gan Alcoholism Screening Test (MAST) results in item-specific positive predictive values ranging from 50 to 94.3 percent.[8] In clinical practice, the usefulness of administering a review of systems in any form relates not only to the predictive value of a positive response to a single question (eg, noted by Verdon and Siemens to be 3.3 percent) but to the cost of administering and reviewing the screening questions. This cost is not addressed anywhere in this study.

The study by Verdon and Siemens is important, not so much for its conclusions but for the larger issue it raises regarding the cost utility of specific components of the history and physical examination. As the cost, which is measured in provider time, of administration and charting increases, clinicians will have to focus far more on the "bang for the buck." Given recent trends in primary care delivery and provider supply, one speculates that this bang will need to be far more audible to family physicians if the review of systems, as it is taught in medical schools, is to remain an integral part of medical history taking.

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Homelessness and Health

Homelessness has reached crisis proportions in the United States. An estimated 600,000[1] to 3 million[2] persons are currently without a home. The crisis is much worse, however; nationally 14 percent of the US population (26 million persons) have been homeless at some time in their lives, and 5 percent (8.5 million) have been homeless within the past 5 years.[3] Not since the Great Depression have such large numbers of homeless persons and such a broad cross section of society been represented.[4,5]

Casual observations of homeless persons reveal that they are burdened with mental health, substance abuse, and physical health problems. Because of high rates of infectious diseases in this population, they have the potential to spread diseases such as tuberculosis to other homeless persons and the general population. Planning for appropriate and effective health services for homeless persons requires attention to the unique characteristics of the homeless population in terms of health status, barriers to obtaining and adhering to prescribed medical care, and integration of housing and health services.

The increased risk for illness among homeless persons compared with the general population is due to a variety of factors. Persons can become homeless because of a physical or mental illness, and homelessness itself can lead to physical and mental disability. Homeless persons are subject to the same risk factors for physical illness as the general population, but they are exposed to higher levels of such risks as well as additional risk factors unique to homelessness: the excessive use of alcohol, illegal drugs, and tobacco; sleeping in an upright position (resulting in venous stasis and its consequences); extensive walking in poorly fitting shoes; and inadequate nutrition.[6] Furthermore, homelessness itself is physically dangerous; being without a home places a person

Submitted, revised, 24 October 1996.

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at risk for victimization and increased exposure to the elements.

One third to one half of homeless adults and children have some form of physical illness,[1,7-9] preventing some from surmounting their predicament.[10] More important, rates of mortality are three to four times higher in the homeless population than they are in the general population.[11-15] Inadequate immunization of homeless children reflects the lack of preventive health care in this population.[9,16,17] Among the more overt identifiers of poverty in the United States is poor dental health, which is a major health problem reported by homeless persons.[18] Ten percent of homeless clinic patients have been found to have poor dental health, a rate 31 times that found in the general population.[11]

Contagious diseases, such as tuberculosis[6,11,19] and infection with human immunodeficiency virus (HIV),[19,20] are more common among the homeless than the general population. Morrow and colleagues[21] in this issue of *JABFP* address a pertinent issue: does anergy testing need to be performed when screening homeless persons for tuberculosis? Homeless clinic patients tested for tuberculosis with the purified protein derivative (tuberculin) (PPD) Mantoux skin test were also tested for anergy status with three antigens. Only 5 percent of the 100 patients were found to be anergic, all of whom were HIV positive, but none had abnormal findings on a chest radiograph. The findings support the use of PPD skin testing alone, without determining anergy status, for detecting tuberculosis exposure in homeless persons. A recent study also supports these findings.[22] The finding that anergy could not be reliably determined with commonly used tests caused the authors to recommend that decisions regarding preventive therapy for tuberculosis among HIV-positive persons should not be based on anergy testing.

Homeless women are severely lacking in women's health services ,[23] and pregnancy and recent births are risk factors for becoming homeless.[24] Ninety-five percent of homeless women are sexually active,[25] yet 72 percent do not use birth control (Gelberg L, Linn LS, unpublished data, 1985). Less than 10 percent of homeless women use condoms despite lifestyles that place them at great risk for acquired immunodeficiency syndrome (AIDS) and other sexually transmitted diseases (Gelberg L, Linn LS, unpublished data, 1985).[26,27] In addition, more than 20 percent of homeless women have not had a Papanicolaou smear in the past 5 years (Gelberg L, Linn LS, unpublished data, 1985) compared with less than 9 percent of women in the general population.[28] This statistic is alarming given that 23 percent of homeless women who use family planning clinic services had abnormal Papanicolaou smear results.[29]

Regarding homeless women's obstetric history, 74 percent have had children,[26,30] and 54 percent are currently at risk for unintended pregnancy[26]; however, nearly three quarters do not have their children living with them.[26,30] Homeless women are more likely to be pregnant (11 percent of homeless adults, 24 percent of 16- to 19-year-old homeless youth) than their poor, but housed, peers (5 percent).[31] In addition, these women are more likely to receive inadequate prenatal care than poor but housed women (56 versus 15 percent).[31] It follows that homeless women are more likely than impoverished housed women to have poor birth outcomes[11,23,26,32] (16 versus 7 percent have low-birth-weight newborns).[31] In New York City, infant mortality was highest among homeless women (24.9 per 1,000 live births) compared with poor housed women (16.6 per 1,000 live births) and nonpoor housed women (12.0 per 1,000 live births).[31] In Great Britain, homeless women had higher rates of premature births (11 versus 7 percent of the general population), whereas their rates of infant mortality were the same as those of housed women.[32]

The media have made the public aware of the pervasiveness of mental illness among the homeless population and their desperate need for effective mental health treatment. One third of homeless adults suffer from a major mental illness,[23,33] one third have a substance abuse disorder,[23,33-35] and 12 percent have a chronic mental illness and a chronic substance abuse disorder.[11,33] The latter group poses a challenge to those developing services that will successfully address both mental illness and substance abuse simultaneously.[11,33]

A Hawaiian study found that the age- and sex-adjusted acute care hospitalization rate for homeless persons was 542 per 1000 person-years as compared with the general population rate of 96 per 1000 person-years. Homeless persons were admitted to acute care hospitals for 4766 days

compared with a predicted 640 days, resulting in excess hospitalization costs of $2.8 million.[36] Despite having higher rates of disease and medical hospitalization, the homeless are in fact less likely than the general population to use medical outpatient services. Fischer et al[37] found that whereas only 24 percent of the homeless had used outpatient medical services during the preceding year, 43 percent of the general population had made such a visit during the same period. Furthermore, the majority of homeless adults stated that they did not obtain needed medical care in the previous year,[10,38] suggesting that the homeless might delay seeking medical attention at a stage when more severe illness could be prevented.

The above data on homeless persons' patterns of health services utilization reflect inappropriate health care delivery. The high rates of hospitalization in this young population means that inpatient care is being substituted for outpatient care as a result of poor access to ambulatory services. This poor access is due to individual factors (eg, competing needs, substance dependence, and mental illness) as well as system factors (eg, availability, cost, convenience, and appropriateness of care).

Heffron and colleagues,[39] in an article in this issue of the *JABFP*, found that homeless patients were more likely than county indigent patients and private patients to report mental illness, substance abuse, childhood instability, limited education, and manual or unskilled vocational experiences. Their findings are supported by published studies.[33,40-43] When comparing the health of patient populations, differences in health status based on housing status might be due to differences in background characteristics, such as demographic and family characteristics. For example, in one study, after controlling for differences in background factors, housing status among indigent patients was no longer associated with rates of substance abuse.[44]

So, where should we focus our efforts to improve the health of homeless persons? The Health Care for the Homeless Program has provided accessible, continuous, comprehensive, appropriate, and sensitive care to homeless persons. Research has shown that homeless patients who receive care from such a model program, which is designed to address their special needs, will return for follow-up visits and will utilize services at least as much as low-income domiciled patients.[45] Only 157 clinics are funded by the Health Care for the Homeless Program, however, and these facilities provide for only 50 percent of homeless persons in their communities.[46] Thus, one basic starting point in addressing the health care needs of homeless people is to stabilize and increase the amount of funding for this excellent program.

Access to dental care is urgently needed by homeless persons as well as other impoverished groups in our country,[47] and vision care is also lacking. Great efforts must be made to address the family planning and prenatal needs of homeless women. Without attention to health care, these women will be creating a second generation at risk for poverty and homelessness. Mental health professionals are badly needed in health care facilities that provide care for homeless persons. Research is needed on how to integrate support groups such as Alcoholics Anonymous and other substance abuse treatment programs into primary care health centers that treat homeless patients.

Convalescent facilities should be available so that homeless persons, after receiving medical, surgical, or obstetric care, are not discharged from outpatient settings or hospitals to the streets when their recuperation requires running water, a bed, refrigeration, or proper nutrition.[48] Such respite care would ensure that homeless persons receive the care most others with homes and families receive routinely,[49] would help homeless persons avoid rehospitalization, and would reduce their in-hospital stays. It is likely that the chronically mentally and physically ill or disabled would rapidly fill up respite care facilities. Consequently, long-term public housing is needed for the chronically ill, including housing to treat homeless persons with tuberculosis, severe mental illness, and substance abuse, as well as hospice facilities for those with such terminal illnesses as AIDS.

Medical education reform toward a more humanistic and primary care model will, it is hoped, create a cadre of medical providers who are trained to care for vulnerable populations, such as homeless persons. Fifty percent of the Health Care for the Homeless clinics funded by the McKinney Act report that they have difficulty recruiting physicians.[46] Perhaps medical education reform will ameliorate some of the major physician recruitment barriers experienced by these clinics: poor working conditions, inadequate sala-

ries, physician bias against working with homeless patients, and lack of respect this work now receives from the medical profession.[46]

Because most of the care for homeless patients is provided in emergency departments rather than in special clinics for the homeless, medical school, residency, and fellowship programs must educate their medical and surgical trainees to appreciate their patients' housing and poverty status. "It is thus essential that those delivering health care to homeless persons carefully consider how their usual procedures and advice will be heard and experienced by those who do not have a home."[50] Appropriate models of clinician training must be developed that can be replicated in the community.

Jahiel,[51] who carefully summarized the urgency for health services research that addresses health care for the homeless population, encouraged studies of access, cost, organization, and quality (structure, process, and outcomes). Furthermore, health care, housing, and social service providers must address prevention, diagnosis, and treatment of illness among homeless populations.

Perhaps of greatest concern is that our nation seems to accept homelessness, as it does violent crime, as just another negative aspect of modern life.[52] As a nation, we should not limit our treatment of homelessness to physical health, mental health, and substance abuse problems of the population. We must change our nation's attitudes toward and treatment of the poor as well as address the nation's policies governing welfare and housing. We need to focus our attention not only on ameliorating or managing mass homelessness, but on ending it.

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