

consequences on pediatric health. Over 5.7 million children, or 1 in every 14 children, have experienced a parent in prison or jail at some time point. Because families in poverty, families of color, and families in rural areas are more likely to be affected, parental incarceration is viewed as a key driver of racial and economic disparities in health. Yet, we fail to routinely screen for this exposure, in part, due to stigma of incarceration, and the limited resources and time in the clinical setting. Our objective was to 1) describe the health of youth who have a documented correctional keyword in their chart 2) develop a machine learning model to locate children of incarcerated parents (COIP).

Study Design: A descriptive study was first conducted using electronic health record data of 2.3 million youth (ages 0–21 years) who received care in a large Midwestern hospital-based institution from February 2006–2020. We employed a correctional-related keyword search (e.g. jail, prison, probation, parole) to locate youth with probable personal or family history involvement. Health characteristics were measured as clinician diagnostic codes. We then conducted a manual chart annotation of 10,000 random cases using correctional related keyword search terms to annotate cases as 1 (“have or had a parent in jail/prison”) or 0 (“false positive”). This resulted in a dataset suitable to train BERT, a state-of-the-art machine learning model which is unique in its ability to pick up context within and across sentences.

Population Studied: Electronic health record data of 2.3 million youth (ages 0–21 years) who received care in a large Midwestern hospital-based institution.

Principal Findings: Two percent of the total pediatric population had a correctional keyword in the medical chart (N = 51,855). This 2% made up 66% of all patients with cannabis-related diagnoses, 52% of all patients with trauma-related diagnoses, 48% of all stress-related diagnoses, 38% of all patients with psychotic disorder diagnoses, and 33% of all suicidal-related disorders within this institution's electronic health record database – among other highly concerning findings. The development of the machine learning model to specifically locate a child who has been exposed to parental incarceration was feasible.

Conclusions: We captured an alarming health profile that warrants further investigation and validation methods to better address the gaps in our clinical understanding of youth with personal or family history involvement with the correctional system. There is also a need for robust language model testing based on machine learning in order to correctly identify evidence of COIP in the electronic health record.

Implications for Policy or Practice: We can do better in identifying, and supporting families affected by the correctional system. This novel cohort identification method may be able to fulfill the gaps in the sciences related to COIP or other types of family and personal involvement with the justice system. Doing so, could inform intervention development, and effective policy creation to improve the care and health of those exposed.

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Legal Determinants of Health: Historic Housing Policy and Modern Day Surgical Outcomes

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Research Objective: In 1933 the United States Government Home Owners Loan Corporation used racial composition of neighborhoods to determine creditworthiness and labeled them “Best”, “Still Desirable”, “Definitely Declining” and “Hazardous.” Although efforts have been made to reverse these racist policies that structurally disadvantage Black Americans, the lasting legacy on modern day healthcare outcomes is uncertain. The objective of this study was to evaluate the association of historical racist housing policies and modern day healthcare outcomes.

Study Design: Cross-sectional retrospective review of Medicare beneficiaries' who underwent one of five of common surgical procedures across neighborhoods historically labeled by the Home Owners Loan Corporation. Outcomes were risk-adjusted using a multivariable logistic regression model accounting for patient factors (age, sex, Elixhauser comorbidities), admission type (elective, urgent, emergency), and type of operation.

Population Studied: 525,690 Medicare beneficiaries' admissions between 2012 and 2016 who underwent one of five of common surgical procedures - coronary artery bypass, appendectomy, colectomy, cholecystectomy and hernia repair – across neighborhoods historically labeled by the Home Owners Loan Corporation.

Principal Findings: Overall, 473,732 Medicare beneficiaries (mean age, 74.6 years; 49.8% women) underwent 520,690 operations within neighborhoods that had been historically graded by the Home Owners Loan Corporation. Mortality increased in a stepwise fashion across neighborhoods. Overall, 30-day postoperative mortality was 4.3% in “Best” neighborhoods, 4.7% in “Still Desirable”, 4.8% in “Definitely Declining” and 5.1% in “Hazardous” (Best vs. Hazardous Odds Ratio = 1.21 [1.16–1.26]; P < 0.001). The same stepwise increase was present for each procedure individually across the following ranges: coronary artery bypass (2.8% to 3.3%), appendectomy (2.8% to 3.3%), colectomy (8.0% to 9.3%), cholecystectomy (3.1% to 3.7%) and hernia repair (3.7% to 4.4%). Mortality rates also increased significantly in a stepwise manner across neighborhoods for White (4.6% to 5.2%, p < 0.001) and Black (5.3% to 6.0%, p = 0.002) racial groups. Black Medicare Beneficiaries had higher mortality rates compared to non-Blacks overall (5.8% vs 5.0%; absolute difference + 0.8%) with persistent disparity across neighborhoods from 5.3% vs 4.6% (+0.7%) in “Best” neighborhoods to 6.0% vs 5.2% (+0.8%) in “Hazardous” neighborhoods.

Conclusions: Discriminatory housing policy was associated with increasing rates of post-operative mortality across neighborhoods for all racial groups, with Black Medicare beneficiaries being disproportionately affected.

Implications for Policy or Practice: These findings underscore the long term sequelae of housing policies and raise concern about policies that reward or penalize hospitals based on their outcomes without taking into account possible structural disadvantages within certain communities.

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Deaths in Immigration and Customs Enforcement (ICE) Detention, 2011–2018. Results of an Analysis of 55 Detainee Death Reviews

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Research Objective: Since 2017, intensified deportation efforts against immigrants have increased the population in Immigration and Customs Enforcement (ICE) detention nationally. ICE assumes responsibility for the health and safety of individuals in their custody for the duration of detention, as mandated by their Performance-Based National Detention Standards (PBNDS). Following the death of an individual in detention, the ICE Office of Detention Oversight produces Detainee Death Reviews (DDR). DDRs evaluate circumstances surrounding the death and determine whether PBNDS were violated. To gain a more comprehensive understanding of ways in which health systems factors may have contributed to deaths in ICE detention facilities, we systematically analyzed the text of 55 DDRs conducted between 2011 and 2018.

Study Design: A total of 55 DDRs from 2011 to 2018 were obtained via a combination of the Official Department of Homeland Security ICE Freedom of Information Act website and from civil rights organizations. Data was extracted from each DDR using a standardized tool. Data extracted described the deceased's demographic information, immigration, criminal, and medical histories, objective medical data, and any PBNDS violations identified and acknowledged in each death report.

Population Studied: Individuals who died while in ICE detention.

Principal Findings: The research team successfully obtained DDRs for 55 (92%) of 69 reported deaths^{5–7} among individuals in ICE detention between 2011 and 2018. Individuals who died were predominantly male (86%); averaging 42.7 years of age at the time of death. The deceased had lived in the United States for a mean of 15.8 years prior to entering ICE detention and spent a median of 39 days (range 1–1865; mean 120) in ICE custody prior to death. Individuals who died had relatively low burdens of pre-existing disease as illuminated by Charlson Comorbidity Index (CCI) scores of 0 (33%) or 1–2 (27%). Markedly abnormal vital signs were documented prior to 51% (28) of deaths, with 71% (20) of deaths preceded by abnormal vital signs during multiple encounters prior to death or hospital transfer. Most deaths (n = 47, 85%) were attributed to medical causes, while 8 (15%) were attributed to suicide. None of the individuals who committed suicide were on suicide watch at the time of death; though half had been at some time during their detention. Among 55 death summaries, a total of 86 counts of PBNDS deficiencies were noted across 7 categories. Overall, 43 (78%) of DDRs identified PBNDS deficiencies related to Medical Care, with a mean of 3.16 deficiencies related to Medical Care per case (Range 1–13).

Conclusions: Findings suggest that substandard medical care occurring within ICE detention facilities may have contributed to or failed to prevent deaths of multiple individuals in ICE detention between 2011 and 2018. Additionally, the detention death review process found the majority of detention facilities had violated ICE's own medical standards repeatedly.

Implications for Policy or Practice: These results highlight the need for further independent investigations into medical and psychiatric care provided to individuals in ICE detention facilities, and greater mechanisms for external accountability.

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Citizenship Status and Mortality Among Latinos: Analyses of the US National Health Interview Survey Linked Mortality Files

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Research Objective: Forty million Latino adults reside in the United States, including eleven million who do not possess US citizenship. Noncitizens disproportionately experience poverty, segregation, and inadequate access to healthcare—pathogenic mechanisms that adversely impact health. Here we examine the association between citizenship status (*i.e.*, US-born citizens, naturalized citizens, or noncitizens) and mortality among Latinos.