Using Administrative Health Records to Study Homelessness

Noah Boden-Gologorsky • Stanford University • Evidence, Experience, and Pathways — A Convening on Unsheltered Homelessness in L.A.

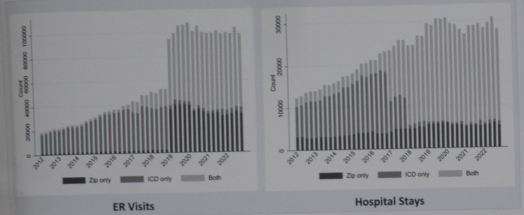
Measurement

Identifying People Experiencing Homelessness in California Health Records

Licensed health care providers in California document unhoused patients by:

1. Recording their ZIP code as "ZZZZZ" **OR**
2. Documenting an ICD code referring to housing insecurity, e.g., V60.0 (ICD-9) or Z59.0 (ICD-10)

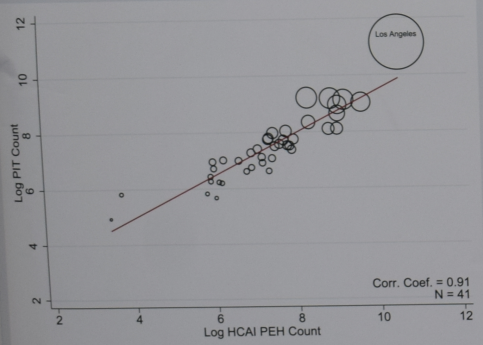
We identify over **2.5M** emergency room (ER) visits and **1M** hospital stays between 2012 and 2022. In 2019, HCAI required screening for homelessness regardless of admission status.



ER Visits | Hospital Stays

2022 PIT and HCAI Counts of PEH are Strongly Correlated

- PIT and HCAI counts of PEH are strongly correlated across California CoCs in 2022 (r = 0.91). The relationship is similarly strong without log transformation (r = 0.94).
- HCAI identifies 135,629 unique PEH statewide in 2022.



	PIT Count	PIT Unsheltered Count	HCAI PEH Count
Los Angeles	69,144	48,548	37,706
Santa Clara	10,028	7,708	4,106
Alameda	9,747	7,135	7,200
Sacramento	9,278	6,664	9,951
San Diego	8,427	4,106	15,170
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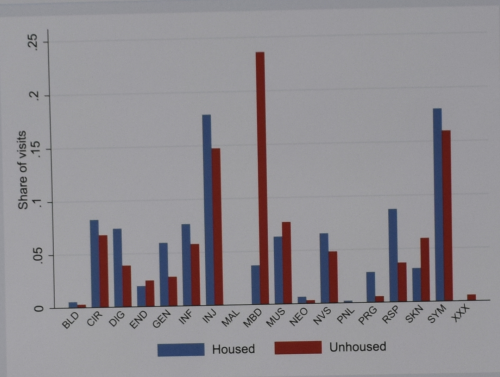
Total	171,521	115,491	135,629

Notes: Data from 2022. Los Angeles includes Los Angeles City & County CoC, Glendale CoC, Long Beach CoC and Pasadena CoC. Bubble size is proportional to PIT counts. Total is deduplicated statewide; CoC counts may include patients appearing in multiple counties.

Health & Utilization in the ER

Distribution of ER Diagnoses Skews Mental and Behavioral Health

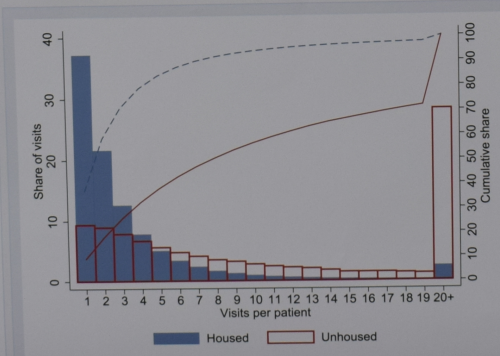
- Nearly 1 in 4 PEH ER visits in 2022 were for mental or behavioral health conditions (MBD), including both mental conditions (e.g., depressive disorders, schizophrenia) and substance-use-related conditions (e.g., alcohol- and opioid-related disorders).
- Relatively higher share of ER visits for skin (SKN) and musculoskeletal conditions (MUS) compared with housed patients.



Notes: HCAI ER data from 2022. Diagnoses are categorized by CCS/CCSR. Acronyms: diseases of the blood (BLD), circulatory system (CIR), digestive system (DIG), endocrine system (END), genitourinary system (GEN), infectious and parasitic diseases (INF), injuries (INJ), congenital malformations (MAL), mental and behavioral disorders (MBD), musculoskeletal system (MUS), neoplasms (NEO), nervous system (NVS), conditions from the perinatal period (PNL), pregnancy and childbirth related (PRG), respiratory system (RSP), skin and subcutaneous diseases (SKN), symptoms not elsewhere classified (SYM) and unclassified (XXX).

Heavy-Utilizing Unhoused Patients Dominate PEH ER Utilization

- Nearly 30% of ER visits for the unhoused come from patients with more than 20 visits in a year, compared to just 2.5% among the housed.
- Single visits account for 37% of ER visits among the housed, compared with only 9% for those unhoused.
- A majority of ER visits for the housed are represented by individuals with at most two ER visits in a year; unhoused patients with eight or more visits per year account for over 50% of PEH ER visits.

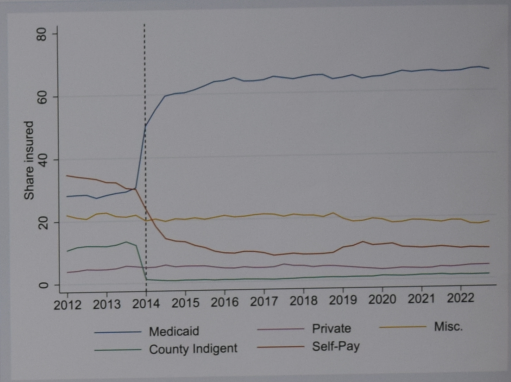


Notes: HCAI ER data from 2022. Encounters missing patient identifiers are dropped. Left axis represents the share of ER visits among the specific population denoted in the legend (i.e., share of ER visits among the housed versus the share of ER visits among the unhoused), and correspond to bars. The right axis (and corresponding lines) illustrate the cumulative share of visits within each group.

Insurance Composition and the Affordable Care Act

PEH Rely on Social Safety Net Programs for Insurance Coverage

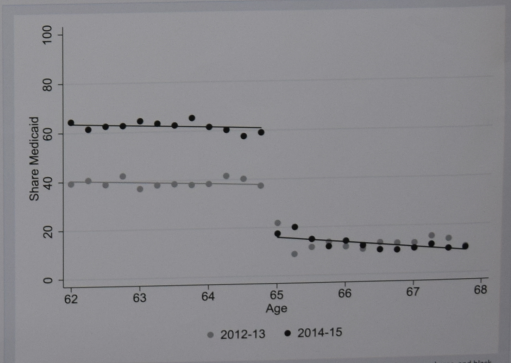
- In 2012, a larger share of ER visits for PEH reported self-pay (i.e., individual responsibility for payment) than Medicaid coverage.
- Following the implementation of the Affordable Care Act (ACA) in 2014, the share insured by Medicaid increased from 30% to 60%, with corresponding reductions in self-pay and county indigent program coverage.



Notes: Quarterly ER insurance coverage among PEH from 2012-2022. Assign insurers into five mutually exclusive and exhaustive categories: Medicaid, private (e.g., Blue Cross / Blue Shield), county indigent (e.g., LIHP), self-pay, and miscellaneous (e.g., Medicare, workers' compensation, disability). These are constructed to account for 100% of observed encounters. We consider a patient uninsured if the payer is either county indigent or self-pay. The black dotted line denotes the implementation of the ACA.

The ACA Increased Insurance Coverage Among PEH

- Using the granularity of the administrative records—which includes date of birth—we implement a difference-in-discontinuities design that compares the size of the discontinuity in coverage pre- vs. post-ACA, for those just below and above the Medicare-eligibility threshold.
- ACA **increases Medicaid** coverage among PEH by **23pp (58%),** and **overall coverage by 15pp (20%)**.
- Effects are nearly **3x** those observed for the general population.
- Largest share of coverage gains offset reductions in the share of previously uninsured patients: nearly **two-thirds** of the Medicaid-driven insurance gains replaced care that was previously uninsured.



Notes: Visually displays our difference in discontinuities design. Gray dots denote pre-ACA quarter-of-age insurance shares, and black dots represent post-ACA shares. For this design, we restrict to visits between 2012-2015 that occur within three years of a patient's 65th birthday, excluding visits within fifteen days of the threshold.