

ISSUE BRIEF



August 2014

HEALTH DISPARITIES ARE LEAVING OHIO'S RURAL CHILDREN BEHIND

The school bus is small for five people. Shelves are stacked to the ceiling, filled with clothes and food. Headlamps hang from a bungee cord. There are touches of home, like a bookcase Smiles built. They improvise solutions to simple problems that do not exist in traditional houses. The kids warm bricks on the wood-burning stove and place them at their feet to keep warm during winter. Eli pulls out a roll-away bed every night, and Forest sleeps on the couch. There is no running water. They compost their waste. They have to start a generator in order to charge their cell phones.¹

The family in the above profile lives together — mom, dad, and three sons — on an old school bus in a rural area near Athens, Ohio. The family has no running water, no heat, and no public services.² They make do, as do many families in rural Ohio, where, in some places, poverty rates are as much as five times higher than they are in Ohio's more affluent, suburban counties.³

Policy discussions about child poverty in Ohio often focus on Ohio's metropolitan areas, where the largest numbers of families and children in poverty are located. The focus on urban poverty is logical — why not focus resources in areas where they will impact the largest



Photo © Biljana "B" Milenkovic

number of families in need? Ohio's rural children, however, often get left behind as a result. Their needs are no less urgent. And, although they are spread out, their numbers are not insignificant. If the number of children in Ohio's 32 Appalachian counties were counted together, they would together comprise the second largest city in Ohio. Poverty in rural Ohio — including both Ohio's Appalachian counties and non-Appalachian rural counties mostly concentrated in Western and Northwestern Ohio — impacts approximately 190,000 children.⁴ These children go to bed hungry. Many of them live miles from the closest pediatrician, children's hospital, and other services.

ISSUE BRIEF • Rural Health Disparities

They need help — and it is a different kind of help than what may be needed for children in Ohio’s cities.

Ohio’s Appalachian counties boast the largest concentration of child poverty in the state. And while the concentration of child poverty in rural, non-Appalachian Ohio is significantly lower than the statewide concentration now, the average rate of child poverty in these counties is growing at a rate outpacing the state.⁵ Poverty is one of many social determinants of health that can lead to what experts call “health disparities.” Health disparities are “preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations.”⁶ Health disparities among children in rural Appalachian

and non-Appalachian regions in Ohio, as compared to their urban and suburban counterparts, are pervasive.

This issue brief examines rural health disparities and how they impact children in some of the highest poverty rural counties in Ohio. The brief explains that health disparities in high-poverty rural areas of Ohio arise from limited access to nutritious food and accompanying health problems, as well as much more limited access to health care providers than is seen in Ohio’s urban and suburban counties. Ultimately, the brief makes grassroots and policy recommendations to remedy health disparities in rural and Appalachian counties and promote positive health outcomes for all of Ohio’s children.



Photo © Allison Wright Photography

There Are More Children in Rural Ohio Than You Might Think

Nearly twice as many children live in Ohio’s Appalachian and rural counties than in Ohio’s suburban counties. The number of children in rural and Appalachian counties combined — 824,946 children — is larger than Ohio’s largest city, Columbus (787,033 people — including children and adults).⁷ There are more children living in Ohio’s Appalachian counties alone than there are people in the state’s second largest city, Cleveland (396,815 people). The number of children in rural, non-Appalachian counties falls right behind the number of people in Cleveland and is bigger than the population of Ohio’s third largest city, Cincinnati, and eighth largest city, Canton, combined.

Figure 1 – Regions of Ohio
(Modified Map from WorldAtlas.com)

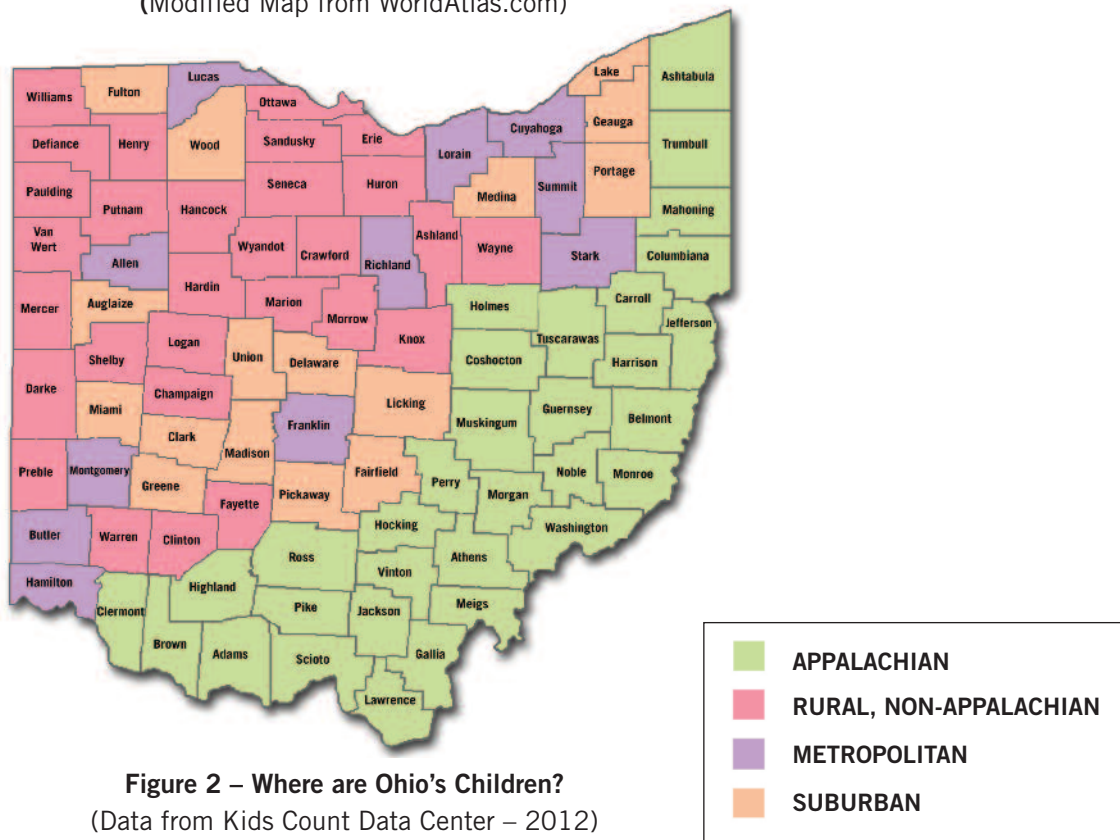
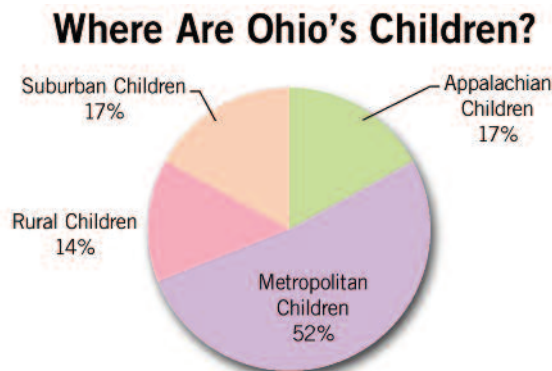


Figure 2 – Where are Ohio’s Children?
(Data from Kids Count Data Center – 2012)

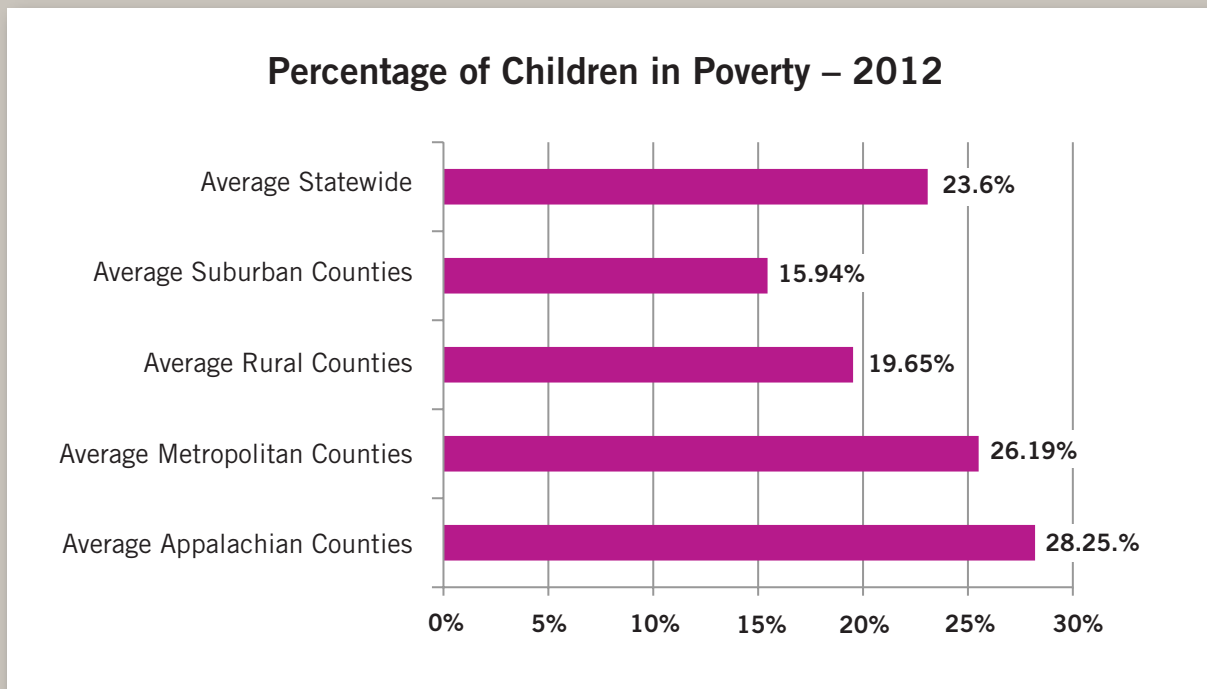


Child Poverty in Rural Ohio

Children in Ohio's Appalachian counties are disproportionately likely to be poor, and the number of rural children in poverty in Ohio is growing. In 2012, almost 24 percent of all Ohio children were living below the poverty line (See Figure 3, below).⁸ In Appalachian Ohio, the average child poverty rate is 28.25 percent. Of all 88 counties in Ohio, the seven counties with the highest percentage of poor children in the state are Appalachian.⁹

Figure 3 – Percentage of Children in Poverty – 2012

Data from Kids Count Data Center – 2012



Although rural, non-Appalachian counties' rates of child poverty were lower than the state as a whole, their poverty rates have been growing faster than the statewide average. While the overall child poverty rate in Ohio increased by 75 percent from 2002 to 2012, rural, non-Appalachian counties' child poverty rates increased, on average by 92 percent, and Appalachian counties' child poverty rates increased by 70 percent.¹⁰ In rural counties in 2012, one in four children (25.1 percent) received food stamps.¹¹

Over one-third (34.8 percent) of Appalachian children are receiving food stamps, a rate 18 percent higher than the state average.¹²

Poverty is a key social determinant of health in that it is a non-biological factor that increases the risk of disability, illness, addiction, and social isolation. These poverty rates are alarming and cause for concern on their own. When combined with what we know about children's health in rural Ohio counties, they create a dire situation that we must not ignore.

Hunger and Nutrition in Rural Ohio

Among its many impacts on children, poverty often leads to shortages in basic goods that most Ohio families take for granted. Hunger and a lack of access to nutritious food go hand in hand with poverty in rural Ohio. While many Americans may assume that food is easy to come by in Ohio's rural and Appalachian counties — which are often known for agricultural production — the average 2012 county rate of food insecurity for rural non-Appalachian children was 24.23 percent and 27.24 percent for Appalachian children.¹³ These numbers are higher than both the average suburban county rate of food insecurity (21.71 percent) and the metropolitan rate (23.69 percent).¹⁴ In total, there are 211,990 food insecure children in rural and Appalachian counties in Ohio, which is larger than the population size of Ohio's fifth largest city, Akron.¹⁵

In 2010, NBC News reported on pervasive hunger in Appalachian Ohio and the impact on families “who’ve had it all vanish — jobs, homes, and dreams — [and have to] choose between paying [their] bills and feeding [their] kids.”¹⁶ In an area defined by valuing self-sufficiency, families are trying everything before turning to emergency foodbanks. Anita Hayes, mother of a 14-year-old daughter, Lydia, and 9-year-old son, Lyle, describes this struggle, saying, “The first few times I had to swallow my pride. But I wasn’t doing it for myself. I have to feed my children. They come first.”¹⁷ Anita, her husband, and her two children live in a camper without running water and borrow a neighboring trailer’s electricity. She describes feeling guilty that she cannot meet her children’s needs and that sometimes a bowl of cereal is “dinner in a household where the children are growing up fast.”¹⁸ Too many children are growing up too fast, without adequate nutrition, in rural and Appalachian counties hard-hit by the recession where, despite being surrounded by farmland, food is often in scarce supply.

Although the recession of the late 2000s has officially ended, families in rural Ohio are still struggling to feed their children. A school administrator from Vinton

County noted in an Ohio news piece from 2012, “You know that it’s an issue when a little kid is going through the lunch line, and they’re already asking what’s going to be for breakfast the next morning, because they’re concentrating on the fact that perhaps this might be their last meal before they come back to school the next morning.”¹⁹

Proper nutrition is crucial for everyone, but it is especially important for children because it is directly linked to all aspects of growth and development, which directly implicates children’s lifelong health.²⁰ Children have a better quality of life if their diets are nutritious because their immune systems are better prepared to fight off illness and their bones are strong enough to decrease the risk of injury. Furthermore, children are better able to perform in school when they eat nutritious breakfasts. Studies from the American Dietetic Association show that children who eat breakfast have better problem-solving abilities, recall, memory, verbal fluency, and creativity.²¹ On the flip side, children who don’t eat breakfast are more likely to have behavioral, emotional, and academic problems at school, as well as higher numbers of absences.²²

For all of these reasons, hunger and food insecurity are major barriers to good quality of life for children. Additionally, both poverty and lack of physical access to nutritious foods are problems that uniquely affect rural Ohio. Many of Ohio’s rural counties are food deserts. The 2008 Farm Bill defines a food desert as an “area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower income neighborhoods and communities.” Physical proximity, economic accessibility, and access to *healthful* foods are all at issue.²³

Physical proximity to inexpensive, nutritious food in rural Ohio is problematic. The Ohio State University’s Center for Farmland Policy Innovation (CFPI) found that 24 percent of rural households must drive more than 10 minutes to any retail food store of any size. This would include a corner store, which is unlikely to stock the variety of fruits, vegetables, and other healthful

ISSUE BRIEF • Rural Health Disparities

items necessary for a nutritious diet. In Vinton County, there is no full-service grocery store within the county and people who live there have to drive to Jackson, Chillicothe, or Athens; an expense many can't afford to take on.²⁴

Of the households living within driving distance to a retail grocery store, five percent (or 75,223 rural Ohio households) do not own a car.²⁵ Seventy five percent of rural Ohio households live further than a one mile walking distance to a grocery store and three percent of rural Ohio households not only live more than one mile from a supermarket but also do not have access to a vehicle. Bus service is very inconsistent across rural areas, and some counties, such as Gallia County, have no bus service.²⁶

In addition to lack of proximity to food as a whole, rural counties lack access to nutritious food. Less than half (only 43 percent) of Ohio rural households live within a 10 minute drive of a large supermarket, the type of store that is likely to sell fresh produce and nutritious foods. For many individuals, a fast food restaurant may be a quicker and easier option, as 25 percent of rural Ohioans live within a 10 minute drive of a fast-food chain, but not a large grocery store.

Finally, economic accessibility is an issue in rural counties. As mentioned earlier, Ohio's Appalachian children face an average poverty rate of 28.25 percent, a rate 20 percent higher than the state average.²⁷

In Tuscarawas County, where the poverty rate was 20.5 percent in 2012,²⁸ Barbara Burns, director of the Tuscarawas County Health Department's WIC Program and Healthy Tusc Task Force said, "We have kids going home on Friday not knowing where they're getting their next meal."²⁹ She also mentioned that these children are most at risk for being overweight or obese because most of the food they eat at home tends to be high in calories and fat, since these foods tend to be cheaper.³⁰

Poverty in rural Ohio is a deep threat to child food security — and, consequently, child health and well-being. If current trends continue, this threat will only continue to grow. Furthermore, the price of food in rural communities is often higher as supermarkets are limited and lack of supermarket competition spurs price increases. Only 30 percent of Ohio's rural households have ready access to more than one food store larger than 40,000 square feet.³¹

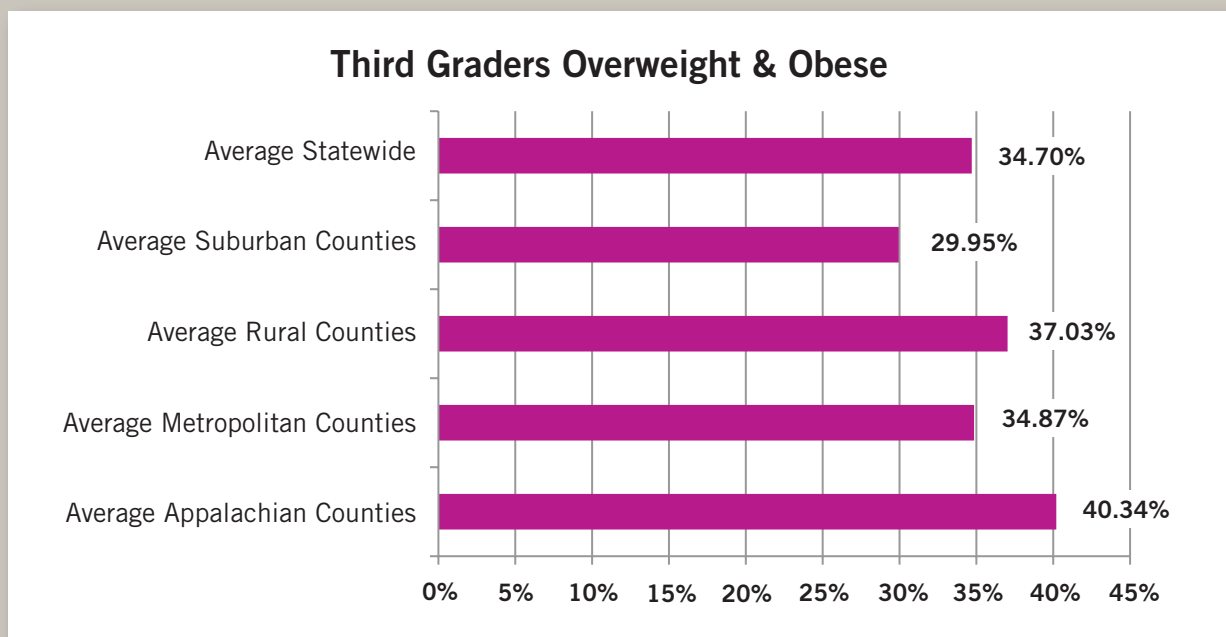


Photo © Allison Wright Photography

Obesity in Rural Ohio

Because children in rural Ohio are disproportionately likely to suffer from poverty and food insecurity, children in these regions are also at greater risk of obesity. Food insecurity — and associated poor nutrition — is linked to obesity in children from an early age, as early as three to five years old.³² When severe food insecurity exists during the toddler years, children are 3.4 times more likely to be obese at 4.5 years old. A 2010 study found that 37 percent of rural, non-Appalachian third graders and 40.4 percent of Appalachian third graders were overweight or obese, falling above the 85th percentile on the Centers for Disease Control BMI-for-age growth charts (See Figure 4, below). The rates of overweight or obese third graders in Appalachia were 16 percent above the state rate, 16 percent above the rates in metropolitan counties, and 35 percent above the rates in suburban counties. Rural, non-Appalachian rates were seven percent above the state rate, six percent above metropolitan counties, and 24 percent above suburban counties.

Figure 4 – Third Graders Overweight & Obese
Data from Kids Count Data Center – 2012



While food insecurity may be one reason for high childhood obesity in rural counties, more research needs to be done into determining the causes. Other possible barriers to a healthy weight and lifestyle for rural children may be a reliance on driving (due to lack of street lighting, sidewalks, and public transit, as well as environmental factors like harsh weather, rough terrain, and remoteness) and a lack of community resources like public parks, playgrounds, exercise facilities,

nutrition and public health programs, and health care providers.³³

Obesity is highly correlated with many future health problems including cardiovascular disease, hypertension, diabetes, and joint degeneration. Because — as shown in Figure 4, above — rural and Appalachian children disproportionately suffer from childhood obesity, this population is particularly at risk for the myriad

obesity-related physical, emotional, and psychological health problems that may diminish their quality of life from youth into adulthood.

Access to Health Care for Rural Ohio Children

Poor children in rural Ohio have more trouble finding doctors to care for them than do children in other parts of the state.³⁴ This is true despite the fact that the number of pediatricians in the United States is growing faster than the growth in the overall child population. This is because pediatricians are more likely to choose to practice in non-rural settings. Nationally, regions with a low supply of pediatricians are disproportionately rural and tend to be poorer than high-supply regions.³⁵ Nearly one million rural children live in areas with no local pediatrician.³⁶ In 2006, while 18.2 percent of children lived in rural areas, only 8.9 percent of pediatricians practiced there.³⁷ Thirty-nine of Ohio's 62 rural or Appalachian counties contain medically underserved areas as defined by the Health Resources and Services Administration. In Ohio, a 2010 study showed that only 68.9 percent of rural, non-Appalachian and 73.4 percent of Appalachian children received a well-baby or well-child checkup in the prior year.³⁸

In addition to the shortage of general pediatricians and family doctors serving children in rural areas, a lack of timely access to pediatric subspecialists is a major problem. In the United States, there are approximately 28,000 pediatric medical subspecialists and surgical specialists to care for over 80 million children. For most subspecialties, there are on average between 10,000 and 200,000 children per provider across hospital referral regions; however, there is significant disparity in the geographic distribution of these subspecialists across the country and many rural areas are underserved.³⁹ Most pediatric subspecialists practice in academic settings, a long drive from many rural areas. Approximately one in three children must travel 40 miles or more to receive care from a pediatrician certified in adolescent medicine, developmental behavior pediatrics,

neurodevelopment disabilities, pulmonology, emergency medicine, nephrology, rheumatology, or sports medicine.⁴⁰ There is also a shortage of available critical care for children in rural emergency rooms. While 21 percent of children in the United States live in rural areas, only three percent of pediatric critical-care medicine specialists practice in such areas.⁴¹

In addition to the lack of pediatricians and specialists in rural areas, rural Ohio children face challenges in finding a dentist as well. Early childhood cavities are the number one chronic disease affecting young children, and children with cavities in their baby teeth are three times more likely to develop cavities in their permanent teeth.⁴² Ohio's shortage of dental professionals particularly impacts rural areas, and preventative oral health is a smart investment to avoid costly emergency room visits for dental pain and missed time in school. In fact, dental care is the single most common unmet health care need among children in Appalachian Ohio.⁴³ Thirty of 32 Appalachian counties have designated dental shortage areas.⁴⁴ Thousands of residents in Appalachian Ohio live a minimum of ten miles from the nearest dentist; the distance is 25 or more miles for specialty care, such as services by a pediatric dentist. A study by Dental Access Now says more than half of Ohio's children experience dental decay by third grade.⁴⁵ About 340,000 third graders in Appalachian Ohio have never been to the dentist. Children in third grade in Appalachian Ohio suffer from tooth decay at nearly a 62 percent higher rate than children in other areas of Ohio.⁴⁶

In short, Ohio's poor rural children are at higher risk for health problems due to a disparity in hunger and food insecurity rates and a lack of access to medical professionals to provide needed care. These health disparities put rural children at particular risk for lifelong health problems and require different policy solutions than do health disparities and health risks for children in urban areas of Ohio. Without a comprehensive and focused approach to improving rural Ohio children's health, we are leaving thousands of our most vulnerable children behind.

Recommendations to Restore Food Security, Combat Obesity, and Increase Access to Health Care in Rural Ohio

Ohio must make changes now to address these rural health disparities and ensure all Ohio children long, productive lives. A combination of local initiatives and state level policy changes are necessary to counteract barriers to food security and access to care.

Local Initiatives

1. Promote Programs that Teach Families How to Grow Healthful Food

At the local level, communities must combat the lack of availability of healthful food. Programs like Grow Appalachia teach families and community groups how to reconnect with the land they live on and grow their own food.⁴⁷ Grow Appalachia provides gardening grants, in-kind tools, educational workshops, technical and physical assistance, and help with building structures to support more efficient growing. In addition to the great success Grow Appalachia has had in feeding 19,500 people in the last year, the program has also helped promote the local economy in rural regions by facilitating 100 jobs through gardening projects and selling \$54,000 in produce.

2. Promote Child Fitness and Wellness

Age-appropriate, community-based fitness and wellness education programs in rural schools and communities have proven to be crucial to improving children's health and well-being in rural areas. One example of a successful program is the Healthy Families program in rural Michigan.⁴⁸ The program offers its participants Healthy Start classroom curricula (age-appropriate nutrition education, physical activity, and risk behavior prevention in schools), wellness field trips and events using community resources, including a grocery store scavenger hunt and creative movements class, weekly health homework, and an incentive program where families can earn points toward wellness equipment by engaging in

healthy activities. In the first year of the program, 86 percent of children improved or maintained their BMI. Forty three percent of parents showed an increased in nutrition knowledge, and 88 percent of families engaged in family fitness activities.

3. Build Alternative Care Models Utilizing Community Resources & New Technology

Programs should be implemented to provide care to rural and Appalachian children where they are. Ohio should expand the use of community center or school-based/linked health services and mobile/portable systems such as telemedicine, the use of video-conferencing to provide and support health care when distance separates the participants. Telemedicine is already being implemented by Nationwide Children's Hospital and has shown great success for subspecialty care in rural areas. In a study of pediatric critical care medicine, it was found that telemedicine consultations improved patient care 89 percent of the time and provided good to very good provider-to-provider communications 98 percent of the time.⁴⁹ Mobile dental vans are also already being used to improve access to care in Mahoning and Trumbull counties through a program run by Humility of Mary Health Partners. Such programs could be expanded in other rural counties.⁵⁰ Additionally, school nurses could be trained to become nurse practitioners and to provide a larger range of care.

State Policy Changes

1. Tax Incentives

Tax incentives should be implemented at the state level to promote the safe growth and purchase of nutritious food options. These programs should educate families and providers about nutritious choices and reward them for making healthy decisions. They must not punish already-struggling families if they do not make nutritious choices. Providing tax breaks for families who buy vegetables is a superior strategy to taxing those families — many of whom have limited access to other options — when they buy soda or sweets. Additionally, incentive

plans should be implemented to promote the development and economic success of more grocery stores in food deserts. Funding also should be given to improve rural public transit options and to build sidewalks and safe routes to school. Transit options also are important so that children can get regular preventive health visits and see a doctor before an emergency arises. Also, in many counties where grocery stores are limited and fast food or convenience stores with unhealthy options are more readily available, public transit is crucial to ensuring access to more nutritious options. Additionally, sidewalks and safe routes to school promote exercise in children and help to prevent obesity.

2. Allow Nurses and Dental Hygienists Increased Autonomy

Ohio should consider laws allowing advanced practice nurses, dental hygienists, and/or other non-dentist dental professionals, with proper training, to provide crucial medical and dental services in underserved areas of the state, particularly rural areas. Such education should be heavily subsidized in rural, high-need areas. If implemented, continual assessment of the quality of care must be done to ensure that the providers are performing at the same level as physicians in our state's suburbs and cities.

3. Medical Education Needs to Be Reformed

Studies show that physicians are likely to return to practice in an area with similar demographics to where they grew up. Numbers of medical students from rural areas, however, are declining.⁵¹ Medical schools could do more to recruit rural applicants or fund scholarship programs to encourage their application. Furthermore, the training environment of medical schools — largely in urban hospitals — is not conducive to teaching the skills needed to run a rural practice. Curricula should be updated to teach budding doctors the business end of running a rural office and how to work without the resources of a major medical center. Additionally, because physician salaries are often lower in rural

regions, Ohio medical schools could implement loan forgiveness programs with state support and partial state reimbursement for doctors choosing to practice in rural areas.

To increase access to doctors, Ohio could utilize existing programs supporting fellows who are training in graduate medical and dental education to apprentice under doctors already located in rural areas. Nationwide Children's Hospital in Columbus, Ohio has such a fellowship program that could be used as a model and the program could entice doctors-in-training to rural areas by offering competitive salaries, funding for relocation, reimbursement for initial specialty Boards, and more.⁵² Similar model programs also exist to close the gap in pediatric care at the federal level, including the Children's Hospital Graduate Medical Education (CHGME) program, which supports the training of more than 5,600 resident physicians and places significant value on providing care for underserved populations.⁵³

4. Ohio Needs to Support Four More Years of Federal Funding for the Children's Health Insurance Program (CHIP)

The Children's Health Insurance Program (CHIP) provides health coverage to nearly eight million children in families with incomes too high to qualify for Medicaid, but who can't afford private coverage.⁵⁴ CHIP provides federal matching funds to states to provide this coverage. In Ohio in 2011, 280,650 children were enrolled in the state's version of CHIP, Ohio Healthy Start. Because jobs are often scarce or low-paying in rural and Appalachian counties, CHIP is crucial in these areas as a support to the working poor and their children. Federal funding for CHIP is now threatened, but states are not allowed to reduce their funding for CHIP. If CHIP funding is not extended for four years by Congress before it expires in October 2015, the state of Ohio will have to cover these costs. Time is of the essence given that Ohio's state budget decisions are also on the horizon.

Conclusion

Children in rural and Appalachian counties face unique health disparities, including food insecurity and poor access to appropriate pediatric care. These problems are exacerbated by climbing levels of poverty in rural and Appalachian counties, as well as geographic isolation, limited public transportation, and limited access to community resources such as foodbanks, gyms, medical clinics, and grocery stores that are readily available in urban areas. Still, Ohio's rural and Appalachian areas have many strong community resources, such as school nurses and volunteers that could get involved with grassroots efforts. These resources can be utilized to brighten the health outlook for Ohio's

rural children. Ohio must implement state policy changes, in addition to promoting and funding local efforts to remedy rural health disparities. Community-based programs like Grow Appalachia have been proven successful in increasing access to nutritious foods and awareness about nutritional issues, as well as growing local economies. Laws allowing nurses or telemedicine practitioners to expand their authority — and funding such programs — are promising options for increasing access to care. Mobile dental vans are already being used in Ohio and such use could be expanded to other counties. While there are great barriers to healthcare for rural and Appalachian children, there are also great opportunities to ensure a healthy future for all children across Ohio. Now is the time to act.



Photo © Biljana "B" Milenkovic

Endnotes

- ¹ Conor Friedersdorf, The Atlantic, “What America Looks Like: Rural Ohio, Living on a Bus,” (June 20, 2011), <http://www.theatlantic.com/national/archive/2011/06/what-america-looks-like-rural-ohio-living-on-a-bus/240656/>.
- ² Meg Roussos, Soul of Athens, Our Dreams Are Different, “The Refuge: A family’s vision to provide a place for rest and shelter,” <http://2011.soulofathens.com/our-dreams-are-different/the-refuge.html>.
- ³ Don Larrick, Office of Resarch – Ohio Development Services Agency, “The Ohio Poverty Report” (February 2014), <http://www.development.ohio.gov/files/research/P7005.pdf> (last visited June 16, 2014).
- ⁴ Annie E. Casey Foundation, Kids Count Data Center, *Children in Poverty*, <http://datacenter.kidscount.org/data/tables/6480-children-in-poverty?loc=37&loct=5#detailed/2/any/false/868,867,133,38,35/any/13429>.
- ⁵ Annie E. Casey Foundation, Kids Count Data Center, *Children in Poverty*, <http://datacenter.kidscount.org/data/tables/6480-children-in-poverty?loc=37&loct=5#detailed/2/any/false/868,867,133,38,35/any/13429>.
- ⁶ Centers for Disease Control and Prevention, *Adolescent and School Health: Health Disparities* (May 16, 2013), <http://www.cdc.gov/healthyyouth/disparities/>.
- ⁷ Jon Husted, Ohio Secretary of State, 2010 Census Data: Ohio Population by Cities, http://www.sos.state.oh.us/sos/upload/reshape/census_data/pop_cities.pdf.
- ⁸ Annie E. Casey Foundation, Kids Count Data Center, *Children in Poverty*, <http://datacenter.kidscount.org/data/tables/6480-children-in-poverty?loc=37&loct=5#detailed/2/any/false/868,867,133,38,35/any/13429>.
- ⁹ Ignazio Messina, Toledo Blade, “Rural poor face unique challenges: Southern Ohio offers glimpse of a forgotten economic class” (May 20, 2010), <http://www.toledoblade.com/Economy/2012/05/20/Rural-poor-face-unique-challenges.html>.
- ¹⁰ Annie E. Casey Foundation, Kids Count Data Center, *Children in Poverty*, <http://datacenter.kidscount.org>.
- ¹¹ Annie E. Casey Foundation, Kids Count Data Center, *Children Receiving SNAP Benefits*, <http://datacenter.kidscount.org>.
- ¹² *Id.*
- ¹³ Feeding America, *Hunger in America, Map the Meal Gap*, <http://feedingamerica.org/hunger-in-america/hunger-studies/map-the-meal-gap.aspx#>.
- ¹⁴ *Id.*
- ¹⁵ *Id.*
- ¹⁶ Ann Curry, NBC News, *Friends and Neighbors: How do you choose between paying your bills and feeding your kids?* (July 25, 2010), http://www.nbcnews.com/id/38382773/ns/dateline_nbc-america_now/t/friends-neighbors/#.U5dWU_idWSp.
- ¹⁷ *Id.*
- ¹⁸ *Id.*
- ¹⁹ Mary Kuhlman, Public News Service, *As Ohio School Bells Ring, Kids’ Tummies Rumble* (August 2012), <http://www.publicnewsservice.org/index.php?content/article/28069-1>.
- ²⁰ Children’s Heart Center, *Why is Nutrition Important for Children*, <http://www.childrensheartcenter.org/whynutritionimportantforchildren.html>.
- ²¹ Kristy Lee Wilson, SF Gate, *Healthy Eating: What Is the Importance of Good Nutrition For Kids?*, <http://healthyeating.sfgate.com/importance-good-nutrition-kids-6236.html>.
- ²² *Id.*
- ²³ Francis Mulangu and Jill Clark, *Identifying and Measuring Food Deserts in Rural Ohio* (June 2012), <http://www.joe.org/joe/2012june/a6.php>.
- ²⁴ WTVN Local News, *Access to fresh food lacking in parts of Ohio* (April 11, 2014), <http://www.610wtvn.com/articles/wtnv-local-news-268656/access-to-fresh-food-lacking-in-12244179>.
- ²⁵ Ned Resnikoff, msnbc, *President Obama Signs \$8.7 Billion Food Stamp Cut Into Law* (Feb. 7, 2014), <http://www.msnbc.com/msnbc/obama-signs-food-stamp-cut>.
- ²⁶ Eric Sandy, Cleveland Scene, *Hunger Games: Food Stamp Benefits Have Been Cut All Across Ohio. Here in Cleveland, the Hungry and Poor are Hungrier and Poorer Than Ever* (Jan. 22, 2014), <http://www.clevescene.com/cleveland/hunger-games-food-stamp-benefits-have-been-cut-all-across-ohio-here-in-cleveland-the-hungry-and-poor-are-hungrier-and-poorer-than-ever/Content?oid=3771206>.
- ²⁷ Annie E. Casey Foundation, Kids Count Data Center, *Children in Poverty*, <http://datacenter.kidscount.org/data/tables/6480-children-in-poverty?loc=37&loct=5#detailed/2/any/false/868,867,133,38,35/any/13429>.
- ²⁸ *Id.*

- ²⁹ Meghan Millea, Times Reporter, *Schools combat hunger through free and reduced lunch programs* (Aug. 19, 2012), http://www.times-reporter.com/x1789227490/Schools-combat-hunger-through-free-and-reduced-lunch-programs?zc_p=0.
- ³⁰ *Id.*
- ³¹ Francis Mulangu and Jill Clark, *Identifying and Measuring Food Deserts in Rural Ohio* (June 2012), <http://www.joe.org/joe/2012june/a6.php>.
- ³² John Cook, PhD, and Karen Jeng, AB, Feeding America, *Child Food Insecurity: The Economic Impact on our Nation* (2009), <http://feedingamerica.org/sitefiles/child-economy-study.pdf>.
- ³³ Andrew Wapner, DO, MPH, Ohio Department of Health, *Obesity in Rural Ohio* (2013), <http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/chss/news%20and%20upcoming%20events/2013%20Rural%20Health%20Conference%20Presentations/1%20LHDs%20-%20obesity%20in%20Rural%20Ohio%20AW%20Final.ashx>.
- ³⁴ Scott A. Shipman, Jia Lan, Chiang-hua Chang, and David C. Goodman, Pediatrics: Official Journal of the American Academy of Pediatrics, *Geographic Maldistribution of Primary Care for Children* (December 20, 2010), <http://pediatrics.aappublications.org/content/127/1/19.full.pdf>.
- ³⁵ Scott A. Shipman, Jia Lan, Chiang-hua Chang, and David C. Goodman, Pediatrics: Official Journal of the American Academy of Pediatrics, *Geographic Maldistribution of Primary Care for Children* (December 20, 2010), <http://pediatrics.aappublications.org/content/127/1/19.full.pdf>.
- ³⁶ Bonnie Rochman, StumbleUpon: Time, *In Rural Areas, There May Be No Doctors to Tend to Your Sick Kid* (Dec. 21, 2010), <http://www.stumbleupon.com/su/1m2WNQ/healthland.time.com/2010/12/21/sick-kid-if-you-live-in-a-rural-area-there-may-be-no-doctors/>.
- ³⁷ *Id.*
- ³⁸ Lauren H. Smith, PhD, RN, Ohio Family Health Survey, *Access to and Utilization of Health Services by Rural-Dwelling Ohio Children* (March 10, 2010), http://www.nichq.org/pdf/2010_Presentations/A1%20Smith_Lauren%20presentation.pdf.
- ³⁹ American Academy of Pediatrics, *America's Children Need Access to Pediatric Subspecialists*, <http://www.aap.org/en-us/about-the-aap/departments-and-divisions/departments-of-education/Documents/Sec5203FactSheet.pdf>.
- ⁴⁰ *Id.*
- ⁴¹ Phyllis Brown, Futurity: Health & Medicine, *In Rural ERs, Kids Get Better Care With Telemedicine* (August, 12, 2013), <http://www.futurity.org/in-rural-ers-kids-get-better-care-with-telemedicine/>.
- ⁴² Children's Dental Health Project, *The State of Dental Health: Pregnancy and Early Childhood* (2014), <https://www.cdhp.org/state-of-dental-health/pregnancy-early-childhood>.
- ⁴³ Ohio Department of Health, *Hills and Valleys: The Challenge of Improving Oral Health in Appalachian Ohio 2012* (September 2012), <http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/ohs/oral%20health/Appalachian%20Report%20FINAL.ash>.
- ⁴⁴ An area is deemed a dental shortage area by the U.S. Department of Health and Human Services if there is only one dentist for a patient population of 5,000 or more.
- ⁴⁵ Jo Ingles, 89.7 WKSU, *Ohio's Has A Shortage of Dentists, Especially in Rural Areas* (June 13, 2013), <http://www.wksu.org/news/story/35899>.
- ⁴⁶ Ohio Department of Health, *Hills and Valleys: The Challenge of Improving Oral Health in Appalachian Ohio 2012* (September 2012), <http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/ohs/oral%20health/Appalachian%20Report%20FINAL.ash>.
- ⁴⁷ Grow Appalachia, <http://www.berea.edu/grow-appalachia/>.
- ⁴⁸ Rural Assistance Center, *Healthy Families* (August 2, 2013), <http://www.raconline.org/success/project-examples/661>.
- ⁴⁹ Heath, B., Salerna, R., Hopkins, A., and Caputo, M., Pediatric Critical Care Medicine, *Pediatric Critical Care Telemedicine in Rural Underserved Emergency Departments* (September 10, 2009), <http://www.ncbi.nlm.nih.gov/pubmed/19451850>.
- ⁵⁰ Ohio Department of Health, *Hills and Valleys: The Challenge of Improving Oral Health in Appalachian Ohio 2012* (September 2012), <http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/ohs/oral%20health/Appalachian%20Report%20FINAL.ashx>.
- ⁵¹ Bonnie Rochman, StumbleUpon: Time, *In Rural Areas, There May Be No Doctors to Tend to Your Sick Kid* (Dec. 21, 2010), <http://www.stumbleupon.com/su/1m2WNQ/healthland.time.com/2010/12/21/sick-kid-if-you-live-in-a-rural-area-there-may-be-no-doctors/>.
- ⁵² Nationwide Children's, *Fellowship Benefits*, <http://www.nationwidechildrens.org/fellowship-benefits>.
- ⁵³ Children's Hospital Association, *Children's Hospitals Graduate Medical Education (CHGME)*, <http://www.childrenshospitals.net/AM/Template.cfm?Section=GME&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=158&ContentID=54292>.
- ⁵⁴ National Academy for State Health Policy, *Ohio CHIP Fact Sheet*, <http://nashp.org/sites/default/files/CHIP/2012/NASHP-2012-Ohio-CHIP-Fact-Sheet.pdf?q=files/CHIP/2012/NASHP-2012-Ohio-CHIP-Fact-Sheet.pdf>.



Photo © Biljana "B" Mienkovic

CDF Mission Statement

The Children's Defense Fund Leave No Child Behind® mission is to ensure every child a *Healthy Start, a Head Start, a Fair Start, a Safe Start* and a *Moral Start* in life and successful passage to adulthood with the help of caring families and communities.

Acknowledgments

The Children's Defense Fund-Ohio thanks the following individuals for providing assistance leading to the production of this issue brief:

Marni Kostman

Policy Fellow, Children's Defense Fund-Ohio

This research was funded by the Annie E. Casey Foundation. We thank them for their support but acknowledge that the findings and conclusions presented in this report are those of the author(s) alone, and do not necessarily reflect the opinions of the Foundation.

Columbus

395 E. Broad St., Suite 330, Columbus OH 43215 • p (614) 221-2244 • f (614) 221-2247
www.cdfohio.org

Cleveland

431 E. 260th Street, Euclid, OH 44132 • p (216) 650-1961
www.cdfohio.org

National Office

25 E Street, NW, Washington DC 20001 • p (202) 628-8787 • f (202) 662-3510
www.childrensdefense.org

