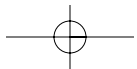
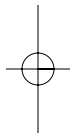
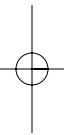
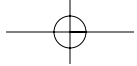


## Part I

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# Populations



## Chapter 2

# Homeless People

Stephen W. Hwang and James R. Dunn

### 1.0. INTRODUCTION

Over the last quarter century, homelessness has become one of the symbols of urban blight. Regardless of the accuracy of this perception, homelessness is indeed a serious issue in many cities. More than 800,000 Americans are homeless in a given week, and 3.5 million are homeless over the course of a year (Burt, 2001). About 2-3% of the U.S. population, or 5-8 million people, have experienced at least one night of homelessness in the past five years (Link, *et al.*, 1994). About 70% of homeless people in the U.S. live in urban areas (Burt, 2001). Within the countries of the European Union, estimates of the number of homeless people in 1997 were 580,000 in Germany, 166,000 in the United Kingdom, 30,000 to 40,000 in the Netherlands, 10,000 in Finland, 8,000 in Sweden, and 6,000 in Norway (Menke, *et al.*, 2003).

Contrary to stereotypes, a broad range of people experience homelessness, including not only single men, but also single women, runaway adolescents, and families with young children. In the U.S., these subgroups represent about 60%, 16%, 9%, and 15% of the homeless population, respectively (Burt, 2001). In the European Union, substantial numbers of homeless families with children are found only in Germany and the United Kingdom (Menke, *et al.*, 2003). Here and throughout this chapter, we define homeless people as individuals who lack a fixed, regular, and adequate night-time residence, including those who are living in emergency or transitional shelters, in motels or hotels due to lack of alternative adequate accommodations, or in private or public places not intended for human habitation (such as cars, parks, public spaces, abandoned buildings, or bus or train stations).

The health of the homeless and the role of cities in their health present an important challenge. The relationship between urban living and the health of the homeless raises two intertwined questions. First, how does the urban environment influence the creation and perpetuation of homelessness, especially among (but not limited to) individuals with pre-existing health problems such as mental illness and substance abuse? Second, how does the urban environment affect the health of people after they have become homeless? At first glance, these two questions appear almost identical in terms of the specific characteristics and attributes of the urban

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environment that warrant scrutiny. For example, both questions will lead to a consideration of the availability of low-cost housing and the ability of the health care system to care for patients with severe mental illness. However, the distinction between these two questions is important as they distinguish factors associated with the likelihood of being homeless due to health reasons versus the likelihood of consequences given homelessness. At another level, it is also important to distinguish if outcomes and their associated factors vary between cities, both in terms of the structural factors that generate homelessness and (given homelessness) health of those who are homeless. These questions frame the issue of the impact of the urban environment on the health of disadvantaged populations.

In the course of such discussions, disagreement often arises as to whether homelessness should be considered primarily the consequence of individual vulnerabilities and failings, or the result of structural inequities in the social, economic, housing, and health care systems. Rather than creating an either/or distinction, we will approach homelessness as the result of a complex interaction between individual vulnerabilities and structural forces in the urban environment. In most cases, the relative importance of these factors in determining the health of homeless people and the prevalence of homelessness remains the subject of ongoing debate.

### 2.0. KEY HEALTH ISSUES FOR HOMELESS PEOPLE

The burden of illness and disease is extremely high among homeless people (Levy and O'Connell, 2004). However, any consideration of the common health problems of homeless people must first recognize the large degree of heterogeneity among people who are homeless. Among street youth, single men, single women, and mothers with children, the patterns of illness differ notably. Adolescents suffer from high rates of suicide attempts, sexually transmitted diseases, and pregnancy (Greene and Ringwalt, 1996; Greene and Ringwalt, 1998; Greene, *et al.*, 1999; Feldmann and Middleman, 2003). Female heads of homeless families tend to have far fewer health problems than single homeless women, although their health is poorer than their counterparts in the housed general population (Robertson and Winkleby, 1996). Homeless single men have a higher prevalence of alcohol abuse and drug abuse, whereas single women have a higher prevalence of serious mental illness (Fischer and Breakey, 1991).

Health status also tends to be correlated with a person's history of homelessness. Individuals with severe mental illness, substance abuse, and medical conditions are overrepresented among the chronically homeless, whereas those who are homeless for a transient period lasting only a few weeks or months are more likely to be relatively healthy (Kuhn and Culhane, 1998). Although chronically homeless people make up only about 10% of all individuals who experience homelessness in a given year, they account for a disproportionately large share of the demand for shelter beds and health care services for homeless people (Burt, 2001). In addition, the public's perception of homeless people often reflects a stereotyped image of this highly visible subgroup.

Cross-national comparisons of disease patterns among homeless people reveal the strong effect of social factors within each country. Among homeless men in Tokyo, Japan, morbidity due to alcohol dependence (but not drug use) is common, as are musculoskeletal injuries incurred doing construction work (Takano, *et al.*, 1999b). In contrast, 60% of homeless people in Amsterdam, the Netherlands, suffer from drug abuse or dependence (primarily heroin), and most are chronically homeless (Slegers, 2000c).

### 2.1. Mental Illness and Substance Abuse

The prevalence of serious mental illness and substance abuse is high among homeless persons. In a nationwide U.S. survey of homeless people, 39% had mental health problems, 50% had an alcohol and/or drug problem, and 23% had concurrent mental health and substance use problems (Burt, 2001). Common psychiatric diagnoses among homeless people include major depression, bipolar disorder, schizophrenia, and personality disorders. A systematic review of the prevalence of schizophrenia in homeless persons found rates ranging from 4 to 16% and a weighted average of 11% in the ten methodologically strongest studies (Folsom and Jeste, 2002). Characteristics associated with a higher prevalence of schizophrenia were younger age, female sex, and chronic homelessness. Marked cross-national variation is seen in the prevalence of schizophrenia, with prevalence rates of 23-46% reported among homeless people in Sydney, Australia (Teesson, *et al.*, 2004).

The prevalence of substance abuse is extremely high among homeless single adults. In a study from St. Louis, Missouri, large increases were seen in the prevalence of drug use among homeless men and women between 1980 and 2000. In 2000, 84% of men and 58% of women had an alcohol or drug use disorder (North, *et al.*, 2004). In another study, about three-quarters of homeless adults met criteria for substance abuse or dependence (O'Toole, *et al.*, 2004). Homelessness increases the risk of adverse health outcomes among substance abusers: in five Canadian cities, the risk of a non-fatal overdose was twice as high among illicit opiate users who were homeless compared to those who were housed (Fischer, *et al.*, 2004).

Homeless adolescents also have very high rates of mental health problems and substance abuse. In a study from Seattle, 83% of street youths had been physically and/or sexually victimized after leaving home, and 18% met criteria for post-traumatic stress disorder (Stewart, *et al.*, 2004). Across the U.S., 55% of street youth and 34% of shelter youth had used illicit drugs other than marijuana since leaving home, in comparison to 13% of youth who had never been runaway or homeless (Greene, *et al.*, 1997). Street youth use a wide range of drugs, including hallucinogens, amphetamines, sedative/tranquilizers, inhalants, cocaine, and opiates. Unfortunately, the initiation of injection drug use is quite common, with an incidence rate of 8.2 per 100 person-years among street youth in Montreal (Roy, *et al.*, 2003).

### 2.2. Infectious Diseases

Infectious diseases are a common cause of health problems in homeless people (Raoult, *et al.*, 2001). The most serious of these infections include tuberculosis (TB), human immunodeficiency virus (HIV) infection, viral hepatitis, and other sexually transmitted infections. Outbreaks of TB among homeless people have been reported frequently, especially in individuals co-infected with HIV (Barnes, *et al.*, 1999; McElroy, *et al.*, 2003; Morrow, *et al.*, 2003). The incidence of active TB in a cohort of homeless people in San Francisco between 1992 to 1996 was 270 per 100,000, or 40 times higher than that seen in the U.S. general population in 1998 (Moss, *et al.*, 2000). Homeless people with TB require more hospital-based care than non-homeless people with TB, resulting in average hospital costs that are higher by \$2,000 per patient. (Marks, *et al.*, 2000) Contact tracing in the homeless population is difficult, and in one study only 44% of identified contacts completed treatment for latent TB infection (Yun, *et al.*, 2003). Among street youth, latent tuberculosis is more common than in the general population, but probably

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less prevalent than among homeless adults. In a study conducted in Sydney, Australia, 9% of homeless young people aged 12-25 years had latent TB infection (Kang, *et al.*, 2000).

Homeless people are at increased risk of HIV infection. Data from an older U.S. survey conducted from 1989 to 1992 in 14 cities found median HIV seroprevalence rates of 4.0% in adult men, 1.8% in adult women, and 2.3% in youths (Allen, *et al.*, 1994). In more recent studies, HIV seroprevalence was 10.5% among homeless and marginally housed adults in San Francisco in 1996, a rate five times higher than in San Francisco generally (Robertson, *et al.*, 2004). HIV infection was present in 1.8% of homeless veterans admitted to residential programs from 1995-2000 (Cheung, *et al.*, 2002). Female street youth and young homeless women who are involved in prostitution are at increased risk of HIV infection, due to both injection drug use and risky sexual behaviors (Weber, *et al.*, 2002). In one study of homeless adolescents, the HIV infection rate was alarmingly high at 16% (Beech, *et al.*, 2003). Among substance users, homelessness is associated with higher rates of HIV seroprevalence (Surratt and Inciardi, 2004; Smereck and Hockman, 1998). Among HIV-infected persons, those who are unstably housed (homeless or temporarily staying with friends or family) are less likely to receive adequate health care than those who are stably housed (Smith, *et al.*, 2000).

Homeless people are at increased risk of viral hepatitis, primarily due to high rates of injection drug use. Infection with hepatitis C was found in 22% of homeless men in Los Angeles (Nyamathi, *et al.*, 2002), 32% of individuals using a mobile medical van in New York City (Rosenblum, *et al.*, 2001), and 27% of homeless persons in Oxford, England (Sherriff and Mayon-White, 2003). In a Veterans Affairs population, the prevalence of anti-hepatitis C virus antibody was 41.7% and the prevalence of hepatitis B surface antigen was 1.2% (Cheung, *et al.*, 2002). Among street youth, the prevalence of these markers of infection was also high: 12.6% and 1.6%, respectively, in Montreal (Roy, *et al.*, 1999; 2001) and 5.0% and 3.6%, respectively, in a northwestern U.S. city (Noell, *et al.*, 2001b).

Sexually transmitted diseases (STDs) are a particularly serious problem among street youth. In a longitudinal study of homeless adolescents, the annual incidence of *Chlamydia trachomatis* infection was 12.1% in females and 7.4% in males; the annual incidence of herpes simplex virus type 2 was 25.4% in females and 11.7% in males. (Noell, *et al.*, 2001) A study of street youth and sex workers in Quebec City, Canada found that 13% of women less than 20 years old were infected with *Chlamydia trachomatis* and 1.7% had *Neisseria gonorrhoeae* (Poulin, *et al.*, 2001). Newer urine-based screening tests make it easier to screen homeless youth for STDs in out-reach settings (Van Leeuwen, *et al.*, 2002).

### 2.3. Chronic Diseases

Common chronic diseases, including hypertension, diabetes, chronic obstructive pulmonary disease (COPD), seizures, and musculoskeletal disorders, are often undiagnosed or inadequately treated in homeless adults. Relatively little research has focused on these medical conditions in the homeless population. The prevalence of hypertension was higher among homeless clinic patients than among non-homeless patients at an inner-city primary care clinic (65% vs. 52%) (Szerlip and Szerlip, 2002). The prevalence of diabetes is similar in homeless and non-homeless individuals, but homeless people with diabetes face a number of serious barriers to appropriate disease management, including lack of access to a suitable diet and dif-

difficulties coordinating medication administration with meal times (Hwang and Bugeja, 2000b). Glycemic control was found to be inadequate in 44% of homeless diabetics in Toronto (Hwang and Bugeja, 2000b).

Smoking rates are extremely high (about 70%) among homeless people (Connor, *et al.*, 2002). As a result, COPD is a common health problem among older adults. In a study of shelter residents in San Francisco, the prevalence of COPD based on spirometry was 15%, or more than twice the prevalence in the general population (Snyder and Eisner, 2004). Smoking also contributes to the high risk of cancer, especially among homeless single men. In a study from Scotland that adjusted for age and socioeconomic deprivation, the incidence of cancer of the oral cavity and pharynx, larynx, esophagus, and lung in homeless men was 139%, 87%, 61%, and 23% higher than expected, respectively (Lamont, *et al.*, 1997). Homeless people are also less likely to receive recommended cancer screening than the general population: among homeless women age 40 and over in Los Angeles County, only 55% had undergone a Pap smear and only 32% had undergone a mammogram within the last year (Chau, *et al.*, 2002). Thus, interventions such as smoking cessation treatment and routine preventive health services may provide significant benefit.

Although it is not surprising that homeless people with mental illness often receive inadequate care for medical comorbidities, the adequacy of care differs according to type of mental illness. Homeless people with schizophrenia receive less detailed physical examinations, fewer primary care visits, and less preventive health services than homeless people with major depression (Folsom, *et al.*, 2002). While it is unknown if these differences are due to patient factors, provider factors, or both, careful attention clearly needs to be paid to the physical health needs of homeless people with psychoses.

## 2.4. Trauma and Injuries

Trauma and injuries are significant hazards associated with life on the street (Staats, *et al.*, 2002). In a sample of homeless and marginally housed people in San Francisco, 32% of the women and 27% of the men had been sexually or physically assaulted in the last year (Kushel, *et al.*, 2003). Among women, being homeless (compared to being marginally housed) was associated with a more than 3-fold increase in the risk of sexual assault. In Sydney, Australia, 58% of shelter residents reported experiencing a serious physical assault in their lifetime, and half of the women reported having been raped (Buhrich, *et al.*, 2000). Among homeless youth in Los Angeles, reported exposure to violence was found to be equally high among males and females (Kipke, *et al.*, 1997).

## 2.5. Other Health Conditions

Foot problems are very common among homeless adults due to prolonged standing, long-term exposure to cold and damp, ill-fitting footwear, and inadequate foot hygiene. Problems can range in severity from mild blisters and fungal infections to debilitating chronic venous stasis ulcers, cellulitis, diabetic foot infections, and frostbite. Other common skin problems include sunburn and bites due to infestations by head lice, body lice, scabies, or bedbugs (Stratigos and Katsambas, 2003). The prevalence of serious dermatologic conditions, while probably quite high among street-dwellers, appears to be relatively low among homeless people

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living in shelters that provide adequate clothing, laundry facilities, bathing facilities, and medical care. In a study of men staying at such a shelter in Boston, the majority of individuals had relatively normal findings on skin examinations (Stratigos, *et al.*, 1999).

Dental problems are an extremely prevalent and troubling but often-neglected problem for many homeless people. Common conditions include advanced caries, periodontal disease, and ill-fitting or missing dentures. These problems may be related to poverty, lack of access to dental care, and substance use, rather than homelessness *per se*. In a study comparing homeless and domiciled veterans in Veterans Affairs rehabilitation programs for substance abusers, the two groups had similarly poor oral health (Gibson, *et al.*, 2003).

### 2.6. Mortality

Given the high prevalence of illness among homeless people and the adverse health effects of homelessness itself, it is not surprising that homeless people have very high mortality rates. Men using homeless shelters are 2 to 8 times more likely to die than age-matched men in the general population (Barrow, *et al.*, 1999; Hwang, 2000a). Homeless women 18-44 years of age have mortality rates that are 5 to 31 times higher than in the general population (Cheung and Hwang, 2004). Common causes of death among homeless people under the age of 45 are unintentional injuries, drug overdoses, AIDS, suicide, and homicide (Hwang, *et al.*, 1997; 2000a). In a longitudinal cohort study of street youth in Montreal, the standardized mortality ratio was 11.4; HIV infection, daily alcohol use in the last month, homelessness in the last 6 months, drug injection in the last 6 months, and male sex were independent predictors of mortality (Roy, *et al.*, 2004).

### 2.7. Pregnancy

Among homeless women, major barriers to contraception include cost, fear of side effects or potential health risks, and the partner's dislike of contraception (Gelberg, *et al.*, 2002). Pregnancy is particularly common among homeless adolescents. In a U.S. survey of runaway females age 14-17 years, 12% of street-dwelling youths and 10% of those residing in shelters were currently pregnant (Greene and Ringwalt, 1998). In a group of pregnant homeless women, the risk of low birth weight (less than 2,500 gm) was 17%, compared to the national average of 6% (Stein, *et al.*, 2000). Lack of prenatal care and severity of homelessness (homelessness in the first trimester of pregnancy, number of times homeless, and percentage of life spent homeless) were independent risk factors for low birth weight.

### 2.8. Children in Homeless Families

The health of children in homeless families has been the focus of relatively little research. Some but not all studies of these children have found an increased prevalence of behavioral and mental health problems compared to children in housed low-income families (Bassuk, *et al.*, 1997; Vostanis, *et al.*, 1998). Infectious diseases are a significant concern in these children (Ligon, 2000). Up to 40% of children in homeless families in New York City suffer from asthma, a rate six times higher than the national rate in children (McLean, *et al.*, 2004c).



### **3.0. DIMENSIONS OF THE URBAN ENVIRONMENT THAT AFFECT THE PREVALENCE OF HOMELESSNESS AND THE HEALTH OF HOMELESS PEOPLE**

The medical literature has usually examined health problems from the perspective of the individual homeless person, and has given relatively little attention to the urban environment within which these health problems arise and must be ameliorated. This section addresses this gap by highlighting dimensions of the urban environment that affect, through interaction with individual vulnerabilities, the prevalence of homelessness and/or the health of homeless people. The following is not intended to be a comprehensive listing, but rather a selection of important determinants about which at least some information is available. These determinants have been grouped into categories encompassing the demographic and physical characteristics of urban centers (population and climate), their socioeconomic and service-delivery structures (income and poverty, social welfare systems, and health care systems), and their spatial and political organization (urban geography and urban governance). Although these dimensions may have differential effects on the health of various subgroups of homeless people (e.g., youths, single adults, and families), these differences are not discussed in depth here.

#### **3.1. Population Size and Migration**

Homelessness is a problem in cities across the U.S., as demonstrated by the fact that federally-funded Health Care for the Homeless Programs exist in 161 cities in all 50 states, the District of Columbia, and Puerto Rico (Health Care for the Homeless Information Resource Center). There is limited information on the relationship between population size and prevalence of homelessness in different urban centers. One reason for this paucity of data is the logistical difficulty of conducting an accurate count of homeless persons, particularly those living on the street. Another reason is that point-prevalence counts of the homeless population cannot be used to determine how many individuals are homeless in a city over an entire year, especially given seasonal fluctuations in the homeless population and the fact that homelessness is a transient state.

Counts of shelter users are particularly informative when all shelters contribute to a common administrative database, because this makes it possible to determine the total number of individuals who use shelters in a particular city over the course of a year, rather than simply the number of shelter users at a single point in time (Metraux, *et al.*, 2001). In 1992, an estimated 1.0% of the 1.5 million residents of Philadelphia and 1.2% of the 7.2 million inhabitants of New York City stayed at a homeless shelter at least once (Culhane, *et al.*, 1994). In Toronto, Canada, 1.3% of the city's total population of 2.5 million used a homeless shelter during 2002. These figures are remarkably similar and strikingly high. Thus, homelessness is quite common in large urban centers, although for many individuals the duration of homelessness is quite brief. In a U.S. survey of homeless people, 28% had been homeless for only 3 months or less, 26% had been homeless for 4-12 months, and 46% had been homeless for more than one year (Burt, 2001).

Cross-sectional counts of the number of shelter residents provide an important but somewhat less accurate picture of the homeless population. The maximum size of a city's shelter population is obviously determined by the number of available shelter beds. In a city with few shelters, this can create the illusion of a smaller

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homeless population than is actually the case. In addition, shelter beds may be less widely available in cities that do not experience severe cold weather in the winter. In the nine largest metropolitan areas in Canada, the number of shelter beds per capita ranges more than four-fold, from 21 to 97 per 100,000 population (Hwang, 2001). The number of shelter beds per capita is not significantly correlated with population size. Interestingly, the lowest number of shelter beds per capita in Canada was observed in Vancouver, a city with a very mild climate, and the highest figure was seen in Calgary, a city with extremely cold winters. Overall, this evidence suggests that episodes of homelessness are quite common among residents of major urban centers, but there is significant variation in the prevalence of homelessness across cities that does not necessarily correlate with population size.

A related question is the role of migration in determining the size of the homeless population in urban centers. Whereas some homeless people are migrants who were homeless before or upon their arrival in the city, others are local residents who have become homeless. In a nationwide U.S. survey, 56% of homeless people reported living in the same city where they became homeless (Burt, 2001). Among the 44% of individuals who had moved from one location to another during their current episode of homelessness, the most common pattern was a net flux from urban fringes and medium-sized cities into large central cities. The most commonly cited reasons for these moves were lack of available jobs, lack of affordable housing, and eviction (Burt, 2001).

### 3.2. Climate

Climate is an interesting example of a characteristic of the urban environment that affects both the prevalence of homelessness and the health of homeless people. Certain cities in warm regions may become a preferred destination for people who are homeless or at high risk for homelessness. As noted above, in cities with warmer climates, a larger proportion of the homeless population is likely to be found on the street rather than in shelters. People living on the street are more likely to be disengaged from the health care and social service systems, and typically these individuals have poorer health than shelter-dwelling homeless people (Cousineau, 1997). In colder climates, exposure to the elements has an obvious adverse impact on the health of homeless people, who face serious risks from trench foot, frostbite, and injury or death from hypothermia (Tanaka and Tokudome, 1991). Conversely, in hot weather, homeless people may experience severe sunburn, heat exhaustion, or heat stroke.

### 3.3. Income and Housing

The prevalence of severe poverty among the residents of an urban area is certainly an important factor affecting the prevalence of homelessness. Poverty alone, however, does not necessarily lead to homelessness. Data from nine U.S. cities demonstrate wide variation in the proportion of a city's poor residents that stays at a homeless shelter over the course of one year, ranging from a low of 1.3% to a high of 10.2% (Metraux, *et al.*, 2001). Some have argued, based on historical data, that an increase in the number of unmarried men with very low income is a particularly important explanatory factor for adult homelessness (Jencks, 1994). During the latter half of the twentieth century, the earning potential of men with limited education was greatly diminished by the decline of manufacturing jobs in urban centers (Wilson, 1987; 1996). At the same time, the availability of open-market sources of

low-cost housing such as single-room occupancy hotels and rooming houses shrank steadily due to gentrification and urban renewal (Hasson and Ley, 1994). In this setting, the level of government support for subsidized rental housing plays a key role in determining the availability of units that a low-income individual or family can afford; the 1980's saw a decline in this support in both the U.S. and the United Kingdom (Cohen, 1994).

Some have suggested that income distribution, specifically the ratio of middle-income to low-income households within a given city, is an important determinant of homelessness among both single adults and families (O'Flaherty, 1996). O'Flaherty argues that because the construction of new rental housing for low-income individuals is economically unattractive, the main source of housing for poor people is deteriorating housing stock that has been vacated by middle-income people. O'Flaherty theorized that cities with fewer middle-class people relative to the number of poor people have higher rents at the bottom of the market (because middle-income housing is not being "handed down" to the poor), resulting in higher rates of homelessness.

Members of ethnic and racial minorities are disproportionately represented in the homeless population (e.g., blacks and latinos in the U.S., and Aboriginal people in Canada) (Burt, 2001; Hwang, 2001). The higher prevalence of poverty in these disadvantaged groups may explain this observation. However, other race-related factors in the urban environment may contribute to the excess risk of homelessness among people of color, including discrimination in the housing market and segregation of low-income minorities in neighborhoods with fewer economic opportunities than neighborhoods in which low-income whites reside.

Any discussion of the role that urban poverty plays in causing homelessness also raises questions about nature of the causal relationship between homelessness and poor health. Poverty is consistently and strongly associated with poor health (Marmot, *et al.*, 1997). Thus, the poor health observed among homeless people may be explained in large part by the fact that they experience extreme poverty and deprivation, rather than the fact that they happen to be homeless at the present time. This is particularly likely to be the case for individuals who have only recently become homeless, and less so for the chronically homeless, who have been subjected to the adverse health effects of lack of housing for a lengthy period. To extend this concept further, homelessness is a marker for severe poverty in the urban environment, and it may be this level of poverty, rather than the negative impact of homelessness itself, that has the greatest effect on population health in urban centers. This issue is discussed further in section 4 of this chapter.

### 3.4 Social Welfare System

Social welfare systems in urban centers have a major impact on both the prevalence of homelessness and the health of homeless people. However, these systems are usually governed at the state or national level, rather than at the municipal level. Wide variation is seen in the scope of social welfare programs, with more generous benefits typically seen in countries or regions that have less tolerance for high levels of income inequality and place a higher value on social cohesion (Slegers, 2000b).

For example, eligibility criteria for welfare benefits in the U.S. vary significantly from state to state. Some states allow single men to collect welfare, whereas others exclude them. These policies would likely affect the risk of homelessness among low-income single men living in any city within a given state. In addition,

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U.S. federal funds may not be used to provide Temporary Aid to Needy Families (TANF) if an adult in the family has received assistance for more than 60 months, but individual states may elect to continue providing assistance to these families using state funds (State Policy Documentation Project). In coming years, as families that are unable to become self-supporting begin reaching the 60-month federal time limits on benefits, their risk of becoming homeless may be greatly affected by the policies of the state in which they live. In contrast, most European Union countries have extensive social welfare and public housing systems that make family homelessness less common.

One area of controversy is whether the provision of cash entitlements or disability benefits has significant effects on the health of homeless people. On one hand, the health of homeless people should improve if public benefits allow them to obtain food, housing, and other essentials of life. On the other hand, increased income could be detrimental to health if the money is used to purchase alcohol or drugs. One of the few studies on this issue examined 173 homeless mentally ill veterans who applied for Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI). The 50 individuals who were eventually awarded benefits did not differ in their past history of substance use from the 123 individuals who were eventually denied benefits. Three months after the decision to award or deny benefits, the group that was awarded benefits had significantly higher average total income (by \$277 per month) and higher quality of life than the group that was denied benefits. There was no evidence of increased alcohol or drug use or deterioration in psychiatric status among those who received benefits (Rosenheck, *et al.*, 2000).

Most homeless people depend on their city's shelter system for housing, food, and other social services, and these shelters can therefore have a significant impact on the health of homeless people. The availability and quality of homeless shelters vary greatly. As noted previously, homeless people in cities with few shelter beds are more likely to live on the street or other places not intended for human habitation, with potentially adverse health effects. In addition, the staff at homeless shelters can play an important role in connecting homeless people to social services, job training, housing applications, and substance abuse treatment. The quantity and quality of food provided at shelters determines to a large extent the nutritional value of homeless people's diets, with potential downstream health effects (Dachner and Tarasuk, 2002). Finally, the physical environments at shelters range from extremely crowded, poorly ventilated, and unsanitary facilities to modern, clean, and well-run establishments. Adverse shelter conditions have an impact on the transmission of tuberculosis and viral respiratory infections and the prevalence of health conditions such as skin infestations and asthma exacerbations. Shelter conditions could also plausibly have an effect on mental and emotional well-being among residents. To date, however, little research has examined the effects of the physical shelter environment on the health of homeless persons, with the exception of the relationship between crowding and poor ventilation in shelters and the transmission of tuberculosis (Advisory Council for the Elimination of Tuberculosis, 1992b).

### 3.5. Health Care System

The organization and financing of the urban health care system has an enormous impact on the health of homeless people, and to some extent on the prevalence of homelessness as well. In the U.S., 55% of homeless people lack health insurance,

creating a significant barrier to obtaining care (Kushel, *et al.*, 2001). These individuals are dependent on state- or city-based systems designed to provide care for the indigent. In many large urban centers in the U.S., a designated public, county, or charity hospital provides the majority of hospital-based health care for homeless people. Some cities have free-care clinics or community health centers that provide ambulatory services for homeless persons as well as other low-income residents. In 161 U.S. cities, federally-funded Health Care for the Homeless Programs have established multidisciplinary teams of physicians, nurses, social workers, and outreach workers that provide care to homeless people on the street and in shelters. This limited set of health care providers is typically the only source of care available to homeless people in urban areas in the U.S., and the local funding and staffing level of these organizations is a critical determinant of access to health care. For homeless veterans, the proximity and availability of Veterans Health Administration services is also an important factor.

In countries such as Canada and the United Kingdom that have systems of universal health insurance, homeless people still face non-financial barriers to care. Many access problems stem from the fact that a health care system designed to meet the needs of the general population may not accommodate the unique requirements of homeless people (Crane and Warnes, 2001; Hwang and Bugeja, 2000a, 2000b). For example, the provision of universal health insurance does not necessarily result in the establishment of outreach programs for homeless people, appropriate treatment programs for homeless persons with mental illness or substance abuse, or an adequate supply of health care providers who are willing, able, and trained to work with this challenging population (Buchanan, *et al.*, 2004). In the United Kingdom, individuals must register with a general practitioner to obtain primary care, and some physicians are reluctant to accept homeless people into their practice because of their complex needs and the extra workload entailed (Wood, *et al.*, 1997). Health insurance does not protect against the fragmentation and discontinuity of care that homeless people often experience, nor does it eliminate the daily struggle to meet basic survival needs that may cause homeless people to place a lower priority on seeking health care (Gelberg, *et al.*, 1997).

Inadequate access to primary health care may result in uncontrolled disease progression and frequent emergency department visits and hospitalizations (Han and Wells, 2003). Emergency department visits by homeless people should be seen as an indicator of high levels of unmet health needs, rather than inappropriate health care utilization (Kushel, *et al.*, 2002). About 50% of homeless children with severe persistent asthma have had at least one emergency department visit in the last year, a finding indicative of inadequate access to health care and under-treatment of their disease (McLean, *et al.*, 2004).

Because individuals with severe mental illness who do not receive appropriate health care are at high risk of becoming homeless, the health care system can have a direct impact on the prevalence of homelessness. The role of deinstitutionalization in contributing to the problem of homelessness has been discussed extensively. Beginning in the 1960's and 1970's, the advent of effective anti-psychotic medications to treat schizophrenia and an understandable desire to move people out of chronic mental hospitals, where conditions were sometimes horrendous, led to the discharge of tens of thousands of long-term psychiatric patients (Dear and Wolch, 1987; Jencks, 1994). The number of beds at psychiatric institutions fell precipitously. In theory, these patients were supposed to receive mental health care and social support in the community. In reality, many of these patients received little if

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any services and ended up swelling the ranks of the homeless population in the 1970's and 1980's.

Today, many decades after these events took place, "deinstitutionalization" is no longer the major cause of homelessness among people with serious mental illness. It is now uncommon for people with psychiatric disorders to have ever been institutionalized for an extended period, and any admissions tend to be quite brief. Not surprisingly, individuals with severe illness, few social supports, and/or inadequate access to appropriate outpatient psychiatric care often become homeless. In a sense, homeless shelters have assumed the role that was played by chronic psychiatric hospitals fifty years ago.

For these homeless people with severe mental illness, the delivery of appropriate health care is challenging but essential to improving their health and housing status. The Assertive Community Treatment (ACT) model attempts to address this problem through a team of psychiatrists, nurses, and social workers who follow a small caseload of homeless mentally ill clients, seeking them out in the community to provide high-intensity mental health treatment and case management. Studies have found that mentally ill homeless people receiving ACT spend fewer days hospitalized as a psychiatric inpatient and have somewhat greater improvement in symptoms than those receiving usual care (Lehman, *et al.*, 1997). However, ACT is labor-intensive and costly, and its availability is often quite limited.

The availability and type of addictive substances in the urban environment have an important effect on the prevalence of homelessness and on the health of homeless people (Munoz, *et al.*, 1998). The advent of crack cocaine has been clearly implicated in the rise of homelessness in the U.S. in the 1980's (Jencks, 1994). In Japan, alcoholism is the predominant addiction contributing to homelessness and morbidity among homeless people, whereas in the Netherlands, homelessness is closely linked to chronic heroin addiction (Takano, *et al.*, 1999a; Slegers, 2000a).

Access to addiction treatment is therefore a vital issue for a large proportion of homeless people. A number of treatment modalities for adults have been shown to be effective in controlled studies: admission to a post-detoxification stabilization program results in longer periods of abstinence than direct release into the shelter system (Kertesz, *et al.*, 2003), and abstinence-contingent work therapy in a long-term residential setting has been shown to improve outcomes (Milby, *et al.*, 2000). Studies have examined the effectiveness of case management for homeless people with addictions, with mixed results (Morse, 1999).

### 3.6. Urban Geography

The forces underlying the urban geography of homelessness are aptly described in the seminal work of Dear and Wolch (Dear, *et al.*, 1987). They examined how deinstitutionalization, rollbacks in entitlements to social assistance, and changes in the global economy in the late 1970s and early 1980s combined to create complex problems of poverty, inequality, and homelessness in North American cities that persist to this day. Dear and Wolch (1987) argued that these problems manifested themselves in the specific urban form of the "service-dependent ghetto," which refers to the spatial concentration in the inner city of service-dependent populations (such as people with mental illness, physical handicaps, addictions, or recent incarceration) and the organizations that assist them. While on one hand these can be characterized as areas of "urban blight," Dear and Wolch (1987) argued that they serve as a supportive environment and adaptive coping mechanism that can have a positive

effect on the health and well-being of residents who have few other options. Service-dependent ghettos are often the object of antagonism from surrounding communities. Paradoxically, however, these more affluent communities often perpetuate the forces that create the service-dependent ghetto and entrench processes of inner-city decay through citizen resistance to housing and services for low-income people and exclusionary land use policies and zoning practices (Dear and Taylor, 1982).

In some cities, the tendency has been to isolate high-poverty urban neighborhoods rather than attempt to destroy them. Davis argues that in Los Angeles and other cities, a conscious effort has been made to create geographic and physical barriers (such as expressways) that circumscribe poor and minority neighborhoods and cut them off from the rest of the city (Davis, 1990). This spatial isolation can further heighten the marginalization of these communities and limit residents' access to goods, services, and economic opportunities that are vital to health.

Since homeless people spend a great deal of their time in public spaces, the nature of these spaces can have a significant impact on their quality of life. Some cities have numerous well-tended public spaces such as parks and squares that are conducive to those who wish to linger or rest, including homeless people. These spaces can serve a socially cohesive function if urban dwellers of diverse backgrounds perceive them to be safe "neutral" spaces in which to gather and socialize. In contrast, other cities have built environments that lack such public spaces and are instead dominated by privatized quasi-public spaces such as shopping malls. Non-purposeful lingering, which would be generally acceptable in a public space such as a park, is perceived as "loitering" in such places. In a relatively trivial but very specific expression of hostility toward homeless people, some cities have installed "bum-proof" benches that are designed to prevent reclining or sleeping on the seat. While these elements of the urban environment seem relatively minor, they may reflect a city's prevailing sentiment towards homeless and poor people that sets the tone of their daily existence (Davis, 1990).

### 3.7. Urban Governance

Homelessness is often perceived as having a negative effect on the quality of life in urban centers. Some consider the visible presence of homeless people in parks, street corners, and other public spaces to be a manifestation of "urban disorder" and a barrier to the successful promotion of commerce and tourism. In response to these concerns, a number of cities have enacted by-laws against panhandling, loitering or sleeping in public places, public intoxication, or possession of shopping carts. Some cities have instituted aggressive policing strategies to remove homeless people from public spaces (Graser, 2000). Efforts to displace street youth and homeless people rather than offer them any meaningful help might have negative effects on health and in fact increase high-risk behaviors such as survival sex and unsafe injection drug use practices (O'Grady and Greene, 2003; Wood, *et al.*, 2004).

Homeless people frequently interact with both police and paramedics, but they have much lower levels of trust in police than in paramedics (Zakrison, *et al.*, 2004). By inhibiting homeless people from calling for needed emergency assistance, this distrust could result in serious harms to health. In a study of injection drug users in San Francisco, 56% of those who had been present with an unconscious heroin overdose victim did not call for emergency services due to fear of police involvement (Davidson, *et al.*, 2002). Police action can also have direct adverse effects on the health through the excessive use of force (Cooper, *et al.*, 2004). In a study in

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Toronto, 9% of homeless people reported having been assaulted by a police officer in the last 12 months (Zakrison, *et al.*, 2004).

On a larger scale, issues of urban governance such as fiscal disparities affect all urban dwellers, but have the potential to have a particularly severe impact on homeless and poor people. Fiscal disparities typically occur when an older central city with a significant number of high-poverty neighborhoods is surrounded by a ring of higher-income municipalities. The central city's primary revenue stream from property taxes is limited by a weak tax base, but at the same time the city is confronted by a high and rising demand for social services, some of which is driven by the downloading of 'unfunded mandates' by states onto central city municipalities (Drier, *et al.*, 2001). Meanwhile, the nearby ring communities have a strong property tax base and face a lower demand for social services, while at the same time its residents work in the central city and benefit from its economic activities and services (the so-called "free-rider" effect) (Orfield, 1998; Drier, *et al.*, 2001). These fiscal disparities greatly exacerbate the adverse effects of racial and economic segregation on homeless people and others living in extreme poverty in the central city.

In an example of an effort to redress this problem, state legislation in Minnesota, the Fiscal Disparities Act, mandates the sharing of commercial property tax between outlying, high tax base municipalities to central city municipalities to assist in the provision of social services. Enacted in 1971 by the Minnesota legislature, the plan pools 40% of the increase in all communities' commercial/industrial property valuation. All cities and townships keep their pre-1971 tax bases plus 60% of the annual growth. The pool is then taxed at a uniform rate and redistributed among all local government entities. Although this redresses some of the intra-metropolitan disparities, it does little to reduce the payoffs of "externalizing" social problems with tools like exclusionary zoning in typically more affluent communities. Moreover, the Minneapolis-St. Paul example depends on the existence of a strong regional-metropolitan level of governance, the Met Council, which although heavily studied (Orfield, 1998; Rusk, 1999; Katz and Bradley, 1999), is still a concept that is strongly resisted by homeowners' associations, gated communities, and affluent municipalities (McKenzie, 1994; Boudreau and Keil, 2001). An alternative solution is to create cities that encompass lower and higher income areas, rather allowing them to separate into different jurisdictions. In Toronto, Ontario, this was effectively accomplished through the amalgamation of five contiguous cities into a single urban entity, although the amalgamation was motivated by a desire to increase operating efficiency rather than concern regarding fiscal disparities (Boudreau, 2000).

## 4.0. THE EFFECTS OF HOMELESSNESS ON POPULATION HEALTH

Does homelessness have a sizeable effect on population health? This question raises a number of complex issues. Homeless people, especially those who are chronically homeless, tend to have poor health. However, homelessness is a temporary state, not a permanent trait. As many as 8 millions Americans experience homelessness over a five year period, but most of these episodes of homelessness are quite brief (Link, *et al.*, 1994). Thus, at any single point in time only a very small proportion of a city's population is without a home. Homeless people would therefore be expected to have a minimal impact on indicators of overall population health, such



as health status or mortality rates. Of course, this assumption may be incorrect in urban centers in the developing world, where extremely large numbers of people often live on the street or in encampments.

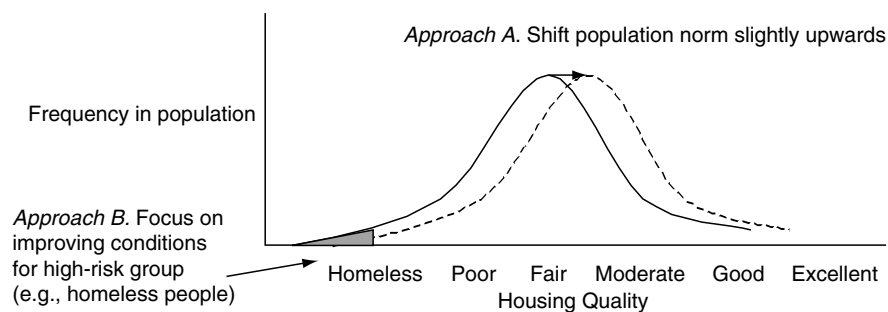
Some have suggested that homelessness may have an adverse effect on public health through the spread of infectious diseases, such as tuberculosis. Compared to the general population, homeless people are clearly at increased risk of developing latent tuberculosis, which is not infectious to others, as well as active tuberculosis, which can infect those who come in close contact with the individual. During tuberculosis outbreaks, shelter residents, shelter staff, and health care providers are at increased risk of becoming infected (Advisory Council for the Elimination of Tuberculosis, 1992a). To date, however, outbreaks of tuberculosis among homeless people have not spread widely within the general population. The threat of tuberculosis is therefore an important health problem for homeless people, but one that has demonstrated relatively limited potential to affect overall population health in urban areas.

The outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003 has raised the specter of rapid and uncontrolled spread of acute respiratory infections through the homeless population. The 2003 SARS outbreak in Toronto was almost entirely confined to travelers returning from abroad, health care workers, and their household contacts (Svoboda, *et al.*, 2004). No homeless person became infected with SARS. If this had happened, the large, transient, and difficult-to-locate shelter population would have made it almost impossible for Toronto public health officials to implement their core strategy of identifying and quarantining all "household contacts" of patients with SARS. Such a situation could have had devastating effects on efforts to prevent the outbreak from spreading into the city's general population. Given the threat of a recurrence of SARS or the possible emergence of other new and potentially deadly respiratory infections, infection control measures to deal with a severe acute infectious disease outbreak in the homeless population require serious consideration. Although this scenario is currently hypothetical, the potential implications for population health are considerable.

Homelessness may have major implications for population health, for reasons other than those discussed above. Emphasis on the direct impact of homelessness on population health may be misplaced. Instead, homelessness may be viewed as a sentinel event, a marker for dysfunction in multiple sectors including the housing market, job market, health care system, and social welfare system. Homelessness represents the extreme end of a larger distribution of socioeconomic status and housing status, and it attracts attention precisely because of its dire nature.

This conceptualization has been well-described in work by Rose (1985). As shown in Figure 1, the curve shown with a solid line represents the distribution of housing quality within a hypothetical population. Homelessness represents the extreme low point along the dimension of housing quality. This approach views one's housing situation as a continuum and avoids creating a simple dichotomy between being homeless and being housed. For the sake of this discussion, we assume that housing conditions have an impact on health, an assertion for which there is ample support (Fuller-Thomson, *et al.*, 2000; Krieger and Higgins, 2002). Figure 1 also illustrates two different approaches to improving health through improving housing conditions. The greatest effect in terms of population health may be gained through approach A (shifting the entire population distribution for the factor upwards slightly, to the distribution curve indicated by a dotted line) rather than approach B (focusing on improving conditions for the highest-risk

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**Figure 1.** The Distribution of Housing Quality within a Hypothetical Population, and the Effect of Two Different Approaches to Improving Health Through Improving Housing Conditions.

group at the worst extreme of the distribution). A similar argument could be applied to the relationship between poverty and health, where the x-axis on the diagram would represent income rather than housing quality.

The case of asthma is an excellent example of this dilemma. About 40% of children staying at homeless shelters in New York City have asthma (McLean, *et al.*, 2004a). Although this is a disturbingly high rate, the prevalence of asthma is also very high among inner-city children living in substandard housing (Malveaux and Fletcher-Vincent, 1995). Because homeless children represent a relatively small proportion of all children living in poverty in a given city, the population health effect of asthma among homeless children is likely to be far smaller than the population health effect of asthma in the much larger number of children who are housed but living in decrepit buildings. While homeless children are a distressing manifestation of urban poverty, they represent “the tip of the iceberg” of the broader issue of poverty and poor housing. Thus, the problem of asthma among homeless children may be regarded as an extreme example of a much larger population health concern that may be a more appropriate target for intervention.

### 5.0. POTENTIAL STRATEGIES TO IMPROVE THE HEALTH OF HOMELESS PEOPLE

A consideration of strategies to improve the health of homeless people raises the question of whether our first concern should be to attempt to deal with the problem of homelessness itself, or to intervene to relieve illness among homeless youths, single adults, or families. Of course, this is not an either/or proposition. Nonetheless, an excessive emphasis on the latter approach might result in producing healthier homeless people, yet fail to recognize that homelessness is the result not only of individual vulnerabilities, but also of deeper structural problems within our society. On the other hand, a focus on the former approach may founder on the assumption that providing homeless people with stable housing will necessarily improve their health.

An example of this tension is the emergence of two contrasting service delivery models to meet the needs of chronically homeless adults with concurrent mental illness and substance abuse (Tsemberis, *et al.*, 2004; Hopper and Barrow, 2003). The

first model, known as the “Continuum of Care,” attempts to move homeless people from the street into transitional congregate housing, in conjunction with a requirement that the individual engage in treatment for their mental illness and addictions. Under this model, the person is allowed to make the transition to permanent housing only after they achieve abstinence from alcohol and drugs and their clinical status has been stabilized. In contrast, the “Housing First” model is based on the belief that homeless people should be afforded permanent housing as a basic human right, not as a reward contingent on participating in treatment. In this model, homeless people can obtain housing in individual apartments without any preconditions, and they are then offered an array of harm reduction and treatment services through an ACT team (see section 3.5. above). A recent randomized controlled trial assigned 225 homeless adults with concurrent severe mental illness and substance abuse to one of these two approaches. Individuals treated under the “Housing First” model spent significantly less time homeless over the follow-up period, and at the end of 24 months about 80% were in stable housing as compared to only 30% in the “Continuum of Care” model. However, there were no significant differences between the two groups in terms of alcohol use, drug use, or psychiatric symptoms. This study highlights the need to acknowledge that ending homelessness is a worthwhile goal in and of itself, but that it is not synonymous with improving the health of homeless people.

Other strategies include adapting the health care system to better meet the unique needs of homeless adolescents, single men and women, or families. As discussed in Section 3.5 above, a cornerstone of this effort is the use of multidisciplinary teams providing coordinated care at outreach sites, in combination with more traditional clinic-based health care services. For homeless people with severe mental illness, the availability of ACT services is vital, but the effectiveness of less resource-intensive systems of mental health care for homeless people needs to be assessed. For those with addictions, the availability of detoxification beds, post-detoxification stabilization programs, and longer-term (6 to 12 month) residential addiction treatment programs are important issues. In designing these services, the heterogeneous needs of different subgroups of homeless people (e.g., street youth, single men, single women, and mothers with young children) must be taken into account.

While improving conditions at shelters is by no means the preferred route to better health for homeless people, it is important that shelters not contribute to ill health. Certainly, the availability of adequate capacity to accommodate everyone who seeks a shelter bed is a reasonable first step towards protecting homeless adults from the elements. Adherence to basic standards of cleanliness, nutrition, and food hygiene within shelters and the avoidance of overcrowding and inadequate ventilation are mandatory. Perhaps equally important is the creation of a safe and welcoming environment that encourages clients to engage with service providers.

At a broader level, interventions are needed to decrease the prevalence of homelessness and address the systemic issues that contribute to homelessness. These efforts may at least in some cases have health benefits as well. For homeless families, there is compelling evidence that the provision of subsidized housing is both necessary and sufficient to end their homelessness (Shinn, *et al.*, 1998). The “Housing First” strategy appears to be more effective in moving homeless people with concurrent mental illness and substance abuse into stable housing; further research is needed to examine the effectiveness of this approach with other subgroups of homeless people.

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Serious attention needs to be paid to the impact of the social welfare system on homelessness and health. Restrictions in eligibility for Temporary Aid for Needy Families and state-run welfare programs threaten to contribute to a potential rise in homelessness among families and single adults in coming years. Further research is needed in this area and on the impact of receipt of welfare or disability benefits on the health of homeless people.

Finally, upstream from the distinctive and visible issue of homelessness is the larger problem of urban poverty. The existence of entire communities and groups who are cut off from a decent education, employment opportunities, housing, and access to health care should raise extremely troubling questions for anyone who cares about the health of our urban centers. While the adverse health effects of homelessness are clearly severe, this phenomenon is only a specific and extreme example of the larger problem of the effects of poverty and inadequate housing on population health.

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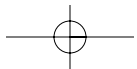
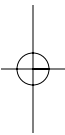
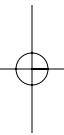
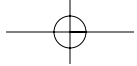
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