Published in final edited form as:

J Public Child Welf. 2020 ; 14(3): 320–335. doi:10.1080/15548732.2019.1612817.

Socioeconomic Characteristics of Neighborhoods where Youth in Out-of-Home Care Reside

Sarah J. Beal, Ph.D.^{a,b}, Mary V. Greiner, M.D., M.S.^{a,c}, Imani Crosby^d, Andrew F. Beck, M.D., M.P.H.^{a,c}

^aDepartment of Pediatrics, University of Cincinnati College of Medicine, Cincinnati, OH, USA

^bDivision of Behavioral Medicine and Clinical Psychology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA

^cDivision of General and Community Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA

^dDepartment of Psychology, University of Cincinnati, Cincinnati, OH, USA

Abstract

In the U.S., little is known about the neighborhoods where youth in out-of-home care live prior to emancipation. This study describes the socioeconomic characteristics of such neighborhoods. Addresses for 229 youth aged 16–20 years and residing in out-of-home care in a single Midwest county were used. Addresses were geocoded and linked to U.S. Census' data at the census tract level. Neighborhoods, or tracts, with youth in out-of-home care were significantly more disadvantaged across five area-based socioeconomic indicators. Findings suggest that youth in out-of-home care live in neighborhoods with disproportionately high rates of socioeconomic disadvantage.

Keywords

Neighborhood; Adolescent; Foster Care; Protective Custody; Child Welfare; Out-of-home Care

Entering out-of-home care under the supervision of child protection agencies (e.g., foster care) is associated with higher risk for adverse life-long economic, psychosocial, and health outcomes. This includes increased rates of poverty, homelessness, acute and chronic medical conditions, and mental health concerns (Ahrens, Garrison, & Courtney, 2014; Dworsky & Courtney, 2009; Kushel, Yen, Gee, & Courtney, 2007b). Research has previously demonstrated that young adults who emancipated from out-of-home care are at increased risk of homelessness (Dworsky, Napolitano, & Courtney, 2013; Kushel, Yen, Gee, & Courtney, 2007a), incarceration (Lee, Courtney, & Tajima, 2014), and poorer education and employment outcomes (Okpych & Courtney, 2014). Median earnings for emancipated youth are approximately one-third the amount of their peers, and emancipated youth experience twice the number of economic hardships than youth in the general population. Further,

housing options available to emancipated youth are predominantly in low-income communities (Tam, Freisthler, Curry, & Abrams, 2016). Thus, young people who were previously in out-of-home care experience life-long socioeconomic disadvantage.

To be able to understand and modify this life-long disadvantage, it is important to understand the multiple mechanisms that contribute to such poor outcomes, including neighborhood characteristics (Chen, Beckfield, Waterman, & Krieger, 2013; Krieger, 2003). The characteristics of communities where youth reside directly and indirectly affect youth development. For example, Ceballo and McLoyd (2002) found that providing support to parents improved their nurturing behaviors toward their children but only when families resided in higher-quality neighborhoods, defined using the percentage of families living in poverty, violent crime rates, and maternal ratings of neighborhood quality. Thus, it is critical to attend to neighborhood context when trying to understand health and wellbeing outcomes for vulnerable children and families (Berrick, 2006).

One set of indicators of neighborhood quality commonly used in the literature is census tract socioeconomic characteristics (Aneshensel & Sucoff, 1996; Chahine, van Straaten, & Williams-Isom, 2005; Estabrooks, Lee, & Gyurcsik, 2003; Lee & Cubbin, 2002). Researchers have consistently found a link between census tract socioeconomic indicators (e.g., percentage of individuals in a geographic area living below the federal poverty level) and outcomes for children and adults who were not in out-of-home care (Beck, Simmons, Huang, & Kahn, 2012; Deutsch, Crockett, Wolff, & Russell, 2012; Galster, Santiago, & Lucero, 2015; Gibson, Perley, Bailey, Barbour, & Kershaw, 2015; Gonzales, Cauce, Friedman, & Mason, 1996; Krieger, Chen, Waterman, Rehkopf, & Subramanian, 2003; Powell & Han, 2011). While much is known about how neighborhood quality affects adolescents and young adults in the general population, it is unclear how this translates to youth with child protection involvement who are living in out-of-home care, where home neighborhoods change frequently and connections to potential supports are frequently disrupted (Barth, Wildfire, & Green, 2006).

Neighborhood Quality for Youth in Out-of-Home Care

Multiple federal, state, and local policies drive decisions regarding neighborhood selection for children entering out-of-home care. There is high emphasis placed on youth remaining in communities of origin to avoid school disruptions, keep children close to their families, friends, and other community benefits, and support reunification whenever possible (for review, see Berrick, 2006). Young people who enter out-of-home care at the direction of child protection agencies are predominantly from impoverished families; priorities to avoid disrupting community settings mean that children placed in out-of-home care would be expected to reside in similar communities, ideally with resourced families to meet children's needs.

The vast majority of research related to neighborhood quality has focused on licensed (typically non-relative) foster homes, one of several types of out-of-home placement. Orme and Buehler reviewed the scant research available prior to 2001 that described foster families and communities, and reported that across a handful of studies, foster homes were often in

low-income neighborhoods with increased safety concerns and poor social supports (Orme & Buehler, 2001). These studies were conducted prior to routine availability of geographical information systems, and as a result, assessments of neighborhood characteristics were subjective and based on small samples. More recently, studies have been able to rely on census data to expand our understanding of the quality of neighborhoods where youth in out-of-home care live. In a study conducted on behalf of the Annie E. Casey Foundation, O'Hare (2008) identified that children in out-of-home care lived in larger household settings with higher disadvantage across all indicators of socioeconomic wellbeing and neighborhood stability. However, Census Bureau data only identified about half of the population of children reported to be in out-of-home care by the Administration of Children and Families, and likely primarily reflected children in licensed foster care placements. While this is beneficial, it does not reflect the full spectrum of young people residing in out-of-home care.

More recently, researchers have linked administrative child protection data and Census data to understand neighborhood context for youth in out-of-home care across placement contexts (Huang & Ryan, 2014; Huang, Ryan, & Rhoden, 2016; Pac, Waldfogel, & Wimer, 2017). Those findings suggest that neighborhood quality for out-of-home care placements tend to be similar when compared to neighborhoods of origin on indicators of community stability, financial resources, and poverty (Huang & Ryan, 2014; Huang et al., 2016). Additionally, it appears that subsidies paid to licensed foster caregivers are effective in elevating children in out-of-home care out of poverty, even when other neighborhood characteristics indicate community vulnerability (Pac et al., 2017). This is promising and reflects the potential that children in out-of-home care can reside in their communities while receiving the benefits of additional resources (Berrick, 2006). However, the evidence that children in out-of-home care benefit from remaining in communities of socioeconomic disadvantage continues to be mixed. For example, Huang and colleagues used linked administrative child protection records and census tract data for children in out-of-home care who were under the age of 16 (Huang & Ryan, 2014; Huang et al., 2016). Their findings suggested that children placed in out-of-home care were predominantly in neighborhoods experiencing high socioeconomic disadvantage and instability, which was associated with increased delinquency among youth. The researchers concluded that attention to neighborhood and the potential impact of neighborhood on child wellbeing is important, particularly for youth unlikely to be reunified. Arguably the population of youth least likely to be reunified are those expected to emancipate from child protective custody; however, there are no studies addressing neighborhood characteristics of this specific group of young people in out-of-home care. This highlights a need to expand the literature understanding the role of neighborhood context on youth in out-of-home care.

While young people expected to emancipate from out-of-home care have the potential to experience gains from neighborhoods where they have employment, education, and socialization opportunities (Berrick, 2006), they also experience high placement instability (Courtney, 2009). This might suggest that neighborhood context is transient and potentially less important for this particular group of young people. However, researchers have demonstrated the reverse: accounting for neighborhood characteristics is particularly important in populations where residential instability is high. For example, in a study of the

impact of neighborhood characteristics on high school graduation, Wodtke and colleagues (2011) found that by including neighborhood characteristics of each neighborhood a child resided in, rather than the neighborhood a child was born into or resided in at the time of graduation alone, the effects of chronic neighborhood disadvantage on the likelihood of dropping out of high school was higher than previously reported. That neighborhood effects persist even when neighborhood transiency is high is likely due, at least in part, to the lack of upward mobility associated with these moves. Families may be changing addresses and neighborhoods, but as identified by Jackson and Mare (2007), neighborhood characteristics are frequently similar across moves. As a result, their study drew similar conclusions regardless of whether cross-sectional or longitudinal models examining neighborhood characteristics were used. Of note, the experience of a child facing neighborhood transiency due to placement into out-of-home care may be different than the experience of a child moving frequently with his/her family. This is because the county or state intervenes and selects a new residential location among their respective pools of authorized housing locations, rather than the family choosing where to relocate independently.

This study takes a first step toward understanding the neighborhood context of adolescents expected to emancipate from out-of-home care by describing the socioeconomic characteristics of census tracts where those adolescents live. Socioeconomic risk was examined using ten indicators available from the 2010–2014 U.S. Census Bureau's American Community Survey (United States Census Bureau, 2016). The primary research question examined was whether census tracts where adolescents in out-of-home care live are characterized by increased socioeconomic disadvantage compared to census tracts where adolescents in out-of-home care are not living.

Method

Context

Data for this study are derived from a single county located in the southwest region of Ohio. The county is comprised of a single urban core surrounded by suburban communities. Between the 2000 and 2010 US Census, census tracts in the county of interest were re-drawn to ensure that census tracts closely aligned with the neighborhoods in the county. Specifically, the county contains 51 census tracts within the boundaries of the city, and 171 census tracts in the county that are outside the city's boundary. With respect to demographics, the county mirrors U.S. averages for the percentage of children (23.3%) and seniors (13.7%), compared to 23.1% and 14.8% nationally, respectively, the percentage of minorities (34% county vs. 28% nationally), and the percentage of women (52% county vs. 51% nationally). With respect to socioeconomic indicators, the county's percentage of people living in poverty (18.5%) and percentage of children living in poverty (27.7%) are slightly elevated compared to national averages (15.9% and 22.5%, respectively). However, the per capita income for the county (\$33,553) is higher than the national average (\$29,845) suggesting greater socioeconomic variation in the county compared to the U.S. as a whole.

Census data were extracted for the 222 in-county census tracts for the purpose of these analyses. Across the 222 tracts, an average of 14% of housing units were vacant ($SD = 10.36$), 15% of households had no vehicle ($SD = 14.20$), and 36% of households received

public benefits ($SD = 27.45$). The median household income was \$67,300, the median home value was \$154,089, and the median rent for occupied units was \$586 per month. Across tracts, 22% of individuals were living at or below the federal poverty level ($SD = 18.37$), 41% had never married ($SD = 15.34$), 12% were unemployed ($SD = 8.76$), and 13% had less than a high school education ($SD = 8.99$).

Participants

This study uses archival child welfare administrative data from all youth between the ages of 16 and 20 years (M age = 18.64, $SD = 1.36$) who were in the custody of a single county between June and December 2015 ($N = 229$). Most youth (77%) were racial/ethnic minorities; roughly half were women (49%). All were living in placements within the county of custody. Young people living in inpatient residential treatment programs and those who were incarcerated were excluded, as these youth do not generally interact with the neighborhoods in which they reside (American Academy of Child and Adolescent Psychiatry, 2016; Annie E. Casey Foundation, 2013). Youth were placed into out-of-home care primarily due to neglect (66%), physical abuse (10%), sexual abuse (3%), emotional abuse (1%), or delinquency (20%). All youth had been in out-of-home care for at least 12 months ($M = 4.4$ years).

Procedures

This study received approval from the Institutional Review Boards at Cincinnati Children's Hospital Medical Center and the child welfare agency in the participating county. The county from which these data were derived has a collaborative data sharing agreement with the investigators, which facilitated this analysis. Data were extracted by child welfare agency staff and provided to the researchers through a secure file sharing program. The researchers removed all unnecessary identifying information from the data (e.g., names). Street addresses were then geocoded or mapped using ArcGIS (ESRI, Redlands, California). Once geocoded, addresses (and corresponding study participants) were localized to 2010 census tracts. These tracts were joined to socioeconomic indicators available from 2010–2014 U.S. Census' American Community Survey (United States Census Bureau, 2016). Once tracts were identified and study participants were linked to relevant data elements, addresses were removed from the dataset. Researchers were effectively able to link 229 out of 230 provided addresses to a census tract for this study.

Measures

Census tract indicators used to describe neighborhoods (Quillian, 2003) included: 1) the percentage of vacant housing units, 2) the percentage of households without a vehicle, 3) the median value of houses that were occupied by their owners (i.e., excluding rentals), 4) the median gross rent for occupied rental units over the past five years, 5) the percentage of households receiving public benefits, 6) the median household income, 7) the percentage of individuals living at or below the federal poverty level, 8) the percentage of adults who have never married, 9) the percentage of adults who are unemployed, and 10) the percentage of adults with less than a high school education living within a census tract. Each indicator was chosen to represent a proxy for a risk, or set of risks, related to the social determinants of health (Adler & Stead, 2015). For example, data on vacant housing units, housing value, rent

paid, public benefits, income, poverty, and employment were thought to represent financial resource strain in the community. Data on household vehicles represented a measure of access in a community with limited public transportation. Educational attainment is another key marker of socioeconomic status. Finally, the measure of marital status could be thought to represent potential social supports available within a community.

Analytic Plan

Univariate descriptive statistics were examined prior to multivariate analyses. The characteristics of census tracts (i.e., neighborhoods) where youth in out-of-home care resided were examined using multiple analysis of variance (MANOVA) with Bonferroni correction comparing neighborhoods with any youth in out-of-home care to neighborhoods with no youth in out-of-home care. The primary question was whether variance between neighborhoods with and without youth in out-of-home care was significantly different from variance within each of those groups. To address this question, MANOVA was used; however, t-test comparisons replicated these findings. To examine the impact of number of placements within a census tract, zero-inflated Poisson regression was used. Due to the restricted range of percentage data (i.e., percentages can only range from 0 to 100), all percentage outcomes were transformed to arcsin values using the formula $A = \sin(1)(\text{percentage}/100)$ and back-transformed for interpretation. All analyses were conducted using SAS software, Version 9.3, ©2015 (SAS Institute Inc., Cary, NC, USA).

Results

Descriptive statistics

Descriptive statistics for the sample are provided below and in Table 1. Youth in out-of-home care included in this study lived in 38% of tracts; between 1 and 14 youth in out-of-home care were placed in a given tract. Means were compared for each of the census tract indicators described above, using Bonferroni correction for the 10 comparisons being estimated. As a result, p-values of .005 or less were considered significant.

Characteristics of neighborhoods where any youth in out-of-home care reside

Compared to neighborhoods with no youth in out-of-home care, the average median home value was significantly lower in neighborhood where youth in out-of-home care resided, $F(1, 220) = 26.37, p < 0.0001$, while average median gross rent was significantly higher, $F(1, 220) = 23.16, p < 0.0001$. Average median household income was significantly lower in neighborhoods where youth in out-of-home care resided when compared to neighborhoods without youth in out-of-home care, $F(1, 220) = 23.04, p < 0.0001$. The mean percentage of households receiving public benefits was significantly higher for neighborhoods with youth in out-of-home care than for neighborhoods without youth in out-of-home care, $F(1, 220) = 11.88, p < .001$. The mean percentage of individuals living at or below the federal poverty level was not significantly different for neighborhoods with and without youth in out-of-home care, $F(1, 220) = 5.08, p = .03$. However, when examining neighborhoods considered to be poor (i.e., more than 20% of individuals living in poverty), significantly more neighborhoods where youth in out-of-home care resided were considered poor (55%) when compared to neighborhoods without youth in out-of-home care (34% for; $\chi^2(1) = 9.46, p =$

0.002). Neighborhoods with and without youth in out-of-home care were equally likely to be considered extremely poor (i.e., more than 40% of individuals living in poverty; 19% of neighborhoods where youth in out-of-home care resided and 18% of neighborhoods without youth in out-of-home care; $\chi^2(1) = 0.06$, $p = 0.81$). Finally, the percentage of adults with less than a high school education living within a census tract was significantly higher for neighborhoods where youth in out-of-home care resided than that in neighborhoods without youth in out-of-home care, $F(1, 220) = 8.96$, $p = 0.003$.

In neighborhoods where youth in out-of-home care resided, the mean percentage of vacant housing units did not significantly differ from neighborhoods without youth in out-of-home care, $F(1, 220) = 0.21$, $p = 0.64$. The percentage of adults who were unemployed was also not significantly different for neighborhoods with and without youth in out-of-home care, $F(1, 220) = 7.39$, $p = 0.007$; a similar pattern was detected for households without a vehicle ($F[1, 220] = 4.48$, $p = 0.04$) and the percentage of adults who have never married ($F[1, 220] = 1.15$, $p = 0.28$).

Characteristics of neighborhoods where multiple youth in out-of-home care reside

Zero-inflated Poisson regression (Famoye & Singh, 2006) was used to examine whether the number of youth in out-of-home care in a given census tract was related to the characteristics of those tracts. For most indicators, there was no significant variation by number of youth in out-of-home care in a tract (Table 2). Median gross rent significantly increased as the number of youth in a tract increased and the percentage of individuals living at or below the poverty line significantly decreased as the number of youth in out-of-home care increased.

Differences by type of placement

Post-hoc analyses of neighborhood characteristics by placement type indicated that independent living placements were associated with census tracts that had the highest percentages of vacant housing units, followed by kinship care placements, group homes, and licensed foster homes ($B = 1.23$, $SE = 0.48$, $p < .01$). Median gross rent was lowest for neighborhoods containing licensed foster homes, followed by independent living placements, kinship care placements, and group homes ($B = 88.73$, $SE = 26.51$, $p < .01$). No other differences by placement type were detected.

Discussion

This study examined the characteristics of neighborhoods where youth in out-of-home care are placed. These findings described the neighborhoods of young people in out-of-home care who were between the ages of 16 and 20 and were expected to emancipate from the child protection system. This group has been identified as particularly vulnerable in other studies of youth with child welfare involvement (Courtney et al., 2011). Neighborhoods where any youth in out-of-home care live are generally characterized by significantly higher indicators of socioeconomic risk compared to neighborhoods where youth in out-of-home care do not live. Specifically, communities with any youth in out-of-home care had significantly lower median home values and household incomes, as well as higher percentage of adults with less than a high school diploma, and households receiving public benefits. This is consistent with

research examining neighborhood context for other high-risk populations (e.g., minority youth; Galster, Santiago, & Lucero, 2014) and younger youth in out-of-home care (Huang & Ryan, 2014; Huang et al., 2016).

It is worth noting that significantly more neighborhoods where children in out-of-home care resided were considered poor (i.e., more than 20% of the population living below the federal poverty line; Fitzpatrick & LaGory, 2002) compared to neighborhoods without youth in out-of-home care. This is particularly important given the established impact of poor neighborhoods on health, academic performance, and employment in adulthood (Fitzpatrick & LaGory, 2002). Neighborhoods with and without youth in out-of-home care were equally likely to be extremely poor (i.e., more than 40% of the population living below the federal poverty line). This suggests that young people have equal potential of living in extremely poor communities regardless of out-of-home care status. Further research is needed to understand whether decisions to place youth in extremely poor communities is based on desires to keep children in their communities of origin or some other reason (e.g., location of group home willing to take hard-to-place youth).

Median gross rent was the only indicator of economic wellbeing in a favorable direction. Specifically, rent was higher for tracts containing youth in out-of-home care. While this might initially seem positive, those same neighborhoods were experiencing lower home values, household incomes, and higher rates of poverty, which makes this effect more challenging to interpret. It could be that foster caregivers are able to move to neighborhoods where rent prices are higher – this is consistent with findings from other studies examining the impact of foster care stipends (Orme & Buehler, 2001; Pac et al., 2017). Alternatively, these findings may reflect patterns of increased rent costs in poor neighborhoods as landlords lease to tenants considered to be at high-risk: those in poverty with unstable rental and employment histories, many of whom are receiving social service benefits (Desmond & Bell, 2015; Desmond & Perkins, 2016). Finally, it may be that the calculation for gross rent, which is averaged for the previous 5 years, fails to detect recent socioeconomic down-turn in communities that may be better represented by the other indicators of neighborhood risk. Additional analyses using other data sources (e.g. Craigslist postings; Boeing & Waddell, 2016) could shed light on these findings and clarify whether there are challenges to accessing affordable housing in communities where adolescents in out-of-home care reside.

This exploratory, descriptive study suggests that neighborhoods where adolescents in out-of-home care are placed are significantly more impoverished than neighborhoods without adolescents in out-of-home care, a trend that generally did not vary as the number of youth in a census tract increased and that was most notable for independent living and kinship placement types. This would suggest that, overall, these young people are experiencing high neighborhood-based socioeconomic risk in addition to the existing risks due to maltreatment, poor health, and education concerns documented to be challenges for emancipating youth (Ahrens et al., 2014; Beal, Nause, Crosby, & Greiner, 2018). However, it is equally important to note that indicators of community strength were not available or assessed within this study, which may unfairly represent the neighborhoods where youth preparing for emancipation live (Acevedo-Garcia et al., 2014; Coulton & Spilsbury, 2014). Additional research that also assesses education quality, community cohesiveness, and

available resources would help to provide a more complete picture of the communities where these adolescents are living and the impact of this context on the wellbeing of young people preparing to emancipate from out-of-home care.

These findings must be interpreted within the context of some limitations. First, findings are limited to a single county with a large, primarily urban population. Findings may differ when more suburban and rural counties are considered. Second, no outcome metrics were available; the health status of this sample is unknown, so the impact of these findings on the health of young people emancipating from out-of-home care is also unknown. Third, historical placement data were unavailable, as was duration of time in placement. It may be that the neighborhoods where youth in out-of-home care are placed, while generally at higher risk than neighborhoods without youth in out-of-home care, are still advantageous because they promote stability in school enrollment or keep youth close to beneficial community organizations and resources (Berrick, 2006). More research is needed to understand these placement decisions and their impact on adolescent wellbeing – especially in the context of planning for emancipation. Additionally, there were no assessments of community strengths (e.g., school quality, social services available, community cohesion) which may mask other advantages offered by the communities where youth in out-of-home care reside. This study also focused on youth in protective custody who were aged 16–20 years. This age group was chosen because it is the population most at-risk for emancipation (i.e., aging out) from out-of-home care – a particularly unique and high-risk time in the lives of these young people (Courtney et al., 2007). These findings may not generalize to younger adolescents or those with a different case plan goal (e.g., reunification, adoption). Finally, data are cross-sectional and only descriptions of neighborhood context could be examined. Research addressing how neighborhood context changes over time for children in out-of-home care would enhance our understanding of placement decisions and their impact on child wellbeing.

Despite these limitations, this study adds to the expanding literature describing neighborhood contexts for youth in out-of-home care, an important first step for building an evidence base for policy and practice around place-based decision making for these youth (Berrick, 2006). This is the first study, to our knowledge, to describe the socioeconomic characteristics of neighborhoods where youth preparing for emancipation from out-of-home care are placed; findings align with previously published studies identifying neighborhood risk and vulnerability for children in out-of-home care (Huang & Ryan, 2014; Huang et al., 2016; O'Hare, 2008; Pac et al., 2017). While there are multiple reasons that children would be placed in particular neighborhoods, many of which are potentially advantageous for child wellbeing and pursuing goals of reunification with caregivers (for review, see Berrick, 2006), the empirical evidence to guide decision-making about neighborhood-based placement decisions and children's best interests is still relatively limited. These descriptive findings, when combined with other existing studies describing neighborhoods for other youth in out-of-home care, form the basis to justify future research that more rigorously examines the impact of neighborhood quality, placement stability, and permanency on child wellbeing. Accomplishing those research goals at a population level would require linking child protection records containing address history for all children at the time of removal and with each placement change to census data and indicators such as the child opportunity

index to also capture neighborhood strengths (Acevedo-Garcia et al., 2014) in order to describe trajectories of change in neighborhood quality while children are in out-of-home care. Further, indicators of child wellbeing would need to be included, which could be based on child health indicators, academic performance and engagement, vocational indicators, and involvement with criminal justice, among other indicators of wellbeing (Aneshensel & Sucoff, 1996; Berrick, 2006; Coulton & Spilsbury, 2014; Estabrooks et al., 2003; Huang & Ryan, 2014). Additional studies providing perspectives of children in out-of-home care, their families and caregivers, and those making placement decisions in the child protection system would also be informative. Empirical evidence linking neighborhood characteristics to child wellbeing while youth are in out-of-home care and the ability to identify who benefits from placement in particular kinds of neighborhoods is essential in order to inform and shape policies around neighborhood and placement for children in out-of-home care (Berrick, 2006).

Acknowledgments:

This study was funded in part through the National Center for Advancing Translational Sciences of the National Institutes of Health, under Award Number 1UL1TR001425-01. Dr. Beck was supported through an NIH Career Development Award (1K23AI112916). Dr. Beal was supported through an NIH Career Development Award (1K01DA041620-01A1). We also thank the contribution of Kris Flinchum for her assistance with retrieving child welfare data for this project, and Cole Brokamp for feedback on a draft of this manuscript.

References

- Acevedo-Garcia D, McArdle N, Hardy EF, Crisan UI, Romano B, Norris D, ... Reece J (2014). The child opportunity index: improving collaboration between community development and public health. *Health affairs*, 33(11), 1948–1957. [PubMed: 25367989]
- Adler NE, & Stead WW (2015). Patients in context—EHR capture of social and behavioral determinants of health. *Obstetrical & Gynecological Survey*, 70(6), 388–390.
- Ahrens KR, Garrison MM, & Courtney ME (2014). Health outcomes in young adults from foster care and economically diverse backgrounds. *Pediatrics*, 134(6), 1067–1074. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/25367543> [PubMed: 25367543]
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4243069/pdf/peds.2014-1150.pdf>. doi:10.1542/peds.2014-1150
- American Academy of Child and Adolescent Psychiatry. (2016). Residential Treatment Programs. Retrieved from <http://www.aacap.org/aacap/familiesandyouth/factsforfamilies/fff-guide/Residential-Treatment-Programs-097.aspx>
- Aneshensel CS, & Sucoff CA (1996). The neighborhood context of adolescent mental health. *Journal of Health and Social Behavior*, 293–310. [PubMed: 8997886]
- Annie E Casey Foundation. (2013). Youth Incarceration in the United States. Retrieved from <http://www.aecf.org/resources/youth-incarceration-in-the-united-states>
- Barth RP, Wildfire J, & Green RL (2006). Placement into foster care and the interplay of urbanicity, child behavior problems, and poverty. *Am J Orthopsychiatry*, 76(3), 358–366. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/16981814> [PubMed: 16981814]
- <http://onlinelibrary.wiley.com/doi/10.1037/0002-9432.76.3.358/abstract?systemMessage=Please+be+advised+that+we+experienced+an+unexpected+issue+that+occurred+on+Saturday+and+Sunday+January+20th+and+21st+that+caused+the+site+to+be+down+for+an+extended+period+of+time+and+affected+the+ability+of+users+to+access+content+on+Wiley+Online+Library.+This+issue+has+now+been+fully+resolved.+We+apologize+for+any+inconvenience+this+may+have+caused+and+are+working+to+ensure+that+we+can+alert+you+immediately+of+any+unplanned+periods+of+downtime+or+disruption+in+the+future.> doi:10.1037/0002-9432.76.3.358

- Beal SJ, Nause K, Crosby I, & Greiner MV (2018). Understanding health risks for adolescents in protective custody. *The Journal of Applied Research on Children*, 9(1).
- Beck AF, Simmons JM, Huang B, & Kahn RS (2012). Geomedicine: area-based socioeconomic measures for assessing risk of hospital reutilization among children admitted for asthma. *American Journal of Public Health*, 102(12), 2308–2314. [PubMed: 23078500]
- Berrick JD (2006). Neighborhood-based foster care: A critical examination of location-based placement criteria. *Social Service Review*, 80(4), 569–583.
- Boeing G, & Waddell P (2016). New Insights into Rental Housing Markets across the United States Web Scraping and Analyzing Craigslist Rental Listings. *Journal of Planning Education and Research*, 0739456X16664789.
- Chahine Z, van Straaten J, & Williams-Isom A (2005). The New York City neighborhood-based services strategy. *Child Welfare*, 84(2), 141–152. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/15828405>. [PubMed: 15828405]
- Chen JT, Beckfield J, Waterman PD, & Krieger N (2013). Can changes in the distributions of and associations between education and income bias temporal comparisons of health disparities? an exploration with causal graphs and simulations. *American journal of epidemiology*, 177(9), 870–881. [PubMed: 23568593]
- Coulton CJ, & Spilsbury JC (2014). Community and place-based understanding of child well-being Handbook of child well-being: Theories, methods and policies in global perspective, 1307–1334.
- Courtney ME (2009). Youth in foster care: Easing the transition to adulthood. *Social Policy Report Brief*, 23(1), 2.
- Courtney ME, Dworsky AL, Brown A, Cary C, Love K, & Vorhies V (2011). Midwest evaluation of the adult functioning of former foster youth: Outcomes at age 26.
- Courtney ME, Dworsky AL, Cusick GR, Havlicek J, Perez A, & Keller TE (2007). Midwest evaluation of the adult functioning of former foster youth: Outcomes at age 21.
- Desmond M, & Bell M (2015). Housing, poverty, and the law. *Annual Review of Law and Social Science*, 11, 15–35.
- Desmond M, & Perkins KL (2016). Are Landlords Overcharging Housing Voucher Holders? *City & Community*, 15(2), 137–162.
- Deutsch AR, Crockett LJ, Wolff JM, & Russell ST (2012). Parent and peer pathways to adolescent delinquency: Variations by ethnicity and neighborhood context. *J Youth Adolesc*, 41(8), 1078–1094. [PubMed: 22460729]
- Dworsky A, & Courtney M (2009). Addressing the mental health service needs of foster youth during the transition to adulthood: how big is the problem and what can states do? *J Adolesc Health*, 44(1), 1–2. doi:10.1016/j.jadohealth.2008.10.134 [PubMed: 19101450]
- Dworsky A, Napolitano L, & Courtney M (2013). Homelessness during the transition from foster care to adulthood. *American Journal of Public Health*, 103 Suppl 2, S318–323. Retrieved from http://media.proquest.com/media/pq/classic/doc/3158427391/fmt/pi/rep/NONE?hl=&cit%3Aauth=Dworsky%2C+Amy%2C+PhD%3BNapolitano%2C+Laura%2C+PhD%3BCourtney%2C+Mark%2C+PhD&cit%3Atitle=Homelessness+During+the+Transition+From+Foster+Care+to+Adulthood&cit%3Apub=American+Journal+of+Public+Health&cit%3Avol=103&cit%3Aiss=2&cit%3Apg=S318&cit%3Adate=Dec+2013&ic=true&cit%3Aprod=ProQuest&_a=ChgyMDE0MDQxNTEyNTkyNDcwNjoyNTI0MjkSBjEyMTA4MhoKT05FX1NFQVJDSCIPMjA1LjE0Mi4xOTcuMTAxKgU0MTgwNDIKMTQ2ODY3NTczMj0NRG9jdW1lbnRjbWFnZUIBMFIGT25saW5lWgJGVGVGIDUEZUagoyMDEzLzEyLzAxgoyMDEzLzEyLzMxegCCAShQLEwMDAwMDEtMjkwOS1DVVNUT01FU0xMDAwMDAwOC0xMDcwMzA4kgEGT25saW5lygEHRW5kTm90ZdIBEINjaG9sYXJseSBKb3Vybmfsc5oCB1ByZVBhaWSqAihPUzpFTVMtUGRmRG9jVmld0Jhc2U0Z2V0TWVkaWVFcmlxG3JJdGVtsgIAugIAyglPQXJ0aWNsZXsZGZWf0dXJl0gIBWeICAU7qAgDyAgA%3D&_s=qmVPCnTc9WHeblHL%2FiNcOVgh4nc%3D [PubMed: 24148065]
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3969135/pdf/AJPH.2013.301455.pdf>. doi:10.2105/ajph.2013.301455

- Estabrooks PA, Lee RE, & Gyurcsik NC (2003). Resources for physical activity participation: does availability and accessibility differ by neighborhood socioeconomic status? *Annals of behavioral medicine*, 25(2), 100–104. [PubMed: 12704011]
- Famoye F, & Singh KP (2006). Zero-inflated generalized Poisson regression model with an application to domestic violence data. *Journal of Data Science*, 4(1), 117–130.
- Fitzpatrick K, & LaGory M (2002). *Unhealthy places: The ecology of risk in the urban landscape*: Routledge.
- Galster G, Santiago A, & Lucero J (2015). Employment of low-income African American and Latino teens: does neighborhood social mix matter? *Housing studies*, 30(2), 192–227. [PubMed: 26273120]
- Galster G, Santiago AM, & Lucero J (2014). Adrift at the Margins of Urban Society What Role Does Neighborhood Play? *Urban Affairs Review*, 1078087414537601.
- Gibson C, Perley L, Bailey J, Barbour R, & Kershaw T (2015). Social network and census tract-level influences on substance use among emerging adult males: An activity spaces approach. *Health Place*, 35, 28–36. [PubMed: 26176810]
- Gonzales NA, Cauce AM, Friedman RJ, & Mason CA (1996). Family, peer, and neighborhood influences on academic achievement among African-American adolescents: One-year prospective effects. *American Journal of Community Psychology*, 24(3), 365–387. [PubMed: 8864209]
- Huang H, & Ryan JP (2014). The location of placement and juvenile delinquency: Do neighborhoods matter in child welfare? *Children and Youth Services Review*, 44, 33–45.
- Huang H, Ryan JP, & Rhoden M-A (2016). Foster care, geographic neighborhood change, and the risk of delinquency. *Children and Youth Services Review*, 65, 32–41.
- Jackson MI, & Mare RD (2007). Cross-Sectional and Longitudinal Measurements of Neighborhood Experience and Their Effects on Children. *Soc Sci Res*, 36(2), 590–610. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/25197150>. doi:10.1016/j.ssresearch.2007.02.002 [PubMed: 25197150]
- Krieger N (2003). Place, space, and health: GIS and epidemiology. *Epidemiology*, 14(4), 384–385. [PubMed: 12843759]
- Krieger N, Chen JT, Waterman PD, Rehkopf DH, & Subramanian S (2003). Race/ethnicity, gender, and monitoring socioeconomic gradients in health: a comparison of area-based socioeconomic measures-the public health disparities geocoding project. *American Journal of Public Health*, 93(10), 1655–1671. [PubMed: 14534218]
- Kushel MB, Yen IH, Gee L, & Courtney ME (2007a). Homelessness and health care access after emancipation: results from the Midwest Evaluation of Adult Functioning of Former Foster Youth. *Archives of Pediatrics and Adolescent Medicine*, 161(10), 986–993. Retrieved from http://archpedi.jamanetwork.com/data/Journals/PEDS/15583/poa70045_986_993.pdf. doi:10.1001/archpedi.161.10.986 [PubMed: 17909143]
- Kushel MB, Yen IH, Gee L, & Courtney ME (2007b). Homelessness and health care access after emancipation: results from the Midwest Evaluation of Adult Functioning of Former Foster Youth. *Archives of pediatrics & adolescent medicine*, 161(10), 986–993. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/17909143>. doi:10.1001/archpedi.161.10.986 [PubMed: 17909143]
- Lee JS, Courtney ME, & Tajima E (2014). Extended Foster Care Support during the Transition to Adulthood: Effect on the Risk of Arrest. *Children and Youth Services Review*. doi:10.1016/j.childyouth.2014.03.018
- Lee RE, & Cubbin C (2002). Neighborhood context and youth cardiovascular health behaviors. *American Journal of Public Health*, 92(3), 428–436. [PubMed: 11867325]
- Maxwell KA (2002). Friends: The role of peer influence across adolescent risk behaviors. *Journal of youth and adolescence*, 31(4), 267–277.
- O'Hare WP (2008). Data on Children in Foster Care from the Census Bureau. Retrieved from <https://www.aecf.org/m/pdf/FosterChildren-July-2008.pdf>:
- Okpych NJ, & Courtney ME (2014). Does education pay for youth formerly in foster care? Comparison of employment outcomes with a national sample. *Children and Youth Services Review*. doi:10.1016/j.childyouth.2014.04.013

- Orme JG, & Buehler C (2001). Foster family characteristics and behavioral and emotional problems of foster children: A narrative review*. *Family Relations*, 50(1), 3–15.
- Pac J, Waldfogel J, & Wimer C (2017). Poverty among Foster Children: Estimates Using the Supplemental Poverty Measure. *Social Service Review*, 91(1), 8–40. [PubMed: 28659651]
- Powell LM, & Han E (2011). The costs of food at home and away from home and consumption patterns among US adolescents. *Journal of Adolescent Health*, 48(1), 20–26. [PubMed: 21185520]
- Quillian L (2003). How long are exposures to poor neighborhoods? The long-term dynamics of entry and exit from poor neighborhoods. *Population Research and Policy Review*, 22(3), 221–249.
- Tam CC, Freisthler B, Curry SR, & Abrams LS (2016). Where Are the Beds? Housing Locations for Transition Age Youth Exiting Public Systems. *Families in Society: The Journal of Contemporary Social Services*, 97(2), 111–119. doi:10.1606/1044-3894.2016.97.12
- United States Census Bureau. (2016). American Community Survey. Retrieved from <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.
- Wodtke GT, Harding DJ, & Elwert F (2011). Neighborhood Effects in Temporal Perspective. *Am Sociol Rev*, 76(5), 713–736. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/22879678>. doi:10.1177/0003122411420816 [PubMed: 22879678]

Table 1.

Descriptive statistics of indicators of neighborhood socioeconomic quality for census tracts with and without youth in protective custody.

	No youth in protective custody (n = 137)			Contains youth in protective custody (n = 85)			P
	M	SD	Range	M	SD	Range	
Median home value (\$)	179357.35	107713.51	14000–816600	115474.12	49622.16	52300–348100	< 0.0001 *
Median gross rent (\$)	490.82	366.79	0–2167	739.56	386.20	81–1850	< 0.0001 *
Median household income (\$)	76394.52	43023.81	10834–295341	52641.35	19173.65	18334–109017	< 0.0001 *
% households with public benefits	31.45	28.01	0–100	44.20	24.72	0–98.12	< 0.001 *
% living below poverty line	20.29	19.06	0.8–85.4	25.95	16.73	3.1–71.7	0.03
% with less than HS diploma	11.42	9.08	0.3–38	15.07	8.41	0.4–40.9	0.003 *
% vacant housing	13.79	11.68	0.4–57	14.45	7.82	0.5–36.5	0.64
% unemployed	10.41	8.91	0.6–54.4	13.66	8.18	1.4–36.4	0.007
% households without a car	13.39	15.23	0–65.8	17.50	12.02	1.7–51.3	0.04
% never married	40.04	16.98	16.3–95.2	42.31	12.22	18.8–88.2	0.28

* p < .005; M = Mean, SD = Standard Deviation. Means comparisons conducted using MANOVA.

Table 2.

Results of a zero-inflated Poisson regression predicting the number of youth in out-of-home care in a tract.

	B	SE
Intercept	2.26	1.21
% vacant housing	0.01	0.02
% households without a car	0.01	0.02
Median home value	0.00	0.00
Median gross rent	0.01 **	0.00
% never married	0.00	0.02
% with less than HS diploma	-0.04	0.03
% living below poverty line	-0.04 *	0.02
% households with public benefits	0.01	0.01
% unemployed	0.02	0.03
Median household income	0.00	0.00

*
p < .05,

**
p < .01