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A Novel Strategy for Counting Persons Experiencing Homelessness and Describing Their Health Outcomes in New Mexico Healthcare Facilities - 2019-2023

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INTRODUCTION

Homelessness is an important health topic that has not been well described in standard New Mexico public health reporting. Studies have found that persons experiencing homelessness (PEH) have shorter life expectancy and are more likely to die due to preventable causes of death, including drug overdose, suicide, and cold-related illness.[1-5] Some infectious disease outbreaks in New Mexico have been associated with homelessness, including hepatitis A and shigella.[6-8]

Defining homelessness and capturing homeless-related events in health surveillance systems is a pervasive challenge. The annual Department of Housing and Urban Development Point-In-Time (PIT) count has been the primary source of estimating the homeless population and is considered to be an undercount of PEH.[9,10] To assess the count of PEH and their health outcomes within New Mexico's healthcare system, an analysis of the address field, discharge diagnosis, chief complaint, and triage notes was conducted in records from 2019 to 2023 in the New Mexico Syndromic Surveillance Program (NM-SSP). Comprehensive public health approaches that address infectious disease, environmental health, drug overdose, suicide, and injury should include strategies to support PEH, prevent homelessness, and promote stable housing.

What is already known about this topic?

Homelessness is associated with preventable death, injuries, and illness. Safe and stable housing is a key social determinant of health.

What is added by this report?

Patient records from New Mexico hospitals indicated 30,882 patients experienced homelessness from 2019 to 2023. Among 488 unhoused patients with a record indicating death, 25 records indicated a firearm injury, 17 indicated a cold-related illness, and 14 indicated a motor vehicle crash often with a pedestrian.

What are the implications for public health practice?

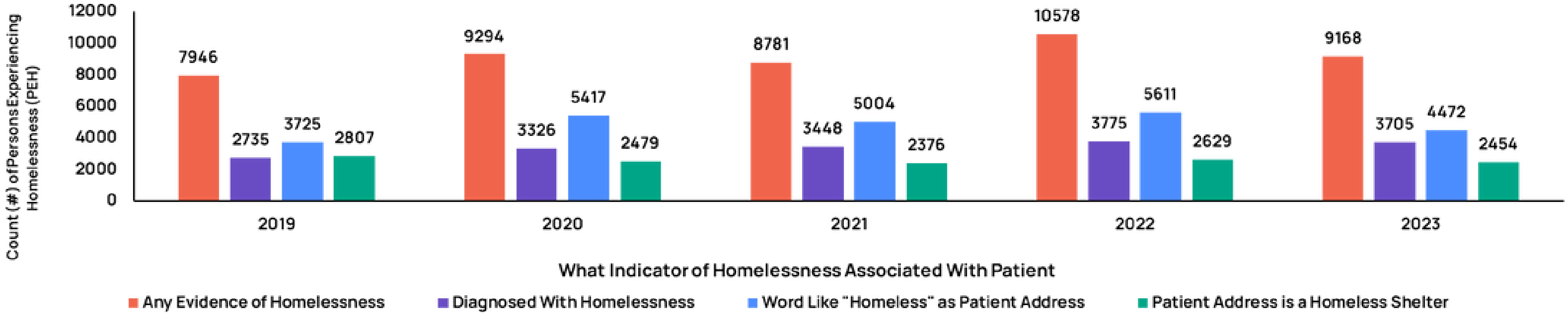
Near real-time analysis of health and homelessness is possible. Standard routine surveillance of homelessness-associated health outcomes should be conducted to inform prevention activities.

METHODS

The NM-SSP contains visit records from hospital facilities statewide excluding federal facilities (e.g., Indian Health Service, Veterans Affairs) and some urgent care and outpatient records. A minimum of 80% of non-federal hospital facilities have reported data since 2019. NM-SSP data (n=9,784,361) from 2019 to 2023 were assessed to identify homeless-related records in an initial exploratory analysis. Homeless-related records (n=54,067) were initially identified if the visit had an ICD-10-CM diagnosis code for homelessness (Z59.0), inadequate housing (Z59.1), or housing instability (Z59.81) or if the record address contained the word "homeless". The Link King software was used to create a person level identifier for every patient in NM-SSP data with a homeless-related record. Common addresses were reviewed among these PEH. If an address was used by two unique individuals and determined to be associated with homelessness through web search, the address was included in the search criteria for the final analysis. These 152 addresses included shelters, homeless services providers, hotels, court/detention center addresses, and post office boxes associated with homeless shelters and homeless serving agencies.

The final search criteria used to identify homeless-related records in the NM-SSP included: homeless-related ICD-10-CM diagnosis codes [Z59.0, Z59.1, Z59.81, Z59.89, or Z59.9], the words "homeless", "unhoused", "unsheltered", "transient", or "general delivery" in the record address, the words "homeless" or "unhoused" in the chief complaint, clinical impression, or triage notes fields, and the homeless-related addresses identified in the initial analysis. 116,652 visit records were identified using the final query to create a PEH subset. The Link King software was used to create a person-level identifier for the PEH subset (unique persons= 30,882).

Figure 1: Count of Unique Patients by Year and Category of Homeless Indicator
New Mexico, 2019-2023



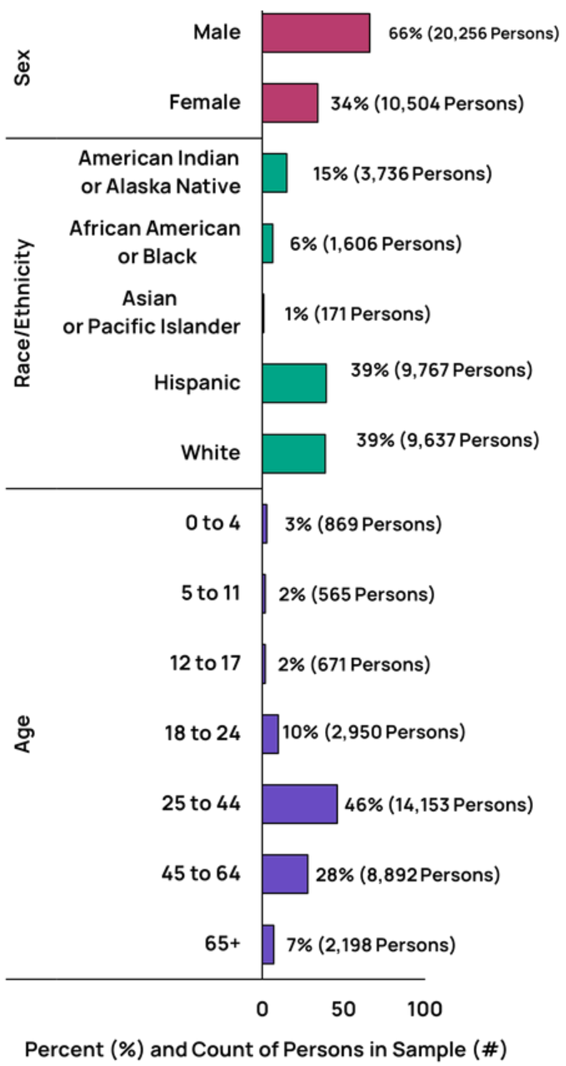
To access a more complete visit history for these patients including records with no indication of homelessness, the PEH subset was linked back to the complete NM-SSP dataset resulting in an additional 245,433 visit records. Visits were aggregated by patient identifier for analysis. Visits were only included in analysis if they occurred between the first and last instance of a homeless-related record (n = 182,689). These data were assessed to determine demographics, comorbidities, and emergency department utilization among PEH. ICD-10-CM diagnoses were combined into categories following the Clinical Classification Software Revised (CCSR) system.[11] Data linkage and preparation were performed using The Link King and SAS 9.4, and descriptive statistics were generated using R.

RESULTS

From 2019 to 2023, 30,882 unique patients had at least one record indicating homelessness and 182,689 visit records for an average of 5.9 visit records per PEH. Some patients had visits in multiple years. The count of unique PEH by year ranged from 7,946 in 2019 to a peak of 10,578 in 2022 (Figure 1). The counties with the highest count of unique PEH over the five-year period were Bernalillo County (n=18,611, 60% of total PEH), Santa Fe County (2,052, 7%), Doña Ana County (1,792, 6%), and San Juan County (1,479, 5%).

Among 30,882 PEH, 66% were male (Figure 2). By race and ethnicity categories, 39% of the identified PEH were Hispanic, 39% were White, 15% were American Indian/Alaska Native, 6% were Black/African American, and <1% were Asian/Pacific Islander. The American Indian/Alaska Native population were disproportionately represented in this subset, particularly considering NM-SSP data do not contain Indian Health Service facility data. The Black/African American population were also disproportionately represented. The disparate representation likely indicates many structural and historical health inequities impacting these populations and leading to higher rates of homelessness. The age distribution of PEH in this study skewed toward the middle-aged group 25-44 years (46%). Additionally, 869 infants and children under age 5 (3%) were identified among this cohort.

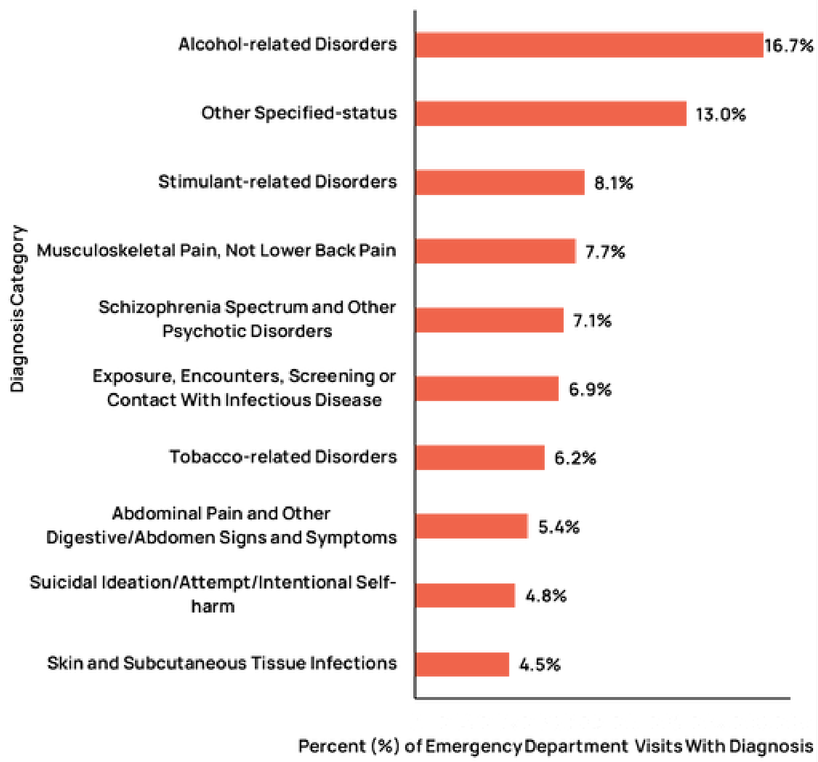
Figure 2: Persons Experiencing Homelessness by Sex, Race/Ethnicity, and Age
New Mexico, 2019-2023



When limiting to emergency records, 91% (n=28,115 unique persons) of the PEH had at least one emergency visit (n=159,124 visits). Excluding the diagnosis of homelessness (Z59.0), the most common ICD-10-CM diagnosis codes associated with these emergency visits were: alcohol abuse with intoxication, unspecified (F10.129), suicide ideations (R45.851), contact with and suspected exposure to COVID-19 (Z20.822), other stimulant use, uncomplicated (F15.10), and nicotine dependence, cigarettes, uncomplicated (F17.210). There was an average of 5.7 emergency visits per PEH over the five-year period. Among the PEH with an emergency visit, 55% only had one emergency visit, 12% had 10 or more emergency visits, and 0.5% (149 PEH) had 100 or more emergency visits. Although they were only 0.5% of all PEH who visited the emergency department, these 149 patients had a combined 26,074 emergency visits (16% of all included emergency visits).

Figure 3: Common Diagnosis Categories

Emergency Department Visits, New Mexico, 2019-2023

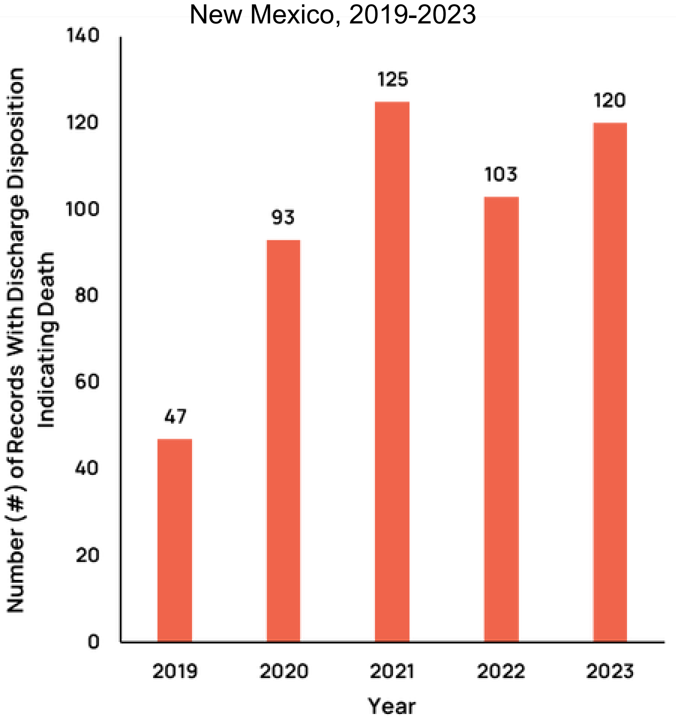


When looking at broader diagnosis categories from CCSR, excluding socioeconomic and psychosocial circumstances which contains the homelessness diagnosis, the top comorbidity categories of all emergency visits were: alcohol-related disorders (17%), other specified status which includes long-term drug therapy and patients leaving without being seen by the healthcare provider (13%), stimulant-related disorders (8%), musculoskeletal pain not including lower back pain (8%), schizophrenia spectrum and other psychotic disorders (7%), and exposure, encounters, screening, or contact with infectious diseases (7%) (Figure 3). It was also found that diagnosis of shigellosis among these visits aligned with the previous reported outbreak with more visits occurring from 2021 to 2023.[7,8]

Among 30,882 PEH, there were 455 persons who had at least one diagnosis related to pregnancy in 1,018 visits. In analysis not limited to visits between the first and last homeless indication, 1,040 PEH were found to have an indication of pregnancy.

Figure 4: Record Indicates Patient Died

New Mexico, 2019-2023



While the pregnancy might not have occurred during the time their records indicate homelessness, this finding indicates additional supportive housing needs for families during a vulnerable life stage.

A discharge disposition indicating death was present in 488 visit records, and a discharge disposition indicating transfer to hospice care was present in 399 visit records. Among the PEH with records indicating death, the mean age of death was 52 years, and the range was 19 to 88 years. The number of deaths per year ranged from 47 deaths in 2019 to a peak of 125 deaths in 2021 (Figure 4). The most common ICD-10-CM diagnosis codes associated with visits indicating death were cardiac arrest (30%), acute kidney failure (25%), acute respiratory failure with hypoxia (17%), severe sepsis with septic shock (12%), and COVID-19 (8%). There were 25 PEH who died where the visit record indicated a firearm-related injury, 17 PEH who died of a cold-related illness (i.e. frostbite, hypothermia, cold exposure), and 14 PEH who died where the record indicated a motor vehicle crash (79% of these records indicated the PEH was a pedestrian struck by a vehicle).

DISCUSSION

Housing and health are connected.[12,13] Homelessness is a cross-cutting issue that is a key risk factor for many public health issues. A person with poor health might be unable to work or more likely to lose their job leading to financial instability and unstable housing, and a person without stable, clean, and safe housing will be more likely to experience negative health outcomes. 30,882 PEH were identified over the five-year period, with an average of 5.9 visit records per PEH. Comorbidities that were commonly found among their visits included alcohol-related disorders, stimulant-related disorders, musculoskeletal pain, schizophrenia, and infectious diseases. These findings bolster understanding of homelessness in New Mexico and demonstrate that statewide healthcare system data can be used to report homelessness and its comorbidities. This analysis found 2-4 times more PEH each year than the official count of homelessness in New Mexico, the annual PIT count.[10] Findings from this study indicate that PEH are at risk of infectious disease outbreaks, violent injury deaths, and frequently experience chronic health concerns like chronic pain or schizophrenia. Comprehensive public health approaches that address infectious disease, environmental health, drug overdose, suicide, and injury should include strategies to support PEH, prevent homelessness, and promote stable housing.

There are some limitations to this analysis. Federally funded healthcare facilities including those operated by Veterans Affairs or Indian Health Service are not included in NM-SSP and not all facilities consistently use an ICD-10-CM diagnosis code of homelessness. These data likely represent more severe cases on the spectrum of housing support needs as the majority of records included in NM-SSP are emergency visits, and individuals might not be screened for housing needs routinely. These data might not represent persons in precarious housing situations or persons who are not obviously homeless. Estimating deaths from the disposition field is not reliable and should not be used as a replacement for vital records data.

RECOMMENDATIONS

This analysis provides an initial blueprint of how homelessness data can be incorporated into routine public health surveillance through analysis of patient address fields and ICD-10-CM diagnoses. The New Mexico Department of Health would benefit from supporting a program or staff to regularly report on homelessness health outcomes. Promoting screenings for housing support needs and the utilization of Z codes among hospital facilities would increase the ability of the Department to monitor this important public health issue. Homelessness should be a routine part of public health surveillance as health is intrinsically connected to housing. Activities which support safe and stable housing as a social determinant of health, such as permanent supportive housing and housing first models, are promising public health strategies.[14] During the 2025 New Mexico Legislative session, the governor's executive budget request included appropriations to create a new Office of Housing to address the cost of housing and support local governments in addressing homelessness and to provide additional funding to the Health Care Authority to address medical respite for homeless individuals. Routine public health data analyses can contribute to broader assessments of homelessness in New Mexico in order to support informed policy making and health promotion activities.

Why is Reporting Homelessness Data Challenging?

There are few data collection standards for homeless mortality or morbidity. Population estimates like the U.S. Census do not include persons living on the street in their estimates. Public health data sources such as New Mexico death certificates do not include a measure of homelessness or housing stability.

Learn more about this issue - **National Health Care For the Homeless Council: Homeless Mortality Data Toolkit**

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