

Data Brief

The Creation of an Indicator of Patient Homelessness in Kentucky's Health Facilities and Services Data

Fictional Patient Vignette - David

David is a 46-year-old man who presented to the Emergency Room with severe leg pain and lacerations covering his face and arms. He was brought to the hospital via ambulance, & EMS personnel report that witnesses on scene saw David – appearing intoxicated – erratically swerve his bike into oncoming traffic on a small surface road. He steered his bike off a curb in front of a sedan traveling an estimated 25 miles per hour, and the car struck him on his left leg. David was admitted for orthopedic surgery to repair his femur that had been fractured in the crash. In the address field of David's admission paperwork, EMS wrote "Unable to Determine." When the hospital social worker interviewed him, David revealed that he had been staying at a camp with people he met at a local homeless shelter. David's drinking led him to become estranged from his friends and family – to the point where he is not welcome in their homes. David refuses to call them to help him after he is discharged from the hospital, saying "They won't pick the phone up anyway." His attending surgeon has communicated that David will be ready for discharge soon.

Once discharged, David will need to: (1) take enoxaparin injections to prevent blood clots; (2) take a course of broad spectrum oral antibiotics to treat an infection that was detected during his admission; (3) receive home health physical and occupational therapy to help him return to normal activities of daily living and; (4) manage his pain with a regimen of low-dose oxycodone tablets. Furthermore, David is at an elevated risk for alcohol withdrawal syndrome once he leaves the hospital.

What is Known on This Topic?

Homelessness is known to complicate the care of hospital patients. Patients experiencing homelessness tend to present to hospitals with more severe illness and fewer resources to utilize in order to adhere to treatment plans. As a result, patients experiencing homelessness are more likely to readmit to hospitals after discharge.

What Did this Project Do?

This project utilized the Kentucky Health Facilities & Services Data (HFSD) to create a process to estimate the prevalence of homelessness in Kentucky hospital care. Using two distinct strategies for identifying an inpatient hospital encounter with a patient experiencing homelessness, analysts produced a replicable methodology to estimate this phenomenon. This indicator variable can be reintroduced into this data each year to estimate trends in the prevalence of homelessness within Kentucky hospitals.

What Could Healthcare Providers and Community Based Organizations Do with These Results?

In the future, we believe this indicator variable can be continuously honed to provide increasingly accurate estimates of how many patients in Kentucky hospitals were experiencing homelessness during the time they received care. This could be useful for a variety of reasons, including: (1) improving the quality of epidemiologic analyses; (2) helping hospitals better understand the characteristics of the patients they care for, and; (3) measuring the efficacy of health and social interventions.

Introduction

While housing issues have not been conventionally considered to be part of medical practice, many practitioners and scholars have noted the centrality of housing stability in the success of a patient's treatment. Homelessness, the most extreme form of housing instability, is a particular threat to the success of treatment plans in clinical settings. This is especially true in hospital care, where patients who lack a stable place to recuperate are often discharged with a compromised ability to walk, climb stairs, and perform other basic activities of daily living (making discharges to most homeless shelters unsafe or otherwise contraindicated).¹

The fictional patient vignette included in this brief illustrates why meeting the medical needs of patients experiencing homelessness can be especially challenging. David's options for recovering from his injury are limited by: (1) his strained family relationships – which preclude his access to social and material support, and; (2) diminished mobility due to his leg fracture – which precludes him from being able to care for himself in a homeless shelter (or even many specialized healthcare programs provided by homeless service agencies).

The complications of homelessness translate to substantially increased odds of hospital readmission within thirty days of discharge. In one study of 113 patients experiencing homelessness at an urban teaching hospital, half of all inpatient admissions for those patients resulted

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in readmission within thirty days (compared to 19% for inpatient admissions among non-homeless adult patients).² When the study authors included observation stays and emergency department visits within thirty days of discharge, 70% of patients experiencing homelessness were considered as readmitting. Importantly, the study also observed that these patients were significantly less likely to readmit if they were discharged to the home of a family member or friend, a hotel, or a nursing facility than if they were discharged to the street or a homeless shelter.²

The Health Facilities & Services Data and the Creation of a Novel Homelessness Indicator

The unique challenges of providing care to this population are well known to Kentucky hospitals. While individual hospitals have ways of identifying the scope of the problem of homelessness amongst the patients they have treated in the past (e.g., electronic medical record systems), there are considerable limitations associated with estimating the statewide prevalence in Kentucky from the vantage point of a single hospital (even a large hospital system).

This limitation is not present in the Health Facilities & Services Data (HFSD) – making it the ideal source of information for this project. The HFSD is associated with KRS 216.2920-216.2929, which instructs the Cabinet for Health and Family Services to collect healthcare data for the purposes of conducting analyses related to: (1) healthcare costs; (2) healthcare quality and outcomes; (3) healthcare providers and health services; (4) health insurance costs.³ With some exceptions, the HFSD contains data on every inpatient hospitalization, emergency department visit, and visits to certain outpatient healthcare centers in the Commonwealth. This data is maintained by the Office of Health Data and Analytics (OHDA) within the Cabinet for Health and Family Services.

The Homelessness Indicator

This project began with a data request from the Homeless and Housing Coalition of Kentucky (HHCK), which initiated the process of creating this new data field. This data request included asking for information concerning the prevalence of homelessness amongst hospitalizations and emergency department (ED) visits in Kentucky. Because there was not a preexisting field in the HFSD data to identify this phenomenon, it was necessary for OHDA to create one.

To begin, it was necessary to ensure that any definition of homelessness used to create an indicator was consistent with current, established definitions and was aligned with technical and academic theories of identifying homelessness in hospital

patients. An initial literature review revealed the current US Department of Housing and Urban Development definition, which described four categories of homelessness.

While this definition was helpful, and was used for the first phase of construction, it was ultimately of limited utility for our purposes. What was discovered to be much more well-populated in the data was the International Classification of Diseases (ICD-10) code for homelessness: Z59.0. Therefore, the counts produced by this indicator should be understood to primarily come from episodes of care where this Z code was used. This analysis was completed using data from 2019.

Limitations of the Indicator

This indicator should be understood to possess some important limitations: (1) it is not intended to be used as an estimate of statewide homelessness in the general sense; (2) because billing and coding practices vary from one hospital to another, the indicator may be less precise for some hospitals or some regions; (3) homelessness is a phenomenon that can be difficult to define, making screening for it in hospital settings challenging, and; (4) in many instances, patients do not wish to disclose their homelessness. Taken together, these limitations suggest that this indicator will likely underestimate the true prevalence of homelessness in Kentucky hospitals. This underestimation dynamic was discovered by a team of researchers in Australia who used a similar method.⁴ However, in spite of these limitations, we believe this indicator can afford a new, pragmatic way to utilize the HFSD to answer questions about homelessness.

Conclusion

Using the HFSD, OHDA has created a data field to identify cases where hospital inpatients were experiencing homelessness during their episode of care. This data can now be tailored for specific questions, and may be useful for researchers, policymakers, and hospital leadership teams.

References

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²Doran, K. M., Ragins, K. T., Iacomacci, A. L., Cunningham, A., Jubanyik, K. J., & Jenq, G. Y. (2013). The revolving hospital door: hospital readmissions among patients who are homeless. *Medical Care*, 767-773.

³<https://chfs.ky.gov/agencies/ohda/Pages/hfsd.aspx>

⁴Lee, S. J., Thomas, P., Newnham, H., Freidin, J., Smith, C., Lowthian, J., ... & Stafrace, S. (2019). Homeless status documentation at a metropolitan hospital emergency department. *Emergency Medicine Australasia*, 31(4), 639-645.