and outside of the affected areas to know how to connect their resources with those in need. One key informant representing a nonprofit on the Upper West Side recalled not knowing where to deploy a large group of volunteers who all had prior experience working with older people.

Local organizations are well-positioned to address the needs of disaster-affected communities.[24] However, without adequate funding, staffing, and integration into the city's disaster response plan, these organizations will not be able to rise to the challenge as quickly and as comprehensively as is required by older people.[7, 96] Of the organizations surveyed by the Human Services Council, 80% expected they would not receive full reimbursement for the costs to provide Sandy-related services, the need for which is projected to last several years.[78] Nonprofits require mechanisms to quickly disburse emergency funding and reimburse emergency expenditures,[96] as well as funding streams designed to meet longer-term needs related to recovery. In the absence of such systems, human service organizational capacity will be depleted, and community resilience for the next emergency event will be weakened.

Related Recommendations

5. **Community Resilience Hubs**

6. **Emergency planning for all providers of essential services**

8. **Develop and implement appropriate metrics**

9. **Consult older adults and providers on the shelter system**

Integration and Involvement of Organizations in Planning, Response, and Recovery

Cross-sector partnerships were fortuitous rather than planned

In their December 2013 report, *All Hands on Deck: Mobilizing New Yorkers for a Livable and Resilient New York*, the Municipal Art Society writes,

"We need all hands on deck—city staff and agencies, cultural and academic institutions, neighborhood residents, experts, philanthropy, elected officials, and the private sector, including financiers and insurers, as well as the creative and entrepreneurial sectors—to generate innovation, increase the capacities of neighborhoods and communities, and place New York City on a path to becoming a global model for urban resilience."[97]

Cross and multi-sector partnerships have the potential to address many of the disaster-related issues of older adults. For example, when the housing sector pooled its assets with the non-profit human services sector, older adults were more likely to have their basic needs met. While some cross-sector partnerships pre-dated the storm, many arose out of fortuitous, yet somewhat haphazard encounters between individuals. These mutually beneficial relationships must now be propagated, cultivated, formalized, and maintained between institutions rather than individuals.

Related Recommendations

3. **Increased disaster planning for senior housing providers**
4. **Train informal networks**
5. **Community Resilience Hubs**

RECOMMENDATIONS

PEOPLE WHO NEVER KNEW WHO-WAS-WHO IN THE NEXT APARTMENT CAME TOGETHER.

WE NEEDED WATER AND TO HELP THE ELDERLY WHO COULDN'T GET AROUND. WE HELPED OUR NEIGHBORS.

WE DIDN'T JUST BECOME RESIDENTS, WE BECAME FRIENDS, FAMILY. WE REALIZE FROM ONE DAY TO THE NEXT, EVERYTHING CAN BE GONE.

WE'RE ALL 1 NEIGHBORHOOD, REGARDLESS OF HOW PEOPLE TRY TO DIVIDE US, WE CAN ALL DEPEND ON EACH OTHER. PERIOD.

THIS HAS MADE US BETTER NEIGHBORS, LIKE THE OLD DAYS. NEIGHBORS CHECKED ON EACH OTHER.

Recommendations

Vision for Resilient Communities

In a more resilient New York City, neighbors talk to and check on one another. Institutions across sectors work together and are known and welcoming to all community members. And older people are seen as problem solvers rather than problems to be solved. The following recommendations present action steps to move toward this desired state.

Recommendations address communities, service providers, government, and proposed legislation. While some recommendations suggest a different way of doing business or an expansion of existing efforts, others require resources for implementation and evaluation. All of the recommendations are in support of the Levers of Community Resilience:[10]

- Wellness and Access
- Education
- Engagement and Self-Sufficiency
- Partnership
- Quality and Efficiency

Recommendation

1 Older adults in underserved neighborhoods should be trained to identify and link vulnerable people with community assets (e.g., health care, social services, benefits, food) under routine conditions and during emergencies. Participant eligibility and institutional bases will vary by neighborhood but could include community centers, churches or synagogues, libraries, and buildings with large concentrations of older people.

Outcome

A Community Resilience Corps composed of older adults is created; vulnerable people have knowledge of available community resources and how and where to access services.

Rationale

Older people are often among the most long-term, civically engaged residents and many older people possess an unparalleled knowledge of their communities' members, assets, and vulnerabilities. Following Hurricane Sandy, older people contributed their professional skills and time to response and recovery efforts. Within the NYAM focus groups, the mean age of frontline responders was 51 (ages ranged from 24-83), and most of the older responders worked near their homes. Older people were especially effective in understanding and responding to the needs of other older people who may have been more physically or cognitively frail or socially isolated. The intellectual and social capital of older adults should be harnessed to strengthen communities.

**Levers of Community Resilience:
Education / Engagement
& Self-Sufficiency**

Recommendation

2 Older adults and informal caregivers should be provided with access to and training on multiple forms of communication (i.e., cell phones, email, and social media) that will connect them to resources and social networks under routine conditions, personal crises, and large-scale disasters.

Outcome

Older adults have greater situational awareness and access to support systems through increased telephone and internet connectivity.

Rationale

During Hurricane Sandy, older adults (65+) were more likely to use landlines exclusively and less likely to use additional forms of communication than any other age group.[66] Yet in many areas, landlines failed, and access to other mediums such as cell phones, email, and social media proved essential in connecting with family, friends, and service providers. Strategies to increase telecommunications resiliency among older people include offering ongoing programming and electronic device charging stations at local organizations and Community Resilience Hubs to promote interpersonal and virtual connection, providing training to increase technological literacy among older adults, and leveraging federal funds (i.e., Homeland Security, Federal Communications Commission) to ensure broadband access in every community.

**Lever of Community Resilience:
Engagement & Self-Sufficiency**

Recommendation

3 Landlords of buildings with large concentrations of older adults and mobility-impaired people should be supported in developing plans to meet the needs of these populations in disasters.

Outcome

Increase resilience within multi-family housing with large concentrations of older adults and mobility-impaired people.

Rationale

Senior housing in New York City primarily consists of high-rise elevator buildings.[36] Residents who are unable to use the stairs due to lack of stamina or mobility impairment (27.9% of New Yorkers 65 and over report difficulty walking[1]) are completely dependent on the elevators. During Hurricane Sandy, thousands of older adults became trapped within buildings that lost heat, power, water, and elevators. With limited capacity, experience, and resources, some property owners and managers struggled to meet the informational, basic, and health care needs of this population. Simultaneously, in some buildings, residents effectively organized themselves and were thus able to address many of their own needs. Interventions such as consortiums of like housing providers (e.g., HUD-assisted, NYCHA, Mitchell-Lama, Coops) established by funders or owners for sharing best practices and pooling risks and resources; mutually beneficial partnerships between senior housing providers and local nonprofit, faith-based, business, and health care institutions initiated by community boards; and building and floor captains identified by residents and building staff have the potential to mobilize and meet the needs of older people in multi-family housing.

Levers of Community Resilience: Engagement & Self Sufficiency / Partnership

Recommendation

4 Employees of city services, local businesses, cultural institutions, and others who routinely interact with older adults should be trained in identifying and providing appropriate local health and human service referrals to those who may be in need of assistance before, during, after, and outside of an emergency.

Outcome

An informal network of community actors is created to serve as an early warning system and informal first response for community-dwelling older adults.

Rationale

Over 31% of New Yorkers 65 and over live alone.[1] While some have strong social networks and connections to service delivery systems, others lack such supports. Social isolation is a risk factor for poor health outcomes under routine conditions and disasters.[90, 91] Encounters with people such as sanitation workers, crossing guards, porters, and local bodega owners provide isolated older adults with meaningful and important social exchanges. These relationships should be leveraged to protect older people in personal crisis or large-scale catastrophe. The Carrier Alert Program and The Weinberg Center for Elder Abuse Prevention's initiative to train doormen to identify and respond to signs of elder abuse are two models that successfully maximize existing human capital for the betterment of older adults and could be replicated.

Levers of Community Resilience: Education / Engagement & Self-Sufficiency

Recommendation

5 Communities should be assisted in organizing Community Resilience Hubs[96-98] housed at the most appropriate and accessible institutions within each neighborhood (e.g., schools, libraries, health clinics, community centers, and local businesses). Hubs should be utilized to facilitate communal planning and cross-sector partnerships and to provide multigenerational programming to promote local interpersonal and virtual connection year-round, including preparedness and technology education and training for older adults and caregivers. During and after disasters, Hubs should be used to distribute and share information and resources, provide access to power and communication, and organize response and recovery activities. Older adults should be engaged in the development and ongoing operations of Hubs.

Outcome

Communities have the necessary communal space and capacity for residents to plan collectively for and respond to disasters.

Rationale

In an emergency, the majority of people will be helped by their neighbors rather than first responders.[19] During Hurricane Sandy, neighborhood relief hubs organically arose throughout affected communities to provide survivors with desperately needed resources and social connection. These voluntary, centralized helping efforts enabled first responders to focus on acute needs and mobilized community members to band together and care for each other. Cultivating connected neighborhoods will benefit older adults for whom strong social support has been linked to better outcomes in the context of disaster and everyday life.[7]

Levers of Community Resilience: Engagement & Self Sufficiency / Partnership

Recommendation

6 Providers of essential services to older adults (including but not limited to long-term care, primary care, mental health, dialysis, pharmacy, home care, home-delivered meals, and case management) should develop contingency plans for power outages, site closures, and disruptions to communication and transportation to ensure the needs of their patients and clients will be met during disasters and emergencies. To enable service providers to expand their reach under extraordinary circumstances, the City should proactively extend MOUs to establish roles and functions and set clear funding eligibility and reimbursement policies in advance of such circumstances.[78, 96]

Outcome

Continuity of medical and mental health care and social services for older adults.

Rationale

Older adults are more vulnerable to disasters due to their predisposition to chronic and emergent health issues,[7-9] and older adults are more dependent on frequent engagement with the health care system to maintain their health than younger adults.[32] After Hurricane Sandy, many older adults could not meet their basic and health care needs, and as a result, experienced a worsening of chronic conditions, and/or unnecessarily went to the emergency room for routine outpatient services. Adequate planning has been shown to mitigate these poor outcomes[84,85] and is encouraged by the Centers for Medicare and Medicaid Services and the Centers for Disease Control and Prevention. To ensure they are effective, plans should be developed in consultation with older adults and communicated with patients, clients, and caregivers in the context of routine care delivery.

Lever of Community Resilience: Wellness & Access

Recommendation

7 Systematically co-locate mental health care and spiritual care within disaster response services, such as distribution sites, restoration centers, and shelters, through the presence of geriatric psychiatrists, psychologists, clinical social workers, chaplains, and people trained in psychological first aid. Systematically coordinate mental health care, spiritual care, and psychological first aid with non-stigmatized disaster recovery services that are more likely to be utilized by older adults, including case management, legal services, and housing assistance.

Outcome

Maintain mental health status for older adults.

Rationale

For older adults affected by disaster, negative mental health outcomes have been found to be associated with financial and material losses, poor physical and mental health status, and low social support.[3, 4, 68, 70] However, older adults are less likely to access traditional mental health services to address these issues than younger populations.[71, 72] Other disaster assistance programs could be coordinated with mental health care, spiritual care, and psychological first aid to facilitate increased access to mental health services to assure that clients' disaster-related distress does not lead to severe mental illness or obstruct efforts to restore their financial security.

Lever of Community Resilience: Wellness & Access

Recommendation

8 Academia, city agencies, and community-based organizations should develop and implement appropriate metrics to indicate how vulnerable populations are affected by and assisted in disasters (e.g., age, household composition, English proficiency, disability characteristics, financial limitations, etc.).

Outcome

Improved planning for and service provision to populations with heightened vulnerability in disasters.

Rationale

Though people may live through the same incident in very close proximity, there is great variation in the experience and impact of that incident among households. Evidence shows that certain risk factors, such as older age, social or linguistic isolation, presence of disability, and poverty, are associated with negative outcomes in disasters.[3, 7, 8, 9] Developing useful metrics that include these risk factors and incorporating them into routine assessments and emergency canvassing tools will help to inform planning and response activities for populations that may be more vulnerable to disasters, as well as to evaluate the impact of such efforts on these populations.

Lever of Community Resilience: Quality & Efficiency

Recommendation

9 The City should consult older people, caregivers, and service providers on their experiences with and perceptions of the public shelter system and should explore partnering with senior housing providers, community and faith-based organizations, health care, and cultural and arts institutions to create fully accessible shelters that safely support older adults in the most appropriate venues in every community.

Outcome

The public shelter system is more responsive to the needs of older adults and other vulnerable populations.

Rationale

Despite a mandatory evacuation order during Hurricane Sandy, thousands of older adults in New York City evacuation zones chose to shelter-in-place. As a result, 25 people over 60[14] died by drowning in their homes, and tens of thousands were isolated without access to food, water, heat, and medications. The New York City emergency shelter system was repeatedly mentioned by NYAM focus group participants and key informants as one deterrent to evacuation due to older adults' safety and health concerns. A post-Sandy New York City Housing Authority survey found that of the households with a member 62 and over, 29.7% stated that they would not go to a public shelter during a mandatory evacuation, even if they had no other place to go.[42] Steps should be taken to understand and address the barriers older adults face in accessing shelters.

Levers of Community Resilience: Engagement & Self-Sufficiency / Partnership

Recommendation

10 The training for professional and volunteer first responders (e.g., NYPD, FDNY, EMS, EmergeNYC, CERT, Civilian Emergency Response Corps) should include information on the needs of older adults in disasters, as well as on the cultural, linguistic, and developmental competencies that may be required to meet those needs. Training should involve older adults, geriatricians, geriatric mental health professionals, and older adult service providers and should include information on common chronic conditions, dementia, home care and hospice, spirituality, issues associated with immigration, psychological first aid, and the possible resurfacing of past traumas associated with current stress.

Outcome

Older adults and emergency responders are able to work together to assure the personal safety of the older person.

Rationale

Older adults, caregivers, and service providers reported difficult interactions with first responders before, during, and after Hurricane Sandy, despite these responders' good intentions. A more nuanced understanding of New York City's older population will strengthen communication between professional and volunteer first responders and older people. Strategies through which to improve interactions with older adults pre- and post-disaster include but are not limited to providing older adults with specific and actionable information ensuring information is presented by the most appropriate messengers in the best formats, respecting cultural differences, and increasing awareness of dementia-related behaviors.

Lever of Community Resilience: Education

Recommendation

11

New York State should enact a disaster pharmacy law to provide a regulatory framework for pharmacists and pharmacies to dispense medication when a state of emergency is declared.

Outcome

Continuity of medication management pre- and post-disaster for the 80 percent[31] of older adults who take medications regularly.

Rationale

In the absence of disaster pharmacy policy and planning, pharmacists were ill-equipped to dispense prescription medication, and older adults struggled to access prescription medication after Hurricane Sandy. Interruptions in medication management can lead to the exacerbation of chronic conditions and the unnecessary flooding of emergency rooms during a disaster. The *Mayor's After Action Report* recommends "working with the State and pharmacies to develop a comprehensive plan for promoting access and continuity for critical prescription drugs."[12] Thirty-three states have disaster pharmacy policies to address issues that commonly arise when a state of emergency is declared, such as protocols around dispensing controlled and non-controlled substances and questions of pharmacists' liability.[65] Enacting laws similar to those of other disaster-prone states and educating doctors, pharmacists, and the public about these regulations prior to a disaster will help older adults and pharmacists become better prepared, will facilitate access to medications and higher quality of care during disasters, and will enable people to continue to manage their conditions outside of the hospital.

**Lever of Community Resilience:
Wellness & Access**

Recommendation

12

New York State should enact bill S.4719/A.6530 which will require counties and cities to consult with home health care and hospice providers on emergency plans and to include provisions in those plans for the deployment of home health care and hospice personnel to ensure they can access patients in areas that have been restricted or subject to curfew.[99]

Outcome

Continuity of in-home care for older adults who receive support at home due to chronic illness, physical, and/or cognitive challenges.

Rationale

There are at least 100,000 New Yorkers who rely on visiting nurses and aides to meet medical or personal care needs at home.[11] Nationally, an estimated 54.1 million caregivers (24% of all adults) provide unpaid care to an adult family member or friend 18 years or older, with 43.5 million of those caregivers providing care to a person 50 or over.[100] Disruption in caregiving leads to unmet basic and health care needs which can rapidly escalate into life-threatening crises. During Hurricane Sandy, many caregivers were unable to reach their care recipients due to zone restrictions, fuel shortages, or other transportation issues. S.4719/A.6530 removes critical barriers to connecting older adults with their caregivers.

**Lever of Community Resilience:
Wellness & Access**

REFERENCES

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THIS HAS MADE US BETTER NEIGHBORS, LIKE THE OLD DAYS. NEIGHBORS CHECKED ON EACH OTHER.

Appendix A
Older Adults & Disasters Policy Advisory Commitee

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Hunter College

Appendix B
Hurricane Sandy & Resilience-Related Events Attended

1/12/13 Facilitated Breakout Group at Municipal Arts Society's "Road to Resilience Conference"

2/25/13 Participated in Municipal Arts Society Roundtable Meeting

2/27/13 Presented at Philanthropy NY Meeting: "Vulnerable Populations and Disaster"

3/7/13 Facilitated SIRR Community Consultation in Red Hook/Gowanus

3/11/13 Facilitated SIRR Community Consultation in Far Rockaway

3/12/13 Facilitated SIRR Community Consultation on Staten Island, East Shore

3/19/13 Facilitated SIRR Community Consultation in Lower Manhattan

4/3/13 Participated in Municipal Arts Society Roundtable Meeting

4/22/13 Attended Institute for Public Knowledge Seminar: Housing & Hurricane Sandy

4/26/13 Attended City Council Hearing on City Hotel Program

5/2/13 Attended Affiliated Volunteer Coordination Planning Team Meeting

5/8/13 Attended Institute for Public Knowledge Seminar: Occupy Sandy & Social Organization

5/13/13 Participated in Municipal Arts Society Roundtable Meeting

5/16/13 Attended Briefing with Commissioner Farley of DOHMH

5/23/13 Attended UJA-Federation of NY Disabilities Task Force Meeting with Presentations by Disabilities Rights Advocates, the Commissioner of the Mayor's Office for People with Disabilities, and OEM

5/29/13 Attended NYC Voluntary Organizations Active in Disasters (VOAD) Meeting

5/29/13 Attended CUNY Sandy Seminar

6/5/13 Participated in Citizen Corps Council Meeting on OEM Hurricane Zones

6/12/13 Participated in Ford Foundation Briefing with Federal Rebuilding Task Force

6/19/13 Facilitated Health care Breakout Session at the Municipal Art Society's SIRR Summit, "The Road Forward: Putting Resilience into Action"

6/20/13 Gave Testimony at City Council Hearing on Emergency Preparedness & Response Bills

6/20/13 Attended NYU Institute for Public Knowledge Seminar: Promoting Resilience Post-Sandy through Innovative Planning and Design

6/21/13 Participated in Con-Ed Conference: Emergency Preparedness in a Post-Sandy Era

6/24/13 Presented to East Harlem Aging Improvement District Meeting

6/25/13 Attended NYC Medical Reserve Corps: Using Social Media in Emergency Preparedness & Response

6/25/13 Attended American Planning Association NYC Metro Chapter Waterfront Committee Meeting

7/9/13 Attended Bronx Long Term Recovery Committee Meeting

7/17/13 Participated in Food Bank Disaster Response Roundtable Meeting

7/18/13 Attended Association of Contingency Planners, NY Metro Chapter: FEMA Briefing on Hurricane Season and Lessons Learned from Sandy

7/31/13 Participated in Human Services Council Meeting with Mayor's Office of Housing Recovery

8/10/13 Served as Panelist for Rebuild by Design Team Briefing at NYCHA

8/20/13 Participated in NYCHA & Community-Based Organizations Emergency Preparedness Planning Meeting

9/18/13 Attended Lower East Side Meeting of NYCHA Tenant Association Presidents

9/24/13 Participated in DOHMH Beyond Engagement Forum:
Building and Sustaining Community Networks

10/1/13 Participated in OEM Special Needs
Advisory Group Phone Call

10/7/13 Participated in Municipal Art Society Roundtable

10/18/13 Presented at Rebuild by Design Workshop

10/23/13 Participated in Human Services Council
Hurricane Sandy Conference

11/13/13 Panelist for Talking Transitions: Community Resilience

11/19/13 Attended ABNY Breakfast: Community Resilience

12/3/13 Participated in After Superstorm Sandy:
Lessons Learned for Bolstering the Resilience
of Health Systems and Services

12/4/13 Presented for NYS Assembly: Age-Friendly Hearing

12/11/13 Organized and Facilitated Increasing Resilience
within HUD-Senior Housing Convening &
Presented: "Home as the Locus of Disaster Planning,
Response, and Recovery for Older Adults"

12/19/13 Participated in Municipal Art Society Roundtable

3/12/14 Presented at the conference of the American
Society on Aging: "A Resilience Framework for
Community-Dwelling Older Adults in Disasters"

Appendix C
Secondary Data Sources

Catholic Charities Community Services, Archdiocese of NY. (2013). Disaster Case Management Program. Unpublished data. Funded by FEMA, the Disaster Case Management Program provides assistance to people with unmet storm-related needs by developing a disaster-recovery plan, facilitating access to resources, and assisting with FEMA and insurance claims and appeals. Of 3,512 clients enrolled in the Disaster Case Management Program across the five boroughs from December 3, 2012 – October 2, 2013, 1,388 or 39.5% were 55 and over.

Community Solutions. (2013). Unpublished data. Using a modified CDC CASPER survey, Community Solutions surveyed 611 NYCHA households with a total of 1,293 household members (24% of members were 65+) in Coney Island, Far Rockaway, and Red Hook in the two weeks following the storm.

Gibbs, L., & Holloway, C. (2013). Hurricane Sandy After Action Report and Recommendations to Mayor Michael R. Bloomberg May 2013. New York. Retrieved from http://www.nyc.gov/html/recovery/downloads/pdf/sandy_aar_5.2.13.pdf. A survey of 509 Evacuation Zone A Residents conducted January 25-29, 2013.

Krauskopf, J., Blum, M., Lee, N., Fortin, J., Sesso, A., & Rosenthal, D. (2013). Far From Home: Nonprofits Assess Sandy Recovery and Disaster Preparedness. New York. Retrieved from http://www.humanservicescouncil.org/documents/REPORT OCTOBER 2013-FINAL 230pm.pdf. A survey of 104 organizations that self-identified as being engaged in Sandy relief and recovery efforts was conducted June-August 2013 by Baruch College School of Public Affairs on behalf of the Human Services Council.

The New York Academy of Medicine. (2013). Enhancing Health in New York City Innovative Senior Centers. New York. A convenience sample of 404 Innovative Senior Center ISC participants, approximately 50 from each of eight ISCs, were surveyed on their self-assessment of physical and mental health status, access and utilization of health care services, use of preventive health screenings, health conditions and their management, and social networks and social isolation.

New York City Department for the Aging. (2013). Profile of Older New Yorkers. 2009-2011 American Community Survey 3-Year Estimates PUMS data, from the U.S. Census Bureau and compiled by DFTA, is the source of socio-demographic data for Coney Island (Brooklyn CD 13), Lower East Side / Chinatown (Manhattan CD 3), the Rockaways (Queens CD 14), and Mid-Island / East Shore (Staten Island CD 2).

New York City Department of Health and Mental Hygiene, Office of Emergency Preparedness and Response. (2013). Unpublished data. A canvassing operation of high-rise buildings in Coney Island and Far Rockaway conducted by FEMA/National Guard personnel with NYC DOHMH Sanitarians from November 9-14, 2012 assessed urgent needs in 11,857 occupied units during the days the electricity was out, and 13,839 occupied units total.

New York City Housing Authority. (2013). NYCHA Emergency Preparedness Survey. Unpublished data. In May-June of 2013, NYCHA conducted an Emergency Preparedness survey to a sample of 1,824 households drawn from NYCHA's Tenant Data System; of these households, 540 had one or more persons age 62 or older.

New York State Department of Health. (2013). Project Hope. Unpublished data. Project Hope Crisis Counseling, funded by FEMA and administered by SAMHSA, provides "emotional first aid services" to people affected by disasters. Individuals are identified through community and door-to-door outreach, referrals by community-based agencies, and phone calls to LifeNet. Among 162,352 Project Hope participants in New York City from November 15, 2012 – August 3, 2013, 25,159 or 15% were for individuals age 65 or older.

Parton, H., et al. (2011). Health of Older Adults in New York City Public Housing: Findings from the New York City Housing Authority Senior Survey. New York. Retrieved from http://www.nyc.gov/html/nycha/downloads/pdf/senior-report-nycha.pdf. A sample of 1,036 senior NYCHA residents, randomly selected from the 2009 NYCHA Tenant Data System.

U.S. Census Bureau. (2013). American Community Survey, 2008-2012 American Community Survey 5-Year Estimates. American FactFinder. Retrieved from http://factfinder2.census.gov. 2008-2012 5-year American Community Survey data is the source of socio-demographic data for New York City, the five boroughs of New York City, and the three census tracts that comprise Red Hook, i.e., Kings County 53, 59, and 85.

Appendix D
Key Informant Interviews

Dr. Hany Abdelaal
Visiting Nurse Service of NY

Melany Avrut
Mental Health
Association of NYC

Terrance Banks
Con Edison

Michelle Bascome
World Cares

Terri Bennett
Respond and Rebuild

Cara Berkowitz
UJA-Federation
of New York

Marie-Regine Borgella
Catholic Charities
Community Services,
Archdiocese of New
York, formerly of JASA

Melba Butler
Formerly of the New York
City Housing Authority

Alison Cardona
ASPCA

Alex Chernis
Metropolitan Council
on Jewish Poverty

Chris Cirillo
Lott Community
Development Corporation

Selig Corman
Pharmacists Society of
the State of New York

Claire Day
Alzheimer's Association,
Delaware Valley Chapter

Bill Driscoll
Nechama

Kimberly Durow
National Voluntary
Organizations Active
in Disaster

Ken Ellis
COPD Foundation

Megan Fleigelman
Formerly of the Regional
Catastrophic Planning Team

Blake Fountain
Formerly of Touro
College of Pharmacy

Eli Fresquez
NYC Office of Emergency
Management

David Gershon
Empowerment Institute

Janet Golrick
HUD, Multifamily Housing

Cathy Gormley
Heights and Hills

Carla Holub
Selectcare

Madeline Jacobs
Selfhelp Community
Services / Co-Chair Home-
based Care Alliance

Marlin Jenkins
Nuluz Networks

Kesha Johnson
Florida Board of Pharmacy

Denise Kane-Lipari
Living Well Pharmacy

Katie Kluger
DOROT

Kate Lewis
Direct Relief

Jacob Ley
World Cares

Edward McQuillian
FEMA

Lilah Mejia
GOLES (Good Old
Lower East Side)

Madelyn Miller
Chair, Disaster Trauma
Committee, NYC-NASW

Nastaran Mohit
Occupy Sandy / New York
State Nurses Association

Susan Moritz
Metropolitan Council
on Jewish Poverty

Eileen Mullarkey
NYC Department
for the Aging

Erin Mullen
Rx Response and Rx Open

Les Mullings
Community Church of
Nazarene/Project Sandy

Julianne Panelli
Catholic Charities
Community Services,
Archdiocese of New York

Julia Pinover
Disability Rights Advocates

Ivan Quan
Walgreens

Shelly Raffle
Visiting Nurse Service
of NY / Co-Chair Home-
based Care Alliance

Stephanie Raneri
Isaac H. Tuttle Fund

Jeffrey Reed
Office of Emergency
Management, County
of Los Angeles

Tamar Renaud
NYC Department of
Health & Mental Hygiene

Ophelia Roman
NYC Special Initiative for
Rebuilding & Resiliency

Asaf Rosenheim
Area Property Partners

Herman Schaffer
NYC Office of Emergency
Management

Jim Simmons
Area Property Partners

Kristen Skinner
New Hanover County,
North Carolina, Office of
Emergency Management

Jonathan Soto
Bronx Long Term
Recovery Group

Victor Tello
City Bar Justice Center

Kim Williams
Mental Health
Association of NYC

Fred Williams
Con Edison

A Representative
of FEMA

Appendix E
Focus Group Report

Disaster Preparedness and Response for NYC's Community-Dwelling Older Adults:
Findings from Focus Groups with Residents and Frontline Responders

Jaime Gutierrez, Linda Weiss, Lindsay Goldman
September 2013

The New York Academy of Medicine
Center for Evaluation and Applied Research

Background

More than 1 million New York City (NYC) residents are 65 or older, with expectations of continued growth in this population in coming years. Older adults, due to the increased likelihood of chronic conditions, mobility limitations, and social isolation, are at high risk during disasters. In fact, during Hurricane Sandy, more than half of reported deaths in NYC were among older adults. Given their vulnerability, comprehensive and coordinated systems of support—involving governmental agencies, social service and health providers, landlords and businesses, and neighbors—are necessary to promote safety and well-being among older New Yorkers before, during and after an emergency. Keeping older adults safe—in turn—builds community resiliency by keeping a valuable resource to prepare, respond, and recover from disasters.

With funding from the Altman Foundation and the New York Community Trust, The New York Academy of Medicine (NYAM) is endeavoring to generate recommendations to coordinate planning and preparations so that community-dwelling older adults can safely shelter-in-place or evacuate, and to facilitate rapid recovery, given post-event conditions. This effort involves convening disaster-related experts from a variety of sectors. To inform their work, fourteen focus groups were conducted with community residents and frontline responders in neighborhoods most impacted by Hurricane Sandy; focus groups sought to elicit first hand experiences and recommendations. This report describes the focus group findings.

Methods

NYAM's Center for Evaluation and Applied Research (CEAR), working in collaboration with the Division of Health Policy and with community based organizations (CBOs) participating in the multisectoral Older Adults and Disasters Policy Advisory Committee, conducted focus groups with local residents and frontline responders in five Hurricane Sandy affected areas *(see Figure 1)*. Focus groups were designed to gather first hand reports and

experience-based suggestions that could be used to inform disaster preparedness policy recommendations for New York City.

Fourteen focus groups (12 in English, one in Spanish, and one in Mandarin) were conducted. Focus groups were held at the offices of collaborating CBOs *(see Table 1)*, except in Staten Island where the group was held in a neighborhood relief hub. CBOs were also responsible for

Table 1: Communities, CBO's and Participants

Affected Community	Collaborating CBOs	Resident Participants (n=81)	Responder Participants (n=57)
Lower Manhattan	Hamilton-Madison House	23	15
Red Hook, Brooklyn	Red Hook Initiative	22	11
Far Rockaway, Queens	Jewish Association Serving the Aging (JASA)	11	17
Coney Island, Brooklyn	Shorefront YM-YWHA	12	9
Staten Island	Community Health Action of Staten Island	13	5

Figure 1
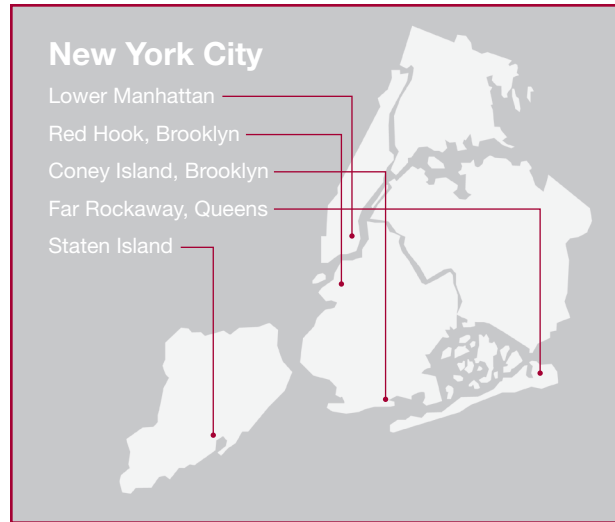
recruitment. They used a flyer and purposeful outreach (by staff) to promote the groups, the latter being the more effective approach.

Focus group participation was limited to 1) local residents over the age of 60 who live in houses or apartments (rather than institutional settings) in the defined communities and 2) local frontline responders. Frontline responders were defined as those individuals (of any age) who played an important role in these communities during and/or immediately after Hurricane Sandy, helping older adults recover from the effects of the storm. It was assumed that they would be staff, members, and volunteers from businesses, CBOs, property management companies, tenant and civic organizations, and health and social service organizations.

Focus groups lasted approximately 1.5 hours and were conducted using semi-structured guides, with different questions for residents and frontline responders. The groups were conducted between June and August of 2013. For residents, questions covered 1) their neighborhood, 2) type of housing, 3) storm preparation, 4) experiences during and immediately after the storm, 5) basic and health-related needs, 6) disaster-related assistance, and 7) community resilience. For responders, questions covered: 1) personal experiences with storm effects, 2) specifics of their work as a frontline responder, 3) observations about coordination of services, 4) barriers experienced in providing assistance to older adults, 5) perceptions of needs of older adults, including overall utility of service provision and notable gaps, and 6) community resilience. Participants were also asked to complete a brief demographic survey. The focus group protocol was approved by the NYAM Institutional Review Board. All participants provided written informed consent and received a $25 honorarium in appreciation of their time.

Focus groups were audio recorded and transcribed. Transcriptions and interview notes were maintained and analyzed in NVIVO version 8, a software package for qualitative research. Study documents were coded and searches were used to extract appropriately coded blocks (e.g., basic needs, shelters, mental health) of text for systematic analysis and reporting. Data from the brief survey were maintained and analyzed using IBM SPSS version 19.

Findings

Participant Characteristics

A total of 138 participants joined the focus group discussions, including 57 responders and 81 residents. Among responders, the mean age was 51 (age range: 24 to 83). Most were female. Almost half were white, and almost one-quarter were Black. Eighty percent worked as full time responders immediately after the storm *(see Table 2)*.

Responder roles and responsibilities included, but were not limited to, property managers; superintendents; home health aides; nurses; translators; staff from CBOs, health provider organizations, and NYCHA; hub managers; and supply coordinators. Approximately 60% of responders were doing the work for pay; 40% were volunteers. Many volunteers came to their positions through faith-based or community organizations and social media (primarily Facebook). Others lived nearby, including some that had themselves faced significant loss and hardship. Volunteering to support the community was thought to be the right thing to do. Seventy-three percent of responders in these groups lived in the affected community. They used their local knowledge to help. For example, one volunteer worked as a crossing guard, which provided her the opportunity to become familiar with many area residents. She reported that this knowledge allowed her to identify older adults not connected to the local CBO and in need of food deliveries.

Among residents, the mean age was 72 (age range: 47 to 99). Most were female, renters, and not working, which is not surprising given their age. Sixty-one percent remained in their homes during Hurricane Sandy. Thirty-six percent of participants were White; 30% were Latino. Thirty-eight percent of participants reported good health. A similar proportion of participants (38%) reported living alone; 34% lived with a spouse.

Almost all residents (87%) reported taking prescription medications daily, and close to 40% reported being on a special diet and/or use of medical equipment. One-quarter of participants were caregivers, with an equal number being care recipients *(see Table 4)*.

Table 2

Participant Characteristics-Responders (n=55)	
	(%)
Female	77
Race/Ethnicity	
Latino	14
White	44
Black	23
Asian	19
Work as a Responder was	
Paid; regular job	44
Paid; not regular job	18
Volunteer	38
Full time responder	80

Table 3

Participant Characteristics-Residents (n=79)	
	(%)
Female	74
Race/Ethnicity	
Latino	30
White	36
Black	17
Asian	17
General Health	
Very good/Good	58
Fair/Poor	40
Live with	
Spouse	34
Child	23
Alone	38
Own Pets	30
Rent	67
Not employed	90
Sheltered in Place	61

Table 4

Health-Related Needs of Residents (n=76)	
	Yes (%)
Require daily prescription medications	87
Require a special diet or medical equipment	39
Someone depends on you as a caregiver	25
You depend on someone in your household as a caregiver	24
You depend on someone outside of your household as a caregiver	13

Hurricane Sandy: Preparation and Impact

Participants in both the resident and responder focus groups spoke with much emotion and at great length about their experiences before, during, and after Hurricane Sandy. They described significant hardship, multiple traumatic events, sustained health and mental health consequences, and inadequate service availability—as well as resilience, generosity, support, and enhanced social connectivity. All neighborhoods included in the study experienced extensive flooding, power outages, and destruction of property. In Red Hook, residents spoke at great length about rat infestation, which was seemingly exacerbated by trash in the hallways of NYCHA housing. In Coney Island and Staten Island, participants described walking through sewage flooded streets.

Below, we describe their comments organized according to five major themes judged to be most informative from a policy and planning perspective:

- Sheltering in Place or Evacuation: Factors Impacting Decision Making

- Immediate and Sustained Concerns: Basic Needs and Health

- Perceived Successes

- Room for Improvement

- Self Assessment of Community Resilience

Sheltering in Place or Evacuation: Factors Impacting Decision Making

As noted above, the majority of participants in the resident focus groups remained in their homes despite living in neighborhoods at highest risk for flooding. They described a number of factors that influenced their decisions. For many, the minimal impact of Hurricane Irene—relative to the "hype"—resulted in underestimation of risk of Sandy.

"I didn't prepare for the storm. Because before that, we had another storm and they said on TV that we had to evacuate and all and nothing happened."

"I wasn't afraid of what could happen worse than what I had already seen in my life. I wasn't going to leave my apartment no matter what. I'd rather dance with the devil I know than the one I'm going to meet."

For many others, uncertainty and fears related to evacuation—particularly fear of placement in a shelter—were more pronounced than fears of remaining at home. There was a general consensus that the shelter system was inappropriate and ill equipped to care for older adults. As one resident commented: "How can you take a 94 year old to a shelter to sleep on a cot?" NYCHA residents participating in the focus group spoke at great length about being urged to evacuate by housing staff and the police. For older adults, such efforts were essentially futile, since they knew that the alternative to remaining at home was going to a shelter, which was considered by many to be unacceptable.

The most they did was urge us to evacuate and get on some bus to be taken to some kind of shelter… I won't be able to defend myself. The police told me, 'Well okay, but we are warning you. You stay at your own risk.' What are you warning me about? You are not taking me to a safe haven, you are taking me to a place where I am going to get my ass kicked, let's be honest. I am not going.

"One-third of the building refused to leave. A shelter was not a choice for many. 'A shelter? I might be killed there. I'd rather be killed here.'"

Responders also spoke of the well founded concerns of older residents with respect to evacuation, including the fear of crime. They also described the very real challenges associated with evacuating those with limited mobility and/or cognition.

"Evacuation is impossible to those at advanced age. [They] need someone professional to explain it to them. If evacuation is thought of as appropriate, you have to think about what kind of place you are going to send a vulnerable elderly person to that is really going to be what they need in terms of mental health, temperature, and safety."

Further complicating the search for safe destinations for older adults was that fact that hotels were occupied by out-of-town workers, including plumbers, construction workers, electricians, and environmental health workers.

It should be noted that fear persisted once the storm had ended. Older people were hesitant to leave their homes due to hazards and perceived lawlessness.

"People were desperate. I saw some people trying to steal stuff out of people's cars, and there were all these loose wires all over, and I thought somebody is going to get electrocuted. You were in fear of coming down from your apartment, because you didn't know what was going to happen to you in the streets. Especially us seniors, because we are already targets as it is, because we walk with canes—and you might get mugged or something is going to happen to you. So you keep your ass in your house."

Fear may have also impacted on their access to support. Responders noted the common (and logical) fear of strangers among older adults and the implications of this for service delivery to individuals that are homebound. An older responder explained:

"I'm probably more senior than any of you, okay… And my eyesight isn't as good as it used to be. When you look through that little keyhole, if there's any shadow… I don't know who that person is. I will not answer. When you listen, which I do, to certain TV programs, to certain news programs, when you hear all of the news, and they're telling you, seniors are always targeted."

Other factors that motivated people to stay at home throughout the storm included fear of household burglaries and care giving responsibilities. Lack of full information, resulting from language barriers, was an issue in the Chinese community. Participants reportedly did not know the anticipated intensity of the storm, what preparation efforts they should consider, or what evacuation orders to heed. They spoke of the lack of information in their language and the need to learn about the storm by those few neighbors who were bilingual.

"Seniors are afraid to open the door [because of] fear of burglary and crime—so we must communicate with them beforehand. Seniors need to anticipate where they can get food, that people will knock on doors, where shelters are, etc."

"Watching news on TV is good, but some seniors who didn't understand English could not afford cable. So they could not watch Chinese channel, and they didn't know what's going on."

A Russian speaking participant also spoke of the importance of Russian-language information:

"I listened to the radio where a person talked all night [in Russian]. It was like a lifeline—all information from all around the city… This voice made me a normal person. I listened all night."

The welfare of pets was a priority of some residents and impacted on decisions regarding sheltering in place versus evacuation. People were concerned that they would not be able to bring pets with them, and/or that their pets would not be properly cared for outside their watch. One Staten Island participant was so concerned about leaving her pets that she ultimately had to be forced out of her home by the police.

"I was taken by six policemen from my home. I never thought it would be like that. I loaded up on a lot of food. They handcuffed me and took me out. I was worried about my dogs and four parrots—I didn't want to leave because of my animals. When the cops pulled us out we called hotels, and there weren't any. So we went over the bridge to Brooklyn. We were in a hotel for a week, and then we managed to rent a basement in Bay Ridge. I didn't want to leave because of the animals."

Responders were conflicted regarding seemingly inappropriate decisions to remain at home during and after the storm, recognizing that residents were putting themselves, as well as responders, at risk by these decisions. Some felt that residents' decisions must be honored; a few felt forceful removal was warranted when risk of injury or death is high. Crafting a convincing message was considered essential.

"We all can work to get our tenants to understand that if they don't evacuate they are leaving everyone crippled."

In most communities, focus group participants reported that they will make the same decision regarding evacuation if there is another storm. However, participants in Staten Island expressed a significant concern about remaining in their community. Not only will they evacuate in the case of future storms, they also hope to be living elsewhere before that time.

Immediate and Sustained Concerns: Basic Needs and Health

Independent of decisions regarding evacuation, preparation for the storm was generally inadequate—which is not surprising, given Sandy's severity. Even if residents purchased a number of useful and recommended items (e.g., bottled water and batteries) stocked up on food, the flooding and the duration of outages made such efforts insufficient.

"I bought all the things they told me to buy, but when the lights went out I called my mother in a panic. All my food was damaged. I was prepared for not being able to get out. My main focus wasn't the loss of power but what to do in case I couldn't travel around without transit. I never bought lamps or flashlights."

Staten Island residents, in particular, felt all attempts to prepare for the storm were futile, particularly when it came to the water surge.

"I prepared everything. I had an emergency bag. I never had a chance to take my emergency bag. I left it upstairs. I left my dog upstairs. I had extra food. I never would have thought water would come so fast. We had to leave. You could not have prepared. There was nothing that anybody could have done. What could you do with all that water?"

When asked to focus on their experiences during and immediately after the storm, members of the resident focus groups, not surprisingly, identified basic needs, including food, water, heat, gas, phone service, transportation, and electricity, as their most essential concerns. "Meal Ready to Eat" (MRE) food was distributed, but was considered by some focus group participants to be inappropriate for older adults.

"MREs were a problem. They are high in sodium and hard to open. Older adults didn't know they had to add water. They were eating the packets. MREs have no instructions. Volunteers were drawing posters. This is not the kind of community education that should happen. This isn't good food for older adults."

The delayed restoration of electricity and phone service was particularly frustrating to residents and responders alike, due to the impact on coordination of service provision and the hours during which services could be provided. The lack of heat brought fears of carbon monoxide poison, particularly in the Russian community.

"The lighting issue is a real issue. During the day the buildings were dark. Far Rockaway, at 7 or 8 pm, police said, no matter what you're doing, for your own safety you need to leave. You need to think about your staff safety. You can't see anything."

"Because it was cold, they were all burning gas. I would get very tense. It was a Russian tradition. It is a health hazard. They didn't use the heaters that we gave them. The electricity company didn't help them. That needs to be changed."

Many spoke of having lived through other disasters and of utilizing skills learned from these prior experiences.

"My daughter said, "Whatever you find that can hold water, fill it up." So I did that. I had no communication and hadn't heard anything. Luckily, she heard that because we live in an elevator building we were going to be stuck at home. I rationed the water. That's where survival skills kick in. I recycled water to wash hands and used [that water for] the toilet later."

Based on resident and responder input, a consensus list of "basic need" related items would include:

Households	Buildings
Blankets	Electricity
Food	Heat
Batteries	Gas
Dry ice	Generators
Phone service	Portable toilets
TV and radio	
LED lights	
Medications	
Clothing and shoes	
Mold removal kits	
Cleaning supplies	

Building superintendents described the importance of generators—at a minimum, they felt it was important that generators connect to water pumps for toilets to function. Nurses felt portable toilets were needed, while acknowledging that they might not be acceptable to older residents. Dry ice was also considered important, to extend the shelf life of perishable food and medications. There were concerns about inflated prices for basic necessities, including batteries.

Beyond basic needs, participants reported significant unmet health-related needs during Hurricane Sandy. Some reported that they ran out of medications and were unable to communicate with their providers. Others needed medical equipment such as colostomy bags, walkers,

oxygen tanks, and lancets. One participant, who took daily medication for high blood pressure and diabetes, was visited by a doctor who seemingly promised to return with medications but never did.

"I couldn't get my pressure pills and my sugar pills. I couldn't get none of that. They had doctors come to your door, she [the doctor] said she'll be back to give me some but she never came back so I had to wait until the bus started running, and pharmacies opened. I had to wait. I did pretty good without it. I know how to stay away from certain [foods]."

"My walker broke. It was destroyed and I have spinal [problems] and fibromyalgia. I spoke with the National Guard. The young man said he will look for it. I never got the walker until seven weeks [later] and none of them found it."

Responders addressed health related issues as best they could, ignoring protocols if need be. Pharmacies that were operational had difficulty meeting the demand. Those that were willing to extend prescriptions and wave copays were greatly appreciated.

"We have several pharmacies. We broke our gates and had to break into our store and brought our own lights. We couldn't turn on a computer. When patients brought in a bottle we gave them medicine. I don't know how much we spent during that period. VNSNY called on a patient, then they called us. We needed to deliver to the patients' homes all over the city. Drug companies weren't delivering, because they didn't have drivers. Our driver had to go to the drug company. We had no phone. We put out a table in front of the pharmacy; someone always stayed in the pharmacy. I saw many other pharmacies closed."

One responder who managed a shelter described his use of the emergency 911 system to transport older adults that needed medical equipment.

"I was sending people away from the shelter because I had no oxygen. I called 911 to transport them to Baruch and John Jay [College] where they had shelter space for people with medical needs. 911 got mad when they arrived. They felt they should be rescuing people from flooded highways."

Participants felt that the storm contributed to declines in physical and mental health—including increased anxiety and depression—that remained months later. Some reported a lingering chronic cough and asthma symptoms, which they attribute to the presence of mold.

"We lost a little bit of our health during these days. I was nervous. I was afraid to go to sleep with the candles lit. It was stressful and frightening. Something should have been done. I'm sure people who were sick got very sick, and the people around them got sick trying to help them. It's tattooed on your brain, the suffering, the misery, the discomfort, the pain, the disconnect."

"I suffer from asthma, and I still have to go and get treated for asthma because of the mold that still is around the house."

"I'm afraid of [the] cold because I am sick, but the week after [Sandy], I became sick with shingles, and the doctor said it was because I was in a freezing room for two weeks and [because of] the stress during those days."

Descriptions of tragedy, witnessed firsthand, were not uncommon. One participant relayed the story of her friend, an older adult, who was taken to a shelter and became ill there. She was transferred to a nursing home and then a hospital but died within a month of the storm. Another participant described the death of her mother-in-law, at home in her bed.

"I lived with my husband and my mother in-law at that time. My mother in-law was 101 years old [and] froze to death. She was too old to walk. She always felt cold. Several blankets were not enough for her. When she felt cold she moved her body in bed, and she fell from the bed and got hurt. Shortly after, she was dead. I went through a lot, too. I had to take care of both my husband and mother-in-law at the same time and didn't fall asleep for more than 10 days. One day I was too tired to walk downstairs to get the daily necessities and fell down on steps. My nose got terribly hurt and bloody [she showed pictures], and I felt pain around my heart. Later when I saw a doctor, I was told that I had internal hemorrhage from my fall."

Responders were also severely affected by the hardships and devastation they encountered. One responder noted:

"I lost electricity but my home was not affected, I was affected emotionally. I worked the whole day as a homecare nurse, saw the destruction, walked along the beach and cried. It was sad to see people's belongings, kids' toys, photographs in the middle of the streets. I was changed forever emotionally and spiritually."

Stress resulting from Sandy-related financial instability continues to impact the lives of all focus group participants in all regions. Staten Island seemingly fared worse than other impacted areas; however, financial recovery appears slow in all regions. There is a common perception by older home and business owners that FEMA efforts to alleviate financial stress are not helpful. There was visible frustration with such recovery efforts since they seemingly include requirements to take out sizable loans that are not feasible for older adults.

"They wanted me to take out a loan…I had to sign all kinds of papers…the percentage was good but at my age…I would be paying the rest of our lives, so I had to take my savings."

"My nephews don't want to help me now because I have become too great a burden on them. My dogs died. My sister got sick. I feel unwanted and uncomfortable and no one can help me. I have very little food. I keep praying that someone will help me but I don't know what to do. FEMA has not been able to help me. No one seems to be able to help. Like I said earlier, I have no more clothes and I have no money to buy anything and I feel embarrassed to ask people to help me buy underwear because I can't speak English."

Perceived Successes

Participants in the resident focus groups described multiple instances of cooperation and generosity, involving both individuals and institutions, which had a substantial impact on residents and communities affected by the storm. The many good deeds witnessed represented a silver lining to the pervasive devastation. Faith-based institutions in Far Rockaway (as well as non-local religious groups, including the Mennonites), were commended for their concerted and continuing effort to meet the needs of residents in private housing, who felt particularly isolated. As one member described:

"We checked on everyone whether they were members of the church or not. We gave them food, transportation or referrals. We are still out there right now. We are committed to continue this process. We are working with other churches."

Occupy Sandy was also commended and considered to be very effective in distributing food and supplies, bringing young volunteers to impacted areas, and creating systems of communication.

"One of the things about Occupy [Sandy] which I thought was extremely important is that they were willing to support and stand back, as opposed to other types of organizations who might want to come in and control the whole process."

In all communities, focus group participants living in multi-family housing commended their neighbors, reporting that neighbors more effectively responded to their needs during and immediately after the storm than did outside agencies. Many participants spoke with enthu-

siasm about the new relationships they established with neighbors due to the assistance provided during Hurricane Sandy.

"The people that were volunteers were beautiful. I feel even though I'm living in hell now, I learned something: compassion. I came up a little bit ahead and a lot behind."

"There are people who live alone. They are very scared people and can be timid. One of my neighbors lives alone, and she never opens the door and I had to tell the responders. I had to go to her door and call out her name and then she opened the door, because she knows me."

"I couldn't walk down the steps and my neighbors brought me food. They are Asian and we have a language barrier. With signs and signals we were able to communicate."

"I wasn't going to leave, because I left for Irene and I didn't think this was going to happen. So what I did, I'm usually the oldest person in the building, so I cooked for the younger kids so I made [food]… and they came and they ate and we had a plan. If anything happens we go up to the fourth floor. The girl on the fourth floor left and left her door open for us. When we saw the water rising, we went up."

"We didn't just become residents, we became friends, family. Even though it's all over now and when we see people you say, 'Hi, how are you? How was your day?' Because we realize from one day to the next, everything can be gone."

Some property managers and superintendents of buildings with primarily older tenants were also commended in all Sandy-impacted areas.

"The police came with a group of young volunteers. They wanted us to abandon the building. It was confusing. People were in a panic. The coordinator told me that I didn't have to leave. This helped me decide to stay. The city didn't take care of anyone, especially the elderly. We need the answer why they didn't respond immediately. This building is for disabled people and senior citizens. They only responded on Friday. The super and coordinator did a great job."

The extent to which neighbor-to-neighbor systems of support established during and immediately after Hurricane Sandy have been sustained—or can be re-activated—is variable. As noted above, some participants reported newly strong bonds with neighbors, and a plan for cooperation in future emergencies. Others were more hesitant, still feeling relatively isolated or maintaining a general discomfort with requests for assistance.

"In case everything goes dark and I cannot communicate, remember that I am here please."

Although focus group participants were most likely to praise individuals, the significance of social media, as a facilitator of instrumental support shouldn't be underestimated. Facebook and Twitter, in particular, facilitated general communications, recruitment of volunteers, and collection of donations.

"Facebook got me hamburgers and volunteers. I did 1,500 hamburgers a day. I was feeding the army, Con Edison, residents, volunteers. Everything was paid for through Facebook donations."

"I started as volunteer. It was like a war zone. I helped take everything that was ruined out of their homes, and they were thankful. It was ironic. I learned about the volunteer opportunity from a group of people talking on Facebook."

"Not only did we get meals to the seniors this way… one time we needed diabetes… Lancets. I tweeted that we needed a handful and I got a box dropped off in 20 minutes in front of my door and got them to the residents. … That's how social media worked."

Other efforts that were considered to be effective include the following:

- City Meals on Wheels was commended for delivering food that residents recognized and could open, in contrast to the MREs delivered by the National Guard.

- The NYPD was recognized for efforts before, during, and after Sandy. For example Police Service Area 1 (PSA 1), a satellite office of NYPD that patrols NYCHA developments, was considered an active responder for residents in Red Hook.

"City Meals on Wheels delivered food that [residents] can open and know how to eat. They delivered 2-3000 boxes, had transportation and were very prompt."

"They brought meals out; they checked on seniors, they checked on regular adults. They gave away coats. You know, I'm telling you, PSA 1 was really there. They called every day to check on what we needed. They found out a lot of buildings were dark; they brought officers around to check to make sure the buildings were safe. So, you know, I have to give them a lot of credit."

- Despite a number of shortcomings, FEMA was acknowledged for distributing food and paying hotel fees for the displaced.

- Sanitation workers were commended as makeshift public health professionals and credited with saving many lives. Participants acknowledged the difficulties inherent in discarding possessions that had been important to residents, but also shared with great enthusiasm the compassion received from sanitation workers. Residents and responders alike felt that sanitation workers were overlooked when the city evaluated their response to the disaster.

"Sanitation! I have goosebumps. I wanted to give them money or tips but they said no 'I won't accept money.' They just kept taking things up. They took everything…two or three times a day, without hesitation."

Room for Improvement

Given the overwhelming scale of Hurrican Sandy, it is not surprising that services fell short of need. In general, criticisms focused on the more formal service delivery and response system, which tended to be more bureaucratic, less transparent, and relatively unable to provide needed services and supports quickly. Frustrations related to FEMA, Medicaid, and Medicare (to get approvals for replacement medical equipment, for example) were heard in all focus groups. According to one responder:

"311 was nothing. They were swamped. 211 did not exist. Red Cross was not accepting any phone calls. FEMA was the only one that sent someone but couldn't do anything because we didn't have structural damage."

Responders were aware of resident dissatisfaction and felt that the frustration of community members added to the difficulty of their jobs. However, they too described numerous problems related to recovery efforts.

"I was stuck at work for 11 days. The only source of food that we had was when JASA brought us food. A lot of patients refused to eat. I couldn't go home and leave them. I had to help roll the wheelchairs. If this happens again, what will happen to those who refuse to leave? I was like a caveman walking around with flashlights. We didn't get food until days after."

There was a general consensus among all responders that coordination of efforts, and strong central leadership, were lacking. Consequently, there were both gaps and redundancies in service delivery. There was a sense among both residents and responders that residents were abandoned unless they were connected to a local CBO prior to Hurricane Sandy.

"CBOs were a blessing but, unfortunately, there were certain buildings that if you weren't tied to some service by one of the local CBOs you were abandoned. They weren't able to go throughout the whole community and if you didn't have that link you would be screwed."

In addition, concerns were raised about appropriate screening and pairing processes, particularly for older, more vulnerable adults. According to responders:

"Some seniors were seen four times and some not seen at all. There is a problem with coordination. You have these wonderful services out there, but who is doing what? People need to share their emergency plans. We're trying to work on this with the people who are right around our area so we're not seeing the same people."

"Miller Field [in Staten Island] was a waste and not accessible to older adults. There were showers, but no one knew they were there. Showers should have been moved to where people were. No one wants to walk in the middle of the night to Miller Field. There was no electricity."

"We are working on emergency planning. It brought out the worst and best in people. It was inspiring to see the good in people. Volunteers need to be screened. They are going into clients' homes. You need to know who the volunteers are and where they are coming from."

"Volunteers would just show up. I wasn't sure how they got there. You don't want people sitting around or in the way. There needs to be more coordination somewhere. Volunteers need to be briefed in some way. People would say, 'Oh, so and so just told me to come.'"

For limited English proficient communities, language discordance impacted on service delivery and perceptions thereof.

"No one from FEMA spoke Chinese. They were stationed at the Chinese Benevolent Association, and no one can speak Chinese. It was a waste of resources. I was asked if I could send people down to translate so we did. There should be some thought to these needs before a crisis."

"FEMA was door-knocking to get people to register but no one [from FEMA] spoke anything but English, and brochures were only in Vietnamese. It was very frustrating for nonprofits because there was no way to give guidance or feedback to government partners."

Independent of language issues, complaints about FEMA were common. One participant reported problems getting help from FEMA because seven people in her neighborhood had the same name. Some people did report that emergency cash assistance and food stamps were useful in the days following Hurricane Sandy. However, the aid was not commensurate with the overwhelming need.

Focus group participants in all impacted areas expressed concern for their neighbors who are living in the U.S. without legal permission. There was consensus that many of these neighbors were living in illegal basement units; many of which were severely damaged by Sandy. Some participants described not seeing these neighbors since Sandy, and worry that these families were permanently displaced or dead.

Self Assessment of Community Resilience

Responders from all regions committed to increasing communication with each other with the goal of improving coordination and local response to future disasters. With the exception of responders in Red Hook, groups felt there was a need for leadership, if only to convene and moderate conversations between responders and residents.

Red Hook, a smaller geographical area than other impacted regions, felt their community organically came together to prepare for, and respond to, Hurricane Sandy. Their use of social media produced rapid results, quickly bringing in supplies and volunteers. In addition, they effectively worked with the media, and through advocacy were able to negotiate terms of recovery with City officials.

"We were the only community, Red Hook was the only public housing project…that negotiated with the politicians as well as NYCHA. So we took the initiative to get out there and we organized and we made sure we got, everything this community got, we had to negotiate, nothing came to us free. It took us a lot of time of organizing; we were going through the same cold as everybody else. But we knew that if we [needed to] get the media out here—we had radio out here, …TV, NY1, NYC radio…and we took them on tours and we showed them how these people were hurting. We didn't only take them to public housing; we took them in residential areas as well, because we're all one neighborhood, regardless of how people try to divide us. We know when it hits the fan we can all depend on each other. Period. What you got and what you don't have is irrelevant."

"We [residents] had to organize. After Sandy a group of us used to have meetings. Homeowners, people that live in residential areas, as well as people that live in public housing…because NYCHA wasn't doing anything. We had a couple of facilitators, we started organizing on a daily basis. We also went to the media. We also paraded in front of 250 Broadway. We also had public meetings with the police dept, health care officials...NYCHA, politicians….Five of us negotiated terms…30 terms that we wanted for people in Red Hook, in general, that we wanted them to address—the lack of communications. And we held them to that, we had meetings every week, and out of 30 demands, they agreed to 28 demands."

"We did a pretty good job of understanding who played what role after a week. The first week here was pretty intense and then after that we were able to coordinate and everything flowed better. We knew that medical services were at [this] clinic, we knew that food was being distributed out of [this CBO]…we all knew after a week where all the services were but it took a while for us to figure out. There was no agency that came in here and said OK, You've been here for 11 years, you take over and handle it. No, it was a very community-oriented and organic."

Far Rockaway did not have the same organizational capacity as Red Hook, or linkages in the immediate aftermath of Hurricane Sandy. Responders acknowledged efforts that did not come to fruition, due to recent changes in local leadership; however, the focus group catalyzed another effort to share contact information and to commit to one another to improve communication and to develop action plans in preparation of future disasters.

"The Rockaway communities are contained and reluctant to reach out to other communities. This mindset can't go on. Unless we talk to each other, this is not going to work. We need to work with groups within the Rockaways. They need to take a look at the emergency response. We need to build on that first."

"We need to identify resources and set up a network. We can't wait for the City. Far Rockaway will always be Far Rockaway."

Participants reported that Lower Manhattan is experiencing disjointed efforts to improve disaster preparedness and recovery. There are concerns about neighborhood coverage, collaboration, and communication. According to one responder: "There is a density of organizations in this area, and people are reinforcing bad habits of not talking to each other."

Coney Island responders had mixed feelings about opportunities for community based responses, given the diversity of the populations. However, there was interest in trying.

"I think it was good coordination in this specific neighborhood. We worked with the churches. Maybe the next step is to develop a plan with them and the schools. My Hispanic community didn't know this center offered social services. They thought it was only for the Russian community."

The Coney Island boardwalk has been repaired. However, there is a perception that the City is investing in efforts that are less important than the need to rebuild businesses and homes.

"There was a supermarket that got ruined. That was the only American supermarket that was available. It is closed now."

"[In Staten Island], businesses are gone. Economically we are gone. People gone; less than half of us are left. Do you want to rebuild when the house next door is burnt out?"

Staten Island responders reported division, inertia and lack of direction. Staten Island responders feel there has been community cohesion. However, there is a sense that Staten Island residents and businesses are moving off the island.

Ideas Suggested by Focus Group Participants

Focus group participants were asked to articulate their ideas to improve disaster preparedness and response efforts related to older adults in their communities. Below is a list of suggestions generated by both residents and frontline responders based on their experiences during and after Hurricane Sandy. These suggestions have been organized into the broad topic areas identified by the NYAM Older Adults Disaster Policy Advisory Committee for ease of reference.

Coordination and Management

- Utilize neighborhood-level data to plan for the different preparedness, recovery, and communication needs of populations throughout the city, including those with language barriers, hearing difficulties, and the undocumented.

- Develop an area coordination map with input from local agencies. Assign roles, regions, and responsibilities to these agencies before a disaster strikes.

- Create a citywide command center that will house a database of the elderly, homebound people, those on maintenance medications, and the agencies that currently serve them. Some responders suggest assigning each person a needs-based priority level.

- Create an organization to screen, train, and pair volunteers with vulnerable populations.

- Develop canvassing protocols to identify older adults in need who shelter in place. Approaches suggested include the use of multidisciplinary teams of nurses and social workers, the creation of a database of retired and active nurses willing to be deployed, the assignment of specific regions to local agencies, and the creation of a local phone tree. Using a tenant's name when knocking on the door was cited as effective in getting the tenant to open the door.

- Involve sanitation workers in disaster preparedness and recovery planning.

- Establish action plans with local churches, schools, and youth associations. Train congregants, teachers, and young adults on disaster response.

- Involve individuals who are not connected to churches or CBO's in preparedness and recovery efforts.

- Assign a point person to orient newly deployed staff or volunteers to a specific site.

- Increase the use of social media as an organizing tool.

- Establish mechanisms to prevent residents from hoarding and businesses from price gouging.

Information and Communication

- Create a centralized clearinghouse for disaster preparedness and recovery information that is accurate, accessible through multiple mediums, and culturally/linguistically appropriate for all New Yorkers.

- Create effective messaging to residents who refuse to evacuate about the risks they are assuming and the risks to first and frontline responders.

- Continue to educate older adults on household preparedness, including go-bags, emergency supplies of medication and extra medical equipment, and proper storage of important files, as well as the value of spare batteries, charged cell phones, and battery-powered radios.

- Educate older adults on the use of computers and smart phones.

- Bring back the FDNY program that distributed free batteries for emergency preparedness.

- Develop communication and action plans with local businesses and CBOs to prepare and respond to disasters.

- Coordinate with cell phone companies to expedite the replacement of towers; use walkie-talkies in case of limited cell phone service.

Health and Social Services

- Make seniors a priority. Bring services to them and/or allow them to be first in line. Wait for older adults who may need more time at mobile distribution sites.

- Facilitate easy and fast access to medical care, prescription medications, and replacement medical equipment, and ensure services are covered by insurance. Mobile pharmacies and clinics were mentioned as effective.

- Encourage and allow older adults to receive a one-month advance supply of medications before a disaster.

- Create an electronic "Disaster Card" with contact and medical information for first responders.

- Prevent hospital closures during and after disasters.

- Ensure emergency shower and bathroom facilities are geographically convenient and accessible (provide special toilet seats); keep park bathrooms open and clean.

- Connect older adults to local CBOs near their homes prior to emergencies.

- Some participants suggested expediting the response time of the Red Cross.

- Expand and replicate NYCHA's Adopt-a-Senior program.

Housing

- Provide emergency preparedness and response training conducted by first responders for housing assistants.

- Educate tenants on how to manage electricity safely in preparation for and following a storm.

- Go block by block to encourage older adults to tape medical and contact information to the inside of their doors.

- Post notifications and provide food and water on all floors in buildings, not just in lobbies.

- Plan to care for tenants for up to five days after the disaster.

- Invest in small and large generators, sleeping bags, emergency carrying chairs (narrow chairs with small wheels that fit down stairwells) for older adults with mobility issues, and emergency lighting in buildings.

- Ensure generators can connect to water pumps.

- Establish a system for tenants to indicate when they are home during disasters, such as by mounting florescent lighting on doors.

- Streamline and monitor mold remediation efforts, even months after disasters.

Sheltering

- Provide shelters that are safe and appropriate for older adults with mental health services, temperature control, and medical supplies. Houses of worship and senior centers were identified as potentially appropriate venues for shelter.

- Provide sources of moral support at shelters such as radios, spiritual care, and individual and group counseling.

- Use the NYPD to enforce mandatory evacuations of older adults and other mobility impaired people if there is an imminent risk of injury or death; ensure their needs will be met wherever they are transported.

Food

- Increase public awareness regarding perishable versus nonperishable foods to avoid food poisoning.

- Distribute food bars that are low in sugar and sodium instead of MREs.

- Enclose MREs in user-friendly packages, and provide clear instructions in all languages.

- Ensure emergency food supplies address those with dietary restrictions such as kosher, vegetarian, and low-sodium needs, and those with food allergies.

- Distribute emergency food stamps before a disaster.

Transportation

- Provide adequate and appropriate transportation for older adults, including those who are mobility impaired and wheelchair-bound.

- Stock up on gasoline before a disaster strikes for transportation to evacuation sites.

Conclusion

Hurricane Sandy disproportionately impacted older New Yorkers and caused varying degrees of devastation to certain areas of New York City. Responding to the needs of older adults during and after Sandy proved a difficult task and required extensive and thoughtful efforts by government agencies as well as neighborhood-specific resources such as CBOs, businesses, and neighbors. Much was done well; however, many residents and responders observed and experienced uncoordinated efforts that felt misplaced, duplicative, or missing. With funding from the Altman Foundation and the New York Community Trust Fund, NYAM set out to document these incidents in hopes of identifying, analyzing, and generating disaster preparedness policies and recommendations.

The findings and recommendations presented in this report aim to help generate appropriate policies and practices to help coordinate planning and preparations for community-dwelling older adults to shelter in place or evacuate. The voices and experiences of residents and responders in these impacted areas are necessary in accomplishing this goal. NYAM's hope is that the many experts who will read this report do so with the purpose of facilitating rapid recovery given post-event conditions.

Appendix F
Selected Socio-Demographic Variables

Variable	New York City	The Bronx	Brooklyn	Manhattan	Queens	Staten Island
(Data Source) 2008-2012 ACS 5-year DP05						
Total population	8,199,221	1,386,364	2,512,740	1,596,735	2,235,008	468,374
% White	44.5	22.5	44.6	56.9	42.5	75.8
% Black	25.1	34.7	34.2	15.5	18.9	10.4
% American Indian / Alaska Native	0.4	0.5	0.3	0.3	0.4	0.2
% Asian	12.9	3.5	10.6	11.2	23.4	7.7
% Native Hawaiian / Pacific Islander	0.0	0.0	0.1	0.1	0.1	0.0
% Other race	14.3	35.2	8.3	12.0	11.6	4.0
% Multi-racial	2.9	3.4	1.9	3.9	3.1	1.9
% Hispanic / Latino (of any race)	28.6	53.5	19.8	25.6	27.5	17.2
(Data Source) 2009-2011 ACS 3-year PUMS (NYC DFTA)						
Total population	8,014,210	1,342,451	2,471,790	1,533,117	2,207,688	459,164
60+ population % White	45.2	23.1	44.5	52.9	44.0	79.5
60+ population % Black	21.6	29.9	31.4	30.4	17.2	5.6
60+ population % Asian/Pacific	11.1	3.4	8.4	10.1	19.1	7.2
60+ population % Other race or multi-race	22.1	43.5	15.6	6.5	19.7	7.7
60+ population % Hispanic /Latino (of any race)	20.5	42.3	14.6	22.7	17.1	7.0
(Data Source) 2008-2012 ACS 5-year DP05						
65+ population (% of total population)	12.2	10.6	11.6	13.5	12.9	12.9
65+ population	1,002,872	147,030	290,700	215,871	288,991	60,280
% Male	39.8	37.9	39.3	40.4	40.5	41.6
% Female	60.2	62.1	60.7	59.6	59.5	58.4
75+ population (% of total population)	5.7	4.8	5.4	6.2	6.1	5.8
75+ population	464,608	66,081	135,663	99,534	136,351	26,979
85+ population (% of total population)	1.7	1.4	1.6	1.9	1.9	1.7
85+ population	141,865	19,956	40,471	31,024	42,340	8,074

Variable	New York City	The Bronx	Brooklyn	Manhattan	Queens	Staten Island
(Data Source) 2009-2011 ACS 3-year PUMS (NYC DFTA)						
65+ population (% of total population)	11.9	10.1	11.2	13.6	12.5	12.2
65+ population	953,391	136,252	276,943	207,971	276,052	56,173
60+ population (% of total population)	17.0	14.6	16.2	18.9	17.7	18.1
60+ population	1,360,476	195,739	400,655	289,920	391,243	82,919
60+ population % Male	41.0	39.3	40.5	40.9	42.0	43.3
60+ population % Female	59.0	60.7	59.5	59.1	58.0	56.7
2008-2012 ACS 5-year B09020						
65+ in family households	61.4	57.0	63.3	50.1	68.7	69.1
65+ in non-family households	34.2	36.3	32.5	46.5	27.6	25.4
65+ living alone	31.3	33.2	29.9	42.3	25.2	23.6
65+ in group quarters	4.3	6.7	4.2	3.4	3.7	5.5
2009-2011 ACS 3-year PUMS (NYC DFTA)						
60+ population % living alone	29.5	32.0	28.1	40.1	23.5	21.7
2008-2012 ACS 5-year B25024						
% of housing units single-family detached	9.4	6.0	5.7	0.7	19.5	33.3
% of housing units in a building with 20+ units	46.8	61.7	33.3	78.2	29.8	9.9
% of housing units in a building with 50+ units	31.2	39.5	20.3	54.7	20.3	7.7
2008-2012 ACS 5-year B25072						
65+ householder % whose rent is over 35% of income	48.4	49.4	49.8	44.2	52.4	45.7
2008-2012 ACS 5-year S1701						
Total population % below poverty (FPL)	19.9	29.3	22.7	17.5	14.4	11.3
65+ population % below poverty (FPL)	18.5	23.2	22.9	18.5	13.3	10.1
2009-2011 ACS 3-year PUMS (NYC DFTA)						
60+ population % below poverty (FPL)	15.5	20.4	18.8	15.3	11.4	7.1
60+ population % below poverty (CEO)	20.7	26.5	25.5	20.6	15.3	10.1
65+ population % below poverty (FPL)	16.1	20.3	19.8	15.7	12.3	7.3
65+ population % below poverty (CEO)	23.0	27.5	29.4	22.2	17.2	11.4
2008-2012 ACS 5-year B22001						
60+ household receiving Food Stamps/SNAP in past 12 months	22.4%	32.0%	26.8%	20.4%	16.9%	10.3%
2009-2011 ACS 3-year PUMS (NYC DFTA)						
60+ household receiving Food Stamps/SNAP in past 12 months	22.0%	30.5%	26.4%	20.1%	17.1%	9.5%

Variable	New York City	The Bronx	Brooklyn	Manhattan	Queens	Staten Island
2008-2012 ACS 5-year S2301						
65+ population % employed	14.2	11.3	11.0	21.0	14.0	13.1
2009-2011 ACS 3-year PUMS (NYC DFTA)						
60+ population % employed	25.4	21.2	23.6	31.4	25.0	24.3
2008-2012 ACS 5-year S1501						
65+ population % did not complete high school	33.8	46.0	36.2	27.6	31.8	23.6
65+ population % high school graduate	66.2	54.0	63.8	72.4	68.2	76.4
65+ population % Bachelor's degree or higher	22.0	12.0	16.3	40.6	19.9	16.4
2009-2011 ACS 3-year PUMS (NYC DFTA)						
60+ population % did not complete high school	30.5	43.1	32.5	24.6	28.5	21.2
60+ population % high school graduate	69.5	56.9	67.5	75.4	71.5	78.8
60+ population % Bachelor's degree or higher	24.6	13.2	19.2	44.3	22.1	20.5
2008-2012 ACS 5-year S1601						
65+ population % that speaks a language other than English	45.0	49.0	47.1	39.2	49.2	25.9
65+ population % that speaks English less than "very well"	28.8	35.7	36.9	27.1	35.6	15.2
2009-2011 ACS 3-year PUMS (NYC DFTA)						
60+ population % whose primary language is Spanish and speaks English less than very well	14.1	29.4	9.7	16.0	11.8	3.3
60+ population % whose primary language is Chinese and speaks English less than very well	5.6	0.8	6.2	6.4	7.5	1.7
60+ population % whose primary language is Russian and speaks English less than very well	3.9	0.5	9.9	0.6	2.3	1.8
60+ population % whose primary language is Italian and speaks English less than very well	1.7	1.6	2.2	0.2	2.1	3.2
60+ population % whose primary language is Fench Creole and speaks English less than very well	1.0	0.1	2.4	0.2	0.9	0.1
60+ population % whose primary language is Greek and speaks English less than very well	0.7	0.4	0.4	0.1	1.7	0.2
60+ population % whose primary language is Yiddish and speaks English less than very well	0.3	0.1	1.0	0.0	0.0	0.0

Variable	New York City	The Bronx	Brooklyn	Manhattan	Queens	Staten Island
60+ population % whose primary language is French and speaks English less than very well	0.3	0.2	0.4	0.2	0.4	0.0
60+population % that speaks English less than very well among those whose primary language is one of the above 8	27.7	33.1	32.4	23.8	26.7	10.3
2009-2011 ACS 3-year PUMS (NYC DFTA)						
60+ population % foreign born	55.2	63.0	60.3	42.6	60.9	28.4
2008-2012 ACS 5-year C27006						
65+ population % with Medicare coverage	91.0	87.6	92.9	91.5	90.4	92.0
2008-2012 ACS 5-year C27007						
65+ population % with Medicaid coverage	28.6	35.4	35.5	26.0	23.0	15.0
2008-2012 ACS 5-year B1802						
65+ with hearing difficulty	105,560	15,164	34,829	19,389	30,104	6,074
2008-2012 ACS 5-year B1803						
65+ with vision difficulty	82,840	14,900	29,744	14,636	20,772	2,788
2008-2012 ACS 5-year B1804						
65+ with cognitive difficulty	112,879	17,885	41,642	21,097	27,762	4,493
2008-2012 ACS 5-year B1805						
65+ with ambulatory difficulty	271,290	44,543	88,900	53,327	70,993	13,527
2008-2012 ACS 5-year B1806						
65+ with self-care difficulty	115,142	16,234	43,368	21,911	28,475	5,154
2008-2012 ACS 5-year B1802						
65+ population % with hearing difficulty	10.5	10.3	12.0	9.0	10.4	10.1
2008-2012 ACS 5-year B1803						
65+ population % with vision difficulty	8.3	10.1	10.2	6.8	7.2	4.6
2008-2012 ACS 5-year B1804						
65+ population % with cognitive difficulty	11.3	12.2	14.3	9.8	9.6	7.5
2008-2012 ACS 5-year B1805						
65+ population % with ambulatory difficulty	27.1	30.3	30.6	24.7	24.6	22.4
2008-2012 ACS 5-year B1806						
65+ population % with self-care difficulty	11.5	11.0	14.9	10.2	9.9	8.6
2009-2011 ACS 3-year PUMS (NYC DFTA)						
60+ with self-care/ mobility difficulties	361,095	64,378	112,078	69,643	97,445	17,551
60+ population % with self-care/mobility difficulties	26.5	32.9	28.0	24.0	24.9	21.2
2008-2012 ACS 5-year B1802						
<65 with hearing difficulty	68,555	16,882	17,354	12,688	18,140	3,491

Variable	New York City	The Bronx	Brooklyn	Manhattan	Queens	Staten Island
2008-2012 ACS 5-year B1803						
<65 with vision difficulty	89,644	22,746	26,196	16,021	21,615	3,066
2008-2012 ACS 5-year B1804						
<65 with cognitive difficulty	201,360	60,768	52,040	35,496	43,142	9,914
2008-2012 ACS 5-year B1805						
<65 with ambulatory difficulty	243,243	63,559	65,326	42,459	57,843	14,056
2008-2012 ACS 5-year B1806						
<65 with self-care difficulty	87,209	20,743	24,344	14,544	22,082	5,496
2008-2012 ACS 5-year B1802						
<65 population % with hearing difficulty	1.0	1.4	0.8	0.9	0.9	0.9
2008-2012 ACS 5-year B1803						
<65 population % with vision difficulty	1.2	1.8	1.2	1.2	1.1	0.8
2008-2012 ACS 5-year B1804						
<65 population % with cognitive difficulty	2.8	4.9	2.3	2.6	2.2	2.4
2008-2012 ACS 5-year B1805						
<65 population % with ambulatory difficulty	3.4	5.1	2.9	3.1	3.0	3.4
2008-2012 ACS 5-year B1806						
<65 population % with self-care difficulty	1.2	1.7	1.1	1.1	1.1	1.3

The five Sandy-affected communities where focus groups were held

Variable	Red Hook, Brooklyn (c.t. 53, 59, 85)	Coney Island, Brooklyn (CD 13)	Lower East Side, Manhattan (CD 3)	The Rockaways, Queens (CD 14)	East Shore, Staten Island (CD 2)
2008-2012 ACS 5-year DP05					
Total population	10,987	x	x	x	x
% White	28.2	x	x	x	x
% Black	35.5	x	x	x	x
% American Indian / Alaska Native	0.1	x	x	x	x
% Asian	2.0	x	x	x	x
% Native Hawaiian / Pacific Islander	0.0	x	x	x	x
% Other race	28.3	x	x	x	x
% Multi-racial	5.9	x	x	x	x
% Hispanic / Latino (of any race)	45.6	x	x	x	x
2010 Census (NYC Dept. of Planning)					
Total population	x	104,278	163,277	114,978	132,003

Variable	Red Hook, Brooklyn (c.t. 53, 59, 85)	Coney Island, Brooklyn (CD 13)	Lower East Side, Manhattan (CD 3)	The Rockaways, Queens (CD 14)	East Shore, Staten Island (CD 2)
2009-2011 ACS 3-year PUMS (NYC DFTA)					
60+ population % White	x	79.4	22.3	54.5	81.3
60+ population % Black	x	6.5	5.3	29.1	2.7
60+ population % Asian/Pacific	x	6.6	46.7	1.7	9.9
60+ population % Other race or multi-race		7.4	25.8	14.7	6.1
60+ population % Hispanic/ Latino (of any race)	x	7.1	24.1	12.8	5.9
2008-2012 ACS 5-year DP05					
65+ population (% of total population)	9.1	x	x	x	x
65+ population	997	x	x	x	x
% Male	41.2	x	x	x	x
% Female	58.8	x	x	x	x
75+ population (% of total population)	3.1	x	x	x	x
75+ population	346	x	x	x	x
85+ population (% of total population)	0.8	x	x	x	x
85+ population	92	x	x	x	x
2009-2011 ACS 3-year PUMS (NYC DFTA)					
65+ population (% of total population)	x	22.8	13.9	11.6	14.1
65+ population	x	23,742	22,748	13,319	18,619
60+ population					
(% of total population)	x	29.9	19.5	16.1	20.3
60+ population	x	31,218	31,874	18,482	26,742
60+ population % Male	x	41.3	41.8	39.1	44.5
60+ population % Female	x	58.7	58.2	60.9	55.5
2008-2012 ACS 5-year B09020					
65+ in family households	48.8	x	x	x	x
65+ in non-family households	50.2	x	x	x	x
65+ living alone	43.4	x	x	x	x
65+ in group quarters	1.0	x	x	x	x
2009-2011 ACS 3-year PUMS (NYC DFTA)					
60+ population % living alone	x	35.0	33.6	30.3	21.6
2008-2012 ACS 5-year B25024					
% of housing units single-family detached	0.9	x	x	x	x
% of housing units in a building with 20+ units	63.9	x	x	x	x
% of housing units in a building with 50+ units	10.6	x	x	x	x
2008-2012 ACS 5-year B25072					
65+ householder % whose rent is over 35% of income	43.4	x	x	x	x

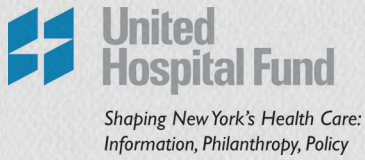| Variable	Red Hook, Brooklyn (c.t. 53, 59, 85)	Coney Island, Brooklyn (CD 13)	Lower East Side, Manhattan (CD 3)	The Rockaways, Queens (CD 14)	East Shore, Staten Island (CD 2)
2008-2012 ACS 5-year S1701					
Total population % below poverty (FPL)	37.8	x	x	x	x
65+ population % below poverty (FPL)	48.4	x	x	x	x
2009-2011 ACS 3-year PUMS (NYC DFTA)					
60+ population % below poverty (FPL)	x	25.1	30.3	18.6	8.1
60+ population % below poverty (CEO)	x	x	x	x	x
65+ population % below poverty (FPL)	x	26.2	30.9	19.0	6.9
65+ population % below poverty (CEO)	x	42.9	39.0	25.9	11.8
2008-2012 ACS 5-year B22001					
60+ household receiving Food Stamps/SNAP in past 12 months	44.9	x	x	x	x
2009-2011 ACS 3-year PUMS (NYC DFTA)					
60+ household receiving Food Stamps/SNAP in past 12 months	x	39.7	36.6	27.3	9.3
2008-2012 ACS 5-year S2301					
65+ population % employed	6.4	x	x	x	x
2009-2011 ACS 3-year PUMS (NYC DFTA)					
60+ population % employed	x	18.7	17.6	19.2	22.8
2008-2012 ACS 5-year S1501					
65+ population % did not complete High School		x	x	x	x
65+ population % High School graduate		x	x	x	x
65+ population % Bachelor's degree or higher		x	x	x	x
2009-2011 ACS 3-year PUMS (NYC DFTA)					
60+ population % did not complete High School	x	22.2	53.5	21.6	23.6
60+ population % High School graduate	x	77.8	46.5	78.4	76.4
60+ population % Bachelor's degree or higher	x	31.2	15.7	22.7	21.3
2008-2012 ACS 5-year S1601					
65+ population % that speaks a language other than English		x	x	x	x
65+ population % that speaks English less than "very well"	42.9	x	x	x	x

Variable	Red Hook, Brooklyn (c.t. 53, 59, 85)	Coney Island, Brooklyn (CD 13)	Lower East Side, Manhattan (CD 3)	The Rockaways, Queens (CD 14)	East Shore, Staten Island (CD 2)
2009-2011 ACS 3-year PUMS (NYC DFTA)					
60+ population % whose primary language is Spanish and speaks English less than very well	x	5.6	15.4	7.9	2.7
60+ population % whose primary language is Chinese and speaks English less than very well	x	3.9	41.7	0.0	2.6
60+ population % whose primary language is Russian and speaks English less than very well	x	44.8	0.6	10.6	2.4
60+ population % whose primary language is Italian and speaks English less than very well	x	2.4	0.2	0.0	4.3
60+ population % whose primary language is Fench Creole and speaks English less than very well	x	0.4	0.0	1.3	0.0
60+ population % whose primary language is Greek and speaks English less than very well	x	0.1	0.0	0.0	0.3
60+ population % whose primary language is Yiddish and speaks English less than very well	x	2.3	0.1	0.0	0.1
60+ population % whose primary language is French and speaks English less than very well	x	0.4	0.1	0.0	0.0
60+population % that speaks English less than very well among those whose primary language is one of the above 8	x	59.8	58.0	19.7	12.2
2009-2011 ACS 3-year PUMS (NYC DFTA)					
60+ population % foreign born	x	69.9	72.2	45.1	30.8
2009-2011 ACS 3-year PUMS (NYC DFTA)					
65+ population % with Medicare coverage	99.3	x	x	x	x
2008-2012 ACS 5-year C27007					
65+ population % with Medicaid coverage	58.9	x	x	x	x
2008-2012 ACS 5-year B1802					
65+ with hearing difficulty	93	x	x	x	x
2008-2012 ACS 5-year B1803					
65+ with vision difficulty	181	x	x	x	x
2008-2012 ACS 5-year B1804					
65+ with cognitive difficulty	163	x	x	x	x
2008-2012 ACS 5-year B1805					
65+ with ambulatory difficulty	387	x	x	x	x
2008-2012 ACS 5-year B1806					
65+ with self-care difficulty	206	x	x	x	x
2008-2012 ACS 5-year B1802					
65+ population % with hearing difficulty	9.3	x	x	x	x
2008-2012 ACS 5-year B1803					
65+ population % with vision difficulty	18.2	x	x	x	x

Variable	Red Hook, Brooklyn (c.t. 53, 59, 85)	Coney Island, Brooklyn (CD 13)	Lower East Side, Manhattan (CD 3)	The Rockaways, Queens (CD 14)	East Shore, Staten Island (CD 2)
2008-2012 ACS 5-year B1804					
65+ population % with cognitive difficulty	16.3	x	x	x	x
2008-2012 ACS 5-year B1805					
65+ population % with ambulatory difficulty	38.8	x	x	x	x
2008-2012 ACS 5-year B1806					
65+ population % with self-care difficulty	20.7	x	x	x	x
2009-2011 ACS 3-year PUMS (NYC DFTA)					
60+ with self-care/mobility difficulties	x	11,975	9,563	5,290	5,729
60+ population % with self-care/mobility difficulties	x	38.4	30.0	28.6	21.4
2008-2012 ACS 5-year B1802					
<65 with hearing difficulty	121	x	x	x	x
2008-2012 ACS 5-year B1803					
<65 with vision difficulty	210	x	x	x	x
2008-2012 ACS 5-year B1804					
<65 with cognitive difficulty	543	x	x	x	x
2008-2012 ACS 5-year B1805					
<65 with ambulatory difficulty	869	x	x	x	x
2008-2012 ACS 5-year B1806					
<65 with self-care difficulty	103	x	x	x	x
2008-2012 ACS 5-year B1802					
<65 population % with hearing difficulty	1.2	x	x	x	x
2008-2012 ACS 5-year B1803					
<65 population % with vision difficulty	2.1	x	x	x	x
2008-2012 ACS 5-year B1804					
<65 population % with cognitive difficulty	5.4	x	x	x	x
2008-2012 ACS 5-year B1805					
<65 population % with ambulatory difficulty	8.7	x	x	x	x
2008-2012 ACS 5-year B1806					
<65 population % with self-care difficulty	1.0	x	x	x	x

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About Age-friendly NYC

Age-friendly New York City seeks to make New York City a better place to grow old by promoting an "age-in-everything" lens across all aspects of city life. The initiative asks the city's public agencies, businesses, cultural, educational and religious institutions, community groups, and individuals to consider how changes to policy and practice can create a city more inclusive of older adults and more sensitive to their needs. NYC is one of more than 150 members of the World Health Organization's Global Network of Age-friendly Cities and Communities.

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