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Factors Leading To Emergency Departments (EDS) Usage In California

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Abstract

The frequent use of health services through emergency department (ED) visits and inpatient hospitalization is a major risk factor for homelessness resulting in poor health and early death, especially in California. In Los Angeles County, ED visits are one of the highest financial expenses in the healthcare system for both patients and providers. California's Medicaid program, Medi-Cal, plays a role in LA County, contributing to repeated ED visits, which can suggest deeper systemic issues like poor access to preventative services or individuals' behaviors to choose to delay care. The data analyzed was from the California Health Interview Survey (CHIS), which is the largest state-level health survey in the nation that offers detailed data around health insurance coverage, access to care, health behaviors and other influencing factors. SPSS was utilized to explore various factors associated with ED visits and the statistical analysis conducted using SPSS provided valuable insights into the relationships between adults with limited or no insurance coverage and the number of Ed visits. SPSS analysis of CHIS 2023 data shows emergency department (ED) use among Los Angeles adults across insurance status, age, race, and income groups. The overall ED use rate for insured individuals is approximately 14.3%, while the uninsured group has an ED use rate of about 10.7%. A few other factors were considered, including but not limited to housing instability, mental health issues, and chronic diseases.

Keywords: Emergency rooms, Emergency departments, Homelessness, Chronic Diseases, Substance abuse disorders, Mental Health Conditions

Introduction

The frequent use of health services through emergency department (ED) visits and inpatient hospitalization is a major risk factor for homelessness resulting in poor health and early death, especially in California. Homeless people's existing health conditions do persist and are less likely to seek necessary health care compared to those who are not experiencing homelessness. Understanding the housing status of Medi-Cal (Medicaid) managed care plans (MCPs) can require the use of different data sources to better understand the housing status of their members; understanding the status of Medi-Cal members could support MCPs' population health management strategies and connect members to appropriate supports to meet their health care housing needs **[16]**.

California experienced a 3.8% reduction in emergency department facilities between 2021 and 2022; however, the utilization rate increased by 7.4% during the same period, and emergency department visits that ended in hospital admission increased by 12%. Homelessness is considered the most severe demonstration of housing insecurity that is also associated with adverse health outcomes. In a national survey, about 44% of homeless individuals rated their health as poor or fair compared with just 12% of the general population in the U.S.; the homeless older adult population in California is estimated to have an age-standardized mortality rate of 3.5 times higher than the general population **[22].**

According to de Sousa, et el., (2023), over 653,000 people experienced homelessness in the U.S. on a single night in 2023 and more than 1.2 million people in the U.S. spent at least one night in an emergency shelter or transitional housing program in 2021. Unstable housing and homelessness exacerbate adverse and inequitable health outcomes and individuals experiencing homelessness are at greater risk of chronic diseases, infectious diseases, injury, and disability leading to increased acute hospital visits and emergency department morbidity and mortality. Even though housing has become a social determinant of health, housing status is infrequently addressed when creating care plans. This has become an issue because it has been shown that reliable, accurate, and timely identification of those at risk of or currently experiencing homelessness is vital for effective interventions and safe discharge **[6].**

According to Routhier, et al., (2023), Housing insecurity takes multiple forms such as unaffordability, crowding, forced moves, multiple moves, and homelessness. Existing research has linked homelessness to increased emergency department use, but gaps remain in understanding the relationship between different types of housing insecurity and emergency department use; homelessness was associated with a higher mean number of emergency department visits in the year post-baseline and other measures of housing insecurity (unaffordability, crowding, forced moves, and multiple moves) were not associated with greater emergency department use in the year post-baseline in multivariable models. The reason for

emergency department visits among people experiencing homelessness includes a high prevalence of health needs, and barriers to other forms of care **[22]**.

Emergency departments present a unique and valuable resource for providing low-barriers, rapid access to needed health care; however, policymakers' insurers, and health systems have expressed concerns about high rates of emergency department use. Little is known about the relationships between non-homeless forms of housing insecurity and emergency department use, despite evidence that emergency department patients have high rates of housing insecurity. A small number of existing studies have found associations between unstable housing and increased acute care use, including diabetes-related emergency department use. However, there is no standardized definition of housing insecurity, and therefore it has been measured in a variety of ways spanning unaffordable housing, household crowding, frequent and/or forced moves (including evictions), and poor housing quality. A significant portion of renters in the United States experience simultaneous manifestations of housing insecurity of varying degrees of severity; therefore, homelessness can be understood as the most severe form of housing insecurity and can also present in different ways, including sheltered or unsheltered, with each presenting unique challenges relating to health, such as navigating shelter rules (which may include curfews, bed access, and medication storage policies), seeking cover from the elements, and facing risks of victimization. As with the broader concept of housing insecurity, clear and consistent definitions of homelessness are lacking in much research on homelessness and health outcomes, according to Routhier, et al., (2023).

Emergency department utilization is a significant financial and operational strain in healthcare. Emergency care is often more expensive than outpatient care or urgent care services. Repeated emergency department visits increase this cost significantly contributing to healthcare expenditure. The cost of a visit can become the biggest burden for uninsured individuals, resulting in medical debt or bankruptcy. The cost of a visit for insured individuals might not impose the same financial burden, leading to reliance on emergency room services when geographic, staffing, or scheduling barriers limit their access to routine outpatient care **[14, 20]**.

Emergency rooms (ERs) serve as a critical resource to the access of care, especially in highly populated regions like Los Angeles County. The California Health Interview Survey (CHIS) 2023, approximates that 8.4% of uninsured adults in LA County reported visiting the emergency department in the past year, compared to 20.1% of insured adults. While it may be expected that uninsured individuals would rely more heavily on emergency services due to their limited access to routine care, this data suggests a more complex relationship between emergency department use and insurance status **[23].**

A major contributor to emergency department overutilization comes from preventable visits. In LA County, it is estimated that 30-40% of emergency department visits are considered preventable using primary care or urgent care **[1]**. These expenditures on preventable emergency department visits redirect financial support away from non-preventable emergencies, such as traumas and life-threatening cases, including heart attacks and strokes **[1]**. Emergency department utilization is complex with multiple areas of influence through insurance coverage, sociodemographic factors, and healthcare access challenges. Public and private insurance expands nominal access, but the quality and timeliness of that access remain a critical influence in emergency department use. The Andersen Behavioral Model remains a useful framework for addressing predisposing, enabling, and need factors that can be difficult to extract from data. LA County residents can be categorized by their needs. This is how they perceive themselves and feel about their health. Additionally, how they are evaluated based on clinical diagnosis. For example, individuals may experience symptoms they perceive as urgent, or symptoms related to an unmanaged chronic illness as urgent and are more likely to seek emergency department care **[19].**

By 2023, the Housing for Health Fund (HFHF) supported more than $2.7 billion in total development costs which translates to the preservation of 7,167 units of housing **[10]** . This project highlights the variety of funding sources and stakeholders that must work together to create affordable housing opportunities while being driven by housing-related incentives. Building housing and health equity was a major decision-driver for Kaiser and other stakeholders involved in the Housing for Health Fund (HFHF). Kaiser noted that housing is recognized to be a social determinant of health and addressing housing instability is a wise foundation to invest into for both improving health outcomes and curbing healthcare costs in the future. Nevertheless, there is no peer-reviewed assessment of the success of the HFHF in curbing healthcare costs directly; therefore, the return on the initial investment is not clear beyond equity gains **[10]**.

Purpose Statement

The purpose of this research is to determine the rate of usage of emergency departments in California by the various ethnicities comprised of adults with limited or no insurance coverage. In Los Angeles County for example, emergency department visits are one of the highest financial expenses in the healthcare system for both patients and providers.

California's Medicaid program, Medi-Cal, plays a role in Los Angeles County contributing to repeated emergency department visits, which can suggest deeper systemic issues such as poor access to preventative services or an individuals' choice to delay care. Higher emergency department utilization in uninsured groups from specific regions can reflect inequities in that region. This can result from poor access to preventative care, social determinates of health, and racial and ethical disparities. These inequities are present in both

uninsured and insured groups. Those insured with Medi-Cal may face these same challenges causing them to rely on Emergency Room (ER) services for care. This highlights the importance of universally appropriate methods that allow accessible outpatient care **[25].**

There are many factors leading to increases in volume and severity of emergency department usage including: increasing prevalence of chronic disease, an aging demographic, limited access to primary care, convenient healthcare access for the uninsured, Medicaid expansion, growing reliance on safety-net healthcare **[4].**

Strategies for reducing emergency department use are equally varied and can either be emergency department led or strategies outside of the healthcare setting. However, a significant body of research shows that a substantial proportion of treatment provided in emergency departments can be treated outside of the emergency department in different healthcare settings **[18]**. This has led to more focus on identifying and managing the smaller number of patients who frequently use emergency departments. Patient populations in this area include populations with elevated levels of chronic disease prevalence, multiple chronic diseases, and older adults who more frequently are managing chronic conditions. Furthermore, frequent users of emergency departments only account for between 4.5-8% of emergency department patients but account for 21-28% of all emergency department visits **[18]**.

This frequency of utilization has been noted and numerous different strategies to address these conditions have been studied throughout the years, but there is no standardized approach to fixing this pervasive problem. Education, patient navigators, referrals, and primary care are all different approaches used by Health Care Organizations (HCOs) to address overutilization, but there is no clear winner among the different strategies. There have also been interventions in the emergency departments (which seem to be preferred by emergency department staff seeking to reduce utilization) which include risk assessment, clinician-lead intervention, screening tools, and case care management that is integrated into the emergency department **[18].**

Problem Statement

Factors such as unstable housing have become a significant nationwide problem as millions of Americans suffer in a variety of ways, including substandard living conditions, frequent relocations, and temporary homelessness, all of which are forms of unstable housing beyond homelessness. Poor housing quality negatively impacts health outcomes and increases the frequency of emergency department visits through a variety of pathways including exposure to mold, pests, and structural inequity. Other factors include overall housing instability, affordability, and neighborhood context, all of which also affect health outcomes in patients **[24].**

California's extended network also presents gaps to access, which the data shows through ER utilizations even in those with insurance coverage. These individuals might struggle to access and receive care that fits their sociodemographic needs. This results in a higher percentage of ER visits used as a safety option for both urgent and non-urgent medical needs **[23]**. Medi-Cal recipients are insured but struggle to find providers who accept their plan or available resources for primary care, leading them to rely on emergency department services **[25]**. Uninsured residents often face the most barriers to access care, causing a delay in treatment, conditions to worsen and an increase in complication rates **[15]**.

Significance Statement

Differences in insurance coverage continue to shape healthcare access and affordability across the United States. Even among the insured, cost-sharing, high deductibles, and network limitations lead many to delay or avoid necessary care **[8]**. Publicly insured individuals, such as Medi-Cal enrollees, often report lower access to primary and specialty care compared to those with employer sponsored plans **[5]**. These access gaps, combined with the rise of underinsurance, leave many patients vulnerable to financial strain and unmet medical needs **[21]**.

In Los Angeles County, one out of 10 adults is uninsured, leading to emergency departments becoming a vital resource for those who are uninsured or facing healthcare access barriers. Healthcare administrators view high ER volume as a cost burden and a strain on hospital resources. It is also a sign of insufficient adequate resources and support systems (American Hospital Association, 2023). Public health policy makers use these findings to increase or decrease investments in telehealth, community clinics, and non-emergency programs in specified regions as an effort to reduce preventable visits and improve access **[7]**.

Increased duration with housing insecurity can also lead to increased severity of self-reported poor health outcomes, chronic disease, and riskier health behaviors in Americans. Current research highlights how housing instability may be increasing the severity of other health issues that are already present and thus leading to increased healthcare utilization for those health issues instead of being the driver for utilization on their own. Public health at the national level is an increasing area of focus and the impact of housing is part of the growing interest. The federal government also recognized the importance of the link between housing and healthcare utilization through the Centers for Medicare and Medicaid services by mandating data collection on social determinants of health starting in 2025; while CMS has identified homelessness as a factor of increased healthcare utilization **[3]**. Despite efforts to expand coverage, barriers to care remain widespread. Understanding how different insurance types affect real-world access is essential to improving not just coverage rates, but actual care delivery. As healthcare systems and state agencies continue to evaluate the value of public and private insurance models, updated, population-specific findings are needed

to inform efforts toward more equitable and effective access **[12]**.

Conceptual Framework

This research draws on Andersen's Behavior Model for Health Services Utilization to examine the complex factors influencing emergency department utilization among adults in LA County. There are three key factors of the model that help organizational healthcare utilization. First, predisposing factors such as demographics and health beliefs. Second, enabling resources such as insurance status and access to healthcare providers. Finally, needs such as perceived or actual illness make up the third factor **[2].** Leifheit, el.al., (2022), argue that housing insecurities result from clear, inequitable policy choices that have further deepened health inequities. Furthermore, they conclude that structural policy change is the most critical tool for alleviating housing insecurity in the US.

This research was grounded in the understanding that health insurance plays a central role in shaping whether individuals can access and afford necessary medical care. Insurance not only affects whether people can pay for services, but also whether providers are willing to accept them as patients **[13]**. These dynamics reflect broader patterns in healthcare access, in which both financial resources and the structural features of the healthcare system influence service use. This aligns with the idea that access is shaped by a combination of individual characteristics, available resources, and the perceived need for care.

Research Methods And Design

The California Health Interview Survey (CHIS) is the largest state-level health survey in the nation that offers detailed data around health insurance coverage, access to care, health behaviors and other influencing factors. CHIS is vital as it has been used to create informed policies, track health disparities, and become an influencing factor in decision making for health care organizations and affiliate healthcare entities. Using CHIS, regions like LA County can be directly addressed by researchers to identify issues and those most at risk in the area **[23]**. Currently, CHIS tracks health insurance data in California within four categories: employer-sponsored insurance, privately purchased insurance, government insurance programs like Medicare and Medi-Cal and Medicare Advantage. This data can be used to help understand and shape patterns of ER use.

CHIS 2023 data research design uses cross-sectional analysis of California's population. The design examines the connection between emergency department use and six key variables. The key variables selected are the dependent variables in this study, ED use in the past 12 months and independent variables, Insurance Status, Age, Race, and income. The independent variables were selected due to their association with healthcare access and financial affordability to understand utilization patterns. This was done with the single hypothesis in mind that housing stability is significantly associated with Emergency Department utilization; and with perceived housing stability and whether the individual accessed the Emergency Room for their own health in the past 12 months.

Research Design And Methodology

The California Health Interview Survey (CHIS) is the largest state-level health survey in the United States, conducted by the UCLA Center for Health Policy Research. It gathers data through a dual-mode collection strategy that includes random-digit-dial (RDD) telephone interviews and online surveys. The survey's comprehensive design, including oversampling of underrepresented populations and detailed measures on dental access and insurance coverage, makes it highly suitable for studying oral health disparities. Its complex, multistage sampling methodology enables general estimates across California's diverse demographic and geographic groups. The adult dataset is an extensive source of information on health behaviors and conditions among California's diverse populations. This dataset is particularly useful for examining homelessness and its association with emergency department use in the past 12 months.

Statistical Analysis

SPSS was utilized to explore factors associated with ED visits and the statistical analysis conducted using SPSS provided valuable insights into the relationships between adults with limited or no insurance coverage and the number of Ed visits. Descriptive statistics were used for categorical variables, and inferential statistics were performed using chi-square tests to assess correlations among variables such as ED use, age, race, and income. The chi-square test was performed to examine the associations between the variables. The threshold for statistical significance was set at $\alpha = 0.05$. Pearson correlation coefficients evaluate these variables relationship and their significance level (Field, 2020). Considerations of statistical analysis are the type 1 error, which is the $\alpha = 0.05$ threshold.

Analysis And Findings

SPSS analysis of CHIS 2023 data shows that emergency department (ED) use among Los Angeles adults across insurance status, age, race, and income groups. The overall emergency department use rate for insured individuals is approximately 14.3%, while the uninsured group has an emergency department use rate of about 10.7%. In the insured population, Employment-Based insurance is the most common category, representing the mode where Medi-Cal is the median insurance type. The emergency department use rates vary across insurance types, with Medicare showing the highest rate at 26.4%, followed by Medi-Cal at 22.7%, Other Public at 21.4%, Employment-Based at 12.1%, Private Purchase at 11.8%, and the uninsured at 10.7%.

Emergency department use rates increase with age, starting from

6.3% among 26 to 29-year-olds and rising to 18.6% among those aged 65 and older. Emergency department use rates differ by race, with American Indian/Alaska Native individuals having the highest rate at 22.4%, followed by African Americans at 21.0%, and those identifying with Multiple Races at 17.8%. Latino individuals have an emergency department use rate of 16.1%, White individuals 15.6%, and Asians have the lowest rate at 9.7%.

Income data reveals that the group with the highest emergency department use falls within the income bracket of $10,000 to $19,999, representing the new top category, while the median income bracket is $60,000 to $69,999. The emergency department use rates among income groups include 23.3% for those earning $10,000 to $19,999, 21.5% for those earning under $10,000, and 20.5% for those earning between $20,000 and $29,999. Furthermore, the chi-square analysis was performed to evaluate the relationship between adults with limited or no insurance coverage, older adults visiting Ed and certain adults' racial group with higher utilization of emergency department and adult with lower income bracket or high-income bracket of the use of ED. See **table 1** below:

Table 1: Summary report of descriptive analysis

Variables	**Data**	**Distribution & Findings**
1. DV: ED use, IV: Insurance status	Frequency: Employment-based- 12.1%, Medi-Cal- 22.7%, Medicare- 26.4% Private Purchased- 11.8%, Uninsured- 10.7%, other 21.4%	Insured group had higher ED use at ~14.3%, uninsured ED use at ~10.7%
2. DV: ED use, IV: Age	Top 3 Frequency: 60-64 years (16.3%), 50-54 years (15.3%), 55-59 (14.8%)	Older adults have higher ED use than younger adults.
3. DV: ED use, IV: Race	Frequency: Latino- 16.1%, Multiple Race-17.8%, American Indian/Alaska Native- 22.4%, Asian- 9.7%, African American- 21.0%, White-15.6%	Highest ED rates among: American Indian/Alaska Native, African American and Multiple races.
4. DV: ED use, IV: Yearly household Income	Top 3 Frequency: $10,000-19,999 (23.3%), Less than $10,000 (21.5%), $20,000-29,999 (20.5%)	The lowest-income groups have the highest ER visit rates.

Table 2: Summary report of Chi – Square Test

Hypothesis	**Chi-square test data**	**Conclusion**
1. Adults with limited or no insurance coverage will have a higher percentage of ED Utilization	N= 17,375 X^2 (6) = 320.47 P <.001	Individuals who are uninsured or on Medi-Cal are more likely to have visited the ER, while those with employment-based insurance are less likely, and this pattern is statistically significant (p < .001).
2. Older Adults will have more ED visits than younger adults.	N= 2,445 X^2 (13) = 175.97 P <.001	Age is strongly associated with ER usage, with middle-aged and older adults more likely to use emergency services than younger age groups, relative to their group sizes. This is also statistically significant (p < .001).
3. Certain adult racial groups will have higher ED utilization.	N= 2,445 X^2 (5) = 152.77 P <.001	Race and ethnicity are associated with ER usage, with African American, American Indian/Alaska Native, and Latino individuals more likely to visit the ER compared to Asian and White individuals, relative to their group sizes. This is statistically significant (p < .001).
4. Adults with lower income brackets will have more ED visits than adults in higher income brackets.	N= 2,445 X^2 (18) = 261.18 P <.001	Household income is strongly linked to emergency room usage, with lower-income individuals, especially those earning under $30,000, more likely to visit the ER than higher-income groups. This is statistically significant (p <.001).

The data highlights important disparities in emergency department utilization across diverse types of insurance, demographic groups, and income status. Although the insured group shows a higher overall emergency department use rate (~14.3%) compared to the uninsured (~10.7%), it is critical to consider the distribution and size of these populations. It is also important to consider the type of responses UCLA CHIS receives regarding sensitive topics and the willingness to participate. Additionally, the insured population is significantly

larger, and subgroups such as Medicare and Medi-Cal enrollee exhibit notably higher emergency department use rates at 26.4% and 22.7%, respectively. This can reflect underlying health needs such as chronic illness and age-related conditions.

The researchers also investigated insurance types whether it was significantly associated with four healthcare outcomes: forgoing needed care, delaying prescriptions, delaying medical visits, and utilizing preventative services. Descriptive statistics and Pearson chi-square tests was conducted to assess each relationship. To examine the first research question, whether individuals forwent needed medical care due to cost, 2,451 respondents (11.3%) reported doing so out of 21,671 valid responses. Among the uninsured, 20.7% reported forgoing care, compared to 9.1% of those with public insurance and 4.5% with private insurance. The chi-square value was 42.711, with degrees of freedom equal to two, and a p-value of less than .001. This result is statistically significant and supports the hypothesis that individuals without insurance are more likely to forgo needed care.

Table 3: Descriptive Statistics of Respondents (N), Mean, and Median.

Variable	N Valid	N Missing	Mean	Median
Forgone needed care	21,671	0	0.133	0.00
Delayed prescription fill	21,671	0	0.099	0.00
Delayed medical care	21,671	0	0.135	0.00
Preventative care utilization	21,671	0	~0.69	-

The second question assessed whether individuals delayed purchasing a prescription due to cost. A total of 2,136 adults (9.9%) reported this experience. Delay rates were highest among the uninsured (16.4%), followed by publicly insured adults (10.2%) and those with private insurance (7.8%). The chi-square value was 10.306, with degrees of freedom equal to two, and a p-value of .006. This statistically significant result supports the hypothesis that uninsured and publicly insured individuals are more likely to experience cost-related delays in accessing medication.

The third outcome involved delayed medical care due to cost. Among the sample, 2,923 respondents (13.5%) reported having postponed care. The uninsured had the highest rate (22.1%), compared to 11.2% for publicly insured and 6.3% for privately insured individuals. The chi-square value was 44.641, with degrees of freedom equal to two, and a p-value of less than .001. This confirms a statistically significant relationship between insurance type and delayed care, further supporting the hypothesis.

Finally, this research examined whether preventative care utilization varied by insurance type. Of the 21,671 respondents, 14,962 (69.0%) reported receiving a recent check-up or screening. Utilization was highest among the privately insured (72.1%), followed by publicly insured individuals (63.8%) and the uninsured (48.9%). The chi-square value was 25.347, with degrees of freedom equal to two, and a p-value of less than .001. This result is statistically significant and supports the hypothesis that those with private insurance are more likely to receive preventative services. The full chi-square results presented in **Table 3** show statistically significant associations across all four healthcare access outcomes.

Table 4: Chi-Square Test Results for Associations Between Insurance Type and Healthcare Access Outcomes

Outcome Variable	Chi-Square	Degrees of Freedom	P-Value
Forgone needed care	42.711	2	< .001
Delayed prescription fill	10.306	2	< .006
Delayed medical care	44.641	2	< .001
Preventative care utilization	25.347	2	< .001

Together, these findings provide staunch support for the research hypotheses. Each of the four outcome variables showed statistically significant associations with insurance type, confirming that coverage status is a key determinant of healthcare access. These results align with Andersen's Behavioral Model, which highlights enabling factors like insurance as central to service utilization **[13]**. The findings also echo national trends showing that individuals without insurance, and many with public insurance, continue to experience gaps in access due to affordability, coverage limitations, and provider availability.

Finaly, the researchers assessed the relationship between two variables, "how individuals feel about their housing" and if "visited emergency rooms for their own health in the past 12 months." The aim of comparing these two variables is to try to thread some association between housing quality (in this case, self-perceived) and non-primary care healthcare utilization. These two variables were chosen because housing stability is a predictor of Emergency Department utilization. A cross-sectional design collects a valuable glimpse in a moment in time across the state to assess the status association between these two variables. The independent variable will be "How You Feel About Current Housing Situation" as we want

to assess how housing stability modifies the likelihood of visiting the emergency room for their own health in the past 12 months.

The Pearson Correlation of -0.073 between both variables suggests that there is a very slight tendency for housing stability to be associated with lower probability of an ER visit in the past year, but the relationship is so weak that the relationship is not statistically significant. Therefore, we can reject the null hypothesis that there is no significant association between both variables and support our hypothesis. However, the correlation between variables is insignificant. The variables might be related in a non-linear or more complex way.

Discussion And Conclusion

The 2023 data reveal that while insured individuals reported higher raw rates in emergency department use, uninsured adults have twice the odds of utilizing emergency department services, pointing to deeper issues **[23]**. The Pearson Correlation of -0.073 between both variables suggests that there is a very slight tendency for housing stability associated with lower probability of an ER visit in the past year. Age appears to be a strong factor influencing emergency department use among older adults, specifically those 65 and older, as they now have the highest rates. This trend of usage as age increases highlights the deep healthcare needs and health complexities within this group. Racial and ethnic disparities are strong, with American Indian/Alaska Native and African American populations showing higher ED use (22.4% and 21.0%, respectively) compared to other racial groups. This can be due to inequities in access to preventive care and overall health outcomes that may contribute to reliance on ED services.

Income data shows that the highest ED use rates are within the lowest income brackets. Adults earning $10,000–$19,999 presented the highest rates at with 23.3%, followed by 21.5% for adults under $10,000, and 20.5% in the $20,000–$29,999 group. This pattern may reflect barriers to accessing primary or preventive care among lower-income populations, leading to increased reliance on emergency services for urgent or untreated conditions. These observations have significant implications for health policy and resource allocation. Efforts to reduce non-urgent ED visits might benefit from targeted strategies that improve access to primary and preventive care in groups that have been highlighted in this study. This includes older adults, certain racial/ethnic minorities, and publicly insured adult groups. Understanding the causes of ED use across different variables can help direct interventions that not only reduce healthcare costs but also improve patient outcomes.

The research finding supports the idea that insurance status alone does not equate to access. Outside influences like social determinates of health, system inefficiencies, and perceptions of urgency all shape ED use behaviors. Applying the Andersen model as a framework in this study created actionable pathways for intervention, such as improving outpatient access, expanding telehealth, and focusing on Medi-Cal systems to reduce preventable ED visits and center resources that serve regions most in need **[7]**.

Current research links homelessness to an increase in emergency department utilization but there are still gaps in understanding the relationship of spectrum of housing insecurity and ED use. Routhier et al. (2023) studied the association between a variety of types of housing insecurity (including homelessness) and future emergency department utilization in a cohort of patients at an urban safety net hospital ED in the U.S. between the years of November 2016 and January 2018. Routhier et al. (2023) concluded that homelessness was associated with an increase in ED use but other markers for housing insecurity such as crowding, unaffordability, and multiple moves (and others) were not associated with an increase in ED use in the year post-baseline in multivariable models. Furthermore, the study found that only specific types of homelessness were associated with increased emergency department use.

A comprehensive review assessed emergency department interventions from 2013 to 2023 and found that the populations who were most affiliated with chronic emergency department use were also the most neglected group when it came to utilizing interventions that attempted to reduce ED use through various forms. Mental health issues and homelessness were found to be the factors most associated with chronic ED use, but most interventions did not seek to address these underlying factors directly. Homeless individuals are at higher risk of psychiatric and mental health conditions, substance abuse disorders, premature mortality, and chronic disease, as well as more likely to use public health hospitals for emergent mental health issues, have a higher rate of acute ED treatment, and higher rates of readmission within 30 days of discharge **[18]**. These intermingled morbidities are getting more frequent across the U.S. population and are another factor of the growing cost of healthcare in the United States. Between 2000 and 2018, the prevalence of these factors at the same time in homeless individuals grew from 7.9% to 16.3%. Chronic diseases are linked to increased ED utilization, but the rate is much higher for individuals with mental health disease and homelessness **[11]**.

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