Homeless in the Hospital

Utilizing Statistics from the URMC System to Study Disease Burden Associated with Homelessness

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INTRODUCTION

The relationship between homelessness and poor health has been illustrated through a number of statistics - including greater usage of acute hospital care services, higher morbidity from chronic illness, and significantly decreased life expectancy - which display the clear, bidirectional, and egregious impacts of this interrelationship. In Rochester, there are an estimated 849 people who experience homelessness on any given night. These 849 individuals often experience illnesses and barriers to receiving care that have demonstrable effects on health outcomes. Indeed, recent research has shown that the average age of death among residents at one of Rochester's largest shelters is over 20 years earlier than the average life expectancy of other individuals living in one of Rochester's most impoverished zip codes. It is important to better understand how individuals experiencing homelessness are viewed by the medical system, and characterize the illnesses that contribute to egregiously poor health outcomes among homeless patients.

COMMUNITY PARTNER

My project was born out of conversations held at St. Joseph's House of Hospitality, when a guest of the house showed discharge paperwork with a principal diagnosis of homelessness. St. Joe's, at it is known, is a Catholic Worker house located in the South Wedge that seeks to meet community needs, including providing hot meals, connections to social services, and clothing, as well as serving as a men's shelter during typical winters.

Through the question regarding the use of the homelessness ICD-10 code, I was privileged to connect with Dr. Fiscella & Dr. Green at the Center for Community Health and Prevention, and David Pinto at the Center for Clinical and Translational Research to obtain and work with data, to better understand how the hospital system understands homelessness and its associated diseases.

Table 1: Demographics of patients identified as homeless in the URMC hospital system EMR, compared to Point in Time data for Monroe County, 2019.

Demographic Characteristics	Hospital Sample	Point-In-Time Data
Gender		
Male	1067 (67.7%)	549 (64.7%)
Female	507 (32.1%)	273 (35.2%)
Transgender	3 (0.2%)	1 (0.1%)
Race/Ethnicity		
Black	620 (39.3%)	463 (54.5%)
White	827 (52.4%)	329 (38.8%)
Asian	4 (0.3%)	4 (0.5%)
American Indian/Alaska Native	1 (0.1%)	0 (0%)
Other	101 (6.4%)	1 (0.1%
Multiracial	14 (0.9%)	52 (6.1%)
Hispanic/Latinx	137 (8.7%)	159 (18.7%)
Age Range		
Children <18	23 (2%)	150 (17.7%)
Age 18-24	135 (11.7%)	74 (8.7%)
Age >24	998 (86.3%)	625 (73.6%)

COMMUNITY HEALTH IMPROVEMENT PROJECT

From March 2011-December 2019, 1577 individuals were identified as homeless in 4068 healthcare encounters within the URMC hospital system. The sample identified was not representative of the Rochester homeless community, as it underrepresented Black/African American and Hispanic/Latinx individuals. The challenge of interpreting data throughout the rest of the report requires attention to the fact that this sample has been defined through the use of codes are thought to be relatively insensitive, and fail to identify a number of patients experiencing homelessness.

At 31.3% of encounters, the most resource-intensive diagnosis requiring attention in the healthcare system was the diagnosis of homelessness. The only solution to homelessness, and an evidence-based public health intervention to address this problem is to provide housing. Housing First programs are a solution to the problem of homelessness that seeks to adequately address the needs of chronically homeless individuals while recognizing personal dignity and autonomy.[xxiii] These programs provide homeless individuals with a safe, dignified home that provides a sense of security and reduces the pressure of scrambling to meet all one's basic needs in a capricious unsheltered environment. These programs make community supports available, which can assist in meeting needs for various services including medical and psychiatric care, thus making it possible for more individuals to remain housed and meet needs. There is some further evidence of cost-savings benefits to the hospital systems that serve homeless individuals through reduced use of emergency medical services.

Among other major drivers necessitating need for acute care include psychiatric illness and substance use disorders. The need for acute mental healthcare among the community in Rochester, demonstrated by the high rates of psychiatric emergency department use and psychiatric hospitalization is consistent with studies performed globally, that identify mental illness and substance use disorders as major contributors to the homeless burden of disease. The burden of disease, calculated by the Charlton Comorbidity Index, revealed a relatively young population with an average estimated 10 year survival of ***.

Homeless patients that required admission to the hospital experienced length of stays over two times the average for patients in the general United States population. A notable, evidence-based intervention that has been shown to reduce hospital readmissions and length of stay among homeless individuals are medical respite programs. Medical respite programs provide post-discharge medical care, social services, and an environment for recuperation and follow up care for individuals who would not be able to receive such resources in their typical home environment. The DePaul Hopelink at Shelter Cove short-stay residence seeks to provide some support similar to medical respite six beds that may be available to patients being discharged from URMC affiliated hospitals, though none of the patients identified in this sample were discharged to Shelter Cove, with bed availability as a typical limiting factor.

Table 2: Common primary diagnoses- indicating the most resource intensive condition identified during hospitalization - associated with number of encounters for which homelessness was identified.

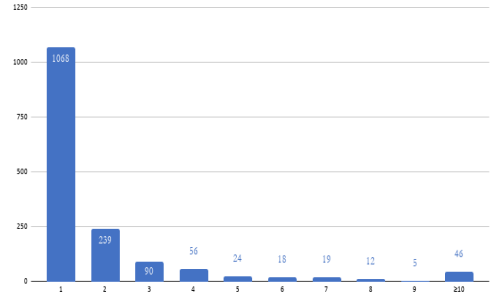
States of Deprivation		**Mental Illness**	
homelessness	1243	schizoaffective disorders	97
effects of reduced temperature	17	trauma-related stress disorders	72
effects of other deprivation	14	schizophrenia	70
Substance Use		emotional state related symptoms	67
alcohol related problem	231	major depressive disorder	52
other psychoactive substance related problem	173	unspecified psychosis	36
cocaine related problem	44	bipolar I disorder	27
adverse effect of prescription drug	14	specific personality disorders	26
Pain, Injury and MSK Disorders		anxiety disorders	24
other soft tissue disorder	110	mood disorder	13
pain in throat and chest	75	behavioral symptoms	11
abdominal and pelvic pain	67	symptoms related to sensations and perceptions	10
dorsalgia	40	**Infectious Diseases**	
pain, unspecified or NOS	27	cellulitis and acute lymphangitis	44
other joint disorder	26	pneumonia	29
injury of unspecified body region	21	upper respiratory infection	12
superficial injury of ankle, foot and toes	18	acute pharyngitis	11
unspecified fall	11	viral infection	8
other disorders of muscle	9	**Neurologic disorders**	
Respiratory Diseases		headache	24
COPD	25	symptoms related to cognition	19
cough	23	**Nausea and vomiting**	27
breathing abnormalities	19	**Hyperglycemia**	22
asthma	12	**Malaise and fatigue**	21
other respiratory symptoms	9	Cardiovascular disease	
Other chronic illness exacerbation	16	essential hypertension	9
Dizziness and giddiness	16	heart failure	9
Sickle cell disorder	15	**Dependence on enabling machines and devices**	12
Dental problems	12	**Fluid, electolyte and renal disorders**	8

CONCLUSIONS

There are clear challenges to using an ICD-10 Z code to define the homeless population, which introduces a considerable amount of bias into the sample of URMC-identified homeless individuals. In fact, a recent review performed of the New York State Inpatient Database suggested that homelessness was rarely identified within the database, with use concentrated - and possibly overattributed – at a few hospitals within the state. While ICD-10 Z codes are beginning to be explored for their utility in research, these studies are typically being done at the level of large statewide medical systems, and even within those systems are challenged by infrequent documentation.

While improving documentation related to social determinants of health has potential as a tool for identifying social risk factors that contribute to poor health outcomes at both an individual and a population health level, implementation is challenged by both logistical and ethical issues.

Figure 1 Frequency Plot demonstrating Number of Encounters per Patient, demonstrating a significant positive skew



IMPACT AND SUSTAINABILITY

To build the idea of community health and outreach beyond small acute needs, partnership is required.I hope that this work can be used for advocacy for future projects, to build support for Housing First tiny home projects and medical respite care. I would like to highlight the incredible work of Kiera Hayes, Michelle Liu and Celia Fung, whose partnerships with Person Centered Housing Options continue to bend the arc towards greater housing justice within Rochester. I would like to express thanks to all of the URMC Street Outreach team for continuing to learn and work to address small acute needs. I hope that by reporting out hospital data regarding homelessness and poor health can provide statistics to be used for further advocacy on behalf of their projects. Good public health data may be useful for securing funding through strengthening grant writing capabilities or making clear arguments for innovative investments.