Socially isolated older persons are difficult to find. Like other vulnerable populations, they tend to be invisible. Unfortunately, it takes a crisis to bring the issues of social isolation and vulnerability among older persons to the policy agenda. For example, thousands of older New Yorkers were left dangerously isolated immediately after the September 11th terrorist attacks in 2001 (O’Brien, 2003). Similarly, during the 2003 summer heat wave, there were 2,000 “excess deaths,” in Paris, mostly among persons age 75+ (ORS, 2003). In 1995, Chicago suffered a heat wave. Klinenberg’s “autopsy” of this disaster highlighted the importance of neighborhood characteristics since he found that socially isolated older persons had higher mortality rates in poor neighborhoods with abandoned lots than in equally poor, but more socially-connected neighborhoods (Klinenberg, 2002). Hurricane Katrina reminded us of how visible otherwise invisible problems can become.

In 2003, the International City/County Management Association (ICMA) recognized that social policy innovations will be required to meet this challenge (ICMA, 2003). They urged local governments to “begin with an analysis of the distribution of population and amenities as these pertain to older adults and active living.” In 2007, the World Health Organization launched the Global Age-Friendly Cities Project, designed to encourage cities to assess how well they are responding to the needs of their aging populations.

Despite these calls for action, not enough has been done by cities around the world on this agenda, and too little is known about the spatial distribution of older vulnerable persons, including isolated persons across city neighborhoods (Glass & Balfour, 2003). This paper provides a critique of an individual approach to emergency preparedness for older persons and discusses the value of incorporating geographic needs analysis into the planning process.
Emergency Supply Kits and ‘Go Bags’: An Individual Approach to Emergency Preparedness

The Centers for Disease Control and Prevention (CDC), in partnership with the American Red Cross, developed and publicized an effort to address the challenge of emergency preparedness for older persons. These organizations provide individuals with information regarding what they should do to prepare for an emergency. They encourage individuals to prepare an emergency supply kit and develop a family disaster plan, as well as to be informed about how to shelter in place, understand quarantine and isolation, and be informed about how to maintain a healthy state of mind. The website provides a detailed list of items that should be included in emergency supply kits and links to other sites with useful information.

Similarly, the New York City Office of Emergency Management (and sister agencies in other cities around the country) encourages residents to prepare an emergency supply kit and to pack a ‘Go Bag’ that contains a host of items one may need in the event of an evacuation, including copies of important documents, at least $50 to $100 in cash, bottled water and non-perishable food, extra medications that are updated regularly, a flashlight, and numerous other items that are listed.

Although following the suggestions included on these websites would almost certainly be helpful for many people in the event of an emergency, the approach they represent is limited, particularly for individuals who are at greatest risk in an emergency. Indeed, many of the suggestions are simply unrealistic for individuals on a fixed income. In New York City, for example, the poverty rate among older persons is over 20%. In the poorest neighborhoods of the city, more than half of the older residents are living within 125% of the federal poverty limit (FPL) (Gusmano, Rodwin, & Cantor, 2007). Extra cash, medicines, food and water are not luxuries that older persons living within 125% of the FPL in New York City are likely to set aside for an emergency that may never occur.

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The Growing Importance of Urban Aging

Over the twentieth century, life expectancy in developed countries increased by roughly 30 years. By the year 2020, the Census Bureau estimates that one fifth of the U.S. population will be 65 years and over and about 5% will be 85 years and over. While these projections are well known, the fact that the “longevity revolution” (Butler, 1987) is taking place in the context of growing urbanization has only recently received attention. United Nations’ estimates indicate that 60% of the population will live in cities in 2030 (UN, 2001). Although older people are less likely than younger people to live in urban areas, more than 75% of older Americans live in urban areas (Kinsella & Velkoff, 2001). As population aging and urbanization increase, cities will have to respond to the needs of the most rapidly growing cohort of older people.
people—the old old, vulnerable persons 85 years of age and over. In particular, cities must find ways to identify and respond to the needs of isolated older people.

**Cities and Social Isolation**

Many studies in sociology and anthropology conclude that urbanization does not lead to social isolation (Durkheim, 1893; Mookherjee, 1998; Sokolovsky & Cohen, 1981). However, social networks in urban areas appear to be different in nature than those in rural areas (Putnam, 2000), and it is clear that the extent and nature of social networks vary within cities. In addition to the individual characteristics that influence the scope and nature of social networks among older people in cities (Fischer, 1982), neighborhoods in which older people live influence their social networks and the quality of their lives. Studies of “productive aging,” for example, highlight the importance of local institutions on decisions to engage in paid and unpaid labor (Morrow-Howell, 2000).

Older people who live in neighborhoods with lower crime rates, more parks, fewer vacant lots, and greater recreational and social opportunities are more likely to have social networks, more likely to exercise, and more likely to have a positive outlook on life than those who live in neighborhoods with high crime, little green space, and few recreational and social opportunities (Kuo, Sullivan, Coley, & Brunson, 1998). Fear of crime can provide a strong deterrent to social interaction.

Features of city life can limit the mobility among older people, discourage social interaction, and increase the probability of isolation. As Phillipson argues, the idea that cities threaten to “imprison” older residents has been around for centuries.

_The image of confinement is still present in the city, notably with the fear of entering particular neighborhoods, or the danger of moving around areas at certain times of the day or night, or the threats posed by natural disasters (Phillipson, 2004: 964)._ 

In their study of aging in Paris, for example, Joël and colleagues found that older persons in Paris were more concerned, than those who live in rural areas in France, about the lack of security in their neighborhoods. Among persons 60 years and over, 15% of those living in provincial cities and 22% in the Paris region were concerned about security, compared with less than 5% in the rural areas. These concerns limited mobility and interaction and feelings of “connectedness” with the neighborhood (Joël & Haas, 2006).

**Investigating Social Isolation: The World Cities Project**

One reason for the increased focus among gerontologists on urban aging and its consequences for social isolation is that “cities are themselves undergoing radical change, notably through the process of globalization” (Phillipson, 2004: 964), which is thought to produce greater isolation, particularly among those who do not benefit from these economic forces.

Not surprisingly, the effects of globalization, both positive and negative, on life in cities are seen most acutely in world cities. The terms _world cities_ and _global cities_ have been used interchangeably to mean cities at the center of the global economy, or hubs in the international world of transnational corporations, financial services, and information exchange (Hall, 1984; Sassen, 1981). For thousands of years, cities have been regarded, simultaneously, as “the natural center of everything that mattered” and “the source of corruption and evil” (Zwingle, 2002). When examining the characteristics of world cities and their implications for older persons, it is easy to understand why. High levels of congestion, pollution, crime rates, the high cost of housing, as well as economic and social polarization may undermine quality of life for older people. Yet these cities offer greater access to public transportation, pharmacies and stores, world-class medical centers, museums, parks, concert halls, colleges and universities, libraries, theaters and other venues for entertainment.

We do not know enough about the impact of this environment on older people, yet there are reasons to believe that the environment may pose serious challenges. World cities offer tremendous cultural and entertainment opportunities, but they are expensive places to live. Only a small percentage of older persons have the resources to take advantage of the opportunities that world cities provide. In New York, for example, Tobier estimates that only one of every 20 older households have enough money to take full advantage of New York’s unique opportunities for a higher quality of life. With the growth of a large population working in low pay service industries, the next generation of older persons in these cities may have even greater need for
assistance due to the physical demands of these jobs. The substantial costs associated with long-term care, particularly assisted living, home care, and other alternatives to institutionalization, make them out of reach for many of the oldest old.

To explore the consequences of growing older in such an environment for emergency preparedness, we draw on findings from our World Cities Project (WCP). The WCP is a comprehensive study of health and aging in four of the world’s most dynamic cities: New York, Paris, London and Tokyo. The project pulls together data and analysis that can help nations and municipalities meet the needs of a citizenry that is older and vastly changed from the traditional post-war model of the twentieth century (Rodwin & Gusmano, 2006).

Though these four cities share similar demographic trends, their means of providing services to elderly citizens and recognizing the impact of an aging population differ considerably. The World Cities Project compares health status and quality of life, informal support, social networks, health and social services, and long-term care within and among these cities. By comparing cities with common key characteristics, useful lessons are able to be identified for improving the health and quality of life of older persons, including lessons about how to plan for emergencies, in large cities around the world.

Aging in place in cities, “especially deprived inner city areas, creates significant risks for older people and those concerned with the delivery of services” (Phillipson, 2004). Given the expense of living in a world city, the extraordinary inequality of wealth and cultural diversity within them, there is reason to believe that these risks may be more pronounced in these cities. As Warnes (2006) puts it:

*World cities are different from the generality of urban settlements. . . . These distinctive attributes are bound to be expressed in the activities and quality-of-life of older people. There will be positive and negative effects. Among the negative attributes may be an exceptional level of dispersion and separation of families, which in turn may generate above-average levels of social isolation and anonymity.*

Recent findings from the English Longitudinal Study of Ageing (ELSA) appear to support these concerns, at least with regard to Greater London. Based on their analysis of ELSA, Barnes and colleagues found that “older people who live in London are most likely to suffer from neighbourhood exclusion.” It is not possible to examine neighborhoods within London using the ELSA survey, but the study noted that the greater degree of social exclusion among older persons in Greater London compared with the rest of the United Kingdom (UK) may be due to the fact that London has the most deprived areas in the country (Barnes, Blom, Cox, Lessof, & Walker, 2006).

Even in Tokyo, which has much lower rates of older persons living alone than in the other three cities examined, there are growing concerns about the number of isolated older people. In recent years, Japanese media have reported a growth in the number of criminals who prey on isolated older persons and attempt to swindle them out of their life savings. As one report concluded, “big cities are becoming hostile places in many ways for elderly people living alone. . . . These con artists know all too well that elderly people who live in isolation and suffer from a weakening sense of judgment are easy targets” (Japan Times, 2005).

Some have argued that New York, London, Paris and Tokyo are the only cities that meet the definition of a world city (Hall, 1966). Indeed, some question whether Paris and Tokyo are world cities to the same degree as New York and London (White, 1998). Without adopting a strict definition of the term, our study is based on the premise that these four cities are useful laboratories for exploring the issues raised by growing older in cities. To begin, these cities share a similar scale and concentration of older residents. Second, there exist many studies about them. Despite this, comparative information about the well being of older persons in these cities is limited, particularly the extent to which they are living in isolation. In the sections below, we draw on our analysis of social isolation in these four cities to develop and present a tool that can be used by governments and social service agencies for emergency planning.

**Living Alone in World Cities**

Living alone is not the same thing as being lonely or isolated (Victor, Scambler, Bond, & Bowling, 2000). One might argue that the rise of people living alone, like the growth of population aging, is an extraordinary human achievement worthy of celebration. Nevertheless, it is a risk factor for social isolation. In 1988, the Commonwealth Fund Commission on the
Elderly Living Alone indicated, based on a national telephone survey, that one third of older Americans live alone and one quarter of these persons, typically older women, live in poverty and report poor health: “The elderly person living alone is often a widowed woman in her eighties who struggles alone to make ends meet on a meager income. Being older, she is more likely to be in fair or poor health. She is frequently either childless or does not have a son or daughter nearby to provide assistance when needed. Lacking social support, she is a high risk for institutionalization and for losing her independent life style” (Commonwealth Fund, 1988).

Rates of living alone among all age groups are typically higher in urban areas, particularly dense urban areas, which makes world cities a prime location for the risks associated with such household arrangements. Indeed, there are millions of people who live alone in these world cities, and the oldest old living alone is the fastest-growing segment of these populations.

When compared across the four cities, however, Tokyo stands out. For example, Inner Tokyo has the lowest rate of persons 85 years and older living alone (18%) in comparison to London (54%), Manhattan (55%), and Paris (59%). The contrast is striking when broken down by gender. Yet, it is important to note that the rate of living alone is more than twice as high in Tokyo as it is in Japan as a whole (Kudo, 2006).

In addition to gender, data on characteristics of older persons in New York and London indicate that ethnicity and race are important factors in distinguishing among older persons who live alone. In New York, rates of living alone are significantly lower among Hispanics and Asians aged 65 and older, and slightly lower among African Americans in this cohort than among Caucasians. Likewise, in Greater London, rates of living alone are higher among the white population than among black Caribbean, Indian, and Bangladeshi populations.

There are also important differences between the characteristics of older persons living alone in world cities and those who are institutionalized. In Manhattan and Paris, the two cities for which data are available, men and women over 65 who live alone have higher levels of educational attainment than those who live in institutions. Although the sample of persons over 85 is small, this pattern holds for Manhattanites.

Our finding with regard to educational attainment of older persons who live alone suggests that the rise of older people living alone, like the growth of population aging, is an achievement. The challenge is to distinguish, among older persons who live alone, (and not exclude those who do not), how many are vulnerable due to social isolation, poverty, disabilities, lack of access to primary care, linguistic isolation, or inadequate housing, e.g., living in walk-up apartments without elevators. The consequences of failing to do so are illustrated by recent events in these cities.


It takes a catastrophe to mobilize public attention on the health risks of vulnerable older people. In the UK, for example, Age Concern has helped to push the issue of social isolation among older people onto the policy agenda by arguing that loneliness and isolation among older people contribute to the large number of annual winter deaths due to hypothermia (Peterborough Evening Telegraph, 2006). In New York City, the International Longevity Center-USA emphasized the issue of isolation of older people in the wake of the September 11th terrorist attacks, finding that “within 24 hours following the 9/11 terrorist attacks, animal advocates were on the scene rescuing pets, yet abandoned older and disabled people waited for up to seven days for an ad hoc medical team to rescue them,” and concluded that “currently, there is no effective way to identify vulnerable people who are not connected to a community service agency” (O’Brien, 2003).

The 2003 heat wave in France provides a window on the extent of social isolation in Paris and its consequences (Cadot, Rodwin, & Spira, 2007). This heat wave, which occurred between August 1st and 20th, had devastating effects on older people, particularly in Paris where sustained and precipitous elevations in temperature reached an average of 38°C (100°F). In France, excess mortality—the number of deaths recorded above the preceding three-year average—reached 14,802, an increase of 60%. In Paris, there were 1,254 excess deaths, an increase of 190%. In contrast to the rest of France where 65% of excess mortality were of institutionalized older people, in Paris 74% of excess deaths occurred among those who lived at home. It is difficult to determine the characteristics of the deceased because their death certificates do not provide individual
characteristics such as their income, occupation, level of education, and living arrangements. Moreover, for those who arrived at emergency rooms in ambulances, there is no record of their previous residence.

Paris has the highest share of people 85 years and over among the four world cities and, as in Manhattan and Inner London, in Paris rates of living alone among women exceed 60%. But age and gender density are not sufficient to explain the concentration of excess deaths in Paris, nor are temperature levels in Paris compared to the rest of France. Does Paris have a higher density of vulnerable, socially isolated older people than in France? Do the excess death rates reflect such individual characteristics of Parisians or are they related to the character of the health care system and the neighborhoods in which they lived? The Paris health system seems an implausible suspect, particularly in light of its high performance along many dimensions (Gusmano, Rodwin, & Weisz, 2006). Since this catastrophe took the French medical profession and public health establishment by surprise, it is important to review at least partial answers to these questions.

The principal epidemiological study on individual factors associated with excess deaths reveals that Parisians 75 years and over were at highest risk of death (Canouï-Poitrine, Cadot, & Spira, 2006). Higher risk was also associated with older people who were unmarried (and more frequently live alone) than with those who were in couples, and with women (but not men) who were foreign nationals. This later association may reflect differences in family structure and social support. For example, foreign-nationals, particularly those from Africa and Asia—in contrast to French women—live, more often, in multi-generational families with stronger mutual support and social networks; hence, there is a lower risk of social isolation. Finally, excess mortality was higher among women than men, after adjusting for age. This probably reflects a pattern of greater attention devoted to the most vulnerable institutionalized population. Paradoxical as this may seem, older women who lived alone more often than men, and who were generally in better health, were also at higher risk of death.

An unpublished study (Paris Public Health Agency) analyzed the characteristics of the deceased who were receiving a personal autonomy allowance based on their disability levels. Among these community-dwelling beneficiaries, the risk of heat-related mortality was twice as high for those living alone than for those living as a couple. Among community-dwelling as well as institutionalized beneficiaries, those with lower levels of disability had a four-fold lower risk of mortality. But community-dwelling beneficiaries—despite their lower levels of disability and the home-care services that they received—appeared more vulnerable, perhaps because nursing home residents benefited from a medicalized environment where assistance was more rapidly mobilized.

The spatial distribution of mortality across Paris arrondissements (municipal administrative districts, or neighborhoods) typically reveals higher rates, adjusted for age and gender, in the northeastern parts of the city. However, during the heat wave, these rates were highest in southeastern Paris, indicating a shift in mortality from poorer to more well-to-do neighborhoods, in comparison to the three years preceding the heat wave. This finding is confirmed by the concentration of the highest rate of excess mortality in the south of Paris. Minimal temperature levels were positively correlated with mortality rates but not with excess mortality rates. Likewise, higher average household incomes were associated with a lower risk of mortality, but there was no association with excess mortality rates.

Key risk factors during the heat wave included being a woman 75 years and over, and living alone at home. Excess mortality rates were highest among dependent older people with lower levels of disability. This was the group least well cared for by nurses, social workers or home helpers. We should therefore be concerned about such individuals in the event of another heat wave where a lapse of attention, even for a few hours, can lead to acute dehydration and hyperthermia.

Perhaps the most important lesson of the Paris heat wave is to reinforce the notion that disaster preparedness and promotion of urban health must focus not only on individual, but also on neighborhood risk factors. As Klinenberg demonstrates in his study of the 1995 Chicago heat wave, social isolation and lack of neighborhood cohesion were powerful factors explaining disparities in excess mortality among equally poor neighborhoods (Klinenberg, 2002). Indeed such neighborhood characteristics may explain the disparities in excess deaths among southern and northwestern arrondissements of Paris. One might speculate that in the southern arrondissements, families can more easily
MAP 1. Vulnerability Index for Population 75 and Over, New York City Census Tracts

Vulnerability Index (75+)

- 1.0 - 3.0 Parks
- 3.1 - 4.6 Cemeteries
- 4.7 - 5.8 Airports
- 5.9 - 6.9
- 7.0 - 9.4

SOURCE: U.S Census 2000, NYC Department of Finance, NYS PARCS
afford vacations while in the northeast, such options are more limited, and there are probably stronger family ties, more social interaction and neighborhood cohesion among foreign nationals than among the French.

The relative importance of such neighborhood characteristics in relation to individual risk factors for excess mortality in heat waves or other disasters must be investigated. Findings on these characteristics can be used to identify neighborhoods with a concentration of vulnerable older persons and to design interventions that improve housing conditions and promote neighborhood cohesion and social interaction.

**Using Existing Data to Identify Vulnerable Older Persons**

The 2003 August heat wave in France served as a dramatic example of how a city with a high concentration of older persons can be unprepared to cope with its aging population. In Paris, the result was thousands of deaths. Throughout the world, major cities are unprepared to cope with their aging populations.

Fortunately, there is a new awareness about the vulnerability of the oldest old and recognition that municipal governments have a responsibility to identify and reach out to the vulnerable oldest old who live in isolation. The challenge for these cities is to find methods for identifying and tracking vulnerable older persons without violating their civil liberties.

In their report on social isolation among seniors (65+) in New York City, the United Neighborhood Houses (UNH) of New York identified several risk factors that are more pronounced in New York City than they are nationwide: living alone, disability, poverty, linguistic isolation, never having married, and being divorced, separated or widowed (United Neighborhood Houses of New York, 2005). Based on unpublished work of the New York City Department of Health and Mental Hygiene, this report also identifies 12 Community Districts (out of 59) in New York City that are “likely the most at risk for senior isolation based on the amount of seniors living alone and the level of need among the elderly residents” (United Neighborhood Houses of New York, 2005).

Building on this work, and the lessons from the tragedies described above, we developed a “vulnerability index” for each of the 2,217 census tracts of New York City. The index is based on indicators for which data could be obtained at the census tract level. These include several measures of population characteristics, including: the number of people age 75 years and over; the percentage of people (75+) living below poverty level; the percentage of people (75+) living alone; the percentage of people (75+) reporting at least one disability; and the percentage of people (75+) who are linguistically isolated. We also examine the rate of avoidable hospitalizations as an indicator of access to primary care and two measures of the quality of the built environment: the number of vacant lots in the census tract and the number of buildings classified as walk-ups (two or more floors without an elevator).

For each of the variables above, census tracts were ranked by deciles. Then the mean decile ranking for each census tract was calculated to produce a vulnerability score from 1 to 10. Map 1 presents the distribution of vulnerability in New York City, among those age 75+ (grouped in quintiles for presentation purposes).

Not surprisingly, the poorest census tracts in New York City are among the most vulnerable according to this index. Nonetheless, it is important to note several exceptions to this general pattern. A number of above median income neighborhoods have very high vulnerability scores. For example, census tract 110 in Manhattan—located between 59th and 65th streets on the east side—has a vulnerability score of 5.6, but only 2% of its residents age 75 years and over are living below the poverty line. It has a higher than average vulnerability score, however, because more than half (53%) of its 474 residents age 75 years and over live alone.

This highlights both the value and the limit of our definition of vulnerability. On the one hand, older residents of census tract 110 in Manhattan are, in many respects, doing quite well. Few of the 75+ residents of this neighborhood report being in poverty or having a disability, and based on the neighborhood avoidable hospital condition (AHC) rate, residents appear to enjoy good access to medical care services. On the other hand, a neighborhood with such a large number of older residents who live alone may deserve special attention during an emergency. Alone, our census tract-level vulnerability index cannot determine which neighborhoods require special attention during an emergency. For example, census tract 52.01 in Brooklyn has a vulnerability measure of 7, which is quite high. A large number of neighborhood residents are 75 years or over,
most live alone, and a large percentage are in poverty. Despite these indicators of vulnerability, as we discuss in the section that follows, many of the residents of this neighborhood live in Shore Hills Housing, a Section 202 senior housing facility operated by Lutheran Medical Center. As a result, the residents of this facility, and to a lesser extent, the residents of the entire neighborhood, already enjoy a great deal of support.

Despite its limitations, we believe the vulnerability index is a useful tool if used in conjunction with other indicators to start a conversation among policy makers, community groups, and non-profit organizations that serve older persons. While our vulnerability index is insufficient to make decisions about which neighborhoods require special attention, it can help policy makers and emergency response teams to target their planning efforts.

Concluding Thoughts

The unprecedented convergence of population aging and urbanization presents great challenges and opportunities for cities and their older residents. Our project explores how the four largest cities in the wealthiest nations of the world—New York, London, Paris and Tokyo—are confronting these changes. In the wake of the September 11th terrorist attacks and the canicule (heat wave) of 2003, the need to address the needs of vulnerable older persons living in cities is apparent. Isolated older persons are an invisible population that does not receive attention from policy makers, the media or the general public. Greater appreciation of the needs of this vulnerable population is probably the only positive outcome from these catastrophic events.

Although policy makers are starting to take note of this issue, there is still a dearth of systematic evidence about the needs of older persons living in cities and the degree to which these needs are being met by public programs. For example, the last large scale survey of older New Yorkers was conducted in 1990, and even this substantial effort was insufficient to provide an assessment of need at the neighborhood level. We believe that a useful strategy would be to make maximum use of existing, publicly available information to target areas of concern and then to employ more limited surveys to evaluate the health and quality of life of older people in neighborhoods, where there appears to be a large gap between needs and service use.

Beyond the need to gather better information about the needs of older persons in cities, it is important to distribute such information to health and social service agencies to help them manage and target their resources more effectively. Disseminating such information could also help agencies develop a population-based approach to case management. Instead of the traditional reactive approach of the existing aging services network, which consists of coming to the rescue and assisting their clients to obtain services for which their agencies are hired, population-based case management seeks to identify and assist clients who have not entered the system and to refer clients to appropriate services. This would require training social workers and other case managers to conduct community assessments and develop outreach strategies for finding, and subsequently assisting, vulnerable older persons. The indicators (e.g., community assessments and asset mapping) can be used to understand neighborhood specificities and design interventions that improve access to aging and health services for vulnerable older persons.

To promote this approach, governments should produce manuals, available online, to allow social workers and other case managers to assess the socio-demographic characteristics, health indicators, and community assets of their clients’ neighborhoods and to identify services, beyond the aging services network, for which their clients are eligible. In addition, these manuals should include information on websites where one may obtain neighborhood level socio-demographic data, health data, as well as data from the city planning department on characteristics of the built environment. These websites would allow social workers to compare the neighborhoods in which they work to others in the city and, when necessary, to make a stronger case for obtaining additional resources for deprived neighborhoods.

By incorporating spatial analysis, based on geographic information systems and maps, to identify neighborhoods with concentrations of vulnerable older persons, governments could help to raise awareness of the problem of vulnerable older persons in cities. Sharing these data with agencies in the field may help aging service professionals to solve immediate problems and allow them to develop population-based approaches for outreach (Vladeck, 2004). The result would be to identify vulnerable older persons and enable them to receive assistance both within and beyond the aging
services network. This type of analysis would also allow governments to plan more effectively for emergencies by directing resources to neighborhoods in which there is a concentration of vulnerable people.

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NOTES

1 See www.hc-sc.gc.ca/seniors-aines/pubs/age_friendly/index.htm
2 See www.bt.cdc.gov/preparedness
3 See www.nytc.gov/html/oem/html/get_prepared/supplies.shtml#go_bag
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