

Income, health, and racial gaps between 340B hospitals, child sites, and nearby neighborhoods

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Introduction

- The 340B Drug Pricing Program is a safety net program that requires manufacturers to offer steep discounts on outpatient drugs to certain providers known as covered entities (CEs).
 - The US Congress established the 340B Program in 1992 with the limited purpose of restoring discounts manufacturers had traditionally provided to safety net providers before enactment of the Medicaid Drug Rebate Program, while protecting against duplicate discounts and diversion.¹
 - The 340B Program has grown exponentially in recent years, becoming the second largest federal prescription drug program after Medicare.²
- CEs earn significant profits by charging patients, their insurers, or Medicare standard reimbursement rates for drugs acquired at deeply discounted 340B acquisition costs.
- CEs may pass 340B discounts to underserved patients, but they are not required to do so.
- Hospital CEs such as disproportionate share hospitals (DSH), pediatric hospitals (PED), and critical access hospitals (CAH) may expand care through so-called 340B child sites.
 - Child sites include clinics, infusion centers, and various other outpatient treatment centers, and can be located on the hospital's main campus or remotely.
 - Child sites must be a reimbursable clinic on the CE's Medicare cost report but otherwise face few restrictions.³
- The number of 340B hospital child sites exceeded 34,000 in 2023, compared to just over 7,000 in 2013.⁴

Research objective

- Investigate where 340B hospitals (parent CEs) chose to expand child sites and estimate neighborhood differences between the locations of the parent CE, their child sites, and other neighborhoods near the parent CE that could serve as alternative targets for child site locations.

Methods

Data sources

- Information on all active 340B hospital CEs and child sites (as of 2022) was extracted from the HRSA Office of Pharmacy Affairs (OPAIs) database. Data included CE types (e.g., DSH, PED, and CAH) and ZIP codes of the parent CEs and child sites.
- Socioeconomic metrics were derived from the 2022 American Community Survey.⁵
- Health data were obtained from the Centers for Disease Control and Prevention's PLACES database.⁶
- Metrics were chosen based on broad availability and their relevance in identifying potential health disparities across socioeconomic groups.

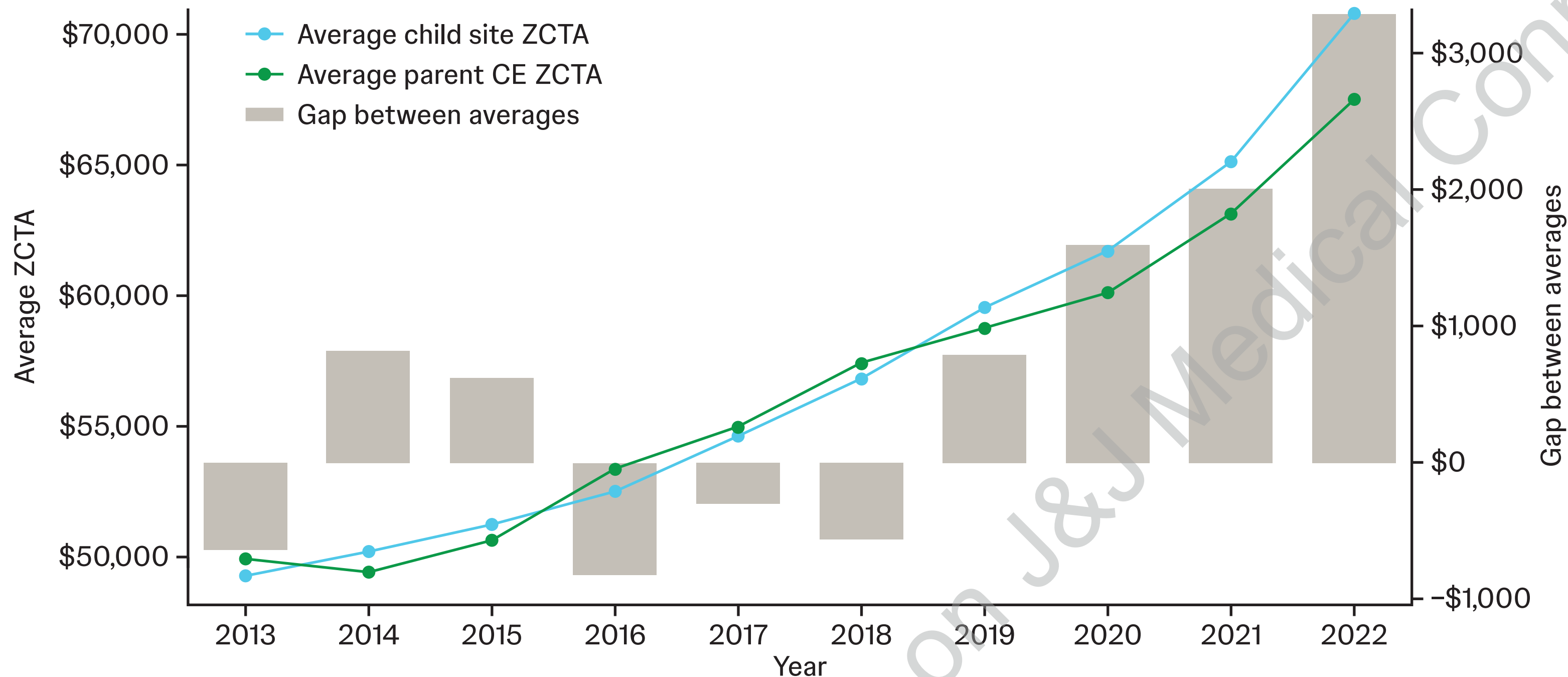
Approach

- The analysis examined socioeconomic and health differences between child sites, parent CEs, and competing potential CE neighborhoods for child site placement in 2022.
- ZIP codes with a minimum population of 1,000 were converted to ZIP Code Tabulation Areas (ZCTAs) using the Centers for Medicare & Medicaid Services' Uniform Data System data mapper.⁷
- Of the total 22,069 child sites in the dataset, approximately 43% were identified as being either on the premises of their parent CE or located within the same ZCTA.
- A total of 12,632 parent CE–child site pairs were analyzed where the child site was in a different ZCTA than the parent CE (57% of total child sites).
 - The distance between parent CE and child site was calculated based on the ZCTAs' corresponding latitude and longitude coordinates.⁸
- The "nearby neighborhood" average was calculated across all ZCTAs within a 10-mile radius of the parent CE to compare the chosen child site's location to potential alternative ZCTAs. This approach considered the possibility that differences may stem from 340B hospitals (parent CEs) being situated in relatively less advantaged neighborhoods originally.
 - Over 50% of child sites situated in a different ZCTA were located within a 10-mile radius of the parent CE.
 - The mean hospital CE had 20.1 ZCTAs within a 10-mile radius, which indicates that CEs have considerable alternative options for child site placement, implying that the choice of ZCTA for child site location likely reflects a meaningful decision.
- Variables for each parent CE–child site pair were tabulated for (a) the child site ZCTA, (b) the parent CE ZCTA, and (c) the average across ZCTAs within 10 miles of the CE, and included
 - median household income
 - unemployment rate
 - uninsured rate
 - share of the ZCTA population identifying as White
 - rates for adult diabetes, stroke, smoking, and obesity.
- For the listed variables, differences between child site and parent CE ZCTA levels were analyzed, followed by a separate examination of differences between child site ZCTA and 10-mile-radius ZCTAs.

Results

- Figure 1** shows the observed growth in median household income across active child site and parent CE ZCTAs between 2013 and 2022.
 - Both 340B hospitals and their child sites were located in ZCTAs of higher annual income every year since 2014.
 - Parent CE ZCTA income grew by 3.4% per year; child site ZCTA income grew at a faster 4.1% annual rate.

FIGURE 1: Child site and parent CE ZCTA income levels, growth and differences, 2013–2022



Blue line indicates child site ZCTA median household income (in US dollars). Green line indicates parent CE ZCTA median income. Grey bars depict differential between child site and parent CE ZCTA income levels.
CE, covered entity; ZCTA, ZIP Code Tabulation Area.

- Table 1** shows the differences between child site and parent CE ZCTAs across various socioeconomic and health metrics as of 2022.
 - Median household income was over 28% higher in child site areas versus parent CE areas.
 - Unemployment and uninsured rates were 17% and 11% lower in the child site areas, respectively, and the share of White residents was 11% higher.
 - Despite higher median resident age (+8.6%), child site areas had lower rates of adult diabetes (–1.2%), stroke (–3.2%), obesity (–3.2%), and smoking (–7.1%).

TABLE 1: Differences between child site and parent CE ZCTAs, 2022

	Child site ZCTA compared to parent CE ZCTA			
	Parent CE ZCTA mean	Average child site difference	Average % difference	Share with same direction difference
Median household income	US\$60,743	+US\$17,008	+28%	70%
Unemployment rate	6.4%	–1.1%	–17%	64%
Uninsured rate	11.4%	–1.2%	–11%	63%
Share of White residents	63%	+7%	+11%	62%
Adult diabetes rate	12.0%	–0.1%	–1.2%	50%
Adult stroke rate	3.68%	–0.1%	–3.2%	49%
Adult smoking rate	15.4%	–1.1%	–7.1%	57%
Adult obesity rate	35.2%	–1.1%	–3.2%	55%
Median resident age	36.2 years	+3.1 years	+8.6%	65%

CE, covered entity; ZCTA, ZIP Code Tabulation Area.

- Table 2** shows the difference in 2022 socioeconomic and health metrics between (chosen) child site ZCTA compared to other ZCTAs within 10 miles of the CE (as potentially alternative site choices).
 - Child sites were located in areas with significantly higher median household income (+11%), lower unemployment (–15%), fewer uninsured (–10%), and more White residents (+9%).
 - Despite higher median resident age (+3.5%), child sites were in areas with lower rates of adult diabetes (–3.2%), stroke (–4.4%), obesity (–3.2%), and smoking (–7.0%), relative to alternative locations that could have been chosen.

TABLE 2: Differences between child site and other nearby ZCTAs, 2022

	Child site ZCTA compared to ZCTAs within 10 miles of parent CE			
	Other ZCTA (nearby parent CE) mean	Average child site difference	Average % difference	Share with same direction difference
Median household income	US\$71,714	+US\$8,032	+11%	60%
Unemployment rate	6.1%	–0.9%	–15%	66%
Uninsured rate	11.3%	–1.1%	–10%	66%
Share of White residents	64%	+6%	+9%	61%
Adult diabetes rate	12.3%	–0.4%	–3.2%	57%
Adult stroke rate	3.61%	–0.2%	–4.4%	58%
Adult smoking rate	15.7%	–1.1%	–7.0%	62%
Adult obesity rate	35.2%	–1.1%	–3.2%	61%
Median resident age	39.6 years	+1.4 years	+3.5%	60%

CE, covered entity; ZCTA, Zip Code Tabulation Area.

Spotlight: Key findings

- The 2022 median household income in child site ZCTAs was over US\$17,000 higher than in the parent CE ZCTAs and over US\$8,000 higher than in CE neighborhood ZCTAs.
- The uninsured rate was 11% lower in the average child site ZCTA than in the average parent CE ZCTA and 10% lower than in the average CE neighborhood ZCTA.
- The average child site ZCTA had a significantly higher share of White residents and better overall health metrics compared to the average nearby neighborhood and parent CE ZCTAs.

Discussion

- This nationwide analysis of ZCTA for 12,632 parent CE–child site pairs in 2022 suggests that 340B hospitals had consistently placed child sites in locations that had on average more affluent residents with lower uninsured and unemployment rates than both the CE's neighborhood and nearby alternative areas.
- Differences in average health status were not as large but followed the same direction: for every 10,000 residents in a ZCTA, analyzed health measures indicate there were hundreds *fewer* residents in worse health compared to those areas which hospitals expanded into.
- This analysis cannot separate 340B margin enhancement as a separate driver from other hospital revenue and business aims (e.g., generally targeting areas with better reimbursement prospects, optimizing location, competition, etc.). The lack of a comprehensive data source on non-340B child sites limits comparisons of their location choices to those made by 340B-affiliated child sites.
- While multiple motivations for 340B hospitals' pursuit of affluent and better-insured neighborhoods for child site expansion are plausible, maximizing 340B profits appears as the most consistent explanation in line with the existing literature on program incentives.
- Regardless of the "dominant" motivation behind 340B expansion, having child sites placed in areas already well-served by the healthcare system (at the detriment of neighborhoods with greater needs) risks exacerbating health disparities between communities, and it may undermine the 340B Program's goal of expanding access to patients with the greatest need.

Conclusions

Echoing earlier findings by Conti and Bach (2014),⁹ this study indicates that 340B hospitals do generally not increase patient care by placing their child sites closer to vulnerable residents in lower-income, higher-need neighborhoods.

Individual circumstances may vary by region or hospital system, but on average, child site expansion creates additional profits for 340B hospitals that target wealthier neighborhoods with better reimbursement prospects instead.

Greater margins from 340B expansion could be reallocated to initiatives aimed at improving access and care for vulnerable communities. However, the lack of mandatory or voluntary systematic tracking of such activities by CEs limits the ability for empirical research to substantiate measurable patient or community benefits.

Whether 340B hospitals reinvest additional profits gained from child sites in alignment with the Program's intended goals remains uncertain given the absence of accountability for the use of 340B profits more broadly.

Increased transparency could help researchers and policymakers understand whether CEs' financial gains from the 340B Program are being utilized to deliver expected benefits for patients with limited access to care.

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