

**San Francisco Homeless Deaths
Identified from Medical Examiner Records:
December 1996 --- November 1997**

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Final Draft

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Executive Summary

Since 1987, the Homeless Death Review has served as a way for the community of homeless people, providers, and advocates to remember those among the homeless population who have died. This remembrance joins a larger national day of mourning on the first day of winter in cities across the country.

The Homeless Death Review provides valuable information to health care providers, particularly the Health Outreach Team of the Homeless Death Prevention Project, helping to identify and reach homeless persons most at risk of death. The findings also serve to identify implications for policy, planning, and development of services in response to key issues.

The 1997 Homeless Death Review, based upon review of Medical Examiner records of deaths for 1997, while recording a decrease over the past year in homeless deaths, highlights the following areas of concern:

I. Demographics:

The demographics of the 1997 Homeless Death Review show that these homeless deaths are not representative of deaths in the general population:

⇒ The average age of death among the homeless population was 43.3 years. The average age of death for homeless males was 44.3 and 38.4 for females. (In 1995, 68.2 was the average age of death for the general population of SF--61.5 for males and 77.3 for females.)

⇒ 83% of the deaths were male, 16% female: 1% transgender. (While 1997 data is not available for San Francisco deaths, in 1995, 57.5% of the deaths in the general population were male; 42.5% female.)

⇒ The majority of homeless deaths occurred in the Tenderloin, South of Market and the inner Mission areas; more of these deaths occurred outdoors than in any previous year. All deaths caused by accident (11), homicide (5), or suicide (3) occurred among unsheltered homeless people.

⇒ The racial/ethnic distribution shows 55 were white, 26 African American, 10 Latino, 1 Asian and 12 unknown/other.

Recommendations:

Of primary importance and central to a public health response is the need for safe and affordable housing. The lack of permanent and adequate housing increases the risk for poor health and premature death. We recommend that San Francisco and the

Department of Public Health make the creation of such housing central to any homeless policy.

► We recommend to the Health Commission and the Health Department to allocate of additional resources needed by the Health Outreach Team and other outreach projects to better serve the needs of those most at risk. Of particular concern is the lack of options related to treatment, shelter and housing for frail, mobility-impaired, or multiply diagnosed individuals.

II. Substance Abuse:

⇒ The leading cause of death among homeless people in 1997 was substance abuse (50% of all deaths)--31% deaths were caused by illicit drug use and 19% by alcohol use.

⇒ Heroin was implicated in 87% of substance abuse related deaths; in recent years it has been more commonly associated with San Francisco drug-related deaths than any other illicit drug. Its purity and price typically influence heroin use. Heroin now is cheaper and purer in 1997 than it was in 1981. The heroin using population is at significantly higher risk for becoming infected with Hepatitis C virus (HCV), Human Immunodeficiency virus (HIV), and pathogenic bacteria (e.g., *Staphylococcus aureus*).

⇒ Today there continues to be people in San Francisco alone awaiting substance abuse treatment. There are 407 people awaiting methadone treatment as of 10/16/98.

Recommendations:

That the Department of Public Health:

► Increase medically supported detoxification programs, both inpatient and outpatient.

► Increase access to methadone treatment for homeless individuals.

► Connect substance abuse treatment options to permanent housing.

► Convene an emergency task force to study and make recommendations to address issues of IV Drug Use from a public health approach rather than a legal stance. This task force should be connected to the work of the Treatment on Demand Planning Council.

III. Methodology:

⇒ While the Homeless Death Review is able to collect valuable information from Medical Examiner records, its scope is limited. Deaths referred to the ME are a fraction of total deaths, thus, these figures likely represent an undercount.

⇒ Without adequate means of linking Homeless Death Review data to other DPH and city systems, more in-depth analysis of data is impossible.

Recommendations:

We recommend that the Department of Public Health and the Health Commission:

☛ Support collaborations with existing studies such as the Urban Health Study, UCSF Homeless Study and with other groups looking at health care issues among the homeless population.

☛ Provide additional support within the Public Health Department to adequately carry out the Homeless Death Review within a broader context.

☛ Preliminary research has shown areas for needed study related to use of systems within Public Health by those who have died (Community Health Network, Community Substance Abuse Services, and Community Mental Health). Support further research needed to evaluate interventions and address gaps in services for homeless persons.

☛ Advocate for all agencies (e.g. CSAS, Medical Examiner) dealing with the homeless population to have a field in their databases to identify housing status.

Based upon this and previous reports, we know that homeless people die at a higher rate than the housed population. What we need to determine is why this is so and what we can do about it. Only by doing so can we identify what factors lead to these deaths and how we might go about intervening and preventing premature death among the homeless population.

I. Introduction

A. BACKGROUND

Public health researchers use numerous measures to evaluate a community's health status. Mortality statistics are generally readily at hand and, since premature death is the most severe potential health outcome, also represent a threshold measure of a community's health. The extreme poverty that is characterized by homelessness is one such measure of community health, as well as a telling indicator of a community's ability to meet the health needs of its most vulnerable members. Although poverty increases the risk of poor health and premature death within a community, there are few reliable studies in the United States describing the demographics characteristics, and circumstances of death among the poorest of the poor (Dennis, 1991; Baumohl, 1991).

In the United States, valid, reliable, and representative national data about homeless mortality is not systematically collected by any government, medical, academic, advocate, or media organization (Hanzlick, 1987; Hwang, 1997). There has been only one review of Health Care for the Homeless patient records in 19 large cities that described patient mortality (Wright, 1987). Since 1990, there has been an informal compilation of annual counts of homeless deaths in several dozen cities participating in the National Homeless Memorial Day event held on the first day of winter. Also, there are a number of local urban homeless mortality studies that have been conducted over the past dozen years -- Atlanta (Hanzlick, 1987; Hanzlick et al., 1993), Boston (O'Connell et al., 1990; Hwang, 1997), Philadelphia (Hibbs et al., 1994), San Francisco (Wlodarczyk et al., 1991).

Since December of 1985, there have been 12 successive annual reports describing and summarizing the number of San Franciscans who were identified from Medical Examiner (ME) records of death as being homeless when they died (Ashe et al., 1996). There also have been three ME record based multiyear retrospective studies of homeless in San Francisco since 1985 (Wlodarczyk et al., 1991; Swanson et al., 1995; Ashe et al., 1996).

Determining the characteristics, circumstances, and causes of urban homeless mortality enable health planners and policymakers to provide services that may reduce the annual number of preventable homeless deaths. By summarizing these deaths by their demographic characteristics, location, time, and cause of death, we hope to characterize the homeless population most at risk of premature death.

The purpose of this study is to determine the number, characteristics, and causes of ME recorded homeless deaths in San Francisco during 1997. The results provided timely data about the preventable deaths of homeless San Franciscans for the San Francisco Homeless Death Prevention Project (HDPP). This data provided the basis for the development of intervention strategies by the

HDPP Health Outreach Team that are targeted to those homeless people most at risk of premature death.

II. Methods

The methods to estimate the annual number of ME recorded homeless deaths occurring in San Francisco has remained the same since it was developed in 1987. The study design is a retrospective study based on Medical Examiner (ME) records of death that occurred during the one-year period from December 1, 1996 through November 30, 1997. The target population is homeless persons in San Francisco who died during the study period and whose deaths were evaluated by the Medical Examiner's office. The study population is composed of those people selected as meeting the study selection criteria for homelessness at the time they died in San Francisco during the 12-month study period and whose death was reviewed by the Medical Examiner's Office.

Each ME-record was reviewed to determine each decedent's housing status. Each case with a residential address was cross-referenced with the addresses of all the homeless housing and service programs in the city. Each death case with a matching address was further evaluated according to selection criteria¹ that determined the decedent's housing status. The cases with non-matching addresses were reviewed to exclude those decedents who were permanently housed. Those remaining cases with a non-matching residential address but an uncertain housing status were determined to be those of homeless people through corroborative informed statements, institutional records, and interviews with informed non-relatives found in the record of death.

For each case with an unlisted residential address, additional information was used to determine whether the decedent was permanently housed or homeless. To be included in this study, at least two independent and informed sources confirmed or documented the decedent's homelessness at the time of his/her death. Two researchers applied the homeless classification criteria to all the ME-reviewed records of death. Inconsistencies were further reviewed on a case-by-case basis until they were resolved by mutual agreement.

All decedents identified by the ME as "White Non-Hispanic", "Black", and "Unknown/other" were given the designation of "Latino" if the family surname was appropriate and any immediate family members noted in the record of death were still residing in the corresponding country of origin. The very small number of Native Americans, Alaskan Aleutians, Pacific were all grouped together with those decedents whose racial/ethnic designation was unknown. In the case of deaths designated by the ME as "accidental" when circumstances suggested suicide, that death, for this study, was reclassified as "suicide" if the decedent left a suicide note.

¹ The selection criteria is described fully in the Appendix in the Homeless Status Criteria section.

III. Results

A. NUMBER OF HOMELESS DEATHS

There were 6,966 deaths in San Francisco from December 1, 1996 through November 30, 1997. The Medical Examiner’s Office of San Francisco initially evaluated 4,409 (63%) of these deaths. The ME determined that 1,621 of these deaths fell within their legal jurisdiction and each was further evaluated as a ME-accepted “Case”. The remaining 2,788 death cases were categorized as a “No Case” and not evaluated further by the ME. Of the 4,409 deaths referred to the Medical, 104 decedents were classified as homeless deaths and constitute the study population for this report.

B. DEMOGRAPHIC CHARACTERISTICS

Of the 104 ME-identified homeless deaths that occurred in San Francisco during the study period, 86 (83%) were male, 17 (16%) were female, and 1 (1%) was a male-to-female transgender individual. The racial/ethnic distribution of these deaths reveal that 55 (54%) were white, 26 (25%) were African American, 10 (9%) were Latino, 1 (1%) was Asian, 12 (10%) were unknown/other (Figure 1). The average age of death was 43.3 years overall (standard deviation = ± 10.9 years), 44.3 years for males, and 38.4 years for females.

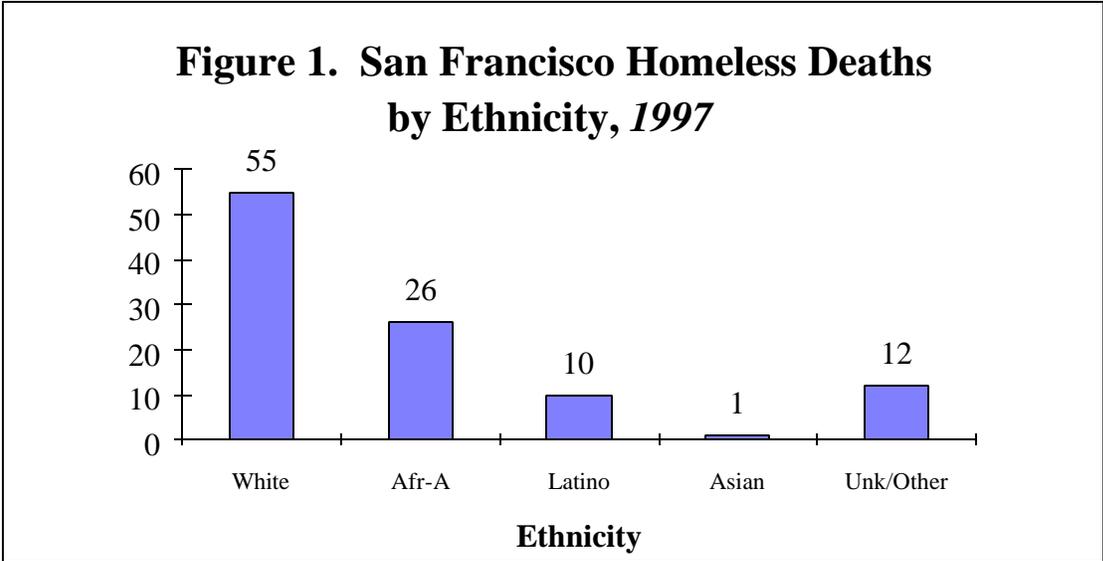
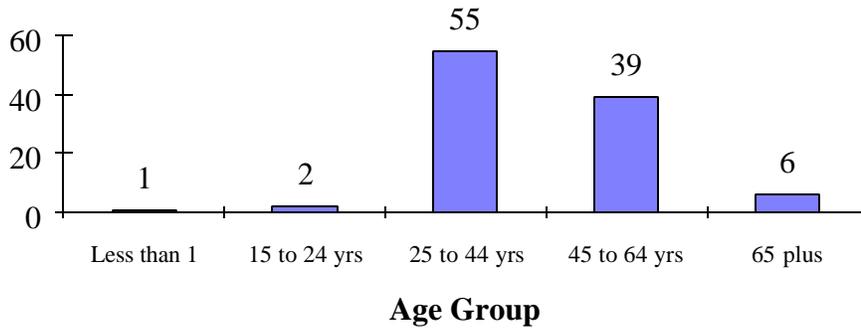


Figure 2. San Francisco Homeless Deaths by Age Group, 1997



The deaths ranged in age from a newborn female to a 72-year-old male. The age distribution of these deaths shows that 55 (53%) died in the 25 to 44 years-old age group. Thirty nine (38%) died in the 45 to 64 years-old age group, 6 (6%) died in the 65 years old-and-above age group, 2 (2%) died in the 15 to 24 years-old age group, and there was one death of a newborn infant of homeless parents (Figure 2).

C. LEADING UNDERLYING CAUSES OF DEATH

Among these 104 homeless deaths, the leading underlying cause was substance abuse (Table 1). Illicit drug use caused 31 (30%) deaths and alcohol abuse caused 19 (18%) deaths. Together, these components of substance abuse caused 50 (48%) deaths. The second leading underlying cause of death was unintentional injury from falls, drowning, motor vehicle accidents, fire, and hypothermia. These unintentional injuries caused 12 (12%) deaths. The third leading underlying cause of death was lower respiratory disease, such as pneumonia, which caused 7 (7%) deaths.

1. Race/Ethnicity

Of the 55 deaths of homeless people identified as white, the leading underlying cause of death was substance abuse, which caused 29 (56%) deaths — 18 (35%) from illicit drug use and 11 (21%) from alcohol abuse (Table 2). The second leading underlying cause of death was unintentional injury with 8 (15%) deaths. Of the 26 deaths of homeless people identified as African American, the leading underlying cause of death was substance abuse, which caused 9 (36%) deaths — 8 (32%) from illicit drug use and 1 (4%) from alcohol abuse. The second leading underlying causes of death were unintentional injuries, accounting for 4 (16%)

**Table 1. San Francisco Homeless
Leading Causes of Death, 1997**

Underlying Cause of Death	Total	
	N	(%)
Drug Poisoning, UI	31	(29.8)
Alcohol use	19	(18.3)
Accidents	12	(11.5)
Severe Infection ²	9	(8.7)
Heart Disease	8	(7.7)
HIV Infection/AIDS	5	(4.8)
Homicide	5	(4.8)
Suicide	3	(2.9)
Liver & Pancreatic Disease	2	(1.9)
Neurologic conditions	2	(1.9)
Legal Intervention	2	(1.9)
Cerebrovascular Disease	1	(1.0)
Diabetes Mellitus	1	(1.0)
Congenital anomalies	1	(1.0)
Lung Cancer	1	(1.0)
Unknown	2	(1.9)
Total	104	(100)

deaths, and heart disease, also accounting for 4 (16%) deaths. Of the 10 deaths of homeless people identified as Latino, the leading underlying cause of death was substance abuse, which caused 7 (70%) deaths — 4 (40%) from alcohol abuse and 3 (30%) from illicit drug use. The single death of a homeless person identified as Asian resulted from legal intervention (fatality involving a police officer in the course of duty). Substance abuse deaths accounted for forty percent (40%) of the ten deaths of persons with unknown racial/ethnic identification.

2. Age

The leading underlying cause of death for the 54 homeless people who were 25 to 44 years old was substance abuse, accounting for 29 (56%) deaths — 21 (40.4%) from illicit drug use and 8 (15.4%) from alcohol abuse (Table 3). The leading underlying cause of death for the 39 homeless people who were 45 to 64 years old was also substance abuse, accounting for 16 (44%) deaths — 10 (27.8%) from alcohol abuse and 6 (16.7%) from illicit drug use. The

² Includes Sepsis and Lower Respiratory Infection (Pneumonia).

**Table 2. San Francisco Homeless
Underlying Cause of Death by Ethnicity
1997**

Underlying cause of death	White		African-Am.		Latino		Asian		Unk./Other	
	n	(%)	N	(%)	n	(%)	n	(%)	N	(%)
Drug Poisoning	18	(34.6)	8	(32.0)	3	(33.3)			1	(10.0)
Alcohol use	11	(21.2)	1	(4.0)	4	(44.4)			2	(20.0)
Accidents	8	(15.4)	4	(16.0)						
Severe Infection	4	(7.7)	1	(4.0)					2	(20.0)
Heart Disease	1	(1.9)	4	(16.0)	1	(11.1)			1	(10.0)
HIV Infection/AIDS	2	(3.8)	2	(8.0)					1	(10.0)
Homicide	4	(7.7)	1	(4.0)						
Suicide	1	(1.9)	1	(4.0)	1	(11.1)				
Legal Intervention							1	(100)	1	(10.0)
Liver & Pancreatic Disease	1	(1.9)							1	(10.0)
Neurologic condition			2	(8.0)						
Cerebrovascular Disease			1	(4.0)						
Congenital anomalies									1	(10.0)
Diabetes Mellitus	1	(1.9)								
Unknown	1	(1.9)								
Total	52	(53.6)	25	(25.8)	9	(9.3)	1	(1.0)	10	(10.3)

Note. - Excludes cases still pending.

leading underlying cause of death for the 6 homeless people who were 65 years and older was severe infection, accounting for 2 (33%) deaths. There were only two deaths among those homeless people who were 15 to 24 years old, both from illicit drug use. There was one death caused by a congenital anomaly of a newborn infant of homeless parents.

3. Gender

The leading underlying cause of death for the 86 homeless people identified as male was substance abuse, accounting for 41 (48%) deaths — 24 (28%) from illicit drug use and 17 (19.5%) from alcohol abuse (Table 4). The leading underlying cause of death for the 17 homeless people identified as female was also substance abuse, accounting for 8 (47%) deaths — 7 (41%) from illicit drug use and 1 (6%) from alcohol abuse. The one death of a homeless person identified as a male-to-female transgender person was caused by alcohol abuse.

**Table 3. San Francisco Homeless
Underlying Cause of Death by Age Group
1997**

Underlying Cause of Death	Less than 1		15 to 24 yrs		25 to 44 yrs		45 to 64 yrs		65 plus	
	n	(%)	N	(%)	n	(%)	n	(%)	n	(%)
Drug Poisoning			2	(100)	21	(40.4)	6	(16.7)	1	(16.7)
Alcohol use					8	(15.4)	10	(27.8)		
Accidents					6	(11.5)	5	(13.9)	1	(16.7)
Severe Infection					3	(5.8)	3	(8.3)	2	(33.3)
Heart Disease					1	(1.9)	4	(11.1)	1	(16.7)
HIV Infection/AIDS					4	(7.7)	1	(2.8)		
Homicide					3	(5.8)	1	(2.8)	1	(16.7)
Suicide					2	(3.8)	1	(2.8)		
Legal Intervention					1	(1.9)	1	(2.8)		
Liver & Pancreatic Disease					1	(1.9)	1	(2.8)		
Neurologic condition							2	(5.6)		
Cerebrovascular Disease					1	(1.9)				
Congenital anomalies	1	(100)								
Diabetes Mellitus							1	(2.8)		
Unknown					1	(1.9)				
Total	1	1	2	2.1	52	53.6	36	37.1	6	6.2

Note. - Excludes cases still pending.

B. GEOGRAPHICAL DISTRIBUTION

1. Neighborhood

Of the 104 homeless deaths, there were 23 (22%) decedents who died either in hospitals, in jail, in the Bay Bridge area, or at unknown locations. There were 19 homeless people who died at 5 different hospitals: 14 at San Francisco General Hospital, 2 at Laguna Honda Hospital, and 1 each at UCSF Medical Center, R. K. Davies Medical Center, and St. Luke's Hospital. There were 2 homeless deaths who were found at locations that were not known as noted in the ME record. There was one homeless death at the city jail and 1

**Table 4. San Francisco Homeless
Leading Causes of Death by Sex, 1997**

Underlying Cause of Death	Males		Females		Total	
	n	(%)	n	(%)	n	(%)
Drug Poisoning, UI	24	(27.9)	7	(41.2)	31	(29.8)
Alcohol use	17	(19.8)	1	(5.9)	*19	(18.3)
Accidents	11	(12.8)	1	(5.9)	12	(11.5)
Heart Disease	7	(8.1)	3	(17.6)	10	(9.6)
Severe Infection	6	(7.0)	1	(5.9)	7	(6.7)
HIV Infection/AIDS	5	(5.8)			5	(4.8)
Homicide	4	(4.7)	1	(5.9)	5	(4.8)
Suicide	3	(3.5)			3	(2.9)
Liver & Pancreatic Disease	2	(2.3)			2	(1.9)
Neurologic conditions	2	(2.3)			2	(1.9)
Legal Intervention	2	(2.3)			2	(1.9)
Cerebrovascular Disease			1	(5.9)	1	(1.0)
Diabetes Mellitus	1	(1.2)			1	(1.0)
Congenital anomalies			1	(5.9)	1	(1.0)
Lung Cancer	1	(1.2)			1	(1.0)
Unknown	1	(1.2)	1	(5.9)	2	(1.9)
Total	86	(100)	17	(100)	104	(100)

* Includes one transgender.

homeless death by suicide at the San Francisco-Oakland Bay Bridge. Of the remaining 81 homeless people, there were 40 deaths concentrated in three adjoining neighborhoods (Table 5 and Figure 3). As shown in Figures 3 and 4, the greatest concentration of homeless deaths occurred at or near the downtown center of San Francisco. The Tenderloin neighborhood had the highest number of homeless deaths (17³ deaths) followed by the adjacent South of Market area (12), and the Mission district (11). Additionally, there were 7 deaths in the downtown financial area (Financial District North and South) and on the eastern side of San Francisco called the Embarcadero (South Beach) and another 6 deaths in the western part of San Francisco (the Haight-Ashbury neighborhood/Golden Gate Park). Another 13 homeless deaths were clustered in 5 other neighborhoods and 15 single deaths were scattered in 15 other locations.

³ Two deaths that occurred in Market St. between Powell St. and Van Ness Ave. were assigned to the South of Market neighborhood. In previous SF ME-based studies, all Market St. deaths within those two streets were assigned to the Tenderloin neighborhood.

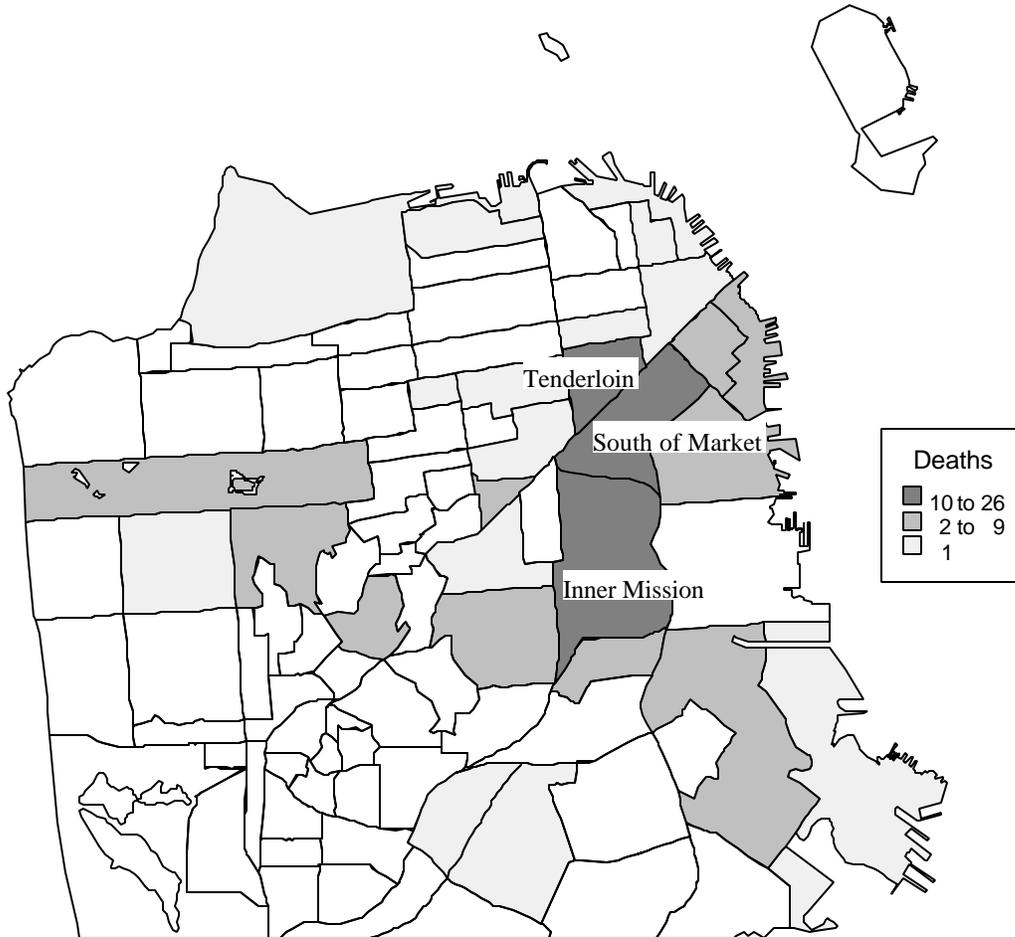
**Table 5. San Francisco Homeless Deaths
by Neighborhood, 1997**

Neighborhood	Deaths
Inner Mission*	26
Tenderloin	17
South of Market	12
Golden Gate Park	6
Mission Bay	4
South Beach	4
Bayview	3
Bernal Heights North	3
Financial District South	3
Duboce Triangle	2
Inner Sunset	2
Midtown Terrace	2
Noe Valley	2
Visitacion Valley	2
Anza Vista	1
Central Sunset	1
Eureka Valley/Dolores Heights	1
Excelsior	1
Financial District North	1
Hayes Valley	1
Hunters Point	1
Marina	1
Mission Terrace	1
North Waterfront	1
Presidio	1
Telegraph Hills	1
Upper Tenderloin	1
Western Addition	1
Total**	102

* Includes 14 at SFGH.

** The location of two deaths was unknown.

**Figure 3. San Francisco Homeless Deaths by Neighborhood
1997**



2. Living Situation

Of the 80 homeless decedents, 59 (74%) died outdoors (Table 6). There were 41 homeless deaths that occurred on or in the city's sidewalks, streets, and doorways. Seven homeless deaths occurred in 2 public parks, 5 homeless decedents were found in buildings where they were unknown strangers, 3 homeless decedents were found in the vehicles they lived in, and 3 other homeless decedents were found as squatters in abandoned buildings.

**Figure 4. San Francisco Homeless Deaths by Neighborhood
1997**



The leading underlying cause of death for these 59 homeless deaths occurring outdoors was substance abuse, which accounted for 26 (44%) deaths — 15 (25%) from illicit drug use and 11 (19%) from alcohol abuse. All of the 11 (100%) homeless deaths caused by unintentional injuries occurred outside, as did all of the 5 (100%) homicides and all of the 3 (100%) suicides. The remaining 12 (20%) deaths occurring outside were caused by various medical conditions.

As shown in Table 6, there were 21 (25%) homeless deaths occurring indoors a residential building. The leading underlying cause of death was substance abuse which accounted for 16 (76%) deaths — 13 (62%) caused by illicit drug use and 3 (14%) from alcohol abuse. Seventeen (81%) decedents were found in Single Room Occupancy (SRO) hotels who either had rented a room for

less than 30 consecutive days, had died while visiting a friend, or had been staying overnight temporarily. Another 3 deaths occurred in homeless shelters.

Table 6. Homeless Deaths that Occurred Outside or Inside a Residential Place

Underlying Cause of Death	Outside		Inside		Total	
	n	(%)*	n	(%)	n	(%)
Drug Poisoning, UI	15	(53.6)	13	(46.4)	28	(100)
Accidents	11	(100)			11	(100)
Alcohol use	11	(78.6)	3	(21.4)	14	(100)
Homicide	5	(100)			5	(100)
Heart Disease	4	(80.0)	1	(20.0)	5	(100)
Suicide	3	(100)			3	(100)
Severe Infection	3	(75.0)	1	(25.0)	4	(100)
Legal Intervention	2	(100)			2	(100)
HIV Infection/AIDS	2	(100)			2	(100)
Diabetes Mellitus	1	(100)			1	(100)
Neurologic conditions	1	(50.0)	1	(50.0)	2	(100)
Cerebrovascular Disease			1	(100)	1	(100)
Liver & Pancreatic Disease			1	(100)	1	(100)
Unknown	1	(100)			1	(100)
Total	59	(73.8)	21	(26.2)	80	(100)

* Indicates row percentages

B. TEMPORAL DISTRIBUTION

1. Seasonal

The Fall months of September, October, and November had the most deaths of any season, with 31 (30%) deaths occurring during this period (Figure 5). There were 27 (26%) deaths in the summer months of June, July, and August; 24 (23%) deaths during the spring months of March, April, and May; and 22 (21%) deaths in the winter months of December, January, and February. The leading underlying cause of death for each of the four seasons was substance abuse (Table 7). Of the 50 deaths caused by substance abuse, 31 (62%) occurred almost evenly during fall and winter, while 10 (20%) happened in the fall, and 9 (18%) in the winter. The winter months accounted for only 2 (11%) off all deaths due to alcohol abuse during the year. The highest number

of deaths occurred on the months of May, October and November (12, 11 and 12 respectively), the lowest occurred in February March and April (4, 6 and 6 respectively).

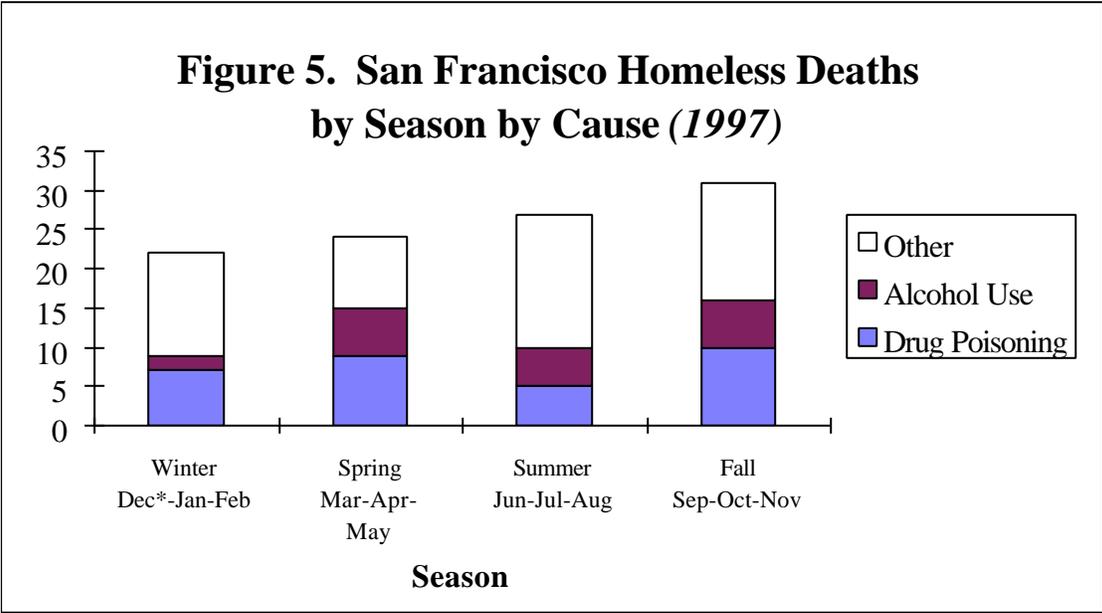


Table 7. San Francisco Homeless Underlying Cause of Death by Season 1997

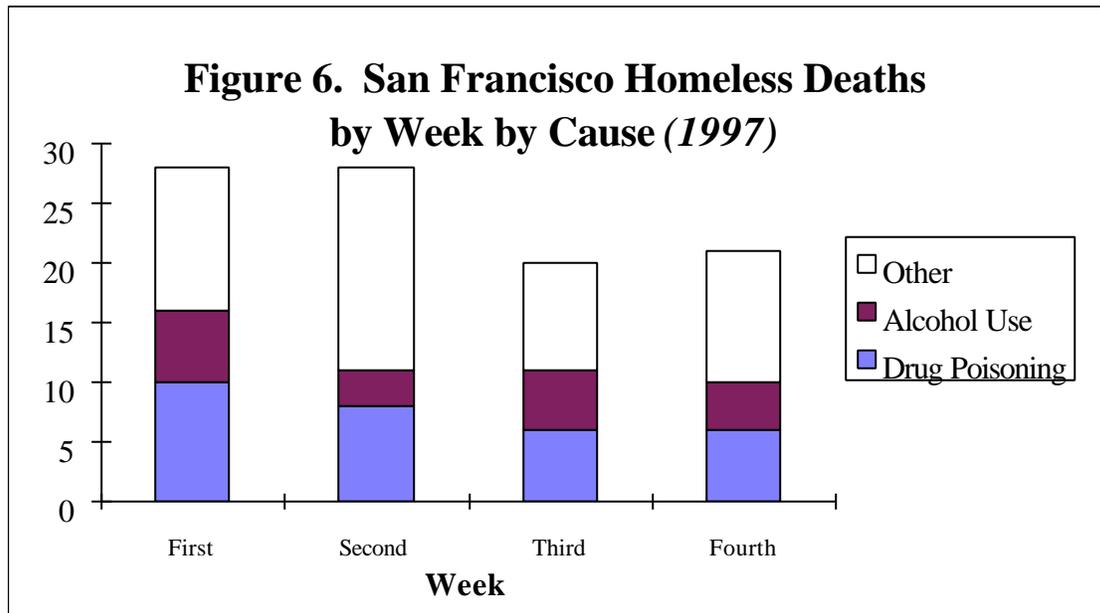
Cause of Death	SEASON				Total
	Winter	Spring	Summer	Fall	
Drug Poisoning	7	9	5	10	31
Alcohol use	2	6	5	6	19
Accidents	4	4	2	2	12
Severe Infection	4	1	2	2	9
Heart Disease	3		3	2	8
HIV Infection/AIDS	1	1	1	2	5
Homicide			3	2	5
Suicide	1	1	1		3
Legal Intervention			1	1	2
Liver & Pancreatic Disease		1	1		2
Neurologic condition			2		2
Cerebrovascular Disease				1	1
Congenital anomalies			1		1
Diabetes Mellitus				1	1
Lung Cancer		1			1

Unknown				2	2
Total	22	24	27	31	104

Note. – Excludes cases still pending.

3. Week of the Month

There were a total of 28 deaths that occurred in each of the first, second, and last weeks of the past 12 months studied, with the third week having 20 deaths (Figure 6). The number of deaths in the fourth week was adjusted to reflect the excess of number of days at the end of the month. A chi-square test showed no statistically significant difference in the number of deaths by week.



* Fourth week adjusted by a factor of .737 for comparison purposes (actual deaths were 28).

Substance abuse was the leading underlying cause of death for each week of the months studied. There were a total of 16 substance abuse-caused deaths occurring in the first week of each month - 10 due to illicit drug use and 6 due to alcohol abuse. There were 11 substance abuse-caused deaths in the second week - 8 due to illicit drugs and 3 due to alcohol. The third week also had 11 substance abuse-caused deaths - 7 due to illegal drugs and 5 to alcohol. The last week had 10 substance abuse-caused deaths - 6 due to illicit drug use and 5 caused by alcohol abuse (Table 8).

Table 8. San Francisco Homeless Leading Causes of Death by Week, 1997

Leading Causes of Death	WEEK									
	First wk		Second wk		Third wk		Fourth wk		Total	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Drug Poisoning	10	(32.3)	8	(25.8)	7	(22.6)	6	(19.4)	31	(100)

Alcohol Use	6 (31.6)	3 (15.8)	5 (26.3)	5 (26.3)	19 (100)
Accidents	3 (25.0)	4 (33.3)	1 (8.3)	4 (33.3)	12 (100)
Other	9 (21.4)	13 (31.0)	7 (16.7)	13 (31.0)	42 (100)

IV. Discussion

A. *LIMITATIONS OF STUDY*

1. Excluded Populations

The 4,409 ME records of death reviewed for this study constitutes 63% of the 6,966 deaths that occurred in San Francisco during this study period. There were 2,557 deaths from other causes (mostly natural) which were not reported to the Medical Examiner and not available for this study. Another group not evaluated in this study were decedents who were formerly homeless but housed for longer than 30 consecutive days at the time of their death, even though they may have died from conditions acquired or exacerbated while homeless. Homeless decedents who lived in other areas outside San Francisco, but whose death occurred in San Francisco, were also excluded. Also excluded were those decedents who had an attending physician at a medical facility for 20 days or longer prior to their death. Finally, suicides from the Golden Gate Bridge are excluded if they were found outside the legal jurisdiction of San Francisco’s Medical Examiner, even though they may have lived in San Francisco. The prevailing ocean and bay currents tend to leave those suicides within the legal jurisdiction of Marin County’s Medical Examiner.

Two other sub-populations were also excluded from this study. First, there are a known number of ME-reviewed deaths whose housing status is unverifiable because no non-relatives could be located and interviewed to determine the deceased’s housing status at the time of his/her death. In some cases, the body could not be conclusively identified because of the degree of body decomposition, which, in turn, impeded the determination of the decedent’s housing status. Second, there is also an unknown number of homeless deaths that occurred at hospices for the terminally ill, primarily those decedents with end-stage AIDS, who were not included in the study. The latter were not accounted for either because their housing status was unverifiable or their placement in a hospice made further intervention by the ME unnecessary.

Hence, the total annual number of homeless deaths during this study period identified through ME records of death is a conservative undercount of homeless deaths in San Francisco.

2. Study Biases

There are several potential biases in this urban study of homeless mortality. First, this study does not accurately inform us about the distribution of causes of deaths among the general homeless population. Homeless deaths were identified from ME records which, by definition, evaluate

primarily deaths that occur under suspicious circumstances. For example, suicide, homicides, accidents and drug overdoses are more likely to be a ME case than other deaths due to natural causes. Second, misclassification occurs because ME investigators do not systematically determine the housing status of the decedents they investigate. Homelessness is only assigned to decedents based on an analysis of the death scene and corroborating statements from informed witnesses, relatives, and acquaintances.

Another bias may occur because many homeless people die in either 1) emergency shelters and other housing programs for homeless people, 2) treatment and other homeless residential service programs, 3) single-room occupancy hotels used as emergency shelter, 4) the homes of friends and relatives in which they are visiting or temporarily staying, 5) residential housing occupied for less than 30 consecutive days, or 6) non-shelter institutions. These homeless are assigned, as their residence, the address of the place in which they died or the medical facility where they were transported to before death. If the decedent had identification, the address on that identification is sometimes noted as the residence. If no identification document is found, the residential address space is left blank on the record of death form. In spite of intensive efforts to identify and confirm homeless status, this process may have still lead to a homeless death being misclassified.

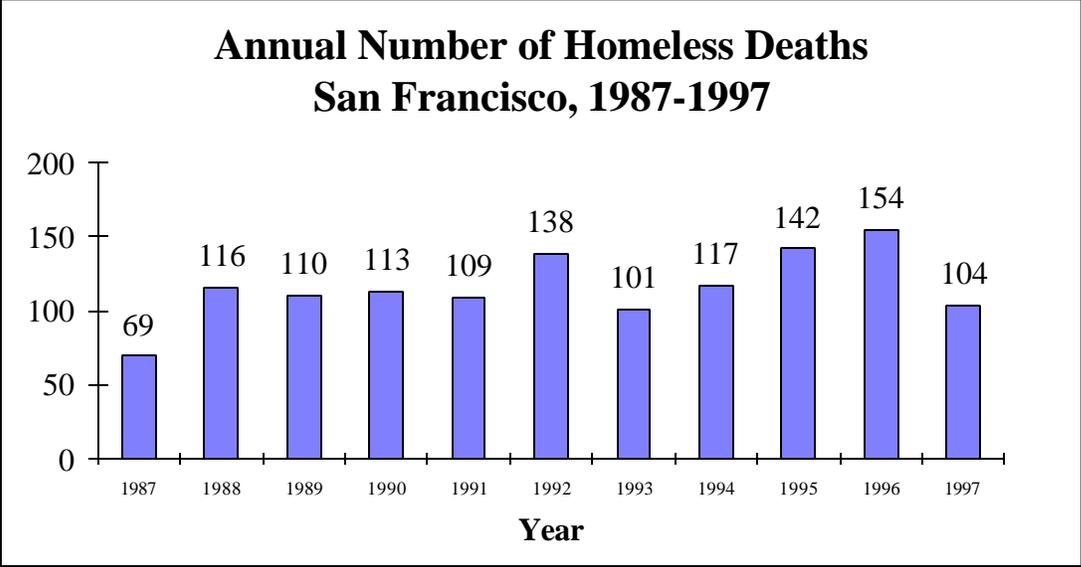
Race/ethnicity misclassification is another potential source of bias. Race/ethnicity was assigned by the ME investigator and may be based purely on the basis of the deceased's surname, appearance, or declaration of a surviving family member. Based on the racial/ethnic categories used by the ME which are "White Non-Hispanic", "Black", "Asian", "White Hispanic", and "Unknown/other", it is probable that some Latinos are categorized as "White Non-Hispanic", resulting in an artificially higher number of deaths for Whites and a lower number for Latinos. Major Asian ethnic groups — Chinese, Japanese, Korean, Southeast Asian, Filipino, and Indian — may be assigned to the "Asian" or "Unknown/other" categories, probably resulting in an artificially higher number of deaths for "Unknown/other" and a lower mortality count for Asians. Some African Americans with ethnic origins in the Caribbean, Central America, and South America are probably classified as "Black", resulting in a larger number for this category and a lesser one for Latinos.

B. COMPARISONS TO PREVIOUS DATA

At least 1,273 homeless deaths in San Francisco have been identified through ME records of death since 1987 (Figure 7 below). The annual number of these deaths has ranged from a low of 69 in 1987 to a high of 154 in 1996. The mean annual number of homeless deaths during the previous seven years (1990-1996) was 125. The 104 homeless deaths found in 1997 meant a 32% decrease from the 154 homeless deaths found in the previous year. This decline is the second notable decrease since 1987. The only previous decline happened in 1993 when 101 homeless deaths represented a decline of 27% from the previous year (138 homeless deaths occurred in 1992).

Several other unknown and/or unmeasured factors, operating independently or in combination, may have accounted for this decrease. First, the total number of people experiencing an episode of homelessness during the course of this 12-month study period is unknown and may have declined. Second, the duration and frequency of homeless episodes is unknown and may have

decreased. Third, the number of homeless people with medical conditions, living circumstances, and engagement in high-risk behaviors that put them most



at risk of death is also unknown and may also have declined. Fourth, efforts by the HDPP Health Outreach Team currently in their first year of operation may have measurably reduced homeless mortality. Fifth, other health care programs for homeless people may have reduced mortality. Sixth, the impact of other San Francisco homeless programs operating during this time may have resulted in more stable lives and less housing instability. Seventh, the number of formerly homeless people who regained stable housing on their own without participating in any homeless program may have increased.

Compared to previous studies the average age at death for homeless San Franciscans has increased slightly since 1990 (Swanson, 1995; Ashe et al., 1996). For the five-year period from 1990-1994, their average age at death was 41.0 (± 12.0) years (Swanson, 1995). These ages at death ranged from 39.0 (± 11.8) years in 1990 to 43.6 (± 12.6) years in 1993 (Swanson, 1995). The average age at death for the three-year period from 1995-1997 was 42.2 years (Ashe et al., 1996).

The average age at death for homeless males was 43.9 years (range = 21 to 72 years) while that for homeless females was 38.4 years (range = newborn to 52 years). If the one death of the newborn female of homeless parents is excluded, the age at death for homeless females rises to 40.8 years (range = 23 to 52 years). This difference in the age at death between homeless males and homeless females for 1997 is similar to that found during the previous six years from 1990-1995 (Swanson, 1995; Ashe et al., 1996).

V. References

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VI. APPENDIX A

A. HOMELESS STATUS CRITERIA

Medical Examiner investigators do not routinely and systematically determine whether the deceased was permanently housed or homeless at the time of death. Therefore, every Medical Examiner-reviewed death case falling within the study period was reviewed to determine the decedent's housing status at the time of his/her death. The following criteria was used to examine each ME record of death:

- No known residential address appearing on the ME record of death
- A ME investigator's conclusion in the ME record of death based upon an analysis of the death scene
- Staying at a public or private homeless shelter
- Staying in a public-funded hotel room used as emergency shelter
- Client status at a homeless service or treatment program
- Staying in a structure not defined by code as habitable housing
- Staying in a vacant building
- Statements by informed witnesses, acquaintances, and relatives confirming the decedent's homelessness
- Timely institutional records that note whether the deceased was permanently housed or homeless
- Visiting at another person's residence
- Any death occurring in a residential building where the decedent was a stranger to staff and residents
- Residency in a hotel for less than 30 consecutive days
- Staying at a non-relative's residence for less than 30 days
- Any death where the decedent was undergoing an imminent legal eviction; and,
- The presence of other homeless indicators in the ME record of death, such as no identification and the presence of camping gear

Those ME records of death selected under these criteria were then analyzed to determine whether there were at least two different documented sources that confirm the decedent's homeless status.

The majority of these selected ME death cases could be confirmed and documented as those of homeless people through the information found in the record of death. The unknown or vague housing status of the remaining death cases were determined and confirmed through follow-up interviews with informed witnesses and acquaintances who knew the decedent. This included attending medical staff, police investigators, hotel staff, friends, and other homeless people.

Medical Examiner policy prohibits researchers from using the information found in the record of death to contact the decedent's relatives; therefore, some decedents' housing status could not be clearly determined or confirmed from at least two different sources, other than the decedent's relatives. These death cases were categorized as probably homeless. This category was also used for those death cases discovered weeks or months after death occurred. Decomposition, the elements, and time together may leave few — if any — clues to the deceased's identity, much less whether the deceased was housed at the time of his/her death. If some homeless indicators were found, they were categorized as homeless. Otherwise, decedents whose housing status is unverifiable were not included in the study. Their numbers are only referred to determine whether they account for any yearly variations in the number of annual homeless deaths.

B. DEFINITIONS

1. Homeless

Any person lacking a fixed and adequate nighttime residence for less than 30 consecutive days. Included are persons temporarily living in:

- public and private shelters
- public-funded hotel rooms used as emergency shelters
- vehicles
- public or private places not designed for, or ordinarily used as, regular sleeping accommodation for human beings
- private dwelling units in which he/she is under imminent eviction, or
- an institution from which he/she will be discharged with no place to go.

2. ME No-Case Death

This is the term used by the ME to designate the roughly 3,500 annual deaths submitted to them that, after some further investigation, are determined not to fall within their legal jurisdiction. Although they are not included in the statistics compiled and analyzed in the ME's Annual Report, these records of death still remain in their computerized records and are accessible to researchers.

By including these ME-No Cases in this study, a little over 60% of the annual deaths in San Francisco could be analyzed. This category of ME death cases also includes all of the roughly 300 San Franciscan decedents who receive an indigent burial at city expense each year.

Because most of these death cases and their records originate from hospitals, the information transferred to the ME is less complete than that of ME-accepted cases. Important information about witnesses, relatives, personal property, and a comprehensive narrative history of the events leading to the death of the decedent that are used to provide clues about their housing status are usually missing. Other telling details — like race and Social Security number — are also not usually given. However, they still contain more information and accuracy than can be typically found in death certificates.

3. Neighborhood Districts:

The San Francisco neighborhoods used in this study are the ones defined in the map of the San Francisco Realtors Association with some modifications. These modifications were necessary to make more realistic neighborhoods for the analysis of homeless deaths in San Francisco.

The Van Ness/Civic Center district was eliminated and reassigned. The Hayes Valley, Western Addition and Lower Pacific Height districts eastern boundaries were extended from Gough St. to Van Ness Ave.

Also, the Downtown/Tenderloin district was eliminated and reassigned. The area bounded by Powell, Market, Stockton and Post streets was assigned to the Financial District North. The Upper Tenderloin district bounded by California St., Van Ness Ave., Post and Stockton streets was added. So was the Tenderloin district with Van Ness Ave., Market, Powell, and Post streets as its boundaries.

VII. APPENDIX B

A. **RESPONSIBILITIES OF THE SAN FRANCISCO'S MEDICAL EXAMINER-CORONER⁴**

The Medical Examiner is appointed by law to many responsibilities, the foremost of which is the investigation and certification of a variety of deaths, including all deaths of other than natural causation, and any apparently natural deaths in which no physician can reasonably state the cause. The Medical Examiner can utilize any and all medico-legal investigative techniques, including autopsy, to establish both the medical cause of death and the mode or circumstances of death (natural, accident, homicide, suicide, or undetermined).

The deaths which must be reported to the Medical Examiner-Coroner, as required by various sections of the Government, Health and Safety and Penal codes, are as follows:

1. Homicide - known or suspected
2. Suicide - known or suspected
3. Following accident or injury (whether the accident or injury is the primary cause or contributory, with death occurring immediately or at some remote time)
4. Medical attendance of less than 20 days
5. No physician in attendance
6. Physician is unable to state the cause of death (must be unable, not merely unwilling)
7. Poisoning (food, chemical, drug, therapeutic agents)
8. Occupational or industrial deaths
9. All deaths where a patient has not fully recovered from an anesthetic, whether in surgery, recovery room, or elsewhere
10. All deaths in operating rooms
11. All solitary deaths (unattended by physicians or other person in the period immediately preceding death)
12. All deaths in which the patient is comatose throughout the period of the physician's attendance
13. All deaths of unidentified persons
14. All deaths in which there are grounds to suspect that the death occurred in any degree from a criminal act
15. All deaths involving contagious disease - known or suspected – and constituting a public health hazard
16. Deaths in prison or while under sentence
17. All deaths associated with rape – known or alleged - or crime against nature
18. All deaths related to or following abortion – known or suspected
19. All deaths involving drowning, fire, hanging, gunshot, stabbing, cutting, starvation, exposure, alcoholism, drug addiction, strangulation, or aspiration

Additional mandated responsibilities include protecting and safekeeping of property belonging to deceased individuals, conducting inquests when indicated, maintaining proper public records, making reports to other agencies, identification of deceased persons, internment of indigent dead, and many other death-related activities.

⁴ Abstracted from the San Francisco Medical Examiner's Office Annual Report, July 1, 1995 – June 30, 1996, page 1.