

Ohio Children's Opportunity Index

Children's Health Bright Spots: Defying Opportunity Deficits in Ohio



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Ohio Colleges of Medicine Government Resource Center



1. Introduction

Neighborhoods are frequently characterized by numerous indicators of opportunity that are known to bear on a range of socioeconomic and ultimately, health outcomes. The pathways through which neighborhood characteristics affect health are complex and not clearly understood. As such, while on average the residents of a relatively deprived neighborhood are expected to have relatively poor health outcomes, outliers do exist. This type of outlier could be the result of atypical community cohesion and cooperation, unique policies, local opportunity-oriented organizations, or other factors that somehow lead to health outcomes that are better than expected given a typical set of neighborhood opportunity indicators. The purpose of this report is to highlight and explore several examples of such “bright spots” that are highlighted by a comparative examination of the Ohio Children’s Opportunity Index (OCOI) and infant and child health outcome variables.

1.1 Brief literature review of neighborhood effects on health

There is a veritable wealth of information that establishes the fact that neighborhood socioeconomic and structural conditions are associated with a wide variety of health, social, and economic outcomes. Of the thousands of peer reviewed journal articles on the topic, 101 were identified across three reviews that spanned more than 20 years (Minh et al., 2017; Sampson et al., 2002; van Vuuren et al., 2014) as examples of work that researches the connections between neighborhood conditions and individual outcomes. Studies have found that an individual’s health is associated with socioeconomic characteristics of their neighborhood, even when controlling for individual-level and family-level socioeconomic status (Robert, 1998; Ross & Mirowky, 2001; Alvarado, 2016). A common theme that emerged from these reviews and one that is reinforced by other researchers (Ellen et al., 2001; Leventhal & Brooks-Gunn, 2000; Sharkey & Faber, 2014) is that while there is a definitive connection between neighborhood constructs and a wide variety of health, social, and economic outcomes, the exact pathways through which neighborhood factors affect health is unknown.

Historically, income inequality and basic demographics have been used as measures of neighborhood constructs used to assess outcomes (Sampson et al., 2002). But as more research has been compiled on the relationship between neighborhoods and various outcomes of their inhabitants, what constitutes a neighborhood construct has evolved to include several domains of measurement, including physical access to resources, children’s health, criminal justice, education, environment, family stability, housing, and infant health (Ellen et al., 2001; Leventhal & Brooks-Gunn, 2000; Minh et al., 2017; Rajaratnam et al., 2006; Sampson et al., 2002; van Vuuren et al., 2014). The Ohio Children’s Opportunity Index (OCOI) uses measures in all of these domains as a means of capturing a comprehensive perspective of neighborhood characteristics that are likely to influence children’s health.

This report does not intend to evaluate the OCOI neighborhood construct measures nor try to prove whether the neighborhood itself or individual level factors are driving certain health, social, or economic outcomes. Instead, this report seeks to use the idea of positive deviance with the neighborhood constructs created in the OCOI. Positive deviance has been used in the population health field for some time and involves identifying advantageous but uncommon behaviors practiced by a limited number of members in a community (Marsh et al., 2004). By identifying community members engaged in these beneficial behaviors, the idea is that the behaviors could be replicated throughout the entire community (Schooley and Morales, 2007). Previous research has used positive deviance at the individual level by

researching the good health behaviors of individuals and applying them to a broader community in order improve health outcomes (Walker et al., 2007).

1.2 Objective

Similar to the work done by the Appalachian Regional Commission (2018) in identifying and investigating “bright spots” (Appalachian counties that are positively deviant compared to the rest of Appalachia), this report seeks to identify and investigate neighborhoods in Ohio that have better-than-expected infant and child health outcomes, given their measured opportunity and other socio-economic characteristics that are captured in the OCOI domains. The OCOI and subsequent bright spot analysis aggregate data by census tract and thus the census tract is used as our definition of a neighborhood. While there are other methods for approximating neighbor boundaries (Cutchin et al., 2011), census tracts are the most commonly used method for neighborhood approximation (Cutchin et al., 2011; Leventhal & Brooks-Gunn, 2000; Rajaratnam et al., 2006; Wang & Immergluck, 2018).

Tracts will be differentiated by geographic type (urban, rural, small town), as each has its unique set of characteristics that distinguishes it from the rest. In addition, the focus will be on identifying bright spots among neighborhoods that are lower on the OCOI distribution of all Ohio census tracts, i.e. neighborhoods that may have greater socioeconomic challenges and resource limitations. Once these bright spot neighborhoods are identified, additional qualitative research will be conducted to determine what, if any, factors exist that are helping these neighborhoods succeed.

2. Methods

2.1 Data

Data for the bright spots analysis were drawn from the OCOI database. The OCOI is a composite measure of 53 variables that constitute eight domains associated with health and wellbeing. The OCOI is a measure of opportunity available to Ohio children at the census tract level, and can be used to assess overall neighborhood conditions, target interventions, and adjust evaluations and other analyses for neighborhood-level health risks. The OCOI database contains the overall Children’s Opportunity Index score, the eight domain scores, and all of the constituent measures used to construct the domain scores and the index. The eight domains are (1) infant health outcomes, (2) non-infant child health outcomes, (3) family stability, (4) education, (5) crime, (6) housing, (7) access, and (8) environment. Each domain contains several constituent measures that were standardized and averaged to produce the domain score.

2.2 Outcome Measures

For the bright spots analysis, all 15 infant and child health outcomes that were the constituent measures within the infant health outcomes and non-infant child health outcomes domains of the OCOI were examined. These measures were derived from Medicaid claims or vital statistics birth and death data and are indicative of diagnoses, claimed services, or adverse events during birth. Table 1 provides a nominal definition of each outcome variable.

Table 1.

Domain	Variable	Description
Infant Health	Infant Mortality	Proportion of births that resulted in an infant mortality
	Infant Injury	Proportion of Medicaid-enrolled infants who had an injury or poisoning in the first year of life
	NAS	Medicaid-enrolled infants with neonatal abstinence syndrome
	NICU	Medicaid-enrolled infants with a NICU stay
	Preterm Birth	Proportion of births to Medicaid-enrolled mothers that were preterm
	Well-Child (first 15 mo)	Proportion of children who were continuously enrolled in Medicaid who also had fewer than six well-child visits with a PCP in first 15 months of life
	Severe Maternal Morbidity	Proportion of infants born to Medicaid-enrolled women with severe maternal morbidity
Children's Health	Developmental Delay	Proportion of Medicaid-enrolled children ages 1-5 with a diagnosis of developmental delay including sight and hearing impairment
	Well-Child (3-6 years)	Proportion of children who were continuously enrolled in Medicaid who did not have a well-child visit with a PCP between years 3 and 6
	Asthma	Proportion of Medicaid-enrolled children ages 6-17 with a diagnosis of asthma
	Mental Illness	Proportion of Medicaid-enrolled children ages 6-17 with a diagnosis of mental illness
	Developmental Disability	Proportion of Medicaid-enrolled children ages 6-17 with a diagnosis of a developmental disability
	Diabetes (I/II)	Proportion of Medicaid-enrolled children ages 6-17 with a diagnosis of diabetes
	Obesity	Proportion of Medicaid-enrolled children ages 6-17 with a diagnosis of obesity
	Psychotropic Rx	Proportion of Medicaid-enrolled children ages 6-17 who received psychotropic BH medication
Access	Transportation Cost	High Transportation Cost Index: Transportation expenses for a 3-person single-parent family with income at 50% of the median income for renters in the region
	Food Access	Percent of population with limited access to a supermarket
	Vehicle Access	Percent of occupied housing units in which at least one person has access to a vehicle
	Behavioral Health Access	The percent of all Medicaid behavioral health visits for children that did NOT meet the access drive-time standards of CMS
	Primary Care	The percent of all Medicaid primary care visits for children that did NOT meet the drive-time access standards of CMS
	Geographic Isolation	Geographic isolation from population centers
	School Distance	Average distance to the nearest elementary school
Crime	Crime Theft	The average number of reported burglary, larceny-theft, and motor-vehicle theft incidents per person per year
	Crime Drug	The average number of reported drug crime incidents per person per year
	Crime Intoxication	The average number of reported drunkenness and driving under the influence incidents per person per year
	Crime Violent	The average number of reported homicide, assault, and sexual assault incidents per person per year
	Crime Robbery	The average number of reported robbery incidents per person per year
Education	School Dropout	Percent of youth who have dropped out of school
	High School Education	Percent of adults with < HS education
	School Enrollment	Percent of youth (age 5-17) not enrolled in school
	Reading Ability	Proportion of children not meeting third grade reading standards
	Free Lunch Access	The proportion of children who do not receive a free lunch
	High School Graduation	Percent who did not graduate from high school
	School Performance	Reversed school performance index
School Value Add	Reversed school value added score	
Environment	Particulate Matter	Annual average of daily particulate matter 2.5 measurements (air quality)
	Tobacco Retail Exposure	Count of accessible tobacco retailers
	Air Quality	Environmental Health Hazard Index (air quality): carcinogenic, respiratory, and neurological hazards (reversed)
	Green Area	Percent of land area NOT covered by vegetation
	Developed Area	Percent of land area covered by pavement, parking, buildings, etc.
Family Stability	Older Housing	Percent of housing units constructed prior to 1980
	Labor Market Engagement	Labor Market Engagement Index (HUD): composite of employment level labor force participation, and higher education (reversed)
	Poverty	Proportion of children living in a household with below-poverty income

	Paternal Involvement	Proportion of births with no indication of paternal involvement
	Parental Mental Illness	Proportion of parents enrolled in Medicaid with a diagnosis of severe mental illness
	Parental Substance Use	Proportion of families with a parent served by Medicaid who has an SUD diagnosis
Housing	Mortgage Distress	Percent of households putting 50% or more of household income towards mortgage
	Crowding	Percent of households with greater than 1 person per room
	Rent Distress	Percent of households putting 50% or more of household income towards mortgage
	Renters	Percent who rent their home
	Housing Mobility	Percent living in the same housing unit for less than one year
	Vacant Housing	Percent of housing units identified as vacant, including those that are for rent or for sale
	Evictions	Rate of evictions among renters

2.3 Independent Predictive Variables

The regression models that were constructed as tools for the identification of candidate bright spot census tracts included one of the outcome measures (see section 2.2) as the dependent variable and all of the OCOI domain scores—except infant health and non-infant child health outcomes domain scores—as the independent predictor variables.

2.4 Analysis

2.4.1 Candidate Bright Spots

One ordinary least squares regression model per outcome variable was fit, totaling 15 regression models. Each model included the six domain scores as independent predictive variables. Using the fitted regression models, predictions about the outcome for each census tract was generated. The predicted value for a tract is what one would expect the health outcome to be for that tract, given the values of the six domain scores assuming the model is reasonable. The difference between the observed health outcome value and the predicted value was calculated and referred to as the *residual* (the excess in health outcome beyond what was predicted). Once this was completed for all 15 outcomes, the 15 residuals for each census tract were divided by their respective standard deviations and averaged, resulting in a single *average standardized residual* per census tract, which was ranked from highest to lowest. Candidate bright spots in rural census tracts were those with an OCOI score below the median and with the highest ranking average standardized residuals. The same rule applied for small town and urban areas except that the OCOI scores must have been in the lowest quartile of opportunity.

Neighborhood types of rural, small town, and urban were defined using a combination of the U.S. Department of Agriculture’s Rural-Urban Commuting Area (RUCA) Codes and population density which can be found in Table 2. The primary RUCA codes are divided into 10 classes and are created using population density, urbanization, and daily commuting flows (USDA ERS - Rural-Urban Commuting Area Codes, 2019). The maximum population density of all Rural tracts (RUCA Code = 10) was identified and used to filter tracts with sufficiently low population density. This had the effect of metropolitan, rural, and small town designated tracts on the fringes of urban areas/clusters being classified as rural. This classification method is more in line with anecdotal knowledge of the State of Ohio.

Table 2.

Acronym Definitions

Acronym	Description
RUCA	U.S. Department of Agriculture’s Rural-Urban Commuting Area (RUCA) Code
PD	Population density of census tract
PDRmax	Maximum population density of existing rural tracts (RUCA = 10) in Ohio (RUCA = 10).

Primary RUCA Codes and Descriptions, 2010

RUCA Code	Description
1	Metropolitan area core: primary flow within an urbanized area (UA)
2	Metropolitan area high commuting: primary flow 30% or more to a UA
3	Metropolitan area low commuting: primary flow 10% to 30% to a UA
4	Micropolitan area core: primary flow within an Urban Cluster of 10,000 to 49,999 (large UC)
5	Micropolitan high commuting: primary flow 30% or more to a large UC
6	Micropolitan low commuting: primary flow 10% to 30% to a large UC
7	Small town core: primary flow within an Urban Cluster of 2,500 to 9,999 (small UC)
8	Small town high commuting: primary flow 30% or more to a small UC
9	Small town low commuting: primary flow 10% to 30% to a small UC
10	Rural areas: primary flow to a tract outside a UA or UC

Updated Neighborhood Type Classification Method

Neighborhood Type	Description
Urban	RUCA = 1 OR (RUCA IN (2,3) AND PD > PDRmax)
Small Town	RUCA IN (4,7) OR (RUCA IN(5,6,8,9) AND PD > PDRmax)
Rural	RUCA = 10 OR (RUCA IN (2,3,5,6,8,9) AND PD ≤ PDRmax)

2.4.2 Qualitative Bright Spot Selection

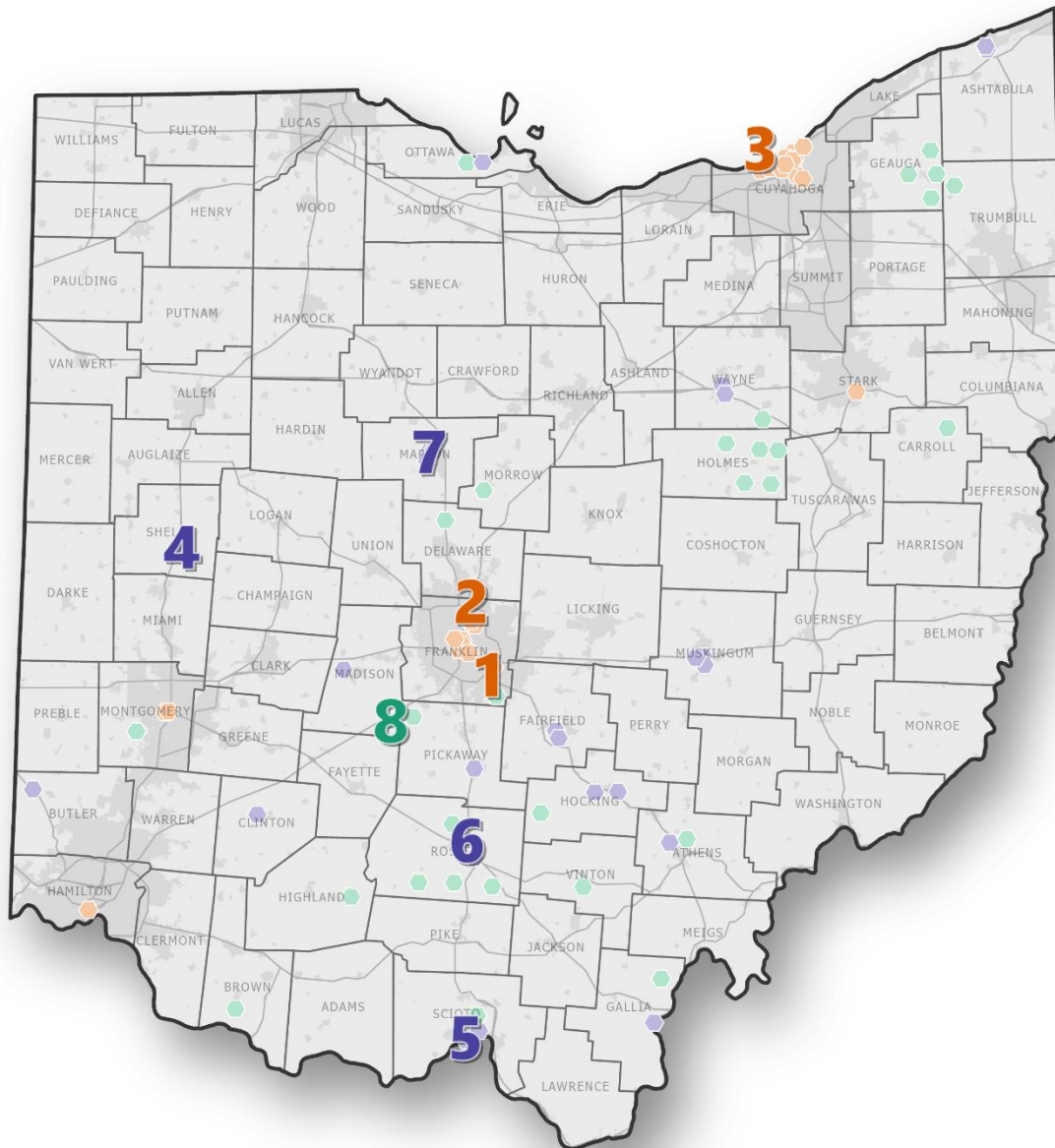
The next step applies qualitative criteria to select appropriate bright spots from the highest ranking Census tracts. Thirty bright spots were identified for further qualitative analysis. In the first phase of the qualitative analysis, GRC reviewed the areas surrounding the census tracts using maps. GRC selected out bright spots that were likely false positives. Three bright spots were selected out because they were in middle of or adjacent to a college campus or university. Two bright spots were selected out because the tract consisted of mostly industrial buildings or freeways and little to no housing was identifiable within the tract. One area was selected out because gentrification within recent years had drastically changed the demographics of the neighborhood, and one bright spot was selected out because the majority of the Medicaid residents listed a temporary family homeless shelter for their address. After further research, it was decided that there was not a way to determine if these residents were residents of the bright spot census tract, another area in Ohio, or another state. Finally, further analysis of the seven Amish census tracts showed that the reason they were classified as having a below the median score

was because the percent of children who graduated from high school in those tracts was very low. The Amish believe strongly in education but only provide formal education through the eighth grade.

2.4.3 Quantitative Description of Selected Bright Spots

Bright spots are represented as numbered geographic points on a map of Ohio (Figure 1) and numerically described in Table 3 using the OCOI overall and domain scores as well as the average standardized residual. Further numerical description is provided in tract-specific tables (Tables 5 -10) that include standardized values for each of the 15 outcome measures and all of the constituent measures (also standardized) from the OCOI domain on which the given census tract scored the lowest. Standardization consisted of dividing the measure on its original scale by its standard deviation, resulting in a z-score.

Figure 1.



Selected Bright Spots

Candidate Bright Spots
● Urban ● Small Town ● Rural

	Label & Neighborhood Name	County	Included Tract ID & FIPS Code
Urban	1) Olde Towne East	Franklin	1.1) 39049003800
	2) Clinton Township	Franklin	2.1) 39049007531 - 2.2) 39049007721
	3) Edgewater	Cuyahoga	3.1) 39035101300
Small Town	4) Sidney	Shelby	4.1) 39149972000
	5) Portsmouth	Scioto	5.1) 39169000500
	6) Chillicothe	Ross	6.1) 39141956300 - 6.2) 39141956400 - 6.3) 39141956500
	7) Marion	Marion	7.1) 39101000100 - 7.2) 39101000200
Rural	8) Mt Sterling	Madison	8.1) 39097041200

Table 3.

Bright Spot Name	Tract ID	Overall Ohio Children's Opportunity Index Score (Mdn = 79.2)	Percent of Children (0-17) on Medicaid	Average Standardized Residual	Domain Scores (Mdn. = 84.4 for all domains)								
					Infant Health	Children's Health	Family Stability	Housing	Access	Education	Environment	Crime	
Urban	1) Olde Towne East	1.1	59.4	37%	0.7	94.2	95.8	26.0	44.6	85.0	58.3	63.4	70.2
	2) Clinton Township	2.1	62.8	93%	0.7	96.3	99.8	87.6	27.1	67.1	62.4	53.7	63.2
		2.2	53.1	122%*	0.7	92.6	99.9	99.0	6.7	56.7	18.6	61.9	65.6
3) Edgewater	3.1	55.6	87%	0.7	96.5	99.6	79.6	48.3	45.2	49.1	44.8	52.2	
Small Town	4) Sidney	4.1	60.8	77%	0.2	81.3	88.7	65.0	48.2	65.1	92.3	71.2	34.0
	5) Portsmouth	5.1	63.9	65%	0.2	66.1	79.1	26.2	79.5	84.8	72.3	84.3	71.3
		6.1	60.2	83%	0.2	84.0	83.0	60.3	70.7	81.1	68.1	89.3	5.8
	6) Chillicothe	6.2	60.0	80%	0.3	85.8	84.9	50.6	65.2	83.0	72.7	82.8	16.0
		6.3	47.9	112%*	0.2	67.5	65.1	20.8	74.6	84.3	61.5	89.5	7.1
	7) Marion	7.1	44.1	84%	0.3	90.2	83.0	53.2	19.1	48.9	68.7	70.0	15.4
		7.2	49.1	98%	0.1	61.2	74.2	27.3	45.3	76.7	60.8	77.3	54.8
Rural	8) Mt Sterling	8.1	77.6	54%	0.4	96.2	96.2	74.5	83.7	37.5	86.8	97.4	71.1

* Estimates of greater than 100% of children 0-17 on Medicaid are potentially due to American Community Survey (ACS) margins of error (MOE) and/or population movement into and out of the neighborhoods.

2.4.4 Qualitative Interviewing of Bright Spot Constituents

To further elucidate why each selected bright spot shows better children's health outcomes than expected, members and leaders of communities associated with the bright spot tracts were contacted using an unstructured interviewing approach. Interviews were conducted with a range of representatives, including county and local health departments and job and family services agencies, city managers, mayors, members of neighborhood associations, librarians, and school principals. Interviews were conducted via telephone, video conference, and email. Respondents were provided with a map of the bright spot census tract(s) and were shown the overall Children's Opportunity Index score and the domain scores. The interviewer asked respondents for their opinion as to why the area was a bright spot and about programming and unique characteristics about the community that may contribute to the children's health outcomes.

3. Results

All of the qualitative data has been summarized into brief highlight pages for each of the bright spot census tracts. Bright spot census tracts that were immediately adjacent to another bright spot census tract were treated as a single neighborhood and referred to as one bright spot in the highlights.

1) Olde Towne East, Franklin County

Neighborhood 1: Olde Towne East, Franklin County
 Included Census Tract ID & FIPS Code: 1.1) 39049003800

Interviews were conducted with two representatives from the Maternal Child Health division at the Columbus Health Department and two members of the Olde Towne East Neighborhood Association.

General

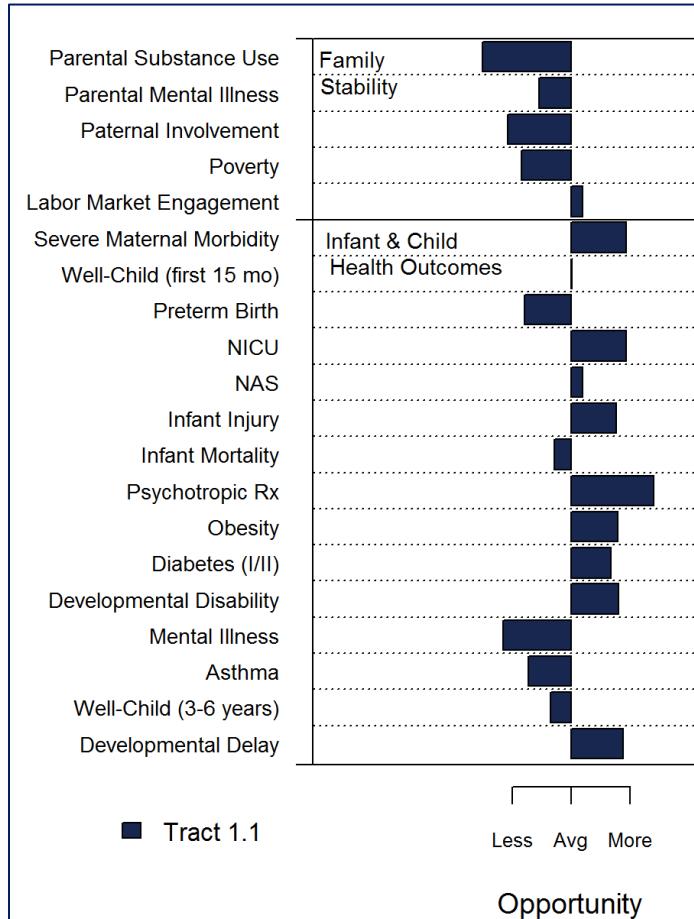
As seen in Figure 2, this bright spot scored low in the Family Stability Domain with the Parental Substance Use, Parental Mental Illness, Parental Involvement, and Poverty constituent measures scoring below average. Despite these low scores, Severe Maternal Morbidity and a number of Child Health Outcomes scored above average, including, NICU, Psychotropic Rx, Obesity, Developmental Disability, and Developmental delay. Furthermore, as highlighted in Appendix A, though some of the constituent measures scored below average in comparison to the rest of the state, all of the residual values in the Infant and Children’s Health Outcomes were positive, with the exception of Well-Child visits (3-6 years), Mental Illness, and Preterm Birth.

Olde Towne East was described as an area in transition with rehabilitation of housing and gentrification taking place throughout the bright spot census tract and the surrounding areas. The neighborhood was described as an area of “demographic extremes” with individuals and families with low income and low educational attainment living next door to individuals and families with high incomes and high educational attainment. Access to vehicular transportation and grocery stores with health foods were noted as challenges to families in this area. Additionally, the area was described as generally unsafe, with crime being prevalent, though the perception of safety in this neighborhood was said to be shifting with the changing demographics of the residents.

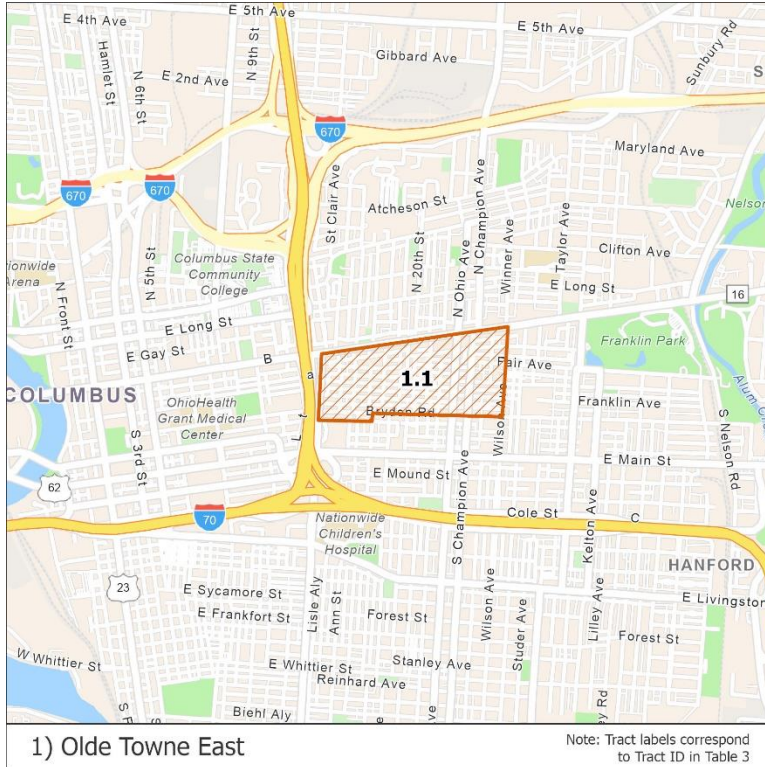
Strengths

Several resources were noted as being strengths of this specific area within Olde Towne East. The most notable resource is the proximity to [Columbus Public Health](#) that resides within the bright spot. The representative from the Columbus Public Health noted that foot traffic from the immediate area accounts for a large proportion of their visitors. Once visitors are triaged at the front lobby, they are provided with information on the resources available at the Department, including:

Figure 2.



1) Olde Towne East, Franklin County



- Immunization
- women’s health
- Sexual health
- Substance abuse programming
- Home visiting for maternal and child health
- Car seat programs
- Pack n’ Play programs

Other nearby community resources, including [Central Community House](#) and the [IMPACT program](#) whose mission focuses on fighting poverty, were noted to have a positive impact on the residents in Olde Towne East. The bright spot is also within close proximity to the [Greater Columbus Ohio Chapter of the Red Cross](#), multiple medical centers, including [Nationwide Children’s Hospital](#), and

the [Buckeye Ranch Child & Family Mental Health Services](#).

The neighborhood also benefits from a number of nearby food pantries and recreational opportunities. Local organizations and churches provide food and activities for free, and in the summer, there is a popular food market that provides coupons for WIC participants. Several green spaces and a community center are within walking distance to this area.

Finally, easy access to public transportation through the [Central Ohio Transit Authority \(COTA\)](#) bus system was said to have a large impact on the ability of residents to access food, entertainment, employment, and other resources not available in the area.

Summary

Though access to healthy foods in grocery stores and vehicles in Olde Towne East were noted as challenges for families in this area, convenient access to public transportation and a number of food pantries and farmer’s markets may be contributing to positive children’s health outcomes in obesity and diabetes. Likewise walking access to resources for women’s, maternal, and children’s health at the Columbus Public Health Department may be contributing to the positive outcomes in NICU, NAS, and Infant Injury. Finally, despite both the quantitative and qualitative data indicating this area faces challenges in crime and family stability, children’s health outcomes in NAS and Psychotropic Rx were positive and perhaps can be attributed to close access to behavioral health organizations and Nationwide Children’s Hospital.

2) Clinton Township, Franklin County

Neighborhood 2: Clinton Township, Franklin County

Included Census Tract ID & FIPS Code: 2.1) 39049007531 – 2.2) 39049007721

One interview was conducted with the manager of the Columbus Metropolitan Library - Northern Lights Branch.

General

Two census tracts make up the Franklin County bright spot in Clinton Township. Both tracts score low in the Housing domain with Evictions and Crowding scoring particularly low. For all but two of the constituent measures, Tract 2.2 fares worse than Tract 2.1. Though not shown in Figure 3, this bright spot also has well-below average scores in Poverty, and Tract 2.2 scored very low in School Dropout. Despite these scores, with only two exceptions (SMM and Obesity), these tracts score above average in all of the Infant and Child Health outcome measures. Likewise, as shown in Appendix A, with only one exception (NAS), all of the residual values for the Infant and Child Health Outcomes are positive.

This area of Clinton Township was described as having a large immigrant population. The majority of the immigrant population was said to be from Somalia as well as a large representation from areas in West Africa.

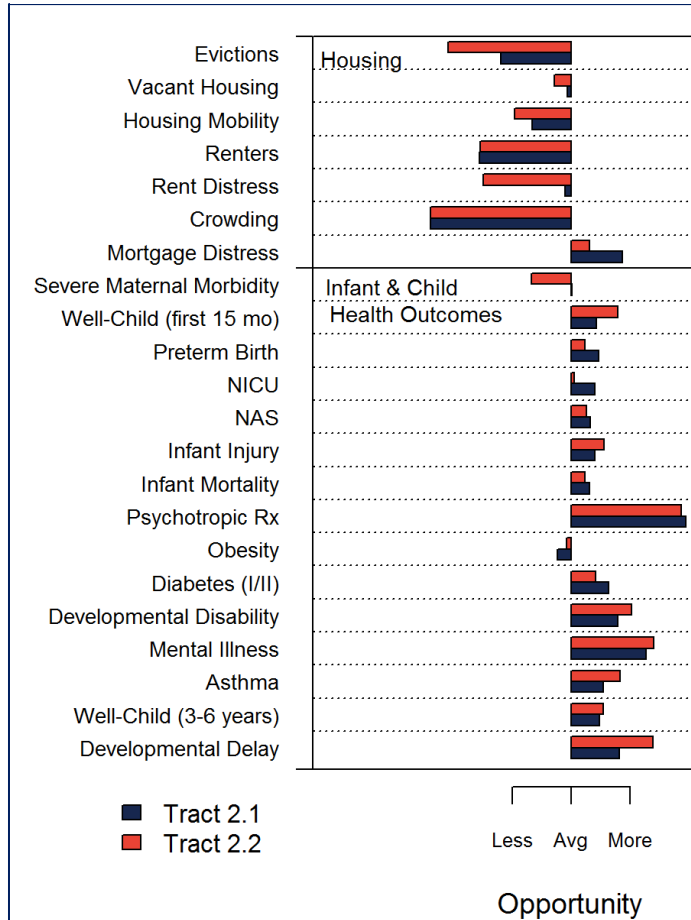
In general, the Somali families in bright spot were observed to place a high importance on healthcare. The Somali population in this area were also described as having large families, often with eight or more immediate family members living in one home or apartment unit. This was described as often being a benefit to mental health, as there was built-in family support. The immigrant population in this area in general was described as having healthy eating habits, and Somali families in particular were observed to cook at home instead of eating fast food and eat food from their own culture.

In the Somali community in this area of Clinton Township, it was observed that families who were struggling financially often had a child drop out of school to work and contribute to the house. It was also said that most of the children in this bright spot attend charter schools.

Strengths

The [Columbus Metropolitan Library - Northern Lights Branch](#) partners with the [Children’s Hunger Alliance](#) to provide free and healthy snacks and lunch to children every day when school is in session. During the summer months, the library partners with the [Columbus Parks and Recreations](#) to provide healthy snacks.

Figure 3.



2) Clinton Township, Franklin County

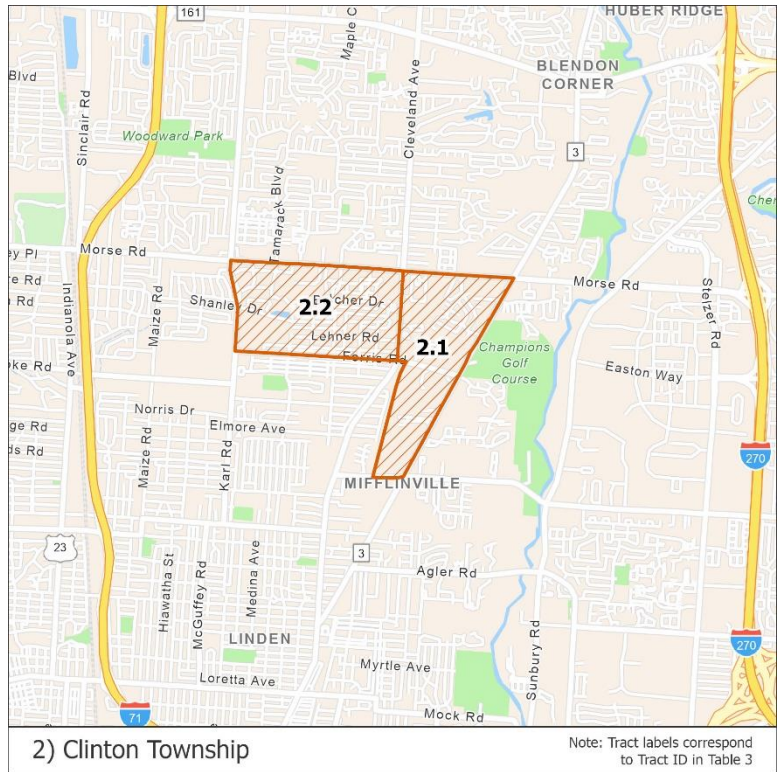
During the school year, it was estimated that this branch served lunch to 60 – 80 kids per day and snacks to hundreds of kids after school.

The Library also hosts [Homework Help](#) sessions to assist students with homework and provide access to free computers, printers, and school supplies. These sessions were described as being very popular and had the support of Somali families, as Somali parents were often observed to be non-English speaking and were not able to assist with homework assignments. The Library also hosts [Readiness for Kindergarten](#) classes and [health resources](#) to the community.

A [free produce market](#) is also available to families in this area where they can pull up to the market location in their car and one week's worth of free produce is placed in their trunk. This market is in partnership with Franklin County Public Health and other local organizations.

Summary

There is little doubt that culture has a role in the positive Infant and Children's Health Outcomes for this area, as the immigrant Somali and African families were said to value healthcare and place a high importance on attending well visits and tending to health concerns in general. Other cultural practices are likely also at play in the scores for High School Dropout and Crowding. The bright spot does offer families several opportunities and resources that reach beyond culture and may be contributing to the positive health outcomes. Notably, the popular free lunch and snack sites that are offered year-round and the free food market provide an opportunity for children and adults to eat healthy foods who may not otherwise be able to afford them. The library's resources may also be providing families with information on how to access healthcare resources.



3) Edgewater, Cuyahoga County

Neighborhood 3: Edgewater, Cuyahoga County
 Included Census Tract ID & FIPS Code: 3.1) 39035101300

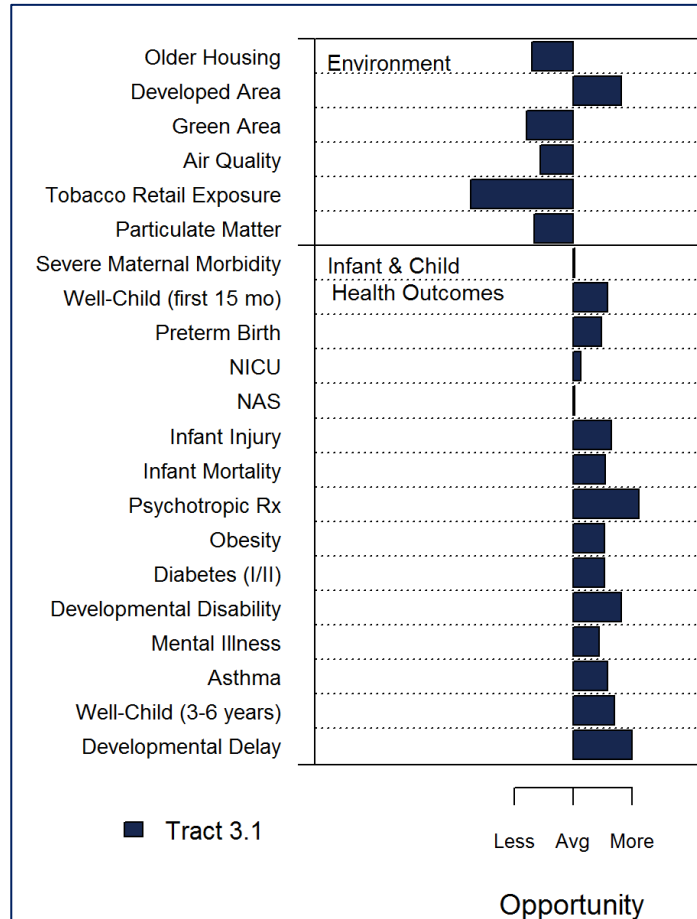
Two interviews were conducted, one with a home visiting program manager and second with a Cuyahoga County Help Me Grow supervisor.

General

As seen in Figure 4, this bright spot scored low in all of the constituent measures in the Environment Domain, except for Developed Area (lack of green space), with a noteworthy low score in Tobacco Retail Exposure. Additionally, Table 3 shows low scores significantly below the Ohio median for the Access, Housing, Education, and Crime domains. However, despite these low scores, this bright spot scored above average in all of the Infant and Child Health outcomes.

This bright spot in the city of Cleveland was described as a heavily populated and well-established community that is a nice place to live and is continually being improved and maintained. The area was described as being diverse in many aspects, having a variety of small businesses on the main streets and plentiful employment opportunities, and in types of housing with a mixture of single-family homes, rentals, and retirement communities that vary from high home prices along the lake to low-income housing in areas not immediately on the lake. Home prices were described as generally being higher in this area than other areas in Cleveland. The area was also described as walkable and community-centered with events for families taking place regularly.

Figure 4.



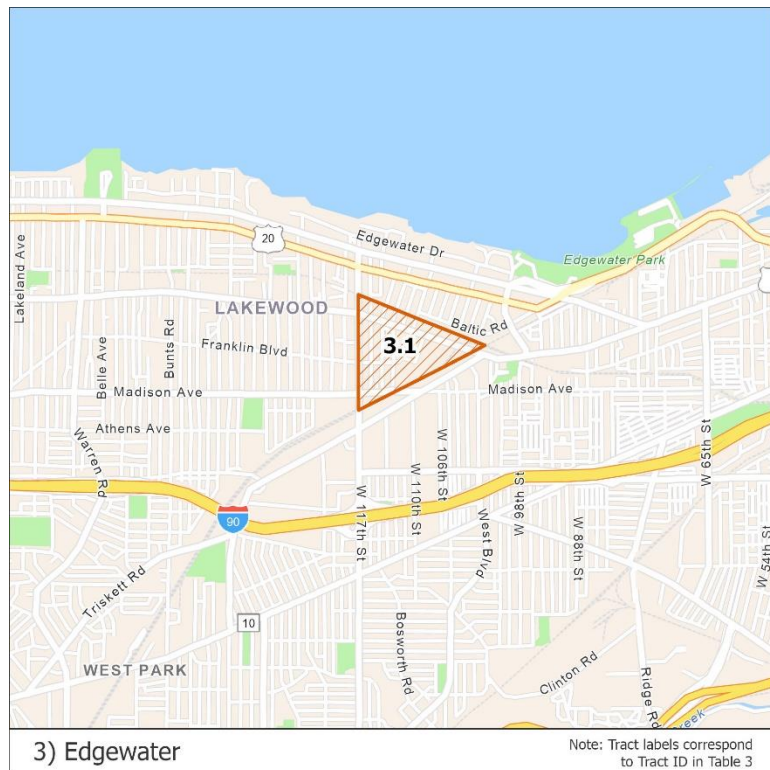
Strengths

Diversity in resources and community offerings was a theme that stuck out during the qualitative data collection for this area. Having a wide variety of businesses and community health resources were said to provide families with what they need to meet their health and other needs. Access to [the Cleveland Clinic's Fairview Hospital](#) and other medical facilities and multiple community organizations that address emotional and behavioral health were noted as being particularly impactful for children. Community organization like [Positive Education Program](#), Community Quality Care, and [Applewood Centers](#) all reside within this bright spot and all provide mental health services specifically for children. Applewood Centers also provides transportation and lunch and snacks to children during the school year and throughout the summer.

3) Edgewater, Cuyahoga County

In addition to the community organizations that provide access to food, the [Cleveland Public Library](#) and [Great Cleveland Food Bank](#) are available to children and families. Multiple recreational opportunities were said to make exercise easy to access by residents in the bright spot, even though they were not in the immediate area. Walking tunnels from the bright spot to the lake, the Cudell Recreation Center, and public parks are within walking distance or a short drive or ride on public transportation.

Finally, access to resources within the bright spot and outside of it were said to be made easy with plentiful public transportation options and the [2-1-1](#) resource directory that connects callers to resources within their zip code.



Summary

This bright spot faces challenges related to the environment, access, housing, education, and crime. Despite this, every single child and infant outcome scored above average. The diversity in community resources and access to medical and mental health service, particularly children's mental health resources, coupled with the access public transportation appear to be major contributors to the favorability to the children and families in this bright spot.

4) Sidney, Shelby County

Neighborhood 4: Sidney, Shelby County
 Included Census Tract ID & FIPS Code: 4.1) 39149972000

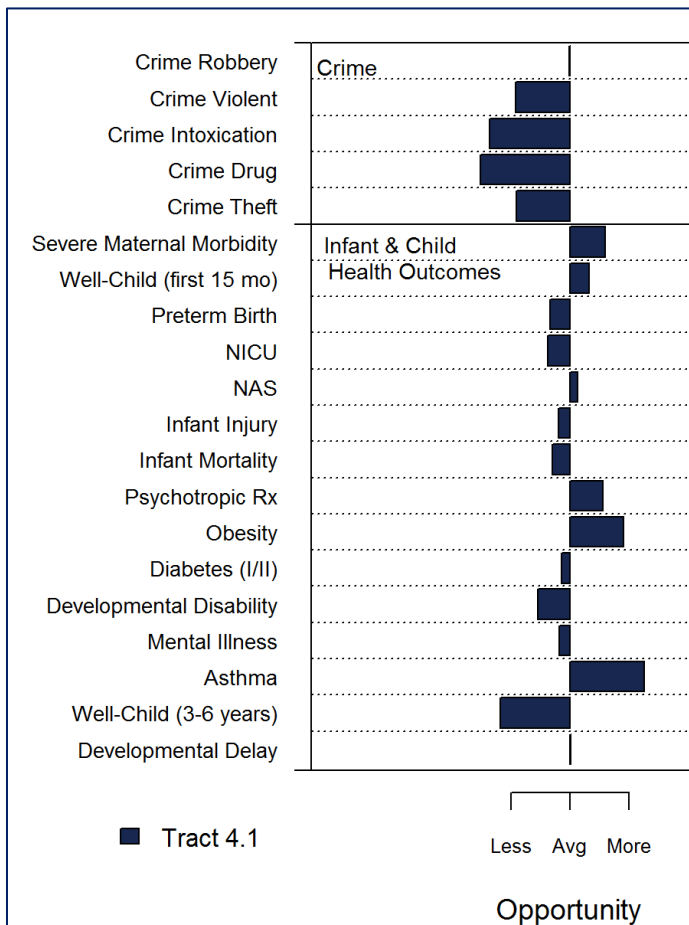
One interview was conducted with the Sidney City Manager.

General

The bright spot in Sidney, Ohio consists of one census tract that scores below average in all of the constituent measures in Housing and Criminal Justice, with the exception of Crime Robbery and in Food Access. In contrast, the bright spot scored above average in SMM, Well-Child (first 15 months), Psychotropic Rx, Obesity, and Asthmias in the Infant and Child Health Outcomes. In addition to the Infant and Child Health Outcomes just mentioned, developmental delay and NAS also had positive residual scores, as highlighted in Attachment A.

The bright spot in Sidney, Ohio was described as a once up-and-coming area that has experienced decline in the past several decades. The schools were described as diverse and a melting pot with a mixture of low income and high income families attending the same schools. The area was said to be under reconstruction with the help of grants. In general, the families were described to be very involved with each other, with large networks of families and heavy involvement of parents and grandparents in children’s lives.

Figure 5.



Strengths

Several local organizations work with the community to address children’s health, education, and recreational needs. Many of these organizations are supported by [United Way](#), and the community was described as “a very giving community” that provides large amounts of donations to United Way to support their community efforts.

United Way helps support the enrollment of every child born in Shelby County into the [Imagination Library](#), a program that provides an age-appropriate book to every child enrolled in the program from birth to five years old for free. [Amos Memorial Library](#) manages the program and as of October of 2019 had enrolled 69% of the Shelby County eligible population into the program. This ranks Shelby County number one for enrollment in the program in the state of Ohio.

4) Sidney, Shelby County

Unique to Sidney, a park or recreation area is mandated to be within one half mile of every residence. This provides for many opportunities for children and families to be active in the community. Additionally, boys' slow-pitch and girls' softball leagues are sponsored by local businesses so children can participate in the sports for free. T-shirts are paid for by sponsorship, and the coaches are volunteers. These leagues are also available to adults. Baseball and softball were described as being a part of the Sidney culture and many families participate in these free leagues or youth and recreational leagues that have nominal fees. The [YMCA](#) also has programs and scholarships for low income families.



In partnership with the local parks and recreation department the [Summer Lunch Program](#) provides a hot lunch to children Monday through Friday throughout the summer and additional food for weekends through the Backpack Program. Distribution of lunches and “backpacks” are conducted at 24 different neighborhood park and recreations sites and are sponsored by the Ohio Department of Education, Summer Food Service Program for Children (Food Programs, 2020).

Summary

Sidney, Ohio appears to be tackling the issue of low opportunity for residents in this bright spot from multiple angles. Data points to issues with crime,

housing, food access, and general decline in the neighborhood, but public programs and county policies are providing children and families with access to healthy foods, early child educational tools, no- or low-cost organized recreational activities, and outdoor recreational space. Effects of these programs may be seen in the above positive scores in Asthma and Obesity. Though not a Child Health outcome measure, it should be noted that this census tract also scored above average in Reading Ability, which could be connected to the automatic enrollment in the Imagination Library (Speicher, 2019).

5) Portsmouth, Scioto County

Neighborhood 5: Portsmouth, Scioto County
 Included Census Tract ID & FIPS Code: 5.1) 145003300

One phone interview was conducted with a resident of this bright spot.

General

As seen in Figure 6, this bright spot scored below average in all but one of the Family Stability constituent measures with Parental Substance Use scoring particularly low. Despite these scores, this bright spot scored close to average in the Developmental Delay, Development Disabilities, Mental Illness, and Wellchild (3-6 years) Child Health outcome measures and better than average in the Athsma and Obesity Child Health Outcome measures. Residual scores in Developmental Delay, Athsma, Mental Illness, and Obesity were also positive. The bright spot also scored better than average in Preterm Birth, NICU, and Infant Mortality Infant Health.

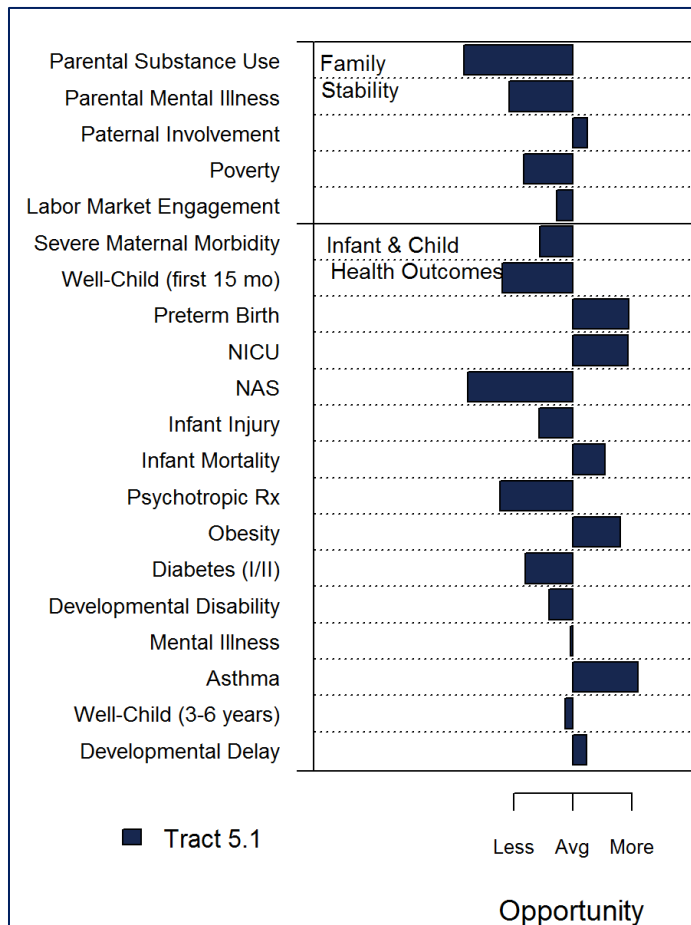
Portsmouth, Ohio was described as a small town with a variety of demographics and income levels throughout the area and large variation in housing accessibility and value within a short distance. The bright spot in Portsmouth was described as one of the more affluent areas with middle- to upper-middle income levels. The area was said to have a variety of family structures and types of housing with many families and two-parent homes and a large retirement community, including a variety of retirement-owned independent living homes and apartments and assisted living through palliative care.

Strengths

One of the biggest strengths of this bright spot is its proximity to a wide variety of community organizations, churches, and medical facilities. Organizations like the [Community Action Organization of Scioto County, Inc.](#) offer workforce development, social services, educational services, nutrition education, and health and wellness programs. [Summer food programs](#), [Help Me Grow](#), [Head Start](#), and special education services are all within the bright spot or within a 10 minute drive.

One of the major contributors to the community’s health was noted to be the [Southern Ohio Medical Center \(SOMC\)](#). Located in the center of the bright spot, it is the largest employer in Portsmouth. Though

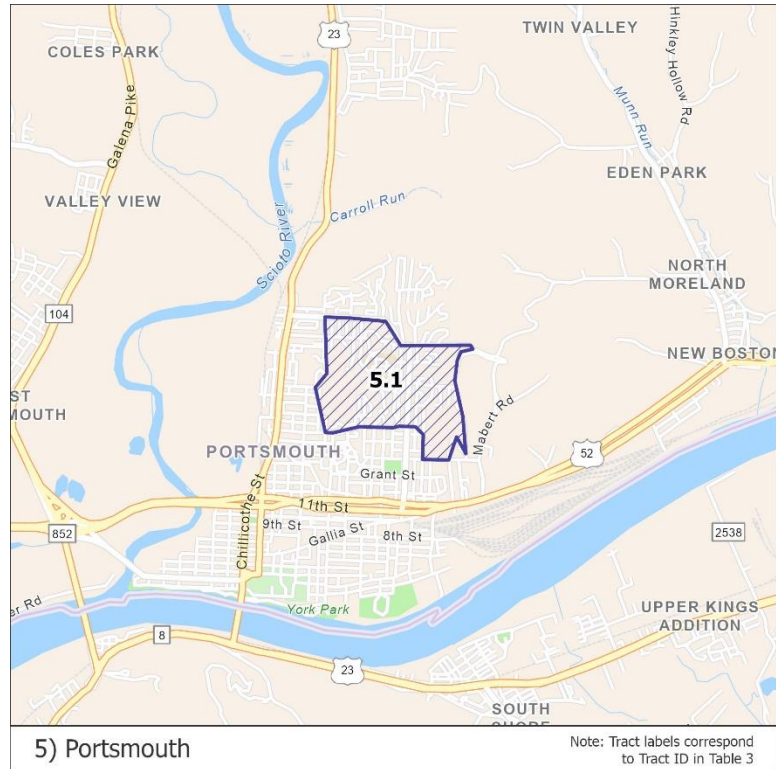
Figure 6.



5) Portsmouth, Scioto County

it was not clear if the residents of this census tract work at SOMC or use its services, it does host a full array of health and wellness programs and medical services. It has a birthing hospital with a maternity department and OB/GYN associates. It also has a [Life Center](#) with membership-based programming, including swim lessons for ages one and up, fitness classes, and coaching. Additionally, there is a Kids Fit program for children ages 6-13 to engage in physical activity while their parents exercise or partake in other Life Center activities.

Though it was noted that this bright spot has limited access to mental health services, [Catholic Social Services](#) is within the bright spot and provides intensive family services, maternal and general counseling, and case management focused on economic self-sufficiency and overall family well-being to low-income families. Other mental health, addiction, and recovery services are offered by multiple organization outside of the bright spot, approximately 15 minutes away by car.



Summary

This bright spot faces challenges with Family Stability, with Parental Substance Use standing out as a major challenge for the area. The bright spot, however, performed better than expected in the Developmental Delay, Development Disabilities, Mental Illness, Well child (3-6 years), Asthma and Obesity Child Health Outcome measures and the Preterm Birth, NICU, and Infant Mortality Infant Health measures. The centralized SOMC was noted as one of the driving factors behind the positive outcomes, but close access to mental health and addiction services, among a diverse array of other resources, looks to be particularly helpful for an area with low scores in Family Stability.

6) Ross County – Chillicothe

Neighborhood 6: Chillicothe, Ross County

Included Census Tract ID & FIPS Code: 6.1) 39141956300 - 6.2) 39141956400 - 6.3) 39141956500

Interviews were conducted with a Ross County public health nurse, the principal of Union Scioto Junior High School, and a Community Health Specialist at the Ross County Health District.

General

The Chillicothe bright spot consists of three census tracts in a small town. All three census tracts score below average in all of the constituent Crime measures and particularly low in Crime Intoxication, Crime Drug, and Crime Theft. The Tract 6.3 Family Stability domain score was also below average with the Parental Substance Use constituent measure being particularly low.

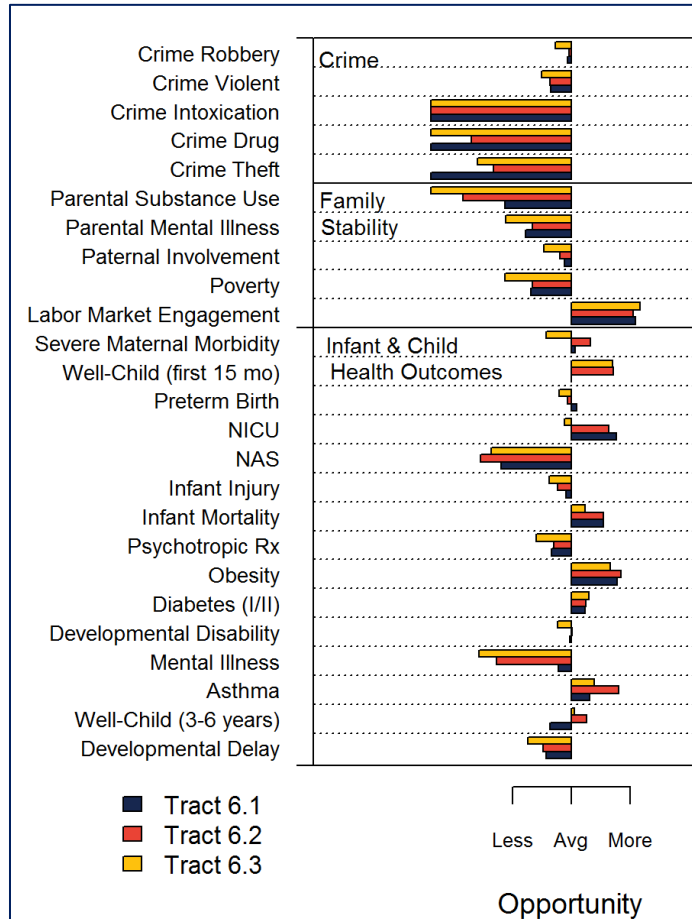
Despite these scores, all of the census tracts scored above average in the Infant Mortality, Obesity, and Asthma in the Infant and Child Health Outcomes. In other Infant and Child Health Outcomes, two census tracts scored above average: SMM (tracts 6.1 and 6.2), Well-child First 15 Months (tracts 6.2 and 6.3), NICU (tracts 6.1 and 6.2), and Well-child 3 to 6 Years (tracts 6.2 and 6.3). Additionally, all three census tracts had positive residual scores for the Asthma, Diabetes, Obesity, Infant Mortality, NICU, Preterm Birth, and Well-child First 15 Months.

This bright spot in Chillicothe was described as a low-income area with high drug activity, crime, and homelessness. Food insecurity and low amounts of resources were noted as a challenge. It was also stated that life expectancy drops by 11 years for people who live in this area.

Strengths

A number of medical facilities and clinics are within these tracts, including and [Ross County Health District \(RCHD\)](#). Several years ago, the RCHD was not doing well financially and has since received several grants that have helped get it back on its feet. The RCHD provides access to immunizations, pregnancy testing, the [WIC](#) program, and [community health programs](#). These services are provided to all residents, regardless of income. The RCHD has also identified three priority communities in Ross County with one of the communities being this specific bright spot within the city.

Figure 7.



6) Ross County – Chillicothe

Another healthcare provider in these tracts is [Adena Regional Medical Center](#). This healthcare center was said to provide a large amount of outreach to the community and is an Ohio Hospital Association safe sleep hospital. They have an obstetrics department that delivers nearly 1,200 babies each year and collaborates with the Ohio State University Wexner Medical Center. Adena also hosts a variety of programs for families and expecting parents and free childbirth and education classes, including classes that will educate and guide teens through pregnancy.

Other healthcare organizations and public programs are active in the area and easily accessible to residents. These include the [Hopewell Health Centers](#), [Help Me Grow](#), and a women's health clinic called [Serenity Haven](#).

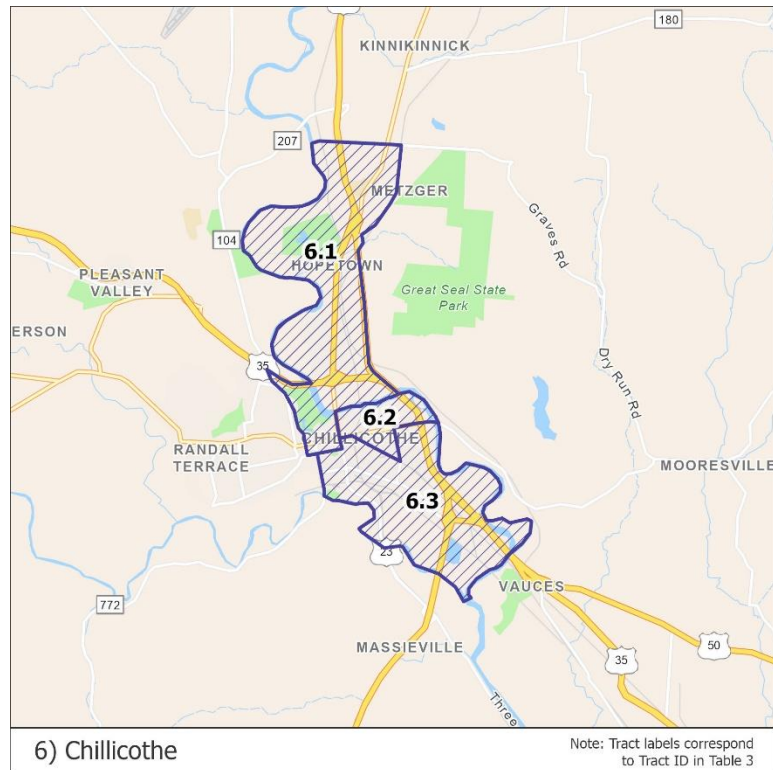
Home visiting programs in the area also provide education on child-rearing techniques, anger management, and coping skills for young parents. Additional mental health and addiction organizations and services in the area include [Scioto Paint Valley Mental Health Center](#), [Spero Health](#), and the Adena Counseling Center.

In addition to the multiple facilities and organizations that provide health services to people in this community, there are also partner groups that work together to improve health in the community. Two notable partner groups include Partners for a Healthier Ross County, a group of 19 Ross County agencies that created the [Community Health Needs Assessment](#), and Live Well Ross, a partner group focused on chronic disease and healthy eating. Community organizations tackle other challenges residents face. Community action programs like United Way focus on education, health, and income stability, and the Ross County Community Action Commission provides assistance with paying water bills, low income home insulation, energy efficient light bulbs.

Lastly, a number of local organizations and systems address food insecurity and provide opportunities for recreation. Food banks, farmers markets, and the [Mount Logan Community Center](#) provide children and families with free food. The community center, 4-H program, YMCA, and the county parks and recreations department also provide exercise and skills education and programming. It was also noted that this is a biking community with schools providing bicycle programs and several organizations providing helmets.

Summary

This bright spot in Chillicothe struggle with high rates of crime, drug activity, poverty, and homelessness. Lack of sufficient resources poses additional challenges within this community. However, this bright spot performed much better-than-average in infant mortality, asthma, obesity, and well-child visits in the first 15 months of life. Access to health care facilities and resources, regardless of income status, was noted to



6) Ross County – Chillicothe

be an important factor in addressing infant and child health. This bright spot was also identified as one of the priority communities in Ross County, with healthcare centers providing many community outreach programs. It is clear that the cross-collaboration between organizations is having a positive impact on this community as well as having multiple organizations all aimed at the same health and wellness goals.

7) Marion, Marion County

Neighborhood 7: Marion, Marion County

Included Census Tract ID & FIPS Code: 7.1) 39101000100 - 7.2) 39101000200

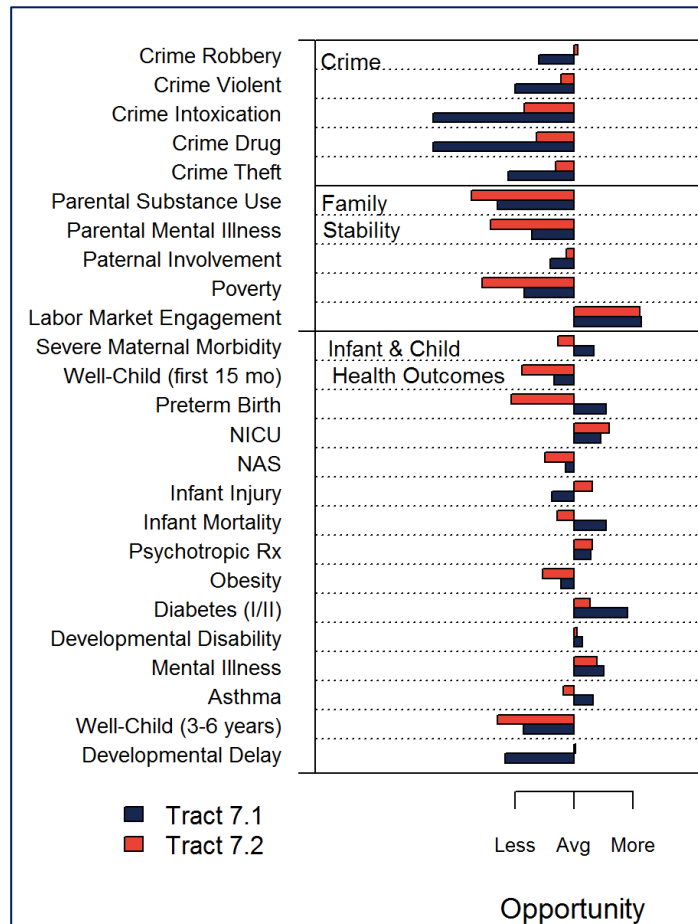
Interviews were conducted with the Boys and Girls Club and the Marion Public Library.

General

This bright spot in Marion County has low scores in the Crime and Family Stability Domains, as shown in Figure 8. Additionally, Table 3 shows that this area has low scores for the Housing Domain. However, this bright spot has better-than-predicted outcomes for a number of Infant and Child Health constituent measures. These include NICU, diabetes, mental illness, and asthma. Tract 7.1 did particularly well in infant health outcomes, with an overall Infant Health score of 90.2, which is higher than the Ohio median score of 84.4 (Table 3).

The bright spot is located just north of the Marion downtown area and is described as an area that has experienced several years of depression, high drug and school dropout rates, and families that have experienced generational poverty. The area was also described as being hit by several recessions, impacting what once was a manufacturing hub. Economic growth and improvement have been observed in the recent years with new businesses emerging and a wider variety of technical and trade programs being offered at nearby colleges and universities.

Figure 8.

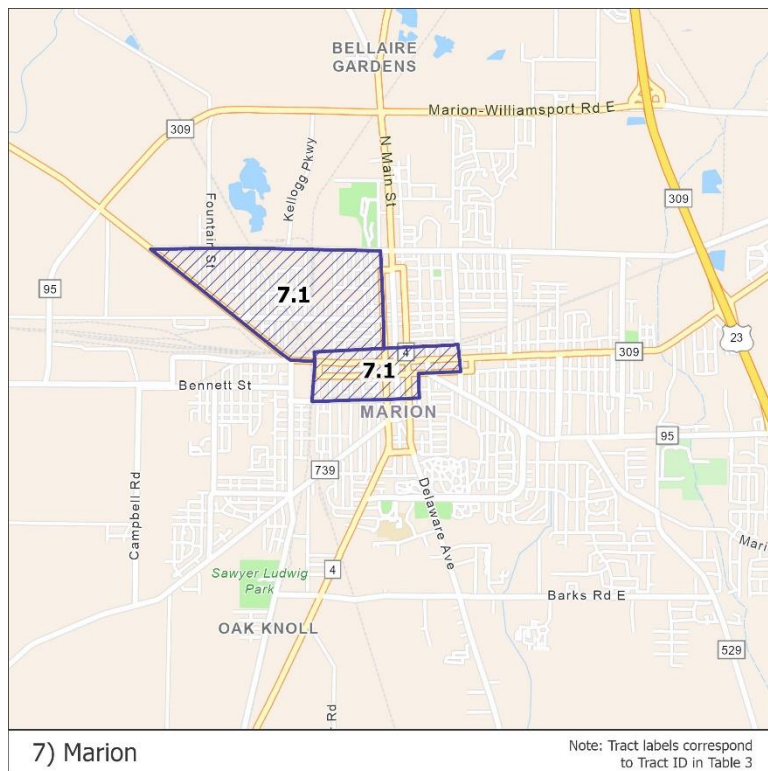


Strengths

This bright spot has a number of community organizations and initiatives aimed at children that work in partnership with each other. They are focused on children’s literacy, mentorship, leadership, theatre, community relationship building, and access to food.

[Let’s Read 20](#) is an organization that brings schools, the library, and other community organizations together to encourage kids and parents to read for 20 minutes every day with the goal to improve Kindergarten readiness, the third-grade reading guarantee, and life-success. This organization started 9 years ago and began its first phase of implementation by promoting the “Let’s Read 20” message and passing out books. Now in its second phase, the organization focuses on the importance of reading, education, and parental engagement. They have also partnered with local schools, hold literacy nights, and incorporate reading for 20 minutes into lesson plans or homework assignments for all grade levels.

7) Marion, Marion County



Informal “library date nights” are held two to three times a month where elementary school teachers invite their students and families to the library for casual book finding. Teachers sometimes bring snacks and crafts and help kids find books to read. Library staff read a fun picture book aloud, and pull a display of great books. This started as an informal request from one teacher and has grown over several years to include multiple teachers. It was noted that this is also a positive community relationship building experience as these informal nights have made the library less imposing to students and families, and library staff have multiple opportunities to engage with the same kids they see when visiting schools and at community events.

[Marion Mentors](#) partners with local volunteers and city schools to pair adult mentors with kids. The goal is to build positive relationships and activities include reading, crafts, board games, or just talking. The organization tries to maintain the same child-adult pair each year.

[The Leader in Me](#) program is a school-wide transformation model based on concepts from "The Seven Habits of Highly Effective People" by Steven Covey. The program is active in the six Marion City elementary schools and in Grant Middle School. Students in the program study and follow the Seven Habits of Health Kids that focus on "soft skills" to meet the expressed needs of employers in the area for the future workforce. Some of the elementary schools are heavily involved in this program, conducting interviews of community members, participating in field trips, and preparing crafts that coincide with topics.

The local [Palace Theatre – School Matinee Series](#) hosts at least two book related productions each year, and elementary schools provide bussing service to elementary students to see the production. The library works with the Palace Theatre to create a free program at the library for the public mirroring the theme of the theatre production, and the two work in partnership to promote the library’s event.

[Summer Food Service](#) organizes summer food stops throughout the community where kids 18 and under can get free meals while school is out of session. The library, historical society, and other community organizations visit the lunch stops and conduct activities with the kids, and the organization involves community gardens and food pantries. Summer Food Service is also involved with local clubs, including the Kiwanis and Rotary Clubs and the Women’s Business Council to recruit volunteers. This organization also partners with Let’s Read 20. The library reads to kids at the library summer lunch stop at least once a

7) Marion, Marion County

week, has a bus, and organizes stops at different lunch stops to read to kids and pass out books with their food.

[Police Department MPACT](#) focuses on relationship building with the community through the delivery of popsicles and hot dogs (partnering with food service locations at times), bringing out their mascot, Safety Pup, conducting programs at the library, showing off the K-9 units, hosting a “touch the truck” program, and providing a therapy dog for kids who are at the local court.

Many local churches, food pantries, and local resources are also involved in this community and belong to Love Inc., a local organization that organizes and coordinates churches in Marion County to respond to individual and family needs.

Summary

This bright spot in Marion County is an area that was affected by multiple recessions and has high poverty, drug use, and school dropout rates. This area scores low in the Crime, Family Stability, and Housing domains, but performed better-than-expected in a number of infant and child health outcomes, including NICU, diabetes, mental illness, and asthma. There is a multi-faceted approach in tackling challenges to infant and child health, focusing not only on access to healthcare, but on supporting children’s educational and emotional needs as well. Numerous community organizations and programs focus on children’s literacy, mentorship, leadership, community relationship building, and access to food. The importance of parental engagement and community building are emphasized across many of these programs.

8) Mt. Sterling, Madison County

Neighborhood 8 – Mt. Sterling, Madison County
 Included Census Tract ID & FIPS Code: 8.1) 39097041200

An interview was conducted with the mayor of Mt. Sterling and the secretary for the First United Methodist Church who also serves on the Foundation Board at Madison Health.

General

This bright spot in Mt. Sterling has low scores in the Access Domain, particularly in the areas of Food, Primary and Behavioral Health Access, and Geographic Isolation, as seen in Figure 9. Despite challenges in access to certain types of healthcare and resources, this Bright spot performs above average in most of the selected infant and child health outcomes, including Preterm Birth, NICU, Infant Mortality, Obesity, Diabetes, Developmental Disability, Mental Illness, and Asthma.

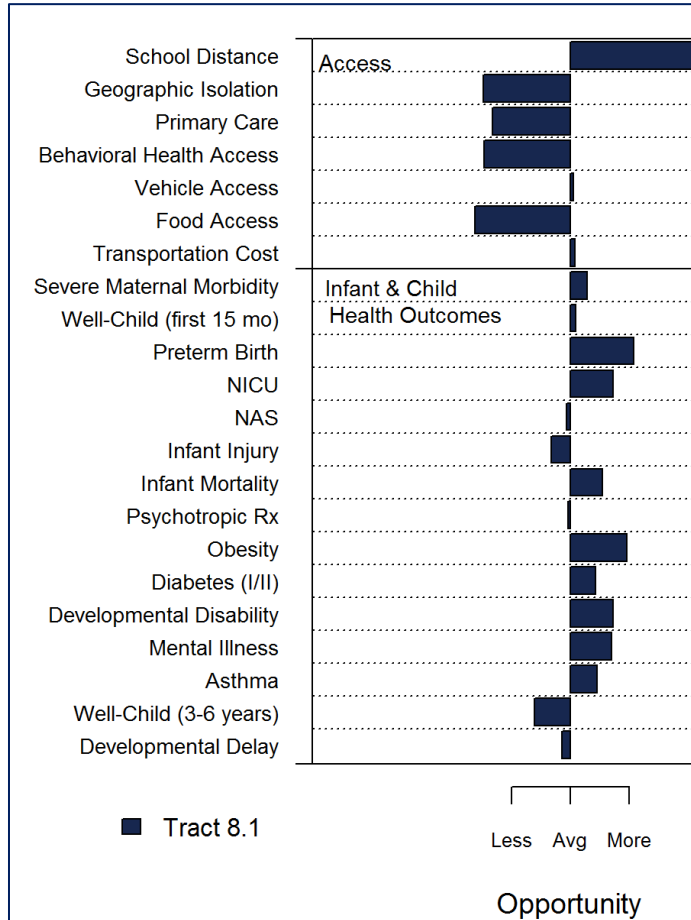
Mt. Sterling was described as a “typical” rural community in Ohio with many community members working in agricultural jobs. The area was described as having plentiful employment opportunities across many job sectors, including box depots like Amazon, jails and prisons, small industries, healthcare, and opportunities in the city of Columbus, which is about a 30 minute drive from Mt. Sterling.

Families in this area were described as having generational connections, with aunts and uncles, grandparents, and extended family members working together on generational farms and helping with childcare.

Strengths

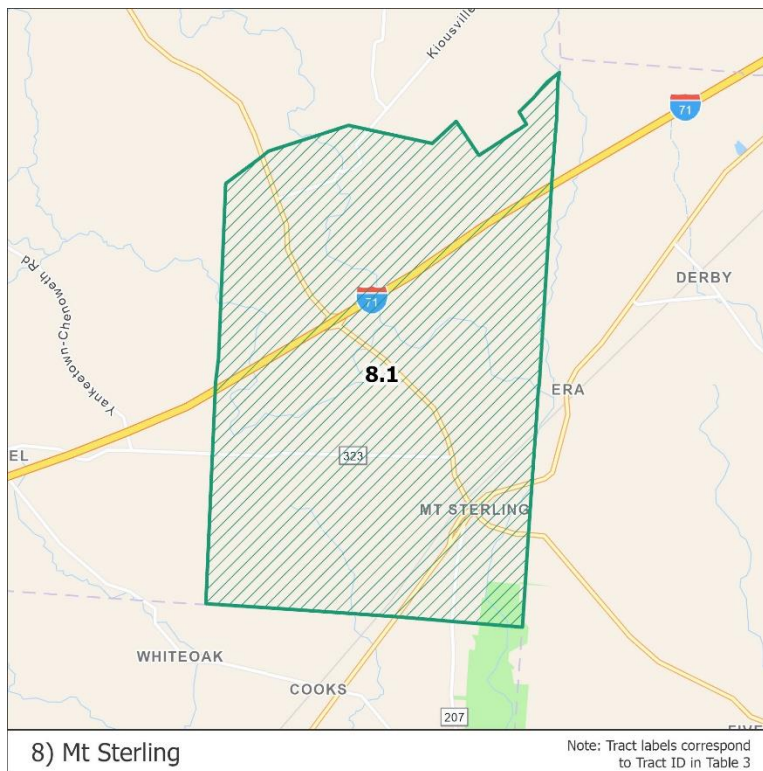
A number of years ago, a group of community leaders and organizations decided to get together to come up with ways to improve the community, according to the Foundation Board member interviewed. They noted that a wide variety of public programs and local organizations met regularly to discuss ways to improve community health and came up with several ideas together. Organizations included the public courts, department of health, what was then the Mental Retardation and Developmental Disabilities (MRDD) department, and community churches. The group also worked with Miami University to secure grants in which the University did research on the area and created plans to help families in the community. The Board member mentioned that there were no “turf wars,” and everyone worked side-by-side to make improvements. They noted that this culture of working together has persisted and that organizations in the area do a really good job of being partners working towards a common goal.

Figure 9.



8) Mt. Sterling, Madison County

This partnership is seen in the collaboration between the community center, fire department, job and family services, local churches, and other community organizations to provide health, local resource information, food, and other necessities to residents in need. Local churches like the United Methodist Church provide food for children (school-aged and younger) through a program called [Sufficient Grace](#) as well as hygiene products, school supplies, Christmas presents, and other seasonal items. Several community sponsors and volunteers provide support and distribution for the programs (Sufficient Grace, n.d.).



Despite Mt. Sterling being in a rural area, the area has a medical facility in close proximity to the Bright spot, [Madison Health](#), and it offers a variety of health services, including pediatrics, women's health and maternity services, and specialty services. It also partners with The Ohio State University Wexner Medical Center and Mt. Carmel Medical Center for services that are not offered directly through Madison Health. The medical center has satellite branches, including one in Mt. Sterling, and actively reaches out to the community to provide information about resources at their facilities and to recruit medical professionals. Madison Health was described as convenient and available to everyone. In addition to Madison

Health, Rocking Horse was noted as a place where low-income and no-income families are able to receive free services.

The [parks and recreations department](#) are also involved in the community and host Special Olympics Baseball, movie nights, bike helmet safety programs, baseball and softball leagues, and other activities for children and families throughout the year.

Public organizations, including the [public library](#), [Help Me Grow](#), [WIC](#), [Job and Family Services](#), [Child and Family Services](#) and programs through the [Madison County 4-H and Extension](#) office are also involved in the community. The 4-H program, Girl Scouts, and Boy Scouts were said to provide children with opportunities for physical activity, education, and specialty projects year-round.

Summary

Being in a rural area, Mt. Sterling has challenges in the Access Domain, including access to food and primary and behavioral healthcare. Despite these challenges, this Bright spot performed better-than-expected in most of the Infant and Child Health constituent measures, most notably in the developmental disability, obesity, and preterm birth measures. The presence of Madison Health, a medical facility in close proximity to the Bright spot, may be a significant contributing factor and was described as

8) Mt. Sterling, Madison County

convenient and accessible to everyone. There are also numerous organizations that work in partnership to discuss ideas to improve the community and offer food and other resources to those in need. In this Bright spot, there is a positive culture of cross-organizational collaboration, which may be contributing to positive infant and child health outcomes.

4. Discussion

Though each of the bright spots has its distinct set of neighborhood characteristics, there are similarities in the challenges they face and the strategies used to address them. We found that all of the identified bright spots struggle with high rates of crime, while other challenges are more prevalent among bright spots of a certain neighborhood type. Small town bright spots overall have lower scores in the Family Stability Domain, which includes poverty rates and parental substance use, while the rural bright spot has greater barriers in access to care and food. Challenges in the Housing and Environment Domains are most prevalent in urban bright spots. All of the bright spots have an OCOI score below the Ohio median and have at least one domain in which they scored considerably below the median score. However, despite challenges, these bright spots were able to implement strategies and programs that may contribute to the better-than-expected infant and child health outcomes.

All of the bright spots, with the exception of Marion, did better-than-predicted for well-child visits in the first 15 months of life. The bright spots also did well in the following infant and child health outcomes: asthma, diabetes, obesity, infant mortality and NICU stays. In general, urban bright spots have higher average standardized residuals than non-urban tracts, which suggests that urban areas are performing much better-than-expected, in comparison to non-urban tracts. This finding could, however, be attributable to the possibility that the relationships between opportunity domain scores and health outcomes are fundamentally different in urban and rural areas. To maintain simplicity, our analyses assumed the relationships were the same, and that opportunity dimensions (domain scores) are what differ and are what explain different outcomes. Our choice of assumptions does not necessarily imply that a more complex model would have identified different rural census tracts as bright spots. It could imply that average standardized residuals between urban and rural areas are not clearly comparable. As such, we do not have sufficient information to conclude that the lower average standardized residuals in rural areas should be taken to imply rural bright spots are not as “bright” as urban bright spots.

Through qualitative interviews with members of each of the identified bright spots, we identified the following approaches that were implemented in these communities to address challenges to infant and child health: 1) cross-collaboration of community organizations, 2) access to healthcare and other health resources, and 3) nutritional, physical, and educational enrichment year-round and critically in the summer months when school is not in session. It is important to note here that qualitative interviews were only conducted in candidate bright spots, and hence we cannot say whether these identified practices differentiate them from neighborhoods that did not have better-than-predicted infant and child health outcomes. However, these approaches are often associated with more positive population-level health outcomes.

One of the most predominant themes that we found across all of the bright spots is the cross-collaboration of many active community organizations within the neighborhood and its surrounding areas. Libraries often partner with schools, government entities, and other non-profit organizations to provide healthy snacks and educational enrichment throughout the year. Free food markets, such as the one in Clinton Township, involve partnerships between county Health Departments and other local organizations. Local businesses and community members play a vital role as well; Sidney has many free or low-cost recreational leagues that are sponsored by local businesses and supported by volunteer coaches. Family and parental involvement is also a significant part of this support network. Many of the

bright spots have strong networks of families that support each other and heavy involvement of parents and grandparents in children's lives. Programs, such as the Let's Read 20 in Marion, focus on the importance of parental engagement, in addition to stressing the importance of reading and education. The key here is that in these bright spots, children's health is not looked at as something to be addressed solely by health care providers, but further upstream by social programs and interventions that are supported by various members of the community.

Another important factor is easy access to health care and other health resources. Health care providers can not only address immediate health concerns, but also give information on additional resources to patients. The Columbus Department of Health in Olde Towne East, after triaging visitors, provides information on additional resources, including immunizations, substance abuse programming, home visiting programs, and car seat programs. Many of the visits are foot traffic from the immediate area and visitors are given information that they otherwise may not have been made aware of, if not for close proximity and easy access to the Department of Health. Rural areas in particular have greater barriers to access to care. Mt. Sterling, our only rural bright spot, has a medical facility nearby that provides a variety of health services that is said to be very convenient and available to all. In addition to health care organizations, libraries also provide information on available health resources to the community.

In addition to health care access, there are many programs in the bright spots that provide good access to food, recreation, and educational enrichment. Nutrition is a vital component in addressing child health and there are many organizations and programs that provide healthy foods to those who may not be able to afford it. Churches, food banks, and backpack programs are a few examples. Distribution of food during the summer months when school is out is crucial; these summer food programs were mentioned in almost all of the bright spots interviews. Other programs offered in the bright spots include Kindergarten readiness, homework help, access to computers, and free or low-cost recreational opportunities. Interviews revealed a general understanding that children's health is more than just physical health and that a multi-faceted approach is key in improving infant and child health outcomes.

Some limitations of the study include difficulty in contacting key personnel for interviews during the pandemic. There are some candidate bright spots for which we were unable to contact a representative, which resulted in us dropping that neighborhood from our final selection of bright spots. Another limitation is that the infant and child health indicators that were used as outcome variables for the models primarily consist of data from Medicaid medical claims data. Out of the 15 health indicators, all but preterm birth and infant mortality consist of only children enrolled in Medicaid. It is very possible that utilization of care and diagnoses for Medicaid children are very different from non-Medicaid children in any given tract. However, our analyses shows that in the selected bright spots roughly three out of every four children are on Medicaid (Appendix B). We can be confident that using these outcomes with a Medicaid-focus is appropriate and constructive given that the Medicaid experience is in fact representative of the community experience.

5. Policy Considerations and Conclusions

The results of this "Bright Spot" analysis clearly articulate that childhood health outcomes are a shared responsibility between families, local communities, and the State of Ohio. While Medicaid, local health departments, and health systems can lay a foundation for delivery of essential preventive and treatment services to families, how individual communities respond to social determinants of health profoundly

impact the social, emotional, and physical development of children. Individual communities can find ways to overcome the disadvantages they face if those disadvantages can be recognized. Local governments, and non-profit voluntary organizations often work together to provide funding and organization for these efforts. The integration of effort between schools, community recreation, nutrition, and library services are a vital component driving the health of children in neighborhoods.

The indicators contained in the Ohio Children's Opportunity Index and reflected in the Bright Spots analysis provide an opportunity for local governments, school systems, and voluntary organizations to reflect on their needs and priorities. It also provides an opportunity for state agencies responsible for financing and delivering health, education, and social services to develop micro-system targeting strategies to incentivize providers and practitioners to work closely with one another to address these issues.

Appendix A: Residuals Table

	Urban				Small Town							Rural
Infant/Child Health Outcomes	1) Olde Towne East	2) Clinton Township		3) Edgewater	4) Sidney	5) Portsmouth	6) Chillicothe			7) Marion		8) Mt Sterling
	1.1	2.1	2.2	3.1	4.1	5.1	6.1	6.2	6.3	7.1	7.2	8.1
Average Standardized Residual	0.73	0.71	0.72	0.70	0.16	0.21	0.22	0.31	0.21	0.32	0.13	0.42
Dev. Delay	1.13	0.79	1.42	0.84	0.10	0.49	-0.21	-0.33	-0.55	-1.44	0.16	-0.14
Well-Child (3-6 yrs)	-0.82	0.09	0.13	0.39	-1.68	-0.13	-0.12	0.55	0.41	-1.44	-1.87	-0.70
Asthma	0.14	1.58	2.47	1.73	2.28	2.22	0.91	1.78	1.50	1.60	0.84	0.41
Mental Illness	-0.52	1.22	1.05	0.22	-0.06	1.18	0.31	-0.96	-0.61	1.00	1.59	0.87
Dev. Disability	1.00	0.67	0.55	0.69	-0.65	-0.31	-0.15	-0.02	-0.26	0.03	0.07	1.10
Diabetes	1.00	0.70	0.39	0.35	-0.21	-0.83	0.24	0.31	0.44	1.11	0.51	0.53
Obesity	1.34	0.40	0.71	1.39	1.66	0.91	1.21	1.34	0.95	0.50	-0.44	1.15
Psych. Rx	1.94	1.50	0.54	0.40	0.50	-0.97	-0.46	-0.30	-0.28	-0.42	0.47	0.00
Infant Mortality	0.01	0.82	1.05	1.06	-0.26	0.76	0.74	0.77	0.39	1.14	-0.03	0.64
Infant Injury	1.21	0.20	0.52	0.44	-0.37	-0.34	0.16	-0.04	0.06	-0.55	0.72	-0.45
NAS	1.04	-0.15	-0.80	-0.34	0.40	-1.27	-1.16	-1.46	-0.59	0.02	0.17	0.07
NICU	1.81	0.77	0.37	0.50	-0.36	1.56	1.04	1.00	0.20	0.94	1.26	0.78
Preterm Birth	-0.23	1.39	1.69	1.53	-0.10	1.71	0.61	0.43	0.46	1.87	-0.63	1.50
Well-Child (first 15 mo)	0.43	0.71	1.54	1.20	0.38	-1.29	0.01	0.98	1.19	-0.17	-0.76	0.25
Severe Maternal Morbidity	1.46	0.02	-0.80	0.07	0.80	-0.46	0.24	0.59	-0.20	0.59	-0.07	0.33

Appendix B: Percent of Children on Medicaid, 2018

		Children Age 0 - 17						
	Bright Spot	Tract ID	Medicaid Enrollees	ACS Population		% on Medicaid*		
				Estimate	MOE	Low	Estimate	High
Urban	1) Olde Towne East	1.1	185	494	330	22	37	113
	2) Clinton Township	2.1	1,013	1,084	413	68	93	151
		2.2	2,753	2,249	882	88	122	201
	3) Edgewater	3.1	213	246	141	55	87	203
Small Town	4) Sidney	4.1	833	1,080	326	59	77	110
	5) Portsmouth	5.1	502	769	263	49	65	99
		6.1	460	554	269	56	83	161
	6) Chillicothe	6.2	706	886	294	60	80	119
		6.3	1,107	986	324	85	112	167
	7) Marion	7.1	295	353	129	61	84	132
		7.2	976	995	455	67	98	181
Rural	8) Mt Sterling	8.1	382	707	184	43	54	73

* Estimates of greater than 100% of children 0-17 on Medicaid are potentially due to American Community Survey (ACS) margins of error (MOE) and/or population movement into and out of the neighborhoods.

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