

Commentary

Homelessness in the United States: Implications for Critically Ill Children

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Abstract: Homelessness is a growing crisis in the United States (U.S.). Across the country, children represent a large proportion of the homeless population. When these children experience critical illness, it poses significant and specific burdens to the child and family, compounded by the social stressors inherent in being housing insecure. Yet research on homelessness in critically ill children remains limited. Here, we provide an overview of the current U.S. homeless population, discuss what is currently known about homelessness and critical illness to inform future research, and close with a proposed homelessness screening and intervention model for use in the pediatric intensive care unit that can further be applied to all pediatric inpatient settings.

Key words: Critical illness; homeless youth; intensive care units, pediatric; housing; social problems; family.

Homelessness, and its accompanying disparities, is a growing crisis in the United States (U.S.) and is considered the most severe form of housing instability.¹ In 2020, on a single night, there were approximately 580,000 individuals experiencing homelessness in the U.S., 172,000 of whom were people in families with children and 35,000 of whom were unaccompanied youth (under 25 years old).² The homeless population disproportionately comprises African Americans (39%) and Hispanic/Latinos (23%) despite their smaller numbers in the overall U.S. population of 12% and 16% respectively.² Point-in-time counts are inherently problematic in accurately characterizing this population, as definitions of homelessness vary, thus likely rendering the above figures underestimates.³

The adverse childhood experiences and health impacts faced by those who are homeless have been frequently documented.⁴⁻¹⁵ Poor family relationship quality, school adjustment problems, and victimization experienced in childhood have been found to be independent risk factors for homelessness in early adulthood.^{4,5} Those who experience homelessness have been shown to perform more poorly in the academic setting and are also more likely to experience many other negative exposures in life, such as food insecurity, increased risk of abuse, and exposure to violence.⁵⁻⁸ Children with asthma experiencing homelessness have poorer health outcomes, higher likelihood of admission to the hospital, and increased risk of requiring ventilation.⁹⁻¹⁰ Children experiencing homelessness are at higher risk for visual, dental, nutritional, and mental health disorders.¹¹⁻¹⁴ Prenatal and postnatal periods of homelessness in children increase risk of adverse health outcomes such developmental delay, postneonatal hospitalization, and poor childhood health.¹⁵ The relationship between these factors is cyclical: homelessness increases one's risk for abuse, exposure to violence, poverty, health problems, and discrimination, all of which increase the risk of becoming homeless.

Given the documented impacts of homelessness, innovative housing models to address homelessness in the outpatient setting have been underway. One such model is Housing Prescriptions as Health Care in Boston, Massachusetts, which has borne promising results.¹⁶ In this trial, 78 homeless or housing-unstable families with medical complexity were prioritized to be placed in affordable housing with associated financial, legal, and case management services. Outcomes at six months showed improved health among children and decreases in average anxiety and depression scores among parents within the intervention group compared with controls.¹⁶ While data and interventions are being elucidated within the pediatric outpatient setting to address housing instability and homelessness, research on inpatient outcomes and interventions is lacking, particularly for children who become critically ill.

Pediatric and neonatal intensive care units care for a uniquely vulnerable patient population as there are significant emotional, financial, and logistical burdens associated with experiencing and recovering from critical illness, all likely to be heavier if one is experiencing homelessness. It is imperative that pediatric critical care providers better understand this experience and consider ideas for future research and quality improvement initiatives aimed at improving outcomes for this population. Here, we provide background about the state of housing insecurity for children, with Massachusetts as a case example, review research related to homelessness and critical illness, and conclude with a three-pronged approach to further much needed research while concretely addressing this issue at the same time.

Background

Shelter options and their accompanying regulations vary across states and are constantly evolving. As such, a passing familiarity of the types of housing in which one's patients may be living is imperative when considering how and where they will recover after critical illness.

In our state of Massachusetts, where there are almost 20,000 individuals experiencing homelessness on any given day, the most common emergency shelters for families are congregate shelters, scattered site shelters, co-shelters, and hotels/motels (Figure 1).¹⁷ Of note, Massachusetts is unique in that it is a “right to shelter” state, which requires the state to provide emergency shelter for those who are eligible. Although beyond the scope of this article, the eligibility requirements are strict with limited family shelter units, which leads to overflow placements in hotels and motels.¹⁸ Many families still end up being denied prompt emergency shelter due to disqualifications related to income or government-defined housing stability.¹⁹ Of the almost 24,000 public school students in Massachusetts who experienced homelessness at one point during the 2017-2018 academic year, 6,800 lived in shelters, 15,000 were doubled up (e.g. living with another family), 1,500 were in hotels/motels, and 200 were entirely unsheltered.¹⁷ In 2019 in Massachusetts, one-fifth of all children under 6 years old experienced homelessness.²⁰

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Homelessness and Critical Illness

Adult population. Past literature has largely focused on intensive care unit (ICU) outcomes in the homeless adult population, although data in this patient population are limited with heterogeneous findings.²¹⁻²⁵ One retrospective cohort study demonstrated that homeless adults admitted to the ICU have significantly higher hospital mortality, even when presenting with comorbidities and illness severity similar to those of non-homeless individuals.²² This finding has been subject to debate, and other larger cohort studies demonstrate no association between homelessness and hospital mortality but do show a significantly longer hospital length of stay and higher rates of ICU readmission when homeless.^{23,24} Furthermore, it appears that living on

the street rather than in a public shelter may be an independent risk factor for increased mortality in the adult population.²³ Homeless adults admitted to an ICU also tend to be younger and have different co-morbidities from non-homeless individuals.²³⁻²⁵ Moreover, adults experiencing homelessness are admitted to the hospital with respiratory syncytial virus more frequently and have higher admissions to the ICU and rates of 30-day readmission.²⁶ With longer hospital length of stays and increased ICU readmissions, homeless status imposes high cost burdens on both patients and hospitals.²⁷

Infants and children. Research on homeless infants and children in the ICU, however, is unfortunately sparse, with many questions left to be answered. One study by Clark et al. linked emergency shelter enrollment records with health outcomes in approximately 11,000 infants. They showed that infants born into housing insecurity, had not only higher rates of low birthweight, respiratory problems, and emergency department visits, but also longer neonatal ICU courses.²⁸

Notably, poverty has been linked with pediatric intensive care unit (PICU) admissions. Andrist et al. demonstrated significant correlations between Cincinnati neighborhood child poverty rates and neighborhood rates of PICU use, with those in lower-income neighborhoods having significantly higher rates of PICU admissions and bed-day rates.²⁹ In the study by Clark and colleagues, both homeless and non-homeless infants had generally low incomes suggesting that homelessness may have a more significant impact on health outcomes than poverty alone. Median annual expenditures were also significantly higher in families that experienced homelessness, which may suggest an exacerbation of the cycle of poverty, housing insecurity, and poor health outcomes.²⁸

Generally, readmissions to the PICU have been associated with significantly higher mortality and longer length of stay, and children with medical complexity (CMC) are at particularly high risk of readmission.³⁰ Children with medical complexity constitute a large percentage of PICU admissions, characterized by high resource utilization, including ventilation days, extracorporeal membrane oxygenation use, and other ICU costs.³¹ This patient population has been shown to occupy more than one third of ICU beds, have longer ICU stays, and also account for more than 75% of ICU resources.^{31,32} A national survey of children with special health care needs (defined by medical technology dependence and care by two or more subspecialists) showed that more than half (56.8%) of the caregivers of these patients reported financial problems.³³ With consideration of the financial findings by Andrist's and Clark's groups, along with the documented high costs of PICU hospitalizations,³⁴ these families may be both at greater risk of homelessness given high health care use and costs and conversely at greater risk of poor health outcomes after discharge if already homeless. Explicit studies of CMC experiencing critical illness and homelessness are needed.

Next Steps

As homelessness rates continue to rise, managing the social needs of a family must become a priority during a critically ill child's admission. We suggest a three-pronged approach to guide future research and support critically ill children facing homelessness: screening, discharge planning, and coordination of care. While such an approach would ultimately benefit all inpatient children with significant insecurities in social determinants of health (SDoH), it is particularly important in homeless pediatric patients experiencing critical illness given the aforementioned studies and already established physical and psychological sequelae of a PICU admission.³⁵

Screening. More research is required to understand the effects of homelessness in critically ill children, and this begins with adequate identification of patients facing homelessness. Although most pediatricians believe that screening for SDoH is important, few feel prepared enough to address social needs.³⁶ A study by Pai et al. assessed the adequacy of general social risk screening tools for the pediatric inpatient setting. They identified 44 social screening instruments with a total 537 individual questions. None of the screening tools were found to be designed specifically to identify social risk in hospitalized children and none contained questions relevant to all 19 social risk themes identified as important by the authors for pediatric social risk screening.³⁷ Importantly, home environment and poverty were only addressed in 25% and 9% of screening tools, respectively.

An ideal screening tool would be required upon admission and address SDoH such as housing, food, and utility insecurities, safety, and transportation. From a homelessness and housing instability perspective, key questions to consider include frequency of moves in the last 12 months, type of current residence, concern about losing housing, concern about affording housing, prior evictions, history of homelessness or prior emergency shelter placement, and accessibility and safety of housing. Screening has been shown to be feasible and successful in subspecialties such as pediatric oncology, with a high rate of needs identified.³⁸ Ideally, the screening tool would be incorporated into the electronic health record of the patient allowing issues identified upon admission to be easily shared with the multidisciplinary care team well before discharge. Appropriate ICD-10-CM codes (e.g., "Homelessness") within the electronic health record should be used for patients experiencing homelessness as easier identification of patients can help clinically and can help streamline future research.

Discharge planning. Discharge planning begins on admission. After screening, a discharge risk assessment should be performed by the multidisciplinary team, identifying barriers to care in the outpatient setting. If homelessness is identified, medical plans and interventions that change throughout a child's hospital course should be provided to social workers, as part of the shelter application process requires letters noting needed accommodations based on the child's medical diagnosis and care requirements. Information regarding needs related to equipment, electricity, space, accessibility, location of outpatient providers, and infection control measures, are important considerations that social workers need in order to find adequate shelter upon discharge. These considerations are crucial, especially for CMC, as many temporary housing solutions may not be adequate based on medical equipment and supply needs.³⁹ Furthermore, neighborhoods with increasing poverty have been shown to be further away from PICUs, which carries implications for both securement of emergency housing and access to care for families at risk of readmission.⁴⁰

Coordination of care. Coordination of care with outpatient providers and programs is crucial for the homeless child recovering from critical illness. To minimize readmissions related to homelessness, patients should be set up with programs to help afford rent (e.g., as offered through housing authorities), utilities (e.g., subsidized programs through companies), affordable food programs, and Supplementary Security Income (SSI) if eligible. A study examining children with special health care needs analyzed caregiver report of child SSI receipt.⁴¹ Those who did not receive SSI had a significantly greater incidence of homelessness. Transportation is also a difficult obstacle, and consideration of outpatient provider distance from a patient's emergency shelter is essential. Given the significance of the immediate period following discharge from a critical illness, the outpatient provider should also have a multidisciplinary team including

members from social work and case management, in order to ensure close follow-up and stability of housing provided.

Conclusions

Clinicians caring for critically ill infants and children have an opportunity and responsibility to screen for, and assist with, housing insecurity in our most critically ill patient population.

Identification of homelessness as a co-morbidity in patients upon admission can help to prevent extended hospital courses and re-admissions, improve the quality of a child's recovery from critical illness, and potentially break a cycle of poverty begetting poor health and poor health begetting further poverty. There remains a dearth of research in this arena, and future research should focus on the epidemiology, experiences, and clinical outcomes of critically ill homeless children as well as the financial and social ramifications of critical illness on homeless children and their families.

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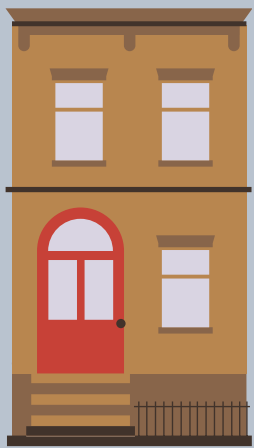
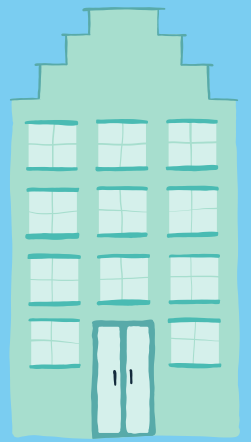
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COMMON EMERGENCY FAMILY SHELTER TYPES

CONGREGATE SHELTERS AND CO-SHELTERS

Multiple families live together - each with their own bedroom - but share many of the common spaces.



SCATTERED SITE SHELTERS

Rented by the state and provide a temporary apartment for a family. This is the preferred placement for homeless children with medical complexity for accessibility and infection control purposes.

HOTELS/MOTELS

Usually a last resort as paid for by the state when there are no other available shelter options.

