Deaths Among Homeless Residents of Davidson County, TN, 2004-2006

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This project was undertaken at the request of the Director of the Downtown Clinic for the Homeless. The endeavor encountered many challenges, but provided insight into what is necessary for a full scale homeless mortality report to be produced at the local level.

Background: Homelessness Defined

The Federal Government's definition of homeless in U.S. Code Title 42 Chapter 119 Subchapter 1.11302 includes: 1) an individual who lacks a fixed, regular, and adequate nighttime residence; and 2) an individual who has a primary nighttime residence that is a) a supervised publicly or privately operated shelter designed to provide temporary living accommodations (including welfare hotels, congregate shelters, and transitional housing for the mentally ill); b) an institution that provides a temporary residence for individuals intended to be institutionalized; or c) a public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings.[1] A chronically homeless person is defined as "an unaccompanied homeless individual with a disabling condition who has either been continuously homeless for a year or more, or has had at least four episodes of homelessness in the past three years." [2]

Literature Review

Studies relating mortality to geographic subdivisions of cities found excess mortality in areas characterized by homelessness. A 1978 study of mortality due to lung cancer in Liverpool, England, found excess mortality in one ward that was explained by a cluster of deaths in a large lodging house. [3] A study using computer mapping of mortality statistics by census tract in Los Angeles County found higher mortality in Watts and in "skid row" areas of Los Angeles and Long Beach.[4] An analysis of mortality in

Massachusetts identified a "zone of excess mortality" in a district in Boston characterized by "poor housing with marked overcrowding and homelessness."[5]

Reports in Atlanta[6] and San Francisco[7] analyzed homeless death data from the office of the Medical Examiner, investigator of deaths from external causes and unattended natural deaths. Deaths not investigated by the Medical Examiner would not have been included in these studies. In addition, homeless status is not always known. Thus studies based on data from the office of the Medical Examiner may not include all homeless deaths. A comparison of reports of homeless deaths in Atlanta from the medical examiner and shelters in 1991 found that shelters reported nearly five times as many homeless deaths as the Medical Examiner's office.[8]

Several studies attempted to calculate a standard mortality ratio for the homeless compared to the general population. In addition to the challenge of identifying deaths of homeless persons, rate calculation adds the challenge of estimating the total homeless population as the denominator. The approach taken in several studies was to use a cohort of homeless as a representative sample: men registered with the bureau for homeless men in Stockholm,[9] adults seen by the Boston Health Care for the Homeless Program,[10] users of homeless services in Philadelphia,[11] and users of shelters in New York[12] and Toronto.[13] Deaths in this cohort were identified from public death records to calculate a rate for the cohort.

Studies of mortality among homeless women in various cities have found the mortality rate to be from 5 to 30 percent higher for younger women (age 16 – 44) than in the general population, and twice as high for older women. Younger homeless women also lose the "survival advantage" of being female; while young females in the general

population have a longer life expectancy and a lower risk of dying, among younger homeless women the mortality rate is similar to that of homeless men.[14]

Methodology

The first and most critical step of this project was to correctly identify the individuals whose deaths should be included in the analysis. As seen in some of the studies described above, this task proved difficult in Nashville. For this project, the 2004-2006 Nashville Homeless Power Project's (HPP) memorial lists were matched to the Tennessee Department of Health's mortality database for each year. Sixty-four (47.1%) people were identified of the 136 on the combined memorial lists.

Several factors contributed to the difficult task of matching the two data sources, but the most obvious were the completeness and accuracy of the HPP lists. Since the only information provided to begin this process was a list of names, researchers assumed that the lists were complete as there was no other source available for verification. The accuracy of the names on the lists was essential: spelling, actual legal names, and full first and last names. Nicknames known only to those in or in close proximity to the homeless community could not be identified in the dataset from TDH. In addition, it became paramount that full names be provided whenever possible so that the proper John D. could be selected for study inclusion from John Doe, John Dolittle, and John Delk.

Results

Table 1 presents a basic demographic profile of the 64 individuals included in the analysis. The majority of homeless deaths reviewed in this study occurred among males, and there were far more deaths among white persons than other racial groups. For the three years in this study, the average age at death for each year ranged from 51 to 54.

Table 1

Demographics of Deceased Homeless Persons in Davidson County, TN 2004-2006			
	2004	**2005**	**2006**
Age Range	36-81	38-69	22-83
Average Age	53.5	51.9	54.0
St. Dev	12.2	9.5	12.9
Male	19	9	26
Female	7	1	2
White	18	10	15
Black	7	0	13
Other	1	0	0
Total	26	10	28

Table 2 below presents the leading causes of death among the 64 homeless people included in this study while Table 3 presents the age-adjusted leading causes of death for all of Davidson County. Like Davidson County as a whole, heart disease was the top ranked cause of death each year 2004-2006. Unlike Davidson County deaths, HIV and accidents appeared in the top 5 causes of homeless deaths each year.

Table 2

Leading Causes of Death Among Homeless Persons in Davidson County, TN 2004-2006								
	2004			**2005**			**2006**	
Rank	**Cause of Death**	**Number of Cases**	**Rank**	**Cause of Death**	**Number of Cases**	**Rank**	**Cause**	**Number of Cases**
1	Heart Disease	7	1	Heart Disease	3	1	Heart Disease	6
2	Accidents	4	2	Accidents	2	2	Cancer	4
	HIV Disease	4	3	Anemias	1	3	HIV Disease	3
3	Cancer	3		Diabetes	1		Homicide	3
4	Stroke	1		HIV Disease	1	4	Accidents	2
	Chronic Liver Disease/Cirrhosis	1		Cancer	1		Septicemia	2
	Influenza & Pneumonia	1		Septicemia	1	5	Chronic Liver Disease/Cirrhosis	1
	Peptic Ulcer	1					Influenza & Pneumonia	1
	Septicemia	1					Nephritis	1
							Suicide	1

Table 3

Leading Causes of Death: Age-Adjusted Mortality Rates* per 100,0000 Davidson County, TN, 2004-2006					
2004		**2005**		**2006**	
Heart Disease	233.5	Heart Disease	234.9	Heart Disease	218.2
Cancer	117.4	Cancer	196.5	Cancer	203.8
Stroke	53.7	Stroke	50.9	Accidents	50.0
Accidents	51.1	Accidents	45.9	Stroke	52.0
Chronic Lower Respiratory Infections	46.9	Chronic Lower Respiratory Infections	45.2	Chronic Lower Respiratory Infections	47.6
Diabetes Mellitus	31.5	Alzheimer's Disease	28.5	Diabetes Mellitus	31.4
Alzheimer's Disease	25.1	Diabetes Mellitus	28.1	Alzheimer's Disease	30.4
Influenza and Pneumonia	20.6	Influenza and Pneumonia	16.9	Influenza and Pneumonia	18.0
HIV Related Disease	13.6	Homicide	15.9	Nephritis	14.3
Nephritis	12.6	Chronic Liver Disease	12.6	Homicide	12.5

* Age-Adjusted Mortality Rates were calculated using the US Standard Population.

This study provided a glimpse of how causes of death among homeless individuals compare to the general populations as illustrated in the work of Cheung & Huang (2004), but here the comparisons were made based only on the raw frequencies preventing any comparisons of magnitude based on incidence rates.

Limitations and Recommendations

The primary limitations of this study were the small sample size and the inability to identify homeless individuals as described in the Methodology section above. The small sample limits the types of analysis which can be performed and generally weakens the overall study and any conclusions which might be drawn.

If a more complete study of homeless deaths is to be conducted in the future in Nashville, it is paramount that there be more input and collaboration from the various shelters and service organizations that serve the homeless community. This may come in the form of data sharing agreements or memorandums of understanding which will enable more, if not all, homeless persons' deaths to be included in the analysis. The importance of recording full and accurate names must be understood by the service organizations with access to these individuals and knowledge of their deaths.

The Homeless Management Information System (HMIS) is a database housed at the Metro Development and Housing Authority, which was designed by MPHD to serve

as a registry of homeless clients to track services across service providers. To date, approximately 6,000 clients served by homeless services agencies are being entered into HMIS. If service providers all were to reliably enter information into the system, a study of mortality would be much easier to conduct. In addition, characteristics of homeless individuals who died could be better described to identify missed opportunities for prevention or intervention and to improve the overall system of services to homeless. This approach could decrease the difficulty and burden in producing this kind of report and increase the completeness and quality of the data reported.

While it is respectful to maintain information about clients in a secure and confidential manner, service organizations must be willing to release information about individuals they served upon a person's death if this type of project is to succeed. In Tennessee, death records are accessible by the general public. Therefore, assistance from community service organizations to correctly identify homeless individuals should pose no conflicts of interest or legal or ethical concerns.

It is also important that service providers be educated to the value of this type of report. By knowing what commonly causes death among homeless members of the community, services can be more appropriately targeted to address these health issues.

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