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RESEARCH ARTICLE

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African American/white disparities in psychiatric emergencies among youth following rapid expansion of Federally Qualified Health Centers

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Abstract

Objective: To test whether rapid expansion of mental health services in Federally Qualified Health Centers (FQHCs) reduces African American/white disparities in youth psychiatric emergency department (ED) visits.

Data Sources: Secondary ED data for psychiatric care for 3.3 million African American and white youth in nine states, 2006-2011. We used the HCUP SEDD and SID. We obtained FQHC service data from the Uniform Data System.

Study Design: The psychiatric ED visit is the dependent variable. Logistic regression methods control for individual risk factors for ED use, as well as county-level health system factors and county and year fixed effects. Key independent variables include indicators of mental health service capacity in FQHCs in a county-year.

Data Extraction Methods: We extracted ED psychiatric visits for 3.3 million African American and white youth in nine states, 2006-2011, from the HCUP SEDD and SID, and FQHC data from the Uniform Data System.

Principal Findings: Overall mental health visits at FQHCs correlate positively with psychiatric ED visits among African American youth. However, increases in the number of mental health visits per FQHC patient corresponds with fewer outpatient psychiatric ED visits among African American youth, relative to white youth (odds ratio = 0.96; 95% CI = 0.94, 0.98).

Conclusions: Increases in the intensity of services offered per mental health patient at FQHCs—rather than increases in overall capacity—may reduce African American youth's overreliance on the ED for psychiatric care.

KEYWORDS
children/adolescents/youths, emergency department, Federally Qualified Health Centers, psychiatry, racial/ethnic disparities

1 | INTRODUCTION

More than 1 in 5 youth (~9 million) in the United States suffer from a severe mental disorder.[1] Less than half of these youth receive care.[2] Undertreatment appears more common among African American than among non-Hispanic white youth.[3] When they do receive psychiatric care, African American youth use the emergency department (ED) 11 percent more than do white Americans.[4] This disparity is long-standing and widespread,[5,6] imposes substantial health care and public health costs,[7-9] and does not arise from differences in

mental illness prevalence.[1] In addition, African American youth often use the ED for nonurgent conditions.[10] Within the US context of overcrowded yet underfunded ED care, such use may increase health care costs, disrupt patient flow, and divert ED staff from treating acute illnesses.[11]

Regional mental health system capacity (ie, primary care and routine outpatient services) may plausibly affect the demand for psychiatric ED visits. One cross-sectional study using 2001 data on adults finds a positive association between regional health system factors (eg, access to Federally Qualified Health Centers [FQHCs]) and African Americans' help-seeking in particular.[12] FQHCs target low-income, historically disadvantaged communities,[13] and their reach has expanded by an unprecedented 70 percent in the last decade.[14-16] Over 24.3 million Americans receive health care from FQHCs.[15] Over three-quarters of FQHCs provide mental health services for youth.[17] African Americans are notably overrepresented in FQHCs.[17] In increasing mental health service capacity particularly in regions with a large share of African American youth, FQHC availability may reduce disparities in ~ 1.1 million youth psychiatric ED visits per year.[18]

Despite the rapid expansion of FQHCs in the last decade, and despite African American's overrepresentation in FQHCs, no research evaluates their effectiveness in reducing African American youth's need to use the ED for psychiatric care. A recent aggregate-level analysis finds that FQHC expansion corresponds with fewer psychiatric ED visits overall, but this work does not focus on racial/ethnic disparities.[19] This disparity issue is crucial from a policy standpoint given the ~$11 billion annually devoted to FQHCs for reducing barriers to routine outpatient care for low-income, mostly minority populations.[20] In the 1990s in California, the volume of outpatient youth psychiatric care increased after Medicaid enforcement of low-cost options.[21] These findings provide "proof of concept" that supply-side factors can drive help-seeking.

We address this gap in the literature by evaluating, among youth, whether a system-wide increase in service access, via rapid FQHC expansion of outpatient volume and in mental health care, corresponds with a reduction in the African American/white disparity in psychiatric ED visits. We use the universe of youth psychiatric ED visit data for nine states (ie, over 3 million visits) from 2006 to 2011, a period that underwent rapid FQHC expansion. Our contribution informs whether FQHC expansion can be expected, on its own, to reduce ED disparities.

2 | METHODS

2.1 | Data: Visit-level outcome

The University of California, Irvine Human Research Protections staff reviewed our research protocol and deemed that our study does not qualify as human subjects research; therefore, no Human Subjects Protocol Number was assigned. We retrieved psychiatric ED visit data for African American and white youth from the Agency for Healthcare Research and Quality-sponsored Statewide Emergency Department Database (SEDD) and the Statewide Inpatient Database (SID).[22,23] Participating states contract with HCUP to make available for researchers (for purchase) all visit-level data from the universe of community hospitals with an ED. Cross-validation with hospital identifiers from the American Hospital Association survey supports over 99 percent hospital coverage by SEDD and SID databases in participating states.[18] SEDD and SID contain encounter-level information on all hospital-affiliated ED visits, for participating states, that either received outpatient treatment (SEDD) or were ultimately admitted for inpatient services (SID). To facilitate multistate analyses, participating states organize all ED encounters into annual files with a common set of data elements and uniform structure. The SEDD and SID record an estimated 110 million ED encounters per year.[22,23]

We restricted our analyses to psychiatric ED visits among patients aged 5-24 years. We used 5 years as the starting age for inclusion because publicly funded mental health services for youth typically begin at 5 years.[24] We, consistent with Healthy People 2020[25] and the World Health Organization,[26] define youth through to age 24 years (inclusive). This inclusive age category aligns more closely with contemporary patterns of adolescent growth and popular understandings of this life phase.[27] In addition, state-level mental health programs geared to youth[28] routinely serve patients beyond the legal definition of adulthood.

We analyzed SEDD and SID for states which met all of the following criteria: (a) made data available to researchers; (b) had a low level of missing data (ie, <10 percent) on clinical classification code(s), diagnosis codes, age, sex, and race/ethnicity for African American and white categories; (c) showed a population with greater than five percent African American; and (d) experienced FQHC growth over time. Based on these criteria, we analyzed nine states (AZ, CA, FL, MA, MD, NC, NJ, NY, and RI), which comprise 37 percent of the US population and cover three of the four US geographic regions. Given that several states no longer collect race/ethnicity data after 2011, we acquired SEDD and SID data for years 2006 through 2011 inclusive. Validation studies support the high quality, consistency, and completeness of our analytic variables—including the African American race/ethnicity category—for our particular states and years studied.[29-31] We, consistent with the literature, classified psychiatric ED visits using ICD-9 diagnostic codes contained within clinical classification software categories for mental disorder (including mood, conduct, anxiety, and behavioral disorders, suicide attempts and self-harm, among others; see Table S1 for full list of ICD-9 codes).[32]

2.2 | Data: County-level independent variable

The Uniform Data System (UDS) contains data from all FQHCs, which we used to construct our independent variables.[17] The UDS includes patient- and encounter-level summaries of the age and race/ethnicity profile, as well as volume and type of mental health services offered, by each FQHC that receives primary care grant funding from section 330 of the Public Health Service Act. The US government requires

UDS reports as a condition of funding. Over 99 percent of FQHCs complete these reports over our test period.[33] The US government ensures validity of FQHC reports by providing the following: data trainings in all states, a clinical consultation helpline for data collection activities, numerous data checks and screenings to identify and resolve data discrepancies, and one-on-one communications with FQHC directors to check outliers.[34] We also find strong concordance between demographic variables from FQHCs and those from the US Census, further supporting data quality.

We cannot know the extent to which individuals presenting at the ED also visit FQHCs. We, instead, use two aggregate county-level FQHC service indicators to gauge overall mental health service capacity in each county-year. FQHCs report aggregate data (separately) on (a) mental health visits and (b) mental health visits per patient diagnosed with a particular condition. We used these variables, in conjunction with US Census population estimates for each county-year, to derive two measures of FQHC penetration and mental health service capacity. These measures include the following: (a) total number of patients seen at FQHCs and diagnosed with a mental disorder, per 100 000 population; and (b) visits per mental health patient seen at FQHCs. Whereas the first variable estimates system-level FQHC service capacity, the second variable gauges continuity of care among patients seen with a mental disorder.

2.3 | Analysis

Our test turns on whether expansions in FQHC capacity and/or services correspond with a reduction in African American youth's psychiatric ED visits relative to ED visits among whites. We operationalize exposure to FQHC expansions at the county level given the system nature of FQHC expansion and the county-level resolution of psychiatric ED visits in SEDD and SID. We linked, by county ID, annual FQHC capacity variables to visit-level psychiatric ED data. The psychiatric ED visit serves as the unit of analysis, which allows for rigorous control of visit-level covariates known to predict psychiatric ED use among youth (eg, age, gender, Medicaid status).

We conducted a logistic regression analysis predicting psychiatric ED visits for youth in which we coded an African American visit as "1" and white visit as "0." This approach estimates the odds of an African American, relative to white, ED visit as a function of FQHC system-level characteristics, conditional on ED use. We opted for this approach owing to a lack of data on the population denominator of race-specific visits among youth at risk of being an ED visit. The lack of a visit-level denominator precludes estimation on an absolute scale of the difference in "rates" of ED visits among African American and white youth. We therefore analyzed the outcome on a relative scale, which appears common in health inequalities research.[35]

Changes in psychiatric ED visits for African American youth, relative to whites, could arise for several reasons unrelated to FQHC expansion. Policy adoption (eg, the Mental Health Parity and Addiction Equity Act), demographic shifts, or changes in the public or private health care landscape may induce temporal patterns of help-seeking in the ED. We controlled for this possibility in two ways. First, we retrieved several regional health care and economic factors previously reported to vary over time with psychiatric care (ie, psychiatric beds per capita, MDs per capita, Medicaid and private insurance enrollees per capita, regional poverty) and specified them in the equation. We retrieved these county-level control variables from the Area Health Resource File, the US Census Population Estimates, the Small Area Health Insurance Estimates, and the Small Area Income and Poverty Estimates.[36-39] Second, we included year indicator variables to control for generally occurring time trends in psychiatric ED visits.

Movement of African Americans (more than whites) across county lines over time could bias inference of our key coefficients if the changing denominator of the population at risk affects the volume of ED visits in a race-specific manner. To control for this possibility, we included as a covariate each county-year's ratio of African American to white youth population. We retrieved these denominators from US Census Population Estimates' county population by race/ethnicity and 5 year age group datasets.[37]

Omitted county-level variables (eg, cultural norms, community resources, patient preferences) could bias effect estimates if they correlate with FQHC expansions and affect racial/ethnic differences in psychiatric ED visits among youth. To control for such potential bias, we included county fixed effects. This approach permits estimates of the effect of a change in FQHC variables on a change in psychiatric ED visits.

These steps led us to estimate the following equation:

$$\text{Logit}(Y_{vjt}) = \beta_0 + \beta' \mathbf{X}_{vjt} + \beta' \mathbf{D}_{jt} + \beta_2 R_{jt} + \beta' \mathbf{J}_j + \beta' \mathbf{T}_t + e_{vjt}, \quad (1)$$

where $\text{Logit}(Y_{vjt})$ denotes the log-odds of the psychiatric ED visit being African American (=1; 0 if white). We express $\text{Logit}(Y_{vjt})$ for ED visit v in county j at year t in terms of a vector of visit characteristics $\mathbf{X}_{vjt}$ (eg, gender, age, health insurance type), a vector of county health care and demographic variables $\mathbf{D}_{jt}$ (eg, bed capacity, physician concentration, ratio of African American to white youth population), a FQHC mental health system variable R_{jt}, a vector of county indicator variables $\mathbf{J}_j$, and a vector of calendar year $\mathbf{T}_t$ control variables. The variable of interest is the FQHC mental health system R_{jt}. Given our two distinct measures of the FQHC mental health system, to avoid overfitting we estimate two separate equations. We used log-transformed exposures to minimize the effect of influential outliers. AIC and BIC estimates also show lower values when using log-transformed exposures in our analyses.

We conducted all analyses in Stata SE version 14.2[40] and specified the "robust" standard error option to allow for efficient estimation in the presence of correlated errors. Given that FQHC expansion may affect "treat-and-release" ED visits differently from presumably more severe ED visits that ultimately require inpatient stay, we analyzed outpatient (SEDD) and inpatient (SID) ED visits separately. If any of the FQHC mental health system coefficients rejected the null, we calculated the number of statistically averted outpatient ED visits and inpatient admissions. We also estimated average marginal effect of exposures to determine the predicted

TABLE 1 Sociodemographic characteristics of white and African American psychiatric visits for youth in nine states, 2006-2011, among counties with at least one Federally Qualified Health Center

Attributes	Outpatient ED visits N (%)	Inpatient admissions from EDs N (%)
N	2 760 624	552 783
Race/Ethnicity (%)		
African American	682 422 (24.6)	163 975 (29.7)
White	2 078 202 (75.4)	388 808 (70.3)
Gender (%)		
Male	1 347 457 (48.5)	289 396 (52.3)
Female	1 413 167 (51.5)	263 387 (47.7)
Age (%)		
5-9 years	110 088 (3.7)	25 640 (4.6)
10-14 years	263 505 (9.5)	55 745 (10.1)
15-19 years	894 247 (32.4)	167 889 (30.4)
20-24 years	1 492 784 (54.1)	303 509 (54.9)
Top six psychiatric diagnoses (%)		
Suicidal ideation/ self-harm	196 547 (7.1)	81 870 (14.8)
Anxiety	429 696 (15.6)	83 012 (14.6)
ADD/conduct	308 774 (11.2)	80 149 (14.5)
Mood disorders	590 768 (21.4)	237 520 (42.8)
Alcohol use disorders	305 855 (10.9)	77 625 (13.7)
Substance use disorders	353 205 (12.8)	169 066 (30.8)
Source of payment for care (%)		
Private	979 520 (35.5)	214 643 (38.0)
Medicaid	839 513 (30.4)	219 180 (37.5)
Other	941 591 (34.1)	136 640 (24.5)

probability of a psychiatric visit by an African American youth (relative to white) per standard deviation increment in exposure.[41]

3 | RESULTS

For the state-years of interest, African American and white youth account for over 2.6 million "treat-and-release" visits to the ED for psychiatric care (Table 1). Over 1 million inpatient psychiatric visits for this group originated in the ED. Consistent with previous literature, females and older youth account for disproportionately more psychiatric ED visits. Mood disorders rank as the most common diagnosis among these ED visits. Whereas the incidence of youth psychiatric treat-and-release ED visits shows a gradual increase from 2006 to 2011, the incidence of ED visits that ultimately result in an inpatient stay remains relatively stable.

The overall patient volume at FQHCs grew by 38 percent over the six-year period (ie, from 32 500 to 45 000). Mental health-related visits at FQHCs grew even faster than this base rate in that visits doubled from 2006 to 2011 (Figure 1). Consistent with the notion that FQHCs target ethnic minority communities, the number of African Americans seen at FQHCs also doubled from 2006 to 2011 (Figure S1). The ratio of mental health visits per patient also increased from 3.05 to 3.7 over the 6-year period. Figure 2 shows the trend in race-specific psychiatric ED visits (outpatient and inpatient combined). The visit rate per 100,000 population is markedly higher in African Americans relative to whites. This disparity increases over time.

Table 2 shows results for African American vs. white disparities in treat-and-release youth psychiatric ED visits (SEDD). For mental health visits at FQHCs, results indicate a positive relation with the odds of African American vs. white ED visits (Model 1). This finding coheres with the expectation that African American children with mental health problems, at least when they are recognized, are more likely to visit the ED. However, increasing mental health visits per FQHC patient corresponds with lower odds of a psychiatric ED visit among African Americans (odds ratio [OR]= 0.96; 95% confidence interval [CI] =0.94, 0.98) (Model 2).

We then analyzed youth psychiatric ED visits that ultimately result in an inpatient visit. We cannot reject the null for any of the two FQHC variables (Table 3; all models).

Next, given the welcomed rarity of psychiatric ED visits among youth aged 5-9 years, inclusion of this age group in our analysis may have led to imprecise results if this age group disproportionately accounts for nonurgent psychiatric ED visits. To examine whether exclusion of children 5-9 years affected inference, we repeated all

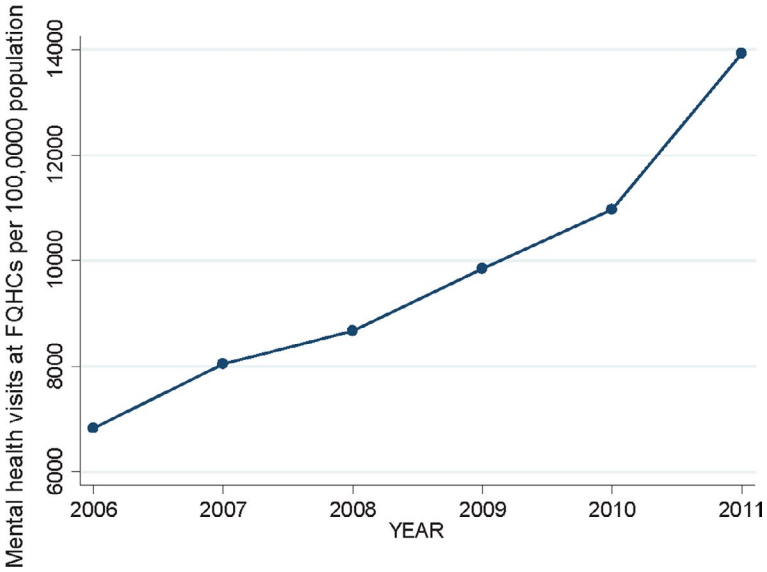

FIGURE 1 Total mental health visits per 100 000 population seen at Federally Qualified Health Centers, in nine states analyzed, 2006-2011 [Color figure can be viewed at wileyonlinelibrary.com]

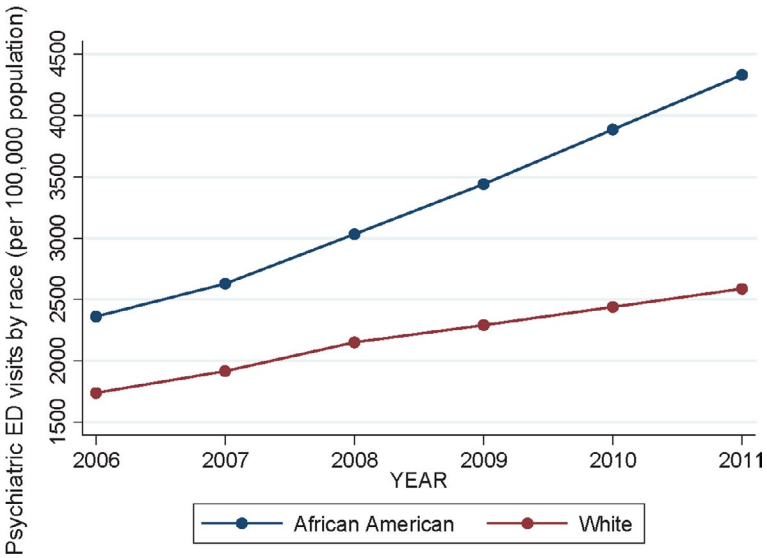

FIGURE 2 Total psychiatric ED visits (outpatient and inpatient combined) per 100 000 population in nine states analyzed, 2006-2011 [Color figure can be viewed at wileyonlinelibrary.com]

analyses using only the 10-24 year age range. Results (Table S2 and S3) provide the same inference as in the original tests.

To assist with interpreting results, we estimated the number of psychiatric youth ED "treat-and-release" visits among African Americans statistically averted by increases in the volume of mental health visits per patient at FQHCs. The county-year with the median number of African American ED visits had 435 outpatient psychiatric ED visits among African American youth, and a case rate of 4.9 annual visits per 100 African American youth. The case rate (African American youth psychiatric ED visits/ African American youth population in median county-year) yields the population-level odds of an African American youth psychiatric ED visit, which equals 0.052. With a 1 percent increase in mental health visits per mental health patient at FQHCs, the odds of an African American ED visit fall by 4 percent (relative to white; white ED visit odds assumed constant). Application of the discovered odds ratio coefficient to the case rate implies that a one standard deviation increase in mental health visits per FQHC patient corresponds with 3 fewer outpatient psychiatric ED visits for African American youth in that county-year (ie, ~0.7 percent reduction). Aggregation of this result to all counties indicates about 4,200 African American ED cases per year statistically "averted" by increases in FQHC visit volume among mental health patients. Estimates of average marginal effects indicate that the predicted probability of a psychiatric ED visit by an African American child/youth (relative to white) decreases by 0.25 percent per standard deviation increment in (log) mental health visit per mental health patient at FQHCs (Figure S2). Given that the average penetration rate of FQHCs in many counties is relatively low (ie, 8 percent in 2015), this modest effect size seems reasonable.[15,42]

4 | DISCUSSION

Federally Qualified Health Centers (relative to other health care options) may compel low-income populations to seek primary care and

TABLE 2 Logistic regression results predicting African American race among visits to outpatient psychiatric ED as a function of FQHC expansion

SEDD covariates	Model 1 OR [95% CI]	Model 2 OR [95% CI]
Log(MH visits at FQHCs per 100 000 population)	1.02*** [1.01, 1.03]	—
Log(MH visits per MH patient at FQHCs)	—	0.96*** [0.93, 0.98]
Females (reference = males)	0.96*** [0.96, 0.97]	0.96*** [0.95, 0.97]
Age (years)	0.97*** [0.97, 0.98]	0.97*** [0.97, 0.98]
Medicaid (reference = all other insurance groups)	1.51*** [1.50, 1.52]	1.51*** [1.50, 1.52]
Privately insured (reference = all other insurance groups)	0.44*** [0.44, 0.45]	0.44*** [0.44, 0.45]
Hospital beds per 100 000 population	1.00*** [1.00, 1.00]	1.00*** [1.00, 1.00]
Percentage of uninsured county population among the 18 to 64 years old	1.00*** [0.99, 1.00]	1.00*** [0.99, 0.99]
Percentage of county population in poverty	1.03*** [1.03, 1.04]	1.03*** [1.03, 1.04]
Physicians per 100 000 population	1.00 [1.00, 1.00]	1.00 [1.00, 1.00]
Ratio of African American to white youth population	0.87 [0.73, 1.03]	0.78** [0.66, 0.93]
Year fixed effects (reference = 2006)		
2007	1.04*** [1.03, 1.06]	1.05*** [1.03, 1.06]
2008	1.03*** [1.01, 1.04]	1.03*** [1.02, 1.05]
2009	1.08*** [1.06, 1.09]	1.08*** [1.07, 1.10]
2010	1.08*** [1.07, 1.10]	1.10*** [1.08, 1.12]
2011	1.09*** [1.07, 1.11]	1.11*** [1.09, 1.13]

*P-value <.1; **P-value <.05; ***P-value <.001.

TABLE 3 Logistic regression results predicting African American race among psychiatric ED visits that became inpatient stays as a function of FQHC expansion

SID covariates	Model 1 OR [95% CI]	Model 2 OR [95% CI]
Log(MH visits at FQHCs per 100 000 population)	0.99 [0.97, 1.01]	—
Log(MH visits per MH patient at FQHCs)	—	1.01 [0.96, 1.05]
Females (reference = males)	0.94*** [0.93, 0.96]	0.94*** [0.93, 0.96]
Age	0.99*** [0.99, 0.99]	0.99*** [0.99, 0.99]
Medicaid (reference = all other insurance groups)	1.67*** [1.64, 1.70]	1.67*** [1.64, 1.70]
Privately insured (reference = all other insurance groups)	0.36*** [0.36, 0.37]	0.36*** [0.36, 0.37]
Hospital beds per 100 000 population	1.00*** [1.00, 1.00]	1.00*** [1.00, 1.00]
Percentage of uninsured county population among the 18 to 64 years old	1.01** [1.01, 1.02]	1.01*** [1.01, 1.02]
Percentage of county population in poverty	1.01*** [1.01, 1.02]	1.01** [1.01, 1.02]
Physicians per 100 000 population	1.00*** [1.00, 1.00]	1.00*** [1.00, 1.00]
Ratio of African American to white youth population	2.39*** [1.72, 3.32]	2.48*** [1.78, 3.46]
Year fixed effects (reference = 2006)		
2007	1.06*** [1.04, 1.09]	1.06*** [1.04, 1.09]
2008	1.06*** [1.04, 1.08]	1.06*** [1.03, 1.09]
2009	1.04** [1.01, 1.07]	1.04** [1.01, 1.07]
2010	1.04* [1.01, 1.08]	1.03** [1.00, 1.07]
2011	1.02 [0.98, 1.07]	1.01 [0.97, 1.05]

*P-value <.1; **P-value <.05; ***P-value <.001.

therefore reduce the need for urgent care.[43,44] Empirical evidence of the extent to which FQHCs may substitute for use of ED care, however, remains scarce.[19,45] We focused on the long-standing African American/ white youth disparity in reliance on the ED for psychiatric care and tested whether rapid FQHC expansions from 2006 to 2011 reduced this disparity. Counter to expectations, increases in the volume of mental health patients seen at FQHCs correspond with increased odds of outpatient psychiatric ED visits among African American youth, relative to white. However, increased visits per mental health patient at FQHCs, which gauges continuity of care, corresponds with lower odds of outpatient psychiatric ED visits among African American youth. Taken together, FQHC system-level results indicate that enhanced continuity of care offered for mental health patients—rather than an increase per se in volume of mental health patients seen—may reduce African American youth's overreliance on the ED for psychiatric care.

Lack of individually linked ED visits to FQHC visits precludes any inference of whether African American youth with a psychiatric ED visit actually sought primary care in the FQHC. Our results, rather, pertain to the health policy-relevant question of the extent to which system-level expansions in availability of mental health services, in underserved areas, reduce African American youth's disproportionate reliance on the ED for psychiatric care. This logic coheres with previous work among African American youth in California, which shows greater help-seeking for mental health care following elimination of barriers to low-cost mental health service options.[21,46]

The positive relation between "treat-and-release" psychiatric ED visits among African American youth and mental health visits at FQHCs agrees with findings from Oregon's Health Insurance experiment[47] (for an exception, see Sommers et al[48]). In Oregon, persons randomized to Medicaid used the ED (for conditions treatable in

primary care settings) 40 percent more than did persons not randomized to Medicaid. The authors argue that expanding health insurance coverage may have increased real or perceived access to all aspects of the health care system, including the ED. Similarly, we speculate that FQHC expansion may have provided more mental health resources and access to African Americans who otherwise may not have sought mental health care in any setting. Alternatively, more mental health visits at FQHCs may signal greater morbidity in the population which, in turn, may require more ED visits during the course of their condition.

Intriguingly, increased number of mental health visits per patient at FQHCs corresponds with African American youth's reduced odds of outpatient psychiatric ED visits. Most youth presenting with a mental disorder require routine follow-up and coordination between primary care providers and specialists.[49] Number of mental health visits per patient seen in this setting may therefore gauge the quality and/or continuity of mental health care at FQHCs. Whereas the field does not agree on a single definition of continuity of care,[49] we aim to cross-validate this "intensity" measure with other FQHC-reported indicators of quality, continuity, and care coordination of mental health services. These variables become available for FQHCs beginning in 2014 and merit further investigation.

We observe no relation between FQHC system-level variables and African American youth's risk in psychiatric ED visits that resulted in an inpatient stay. These psychiatric ED visits among youth are much less common than are outpatient ED visits but show, on average, higher acuity. These populations remain challenging in terms of designing effective outreach, primary care services, and effective coordination of care.[50]

Strengths of our analysis include the use of 3.3 million psychiatric ED records from the SEDD and SID, which permits control for individual-level confounders, precise estimates of our coefficients, and external validity for African American and white youth to nine populous states. The six-year time period covered, and the county fixed-effects strategy allows us to examine within-county changes over time in FQHC services while controlling for important differences across counties that affect psychiatric ED use. The multiyear panel and control for county effects represents a key improvement relative to other work given the rapidly evolving mental health services landscape in the United States.

In addition to the FQHC variable limitations already mentioned, missing race/ethnicity data in SEDD/SID in many states after 2011 preclude an evaluation of youth psychiatric ED visits after Medicaid expansions of the Affordable Care Act. FQHC expansion, in conjunction with Medicaid expansion, may have resulted in greater mental health services penetration for underserved African Americans. Such evaluations will require alternative data sources but will apply to fewer states or regions. Our disparity-focused research question among youth also does not address whether overall psychiatric ED care across all ages and all race/ethnicities varies inversely with FQHC expansion. Given the large ongoing federal investment in FQHC expansion, we encourage additional investigations in this area. In addition, owing to the lack of estimates on the total number of medical visits overall, we could not report differences in race-specific risk of psychiatric ED visits following FQHC expansion. Future research in this area, using other datasets, may permit rigorous evaluation and reporting of disparities on both absolute and relative scales (as recommended in the literature).[35,51]

Beginning in 2014, as a condition of receiving federal funding, FQHCs report quality of mental health service delivery.[52] The quality measure aligns with that of national standard-setting organizations such as Medicare, Medicaid, and large HMOs. For mental health, the quality indicator is percentage of patients aged 12 and older screened for clinical depression, using an age-appropriate standardized tool, and with a documented follow-up plan. This depression screening tool, if appropriately administered, may promote continuity of care at FQHCs and appropriate referral of high-risk youth to specialists. We encourage further development of this and other indicators of mental health service delivery so that we can address whether quality or continuity of mental health care—rather than merely the system-wide capacity of FQHC mental health services—affects African Americans' reliance on the ED for youth psychiatric care.

Our descriptive results indicating increased psychiatric ED visits over time cohere with national trends. Lack of access to care in the primary care setting may compel patients to visit the ED. Patients often choose the ED for their care due to "lack of access" to primary care.[53] This preference holds even when patients feel their condition was "not an emergency." Other factors including geographic proximity and availability to a comprehensive set of resources may also contribute to this phenomenon. Health systems may benefit from diverting ED use by incorporating better managed care practices such as the concept of the patient-centered medical home, improved case management, and increased resources.

5 | CONCLUSIONS

Full integration of behavioral health into routine primary care at FQHCs remains a work in progress. Researchers further note that the current investment in FQHCs, whose most recent annual outlay exceeds $5.0 billion,[54] may fall below sufficient levels given the prevalence of mental health needs in these underserved communities. Whereas a thorough cost-effectiveness analysis remains outside of the scope of this paper, we encourage more rigorous evaluations of the efficiency of FQHC expansions.[16,19,45] We also note that the penetration rate of FQHCs in many communities remains low. Given this circumstance, the effect sizes we discovered, although modest, may represent lower bounds as FQHCs continue to expand.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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