# Effect of Having a Usual Source of Care on Health Care Outcomes Among Children With Serious Emotional Disturbance



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# **A**BSTRACT

**OBJECTIVE:** To determine the influence of a usual source of care (USC) on health care utilization, expenditures, and quality for Medicaid-insured children and adolescents with a serious emotional disturbance (SED).

**METHODS:** Administrative claims data for 2011–2012 were extracted from the Truven Health MarketScan Multi-State Medicaid Research Database for 286,585 children and adolescents with a primary diagnosis of SED. We used propensity score-adjusted multivariate regressions to determine whether having a USC had a significant effect on utilization and expenditures for high-cost services that are considered potentially avoidable with appropriate outpatient care: physical and behavioral health inpatient admissions, emergency department (ED) visits, and hospital readmissions.

**RESULTS:** Propensity score-adjusted regressions indicated that children with a USC had fewer inpatient admissions related to behavioral health (adjusted odds ratio [AOR] = 0.87; 95% confidence interval [CI], 0.79-0.97) and physical health

(AOR = 0.91; 95% CI, 0.89–0.93) and lower expenditures for behavioral health inpatient admissions, physical health ED visits, and readmissions. Having a USC also was associated with a higher likelihood of receiving quality health care for 4 physical health and 2 behavioral health measures.

**CONCLUSIONS:** Having a USC improved the health care of Medicaid-insured children and adolescents with an SED. However, despite having insurance, approximately one-fourth of this patient population did not appear to have a USC. This information can be used in developing programs that encourage connections with comprehensive health care that provides coordination among various providers.

**KEYWORDS:** health care quality; health care spending; health care utilization; serious emotional disturbance; usual source of care

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# WHAT'S NEW

For children and adolescents with serious emotional disturbance enrolled in Medicaid, having a usual source of care is associated with lower rates of utilization and spending on high-cost services and better quality of care, suggesting the importance of connecting this population with a usual source of care.

CHILDREN AND ADOLESCENTS with serious emotional disturbance (SED) have specific mental, emotional, and behavioral disorders that greatly affect their functional ability and increase their need for specialized treatment. Having a usual source of care (USC) can enhance health care.<sup>1–5</sup> Among the general population, a USC is associated with earlier, more accurate diagnoses; better coordination of care; fewer hospitalizations and

emergency department (ED) visits; and lower health care costs. 4,5 Studies have documented the benefit of having a USC in children and adolescents. 1,3,6,7 Those with a USC obtain more consistent and adequate medical care, whereas those with little or no regular source of health care have an increased risk of ED visits, hospitalizations, and readmissions. 6,8,9

There is a strong association between having an SED and increased use of health care services. <sup>10</sup> According to a recent study using the National Comorbidity Survey-Adolescent Supplement survey, 22% of adolescents met the criteria for a mental disorder with severe impairment during their lifetime. <sup>11</sup> Not only is SED a prevalent problem, but children and adolescents with this disorder also are disproportionately represented in the Medicaid population. <sup>12</sup> Taken together, children and adolescents who have an SED are more likely to use high-cost health care, which might

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indicate the benefit for having a USC. However, no studies have examined the role of having a USC on health care outcomes among Medicaid-insured children with SED.

This study used Medicaid administrative data to determine the percentage of children and adolescents with SED who have a USC, and the influence that a USC has on their health care utilization, cost, and quality. We hypothesized that having a USC would be associated with less utilization of and subsequently less spending on high-cost health care services that are considered potentially avoidable with appropriate outpatient management. A USC also was expected to enhance the quality of health care in this population.

## **METHODS**

This study used 2011–2012 administrative claims data from the Truven Health MarketScan Multi-State Medicaid Research Databases. This longitudinal database contains inpatient, outpatient, and pharmaceutical Medicaid claims data for more than 28 million individuals in 12 geographically disparate states and tribal regions. Agreements with state Medicaid agencies prohibit the disclosure of which states contribute to the MarketScan Medicaid databases. We identified eligible subjects and their characteristics using the 2011 base-year data and outcomes of interest using the 2012 follow-up year data.

The study included individuals 18 years of age or younger who had a primary diagnosis of SED during 2011. Specifically, children and adolescents were classified as having SED if they had either 1 inpatient stay or 2 outpatient claims on different service dates in calendar year 2011 with a primary diagnosis of schizophrenia (295), mood disorders (296, 311), other psychoses (297–298), pervasive developmental disorders (299), anxiety disorders (300), personality disorders (301), sexual and gender identity disorders (302), special symptoms or syndromes not elsewhere classified (307), adjustment disorders (309), conduct disorders (312), emotional disturbances of childhood (313), and attention deficit hyperactivity disorder (ADHD; 314). We used a modified version of the current Substance Abuse and Mental Health Services Administration definition of SED<sup>13</sup> and identified SED diagnoses using the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM). To ensure that all annual data were available, we excluded individuals who were not enrolled continually from January 1, 2011 to December 31, 2012, and individuals who were dually eligible for Medicaid and Medicare.

# **OUTCOME MEASURES**

# HEALTH CARE UTILIZATION AND EXPENDITURES

We used claims data from 2012 to determine utilization and expenditures for 5 health care services: physical and behavioral health inpatient admissions, physical and behavioral health ED visits, and 30-day all-cause hospital readmissions. These services represent more expensive acute care or acute care that can potentially be reduced

or avoided with adequate outpatient care. Inpatient admissions and ED visits were classified as physical or behavioral health on the basis of each encounter's primary diagnosis. The ICD-9-CM codes representing behavioral health diagnoses were 290-319 (mental disorders), 648.3 (drug dependence complicating pregnancy childbirth or the puerperium), 648.4–648.44 (mental disorders of the mother), V61.0-V61.9 (other family circumstances), V66.3 (convalescence after psychotherapy and other treatment for mental disorder), V67.3 (follow-up examination after psychotherapy and other treatment for mental disorder), V70.1 (general psychiatric examination, requested by the authority), V70.2 (general psychiatric examination, other, and unspecified), V71.01-V71.09 (observation for suspected mental condition); all other codes were classified as physical health. Thirty-day all-cause readmissions were defined as at least 1 inpatient admission, regardless of cause, followed by a second inpatient admission within 30 days of discharge. Expenditures represented all Medicaid payments in 2012 dollars to providers for each of the 5 services.

#### QUALITY OF HEALTH CARE

We assessed quality using 8 pediatric quality measures that reflect appropriate health care from the National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS; detail in Table 1). Four measures addressed behavioral health care involving short-term and long-term follow-up after being hospitalized for a mental health disorder and being prescribed ADHD medication. Two measures addressed infectious disease management involving pharyngitis and upper respiratory infections, and two addressed the pharmaceutical management of asthma. We based estimation procedures on the technical specifications of the 2014 HE-DIS measures. <sup>15</sup>

# INDEPENDENT VARIABLES

## USC

The primary independent variable was having a USC, which represents where individuals typically go for their physical health care. Our definition of a USC was modeled after previous national surveys that defined it as involving outpatient physical health care obtained in nonemergency settings, 16 so visits to EDs and urgent care centers were excluded. Children and adolescents were considered as having a USC if they had at least 1 service in 2011 representing new or established patient evaluations, office consultations, or visits that took place in private residences or in skilled nursing or assisted living facilities. USC appointments included preventive medicine visits and annual wellness or general medical examinations. Outpatient settings included independent, free-standing, provider-based Indian health and tribal, state, and local public health facilities or rural health clinics; federally qualified health centers; military treatment facilities; and custodial care. Community mental health center visits also were included if the visits were not associated with a behavioral health

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