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Mental Illness Drives Hospitalizations for Detained California Youth

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A B S T R A C T

Purpose: The purpose of the study was to describe inpatient hospitalization patterns among detained and nondetained youth in a large, total population of hospitalized adolescents in California.
Methods: We examined the unmasked California Office of Statewide Health Planning and Development Patient Discharge Dataset from 1997 to 2011. We considered hospitalized youth aged 11–18 years "detained" if admitted to California hospitals from detention, transferred from hospital to detention, or both. We compared discharge diagnoses and length of stay between detained youth and their nondetained counterparts in the general population.
Results: There were 11,367 hospitalizations for detained youth. Hospitalizations differed for detained versus nondetained youth: 63% of all detained youth had a primary diagnosis of mental health disorder (compared with 19.8% of nondetained youth). Detained girls were disproportionately affected, with 74% hospitalized for a primary mental health diagnosis. Detained youth hospitalized for mental health disorder had an increased median length of stay compared with nondetained inpatient youth with mental illness (≥6 days vs. 5 days, respectively). This group difference was heightened in the presence of minority status, public insurance, and concurrent substance abuse. Hospitalized detained youth discharged to chemical dependency treatment facilities had the longest hospital stays (≥43 days).
Conclusions: Detained juvenile offenders are hospitalized for very different reasons than the general adolescent population. Mental illness, often with comorbid substance abuse, requiring long inpatient stays, represents the major cause for hospitalization. These findings underscore the urgent need for effective, well-coordinated mental health services for youth before, during, and after detention.

IMPLICATIONS AND CONTRIBUTION

The vast majority of hospitalizations among youth in the juvenile justice system result from mental health conditions, often requiring prolonged inpatient stays, transfer to specialized facilities, and significant public resources.

Detained youth are a high-risk population with numerous unmet medical and mental health needs [1–3]. Previous studies within the juvenile justice system demonstrated increased prevalence of a variety of medical conditions, including sexually transmitted diseases, pregnancy, asthma, and obesity [4–7]. The

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prevalence of psychiatric illness in detained adolescents is striking, with studies suggesting that up to two thirds of these youth have mental health disorders [8–10].

Despite this increased burden of illness, little is known about the severity of these conditions among detained youth. Hospitalization, as an indicator of disease severity, can provide insight into the burden of unmet health care needs. Moreover, because many of the conditions observed in these youth are potentially amenable to coordinated outpatient care, characterization of hospitalizations for this group could help elucidate the nature and scope of their unmet health needs.

Few previous studies have examined hospitalizations among detained youth, and none have examined the causes of hospitalization in a large, total population of hospitalized adolescents [3,11,12]. Using data from the California Office of Statewide Health Planning and Development (OSHPD) Patient Discharge Database, we examined all hospital discharges among adolescents aged 11–18 years in California over a 15-year time span. Our objectives were to characterize hospitalization patterns among detained youth and to compare these patterns with those for the general, nondetained adolescent population in the large, ethnically diverse state of California utilizing a large database.

Methods

Patients and study variables

Data source. We used the private, unmasked OSHPD Patient Discharge Database from 1997 to 2011. This dataset contains information (submitted biannually) on all hospital discharges from nonfederal acute care hospitals. Variables in the "unmasked" version of the dataset include all available patient identifiers (date of birth, social security number, Zone Improvement Plan (ZIP) code of residence, hospital identification number), as well as other sociodemographic information (ethnicity, race, gender), expected source of payment (health insurance), admission source, diagnosis and treatment codes, length of hospital stay, and disposition.

Study population. We queried the dataset for all adolescents aged 11–18 years, excluding non-California residents (n = 35,662) from the analyses. We considered patients admitted to California hospitals from detention facilities, transferred from a hospital directly to a detention facility, or both during the study period to be "detained youth." We identified admissions from detention by Admission Source of "jail" in the OSHPD database and discharges to detention by Disposition to "jail." Based on our clinical experience, we divided hospitalizations for detained youth into three patterns: (1) hospitalizations for youth admitted from detention and then transferred back to detention (hereafter referred to as "Detention-Hospital-Detention"); (2) hospitalizations for youth admitted from the community and then transferred to detention (hereafter referred to as "Community-Hospital-Detention"); and (3) hospitalizations for youth admitted from detention and subsequently discharged or transferred to another facility, including psychiatric hospitals or substance abuse treatment centers (hereafter referred to as "Detention-Hospital-Treatment"). Throughout the article, we use "hospitalizations" among detained youth or nondetained youth as shorthand for "discharges among detained youth" or "discharges among nondetained youth," particularly in the tables.

Sociodemographic, health insurance, and geographic characteristics. Sociodemographic variables we examined included patient age, gender, and race/ethnicity (Caucasian, black, Hispanic, Asian-American, and other). We categorized health insurance as public insurance, private insurance, and other [13]. We used ZIP code of residence to create a dichotomous variable reflecting major metropolitan population centers versus rural areas.

Diagnosis identification. We determined the principal discharge diagnosis and up to 24 secondary diagnoses to identify co-occurring or comorbid conditions [13–15]. We collapsed International Classification of Disease Ninth Revision, Clinical Modification (ICD-9-CM) codes into the following broad categories: (1) Mental Health; (2) Trauma; (3) Pregnancy; and (4) Other Acute and Chronic Medical conditions. The Mental Health category comprised psychiatric DSM-IV discharge diagnostic codes (ICD-9 CM codes 290xx–319xx). This category reflected the following three major groups: (1) mental disorders; (2) substance use disorders; and (3) developmental disorders. We subdivided mental disorders into clinically relevant psychiatric categories that included anxiety/stress, depressive, disruptive, and psychotic disorders [16]. Finally, we identified mental health comorbidities (defined as a psychiatric diagnosis that occurred with one or more lower ranked psychiatric diagnoses) because such conditions are predictors of poorer outcomes [17,18].

We defined Trauma diagnoses as ICD-9 CM codes 800xx-959xx. We calculated Injury Severity Scores (ISS) for all hospitalizations with trauma diagnoses and stratified them into mild (ISS = 1–8), moderate (ISS = 9–15), and severe (ISS > 16) [15,19]. Diagnoses associated with pregnancy included 630xx-677xx. We categorized all other ICD-9 codes as "Other acute and chronic medical" diagnoses. Although we examined both primary and up to 24 secondary discharge diagnoses, we only counted each discharge once.

Statistical analysis

We compared discharge diagnoses between detained adolescents (including stratification by gender, race/ethnicity and by the three hospitalization patterns) and their nondetained counterparts using chi-square tests. We compared length of stay (LOS) between detained and nondetained youth within diagnosis categories (i.e., Mental Health, Trauma, Pregnancy, Other Medical). To account for skewness in LOS, we used nonparametric tests (Wilcoxon and Kruskal–Wallis) to compare sociodemographics, insurance status, disposition subgroup, diagnosis categories, and hospital type among detained and nondetained youth. We designated p values less than .05 to indicate statistical significance, and we report 95% confidence intervals. We used SAS 9.3 (SAS Institute, Cary, NC) for all analyses.

Human subjects

The institutional review board at Stanford University and the State of California Committee for the Protection of Human Subjects reviewed and approved this study.

Results

Of the 3,562,644 pediatric discharges during the study period, 1,936,513 involved adolescent California residents. Six tenths of one percent (.6%) of adolescent discharges (n = 11,367) either