EXPANSION OF BENEFITS TO PROMOTE FOOD SECURITY AMONG STUDENTS IN CLEVELAND COUNTY, NORTH CAROLINA

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ABSTRACT

Celeste Kurz, Marlee Marrotta, Kathryn Scruggs, Kirsten Siebenga, Anastassia Skarlinksi: Expansion of Benefits to Promote Food Security Among Students in Cleveland County, North Carolina
(Under the direction of Seema Agrawal, Pam Silberman and Dana Rice)

Healthy People 2030 targets several social determinants of health (SDOH) for improvement, including eliminating very low food security in children (VLFS-C). VLFS-C is the most extreme version of food insecurity (FI) and is associated with negative outcomes in the short- and long-term. In Cleveland County (CC), North Carolina (NC), 23.2% of children under 18 years of age experience FI. Summer Electronic Benefit Transfer-CC (SEBT-CC) and Community Eligibility Provision (CEP) utilize proven methodologies within existing federal and school-level structures to increase food access in students under 18 in CC. SEBT-CC targets families receiving free and reduced lunch (FRL) at baseline to receive $60 monthly food benefits during school breaks, while CEP extends FRL benefits to all students in CC. The goal of SEBT-CC and CEP is to provoke a 30% reduction in CC childhood VLFS over a three-year implementation period.

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COMMON PROPOSAL

Problem Statement and Goals

Social determinants of health (SDOH) are "conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks" (Healthy People 2030, n.d.). SDOH often intersect, forming a complex web of factors that facilitate or challenge health at the individual and community level. Within social and community context SODHs, Healthy People 2030 aims to eliminate very low food security in children by improving healthy eating through increased access and nutrition education (Healthy People 2030, n.d.).

Food security covers a wide spectrum, ranging from high security (no problems accessing adequate food) to very low food security (marked disruptions to adequate food intake due to limited resources) (Economic Research Service, 2020). Food insecurity during childhood is associated with negative health outcomes like an increased likelihood of anemia, consumption of fewer essential nutrients, oral health issues and cognitive problems (Chilton et al., 2007). Children living in food insecure homes are more likely to have vitamin, mineral, and protein deficiencies, which can hinder educational attainment, stunting economic productivity during adulthood, and result in a cycle of poverty that is difficult to escape (Chilton et al., 2007).

Children in Cleveland County are disproportionately impacted by food insecurity, as the prevalence of food insecurity among children is 23.2%, compared to the county prevalence of 17% (*Cleveland County - NCIOM*, n.d., *Food Insecurity Statistics in NC | Hunger Research*, n.d.). In the short term, food insecurity among children is associated with increased hospitalizations, behavioral problems, nutritional deficiencies, chronic health conditions, anxiety and depression, and lower physical functioning and rates of educational achievement (Coleman-Jensen et al., 2013). Long term, food insecurity among children is associated with impaired

psychosocial and cognitive development, impaired educational attainment, and decreased economic productivity (Coleman-Jensen et al., 2013; Currie & Vogl, 2013).

Policy and Programmatic Changes

This proposal centers on decreasing very low food security among children, a key objective within the social and community context SDOH that has downstream impacts on educational attainment and hospitalizations. The proposed intervention (Summer Electronic Benefits Transfer for Children in Cleveland County [SEBT-CC]) aims to decrease very low food insecurity among children in Cleveland County by providing monetary benefits equivalent to $60 per month during school holidays to children who qualify for free and reduced lunch. This intervention is based on the United States Department of Agriculture's Summer Electronic Benefits Transfer (EBT) for Children pilot program, which took place in select areas of 11 states and Indian Tribal Organizations between 2011 and 2014 (Collins et al., 2016). The proposed intervention will also distribute $15 per week benefits during school calendar breaks of two weeks or greater, including December holiday leave and year-round school extended breaks. Eligible families will be contacted by school system staff and asked to fill out an information and consent form (Collins et al., 2016). EBT cards will be mailed to participating households and funds uploaded monthly to each household's account (Collins et al., 2016).

The proposed policy intervention aims to complement our program recommendation by supporting students' nutritional needs in Cleveland County while they are in school. The Community Eligibility Provision (CEP) allows qualifying schools and school districts to offer free school meals, breakfast, and lunch, to all students regardless of whether they individually qualify (Crittenden- Fuller and Hedrick- Weant, 2021). In schools in North Carolina that have implemented CEP, the average number of school breakfasts and lunches per year rose by 18 and

20 meals per student, respectively (Crittenden-Fuller et al., 2021). While the entire Cleveland County School District is eligible to participate in the CEP, only individual schools currently participate leaving out over 6,000 students in the district who are eligible for free school meals (North Carolina Department of Public Instruction, 2021). Finally, the CEP reduces the administrative barriers associated with schools, individual students, and families applying for free and reduced lunch because an entire school needs only to apply for the program every four years (Crittenden-Fuller & Hendrick-Weant, 2021).

Budget

The total cost of the policy intervention over three years would be $28,938,645. This is not reflective of what Cleveland County would be responsible for because of the high reimbursement rate by the Federal Government under CEP for the student lunch and breakfast costs. The county would only be responsible for 10.8% of the cost of student meals or around $1.1 million each year. Other costs for the program would be limited as there is no additional staff needed. Current nutrition staff in Cleveland County would be responsible for implementing the program and reapplying for reapproval every four years. Staff costs allocated to the CEP would be $72, 496.50 over three years and benefit costs would equate to $21,748.95. There are no additional indirect costs associated with this policy recommendation as the current office space, office supplies, and utilities are already used for current school nutrition programs.

Program/Policy Evaluation Component

The research team will collect baseline and outcome data by utilizing pre- and post-surveys in a random sample of program participants' caretakers. Samples provided in Appendix 1. The purpose of the survey is to assess the food security status of children in the selected households using the USDA Food Security Index for Children (Appendix 1). The pre-survey will

be administered during the first month of school after children return from Cleveland County Schools' summer break, prior to program implementation. Post-surveys will be administered 12, 24, and 36 months from the pre-test. The research team will collect monetary data from Electronic Benefit Transfer accounts to assess funds distributed versus funds used. Survey questions and scoring are detailed in Appendix 1. The research team aims to enroll at least 40% of eligible children in the program, achieve at least a 75% participant utilization rate of dispersed funds, and decrease very low food security among participating children by 30% by month 24 of the program (Collins et al., 2016; Gordon et al., 2017).

APPENDIX 1: USDA FOOD INSECURITY INDEX FOR CHILDREN

1. [I/We] relied on only a few kinds of low-cost food to feed [my/our] [child/children] because [I was/we were] running out of money to buy food.
    1. 1=often/sometimes
    2. 0=never true
2. [I/We] couldn't feed [my/our] [child/children] a balanced meal, because [I/we] couldn't afford that.
    1. 1=often/sometimes
    2. 0=never true
3. [My/Our/The] [child was/children were] not eating enough because [I/we] just couldn't afford enough food.
    1. 1=often/sometimes
    2. 0=never true
4. In the last 30 days, did you ever cut the size of [your child's/any of the children's] meals because there wasn't enough money for food?
    1. 1=often/sometimes
    2. 0=never true
5. In the last 30 days, did [your child/any of the children] ever skip meals because there wasn't enough money for food?
    1. 1=often/sometimes
    2. 0=never true
6. In the last 30 days, how many days did this happen?
    1. 1=often/sometimes
    2. 0=never true
7. In the last 30 days, was [your child/were your children] ever hungry but you just couldn't afford more food?
    1. 1=often/sometimes
    2. 0=never true
8. In the last 30 days, did [your child/any of the children] ever not eat for a whole day because there wasn't enough money for food?
    1. 1=often/sometimes
    2. 0=never true

A score of 5 points or higher indicates very low food security among children in the household.

A score of 2-4 points indicates food security among children in the household.

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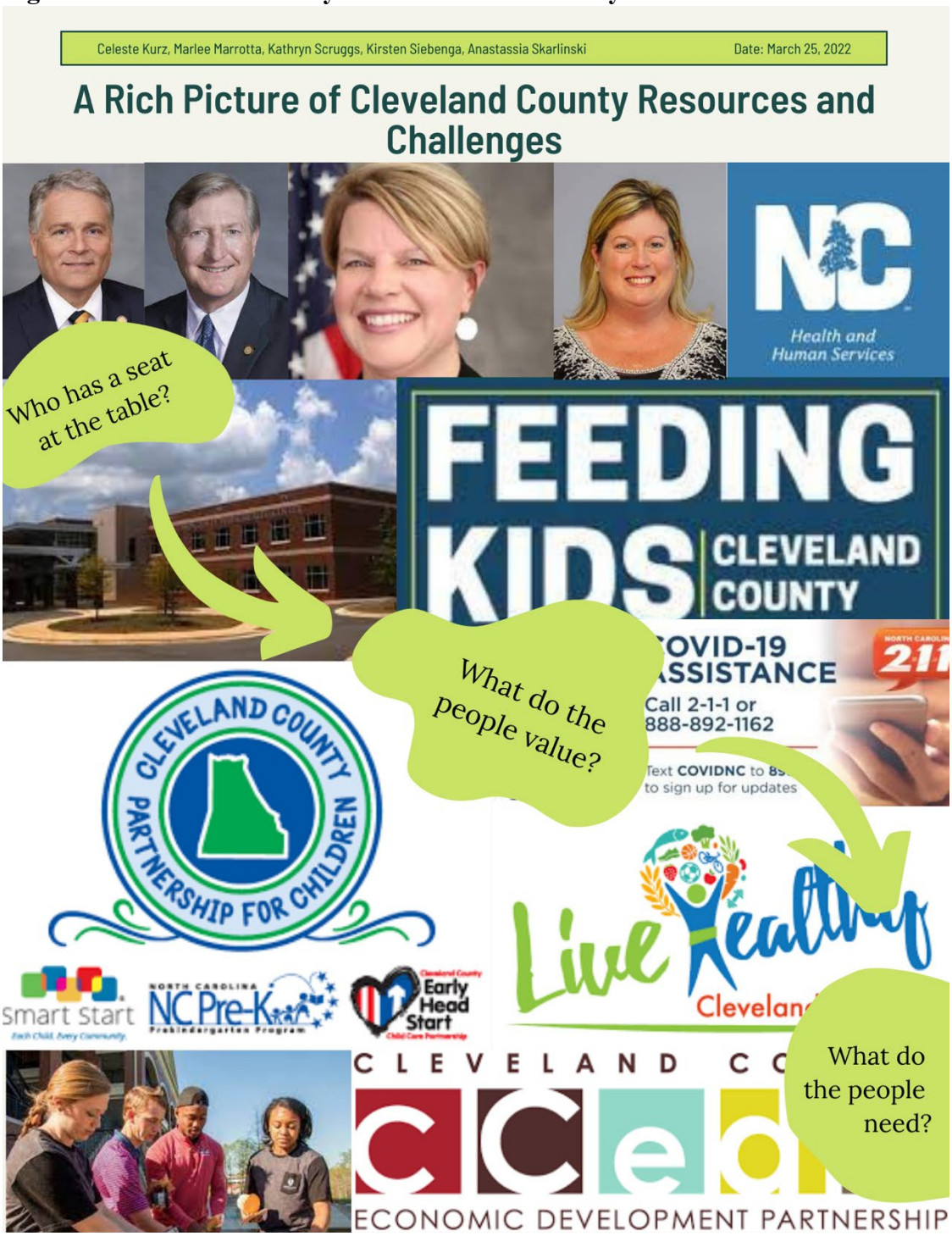
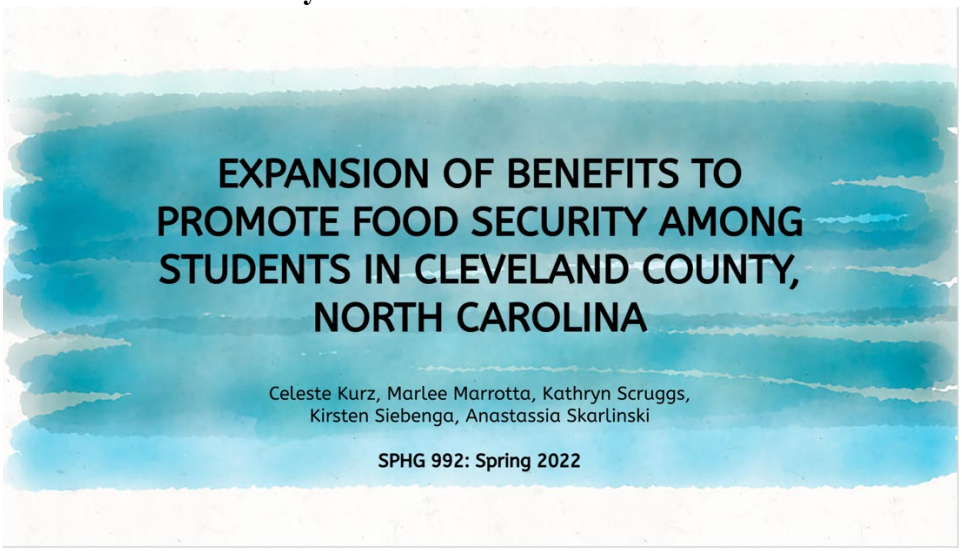
APPENDIX 2: GROUP DELIVERABLES

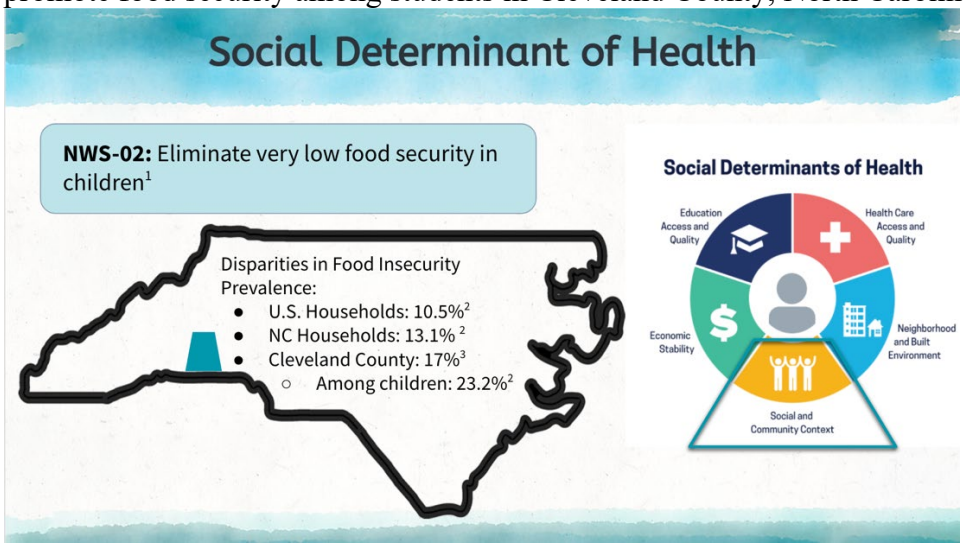
Figure 1: Rich Picture Analysis for Cleveland County



Presentation to County Commissioners



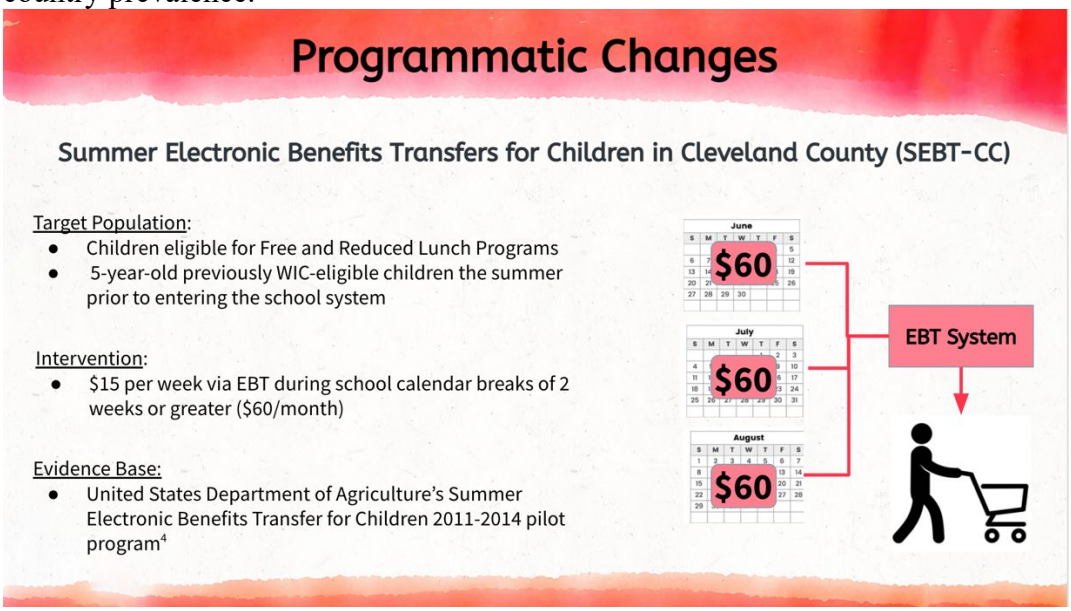
Script - Hello everybody. We are team 3 and we're proposing an expansion of benefits to promote food security among students in Cleveland County, North Carolina.



Script:

The conditions where people live and interact with the environment impact their health and quality of life. This idea is the basis for the social determinants of health (Healthy People 2030, n.d.). Economic stability, education access and quality, health care access and quality, quality of the neighborhood and built environment, and social and community context all impact an individual's health and well-being (Healthy People 2030, n.d.). The health objectives within Social and Community Context aim to increase social and community support. (Healthy People 2030, n.d.). The health objective the research team chose to address for this project is NWS-02: Eliminate very low food security in children. (Healthy People 2030, n.d.). Food security is when physical and economic access to food to meet both dietary needs and needs for a productive and healthy life are adequately met. (Healthy People 2030, n.d.). Food security falls on a spectrum from high food security, where individuals have no problems accessing food or sufficient intake, to very low food security, where there are multiple signs of disrupted eating patterns and insufficient intake. (Economic Research Service). Addressing very low food insecurity is

important because food insecurity is associated with increased rates of chronic disease, increased risk of mental health problems, and worse outcomes on health exams. Food insecure children have two times the odds of developing asthma and are three times more likely to experience depression and suicidal thoughts later in life when compared to their food secure classmates. Food insecurity is estimated to cost the U.S. economy $160 billion every year in poor health outcomes and additional healthcare. Compared to the United States and North Carolina, Cleveland County is disproportionately impacted by food insecurity. 10.5% of households in the country are food insecure and this increases to 13.1% among North Carolina Households. Food insecurity among children in Cleveland County is 23.2%, which is more than two times the country prevalence.



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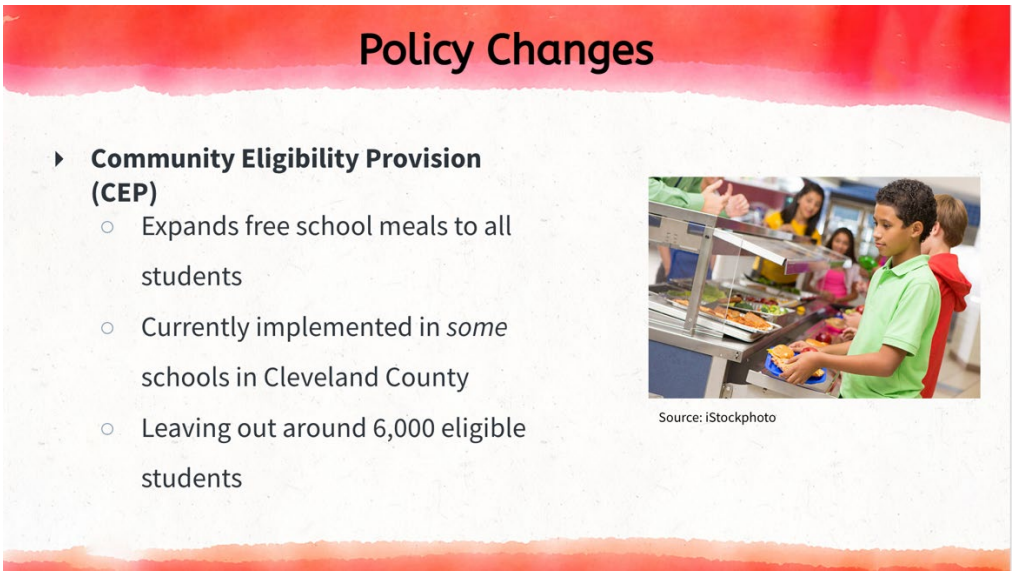
The intervention we proposed to address very low food security among children in Cleveland County was a Summer Electronic Benefits Transfer program. This program includes children enrolled in Cleveland County Public Schools who are eligible for free and reduced lunch, and any 5 year old children who were eligible for WIC prior to aging out but have not started kindergarten yet. Program participants will receive funds for food via EBT card during summer months, when school is out of session, and during any break in the school year that is greater than or equal to 2 weeks. Funds will be prorated based on the length of the break, with the baseline of $15/week or $60/month per participant. We also did want to note that some schools in Cleveland County operate on modified, or year-round, schedules, and those children will be able to participate in the program and will receive funds equal to $15/week for any break of 2 weeks or greater. This program is based on the USDA's summer EBT for children pilot programs that were conducted 2011-2014. These programs were found to be highly effective in decreasing food insecurity among children, and they specifically found that the $60/month benefit reduced very low food security among children by 30%. Evaluation data also noted that 90% of enrolled participants utilized the monetary benefits and that a total of 75% of benefits were utilized. Taken together, these results suggest this approach is both acceptable to participants and effective.



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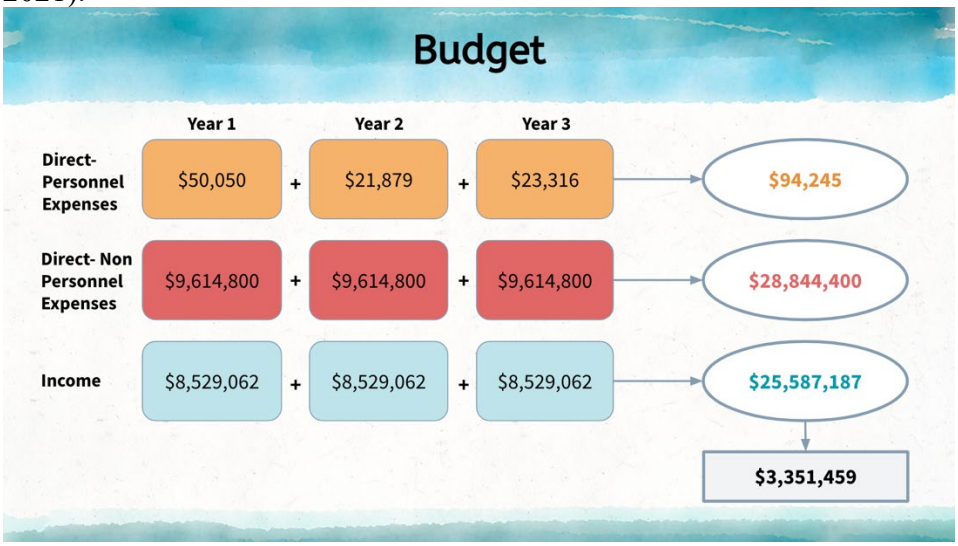
CEP expands free school breakfast and lunch to all students at participating schools. One of the additional benefits of the program is that schools only need to reapply every 4 years. Saving administrative time. In Cleveland County, some schools have implemented CEP even though the entire district is eligible. This leaves our around 6,000 students from the program. Eligibility for CEP in North Carolina is based on an identified student percentage (ISP) of above 40% (Crittenfuller et al. 2021). This percentage is unique from a schools free and reduced lunch percentage and instead is based on the percentage of student enrollment in multiple social programs including SNAP, TANF, the foster care program, or other criteria (Crittenfuller et al. 2021). In schools in North Carolina that have implemented CEP, the number of school breakfast and lunches rose by 18 and 20 meals on average per student respectively (Crittenfuller et al., 2021).



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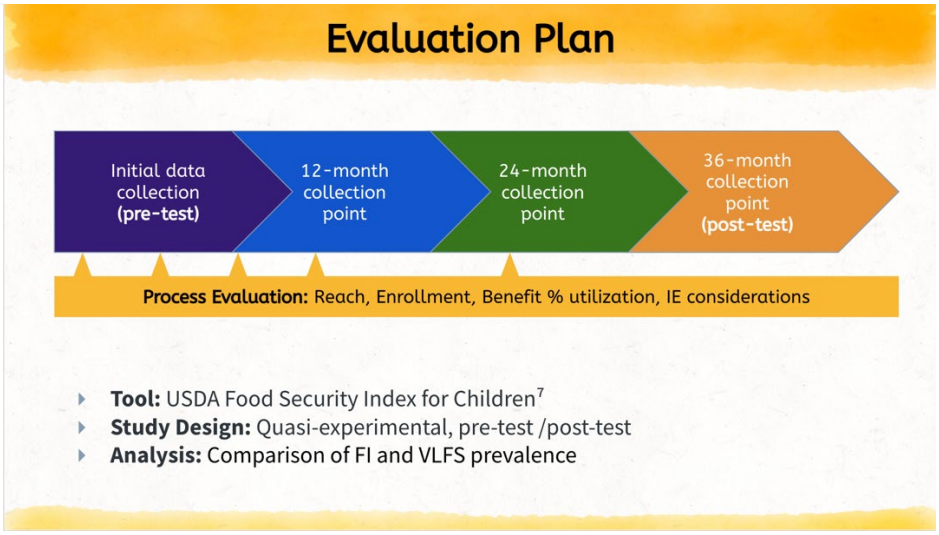
The majority of the administrative time and effort for the CEP program will be in the initial year of implementation as the application process only takes place every four years. The total amount requested from the county commissioners for the CEP is 3.3 million dollars over three years. The competitive Federal reimbursement rate for the cost of the school meals will cover most of the

school meal costs. Additionally, expenses include reallocating current staff time to the program. Other expenses include the copying and printing costs for materials that will be distributed to families and parents to educate them about the CEP program.

Script:

There are a number of people and organizations that we feel would be essential stakeholders for this enterprise. We would want to work with people in the community, such as church leaders, food service and retail workers, teachers, guidance counselors, and social workers in the local schools, and of course, the people who live with low food security in Cleveland County. We feel that as these groups of people are such vital components of the community they would be able to give us insight into how our program could be implemented, potential barriers, and how the program and its advertising is perceived in the community. We feel that it would be important to gauge these issues, and more, so that we do not overstep bounds or disrupt the skillful running of the community. We also feel that it would be important to work with a number of professional organizations in Cleveland County, such as the health department, the department of health and human services, local food charitable organizations such as feeding kids in Cleveland County, and the department of social services. The people who work in these organizations will have invaluable insight into how to best approach and work within the community of Cleveland County. They will also be essential in the running and maintenance of this intervention.

As we lack an expert in stakeholder engagement in this group, we also would seek the assistance of a program such as NC TRACKS.



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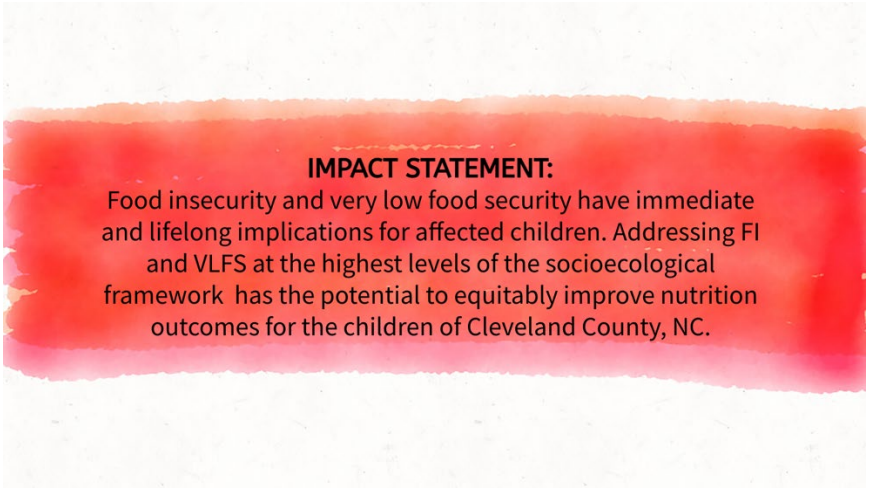
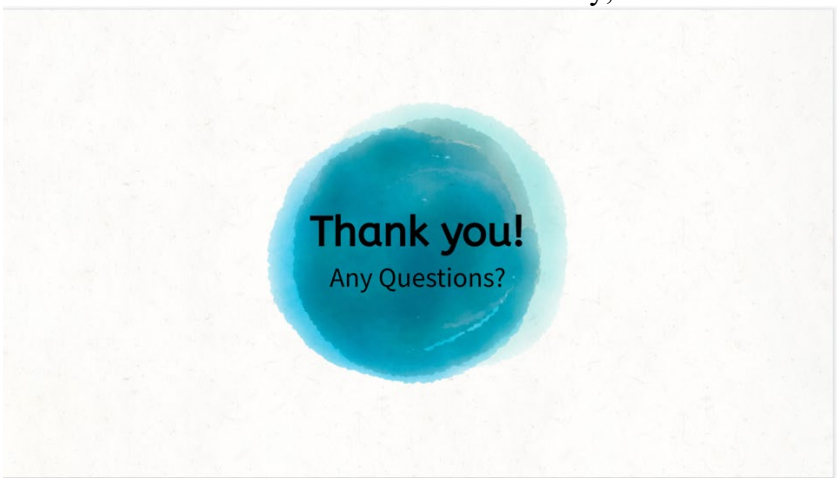
We will evaluate SEBT-CC throughout the entirety of program implementation. We will collect outcomes measures using the USDA Food Security Index for Children, a validated questionnaire with just 8 binary response questions, shown to consistently identify food insecurity and very low food security within children. We will collect baseline prevalence of FI and VLFS at the beginning of the intervention period, outcome data at two midpoints (12 and 24 months into the program), and final outcome data at the end of the 36-month-long intervention.

In addition to assessing outcomes, SEBT-CC is also committed to analyzing process evaluation data in order to ensure impactful and equitable implementation of the program. We will assess reach, enrollment of eligible children and families, percentage of financial benefits utilized, and equity and inclusion considerations such as racial and ethnic representation within intervention participants. Should any process measures not meet identified goals, we will conduct focus groups with participants and other relevant stakeholders to identify areas for improvement. Each process evaluation period (noted by the triangular protrusions on this timeline) is followed by an implementation modification period (noted on this timeline in light yellow bars). You may notice the process evaluation and modifications periods are more frequent in the first year and follow the midpoint evaluations within years 2 and 3 of the intervention. This is in an effort to react quickly to early challenges. Finally, we will analyze data utilizing comparative t-tests. SEBT-CC selected this analysis plan as we do not have a comparison group, and are assessing results based on a continuous variable (prevalence of FI and VLFS). We will conduct these analyses after each data collection point (12-, 24-, and 36-months). We will also conduct analyses controlling for race and ethnicity, household income level, and household parent/guardian structure (for example, single parent households). This will allow us to observe extra-intervention influences and assess program influence between diverse groups to then potentially adapt the intervention for a more equitable implementation.



Script:
In conclusion, food insecurity and very low food security have immediate and lifelong implications for affected children. Addressing food insecurity and very low food security at the highest levels of the socioecological framework has the potential to equitably improve nutrition outcomes for the children of Cleveland County, North Carolina.



Script:
Thank you for your time. We will now accept questions.

APPENDIX 3: CELESTE KURZ'S INDIVIDUAL DELIVERABLES

Problem Statement

Social Determinant of Health (SDoH)

Healthy People 2030 (HP 2030) outlines five domains of social determinants of health (SDoH): economic stability, education access and quality, health care access and quality, neighborhood and built environment, and social and community context (*Social Determinants of Health - HP* 2030). HP 2030 defines SDoH as "the conditions in the environments where people are born, live, work, play, worship, and age that affect a wide range of health, functioning, and quality of life outcomes and risks" (*Social Determinants of Health - HP* 2030). HP 2030 also reports that SDoH contribute to disparities and inequities related to health. Within the domain of social and community context, an objective related to nutrition and healthy eating is to eliminate very low food security (VLFS) in children under 18 years of age. Food insecurity (FI) is also a contributing factor in health targets related to housing, mental health, and infant mortality (*Social Determinants of Health - HP* 2030; *USDA ERS - Definitions of Food Security*). Very low food security (VLFS) is the more severe of two levels of food insecurity, as defined by the United States Department of Agriculture's (USDA) Economic Research Service (ERS) (*USDA ERS - Definitions of Food Security*). In instances of VLFS, "eating patterns of one or more household members [are] disrupted and food intake reduced because the household lacked money and other resources for food" (*USDA ERS - Definitions of Food Security*). In the U.S, 3.9% of households experienced very low food security in 2020 (*USDA ERS - Definitions of Food Security*). In children, very low food security can have negative effects on physical and mental health (including developmental delays, increased risk for chronic disease developments, and

behavioral issues) in addition to worsening academic outcomes and lifelong economic success (*Effects of Hunger | Feeding America*).

Geographic and Historical Context

Cleveland County (CC) is a rural area (population density 211.4 residents per square mile) in Southwestern North Carolina (NC) with a population of nearly 100,000 individuals (*Cleveland County, North Carolina*; *U.S. Census Bureau QuickFacts*). NC recognized the County in 1841and named it after revolutionary war hero, Colonel Benjamin Cleveland (*Cleveland County | NCpedia*). Prior to the introduction of European settlers, Cherokee and Catawba Indians lived on this land (*Cleveland County | NCpedia*). CC is close to the home of Thomas Dixon Jr., author of the 1905 novel, *The Clansman,* which was the basis of the film *The Birth of a Nation* (*Cleveland County | NCpedia*). *This film* has been referred to as "the most reprehensibly racist film in Hollywood history" ('The Birth of a Nation').

CC is a tier one economically disadvantaged county, as defined by the NC Department of Commerce's (NCDC) four-factor assessment of average unemployment rate, median household income, percentage growth in the population, and adjusted property tax base per capita (NCDoC, 2019). This designation is notable considering the county's close proximity to Charlotte, Asheville, and Spartanburg-Greenville (in South Carolina); such geospatial relationships usually mitigate these economic indicators (*Cleveland County, North Carolina*).

Priority Population

Residents of Cleveland County are largely White and non-Hispanic, similar to the demographic breakdown of the state as a whole. There is a sharp divergence, however, in income level and poverty prevalence. The median household income in Cleveland County is $40,002 annually, compared to $50,320 in the state as a whole (*Cleveland County, North Carolina*). A

significant number of residents live in poverty, higher than the overall NC poverty prevalence of 14.1% (*Cleveland County, North Carolina*). Poverty rates are worse in households with children under 18 years of age and deteriorate further when just one female caretaker lives with the children (See Appendix 3A *Table 1*) (*Cleveland County, North Carolina*). Overall, 31% of children in Cleveland County are living in poverty, a much higher prevalence than the statewide childhood poverty level of 19% (*Cleveland County, North Carolina*). When compared with other counties in North Carolina, Cleveland is among the least healthy. 23% of residents reported poor or fair health, compared to 18% of North Carolinians (*Cleveland County, North Carolina*). According to Feeding America, poverty is one of the main drivers of FI (Feeding America, 2019). Likely related to this high level of poverty, 7% of Cleveland County residents have limited access to healthy foods and 15% are food insecure (*Cleveland County, North Carolina*). However, FI is not evenly distributed throughout the population. 23% of families with children under 18 years of age experience FI (Feeding America, 2019). Children under 18 years of age, living in CC and experiencing FI are the priority population of this discussion and proposed intervention. Appendix 3A: *Table 1*) contains the statistics described in this section.

Measures of Problem Scope

Comprising just 20.6% and 3.8% of CC residents, Black and Hispanic residents represent 47% and 41% of residents experiencing FI, respectively (*Cleveland County, North Carolina*). White residents, though 72.8% of the population, only account for 22% of those experiencing food insecurity (*Cleveland County, North Carolina*). Low wages and unemployment, issues that troubled the county before the COVID-19 pandemic and have worsened since, also contribute to food insecurity (*Cleveland County, North Carolina*; Feeding America, 2019). Unemployment rates were 4.7% in 2019, but increased to 12.7% by May of 2020 (*Cleveland County, North*

Carolina). While the effect of COVID-19 economic depression has not been studied in Cleveland County explicitly, national rates of FI increased significantly during this time, with non-White households and children more likely to be negatively impacted that White households and adults (Feeding America, 2021).

The economic impact of hunger and food insecurity cannot be understated. In addition to the long-term costs to individuals and families, the price of food assistance must also be considered. In the three most recent reported periods, FY 2016-19, the county-level Department of Social Services (DSS) reported food assistance expenditures of $2.7-$2.9 million annually (*Cleveland County, North Carolina*). Vouchers from the Special Supplemental Program for Women, Infants, and Children (WIC), accounted for another nearly $2 million worth of food in FY 2017-18 (*Cleveland County, North Carolina*). These numbers are easily traceable to VLFS, but the cost of related chronic diseases and diminished lifelong prosperity must also be considered.

Rationale and Importance

While prevalence and economic data make a compelling case as to the need to address VLFS among children in Cleveland County, it is also important to note that this type of initiative is likely to be well-received by the community. Survey respondents of the 2019 Community Health Assessment expressed an interest in "learning more about nutrition" among other topics (*Cleveland County, North Carolina*). When asked to rank HP 2030 Health Indicators, residents of Cleveland County noted "Limited Access to Health Food" as their seventh highest priority (of 21) (*Cleveland County, North Carolina*). Responses also reflected strong community valuation of the health outcomes of their young residents, with infant-, child-, or teen-related indicators ranked in the top third of priorities (*Cleveland County, North Carolina*). Parents living with

school-aged children (9-19 years old) noted “nutrition” as a topic of health information most needed by children in the community (*Cleveland County, North Carolina*). When asked to “choose one issue most affecting the quality of life in Cleveland County,” “Low income/poverty” was ranked first in 2015 and 2019 assessments (*Cleveland County, North Carolina*). As noted previously, low paying jobs and poverty are two of the strongest contributors to food insecurity.

Disciplinary Critique

As outsiders entering CC from an academic perspective, it is imperative to recognize and build upon the initiatives to improve health outcomes already led by residents of Cleveland County. The County received Healthy Communities Funding from the NC Department of Public Health (NCDPH), and subsequently established the Health Education Unit at the Cleveland County Public Health Center (CCPH) and the Eat Smart Move More (ESSM) Coalition of Cleveland County. The ESSM Coalition and Health Education Unit established the Live Healthy Cleveland County website, on which there is an inventory of fresh fruits and vegetables, information about the Cleveland County Kitchen (a collaboration between NC Extension and Cleveland County Community College), and information about the local farmer market (operational between April and October) (*Cleveland County, North Carolina*; *Live Healthy Cleveland County*). These initiatives and infrastructure will be supportive of action to address FI and VLFS among children living in Cleveland County.

While elevating the successes of CC health- and nutrition-related initiatives, it is also important to identify areas for potential growth. Registered dietitians and nutritional scientists have a goal to improve wide-ranging outcomes for people and communities using food. However, nutrition professionals working in public health acknowledge that structural barriers

often lead to inequities in nutritional outcomes as some members of the population have greater access to nutritious foods, and simply enough food, than do others (*USDA ERS - Definitions of Food Security*). With this understanding, and strong knowledge as to the importance and impact of quality nutrition, dietitians and nutrition professionals are uniquely positioned to advocate for structural changes that promote equitable access to nutritious foods. The residents of Cleveland County independently identified what these professionals know to be true, that food security and good nutrition have positive health implications in a community far beyond the lack of hunger (*USDA ERS - Definitions of Food Security*). Their grassroots efforts at the local level could be further supported by interventions at the organizational (school) and policy (state and federal) levels of the Socioecological Framework (See Appendix 3B: *Figure 1*). Addressing FI and VLFS among children at a structural level has the potential to improve school performance immediately, reduce a child's chances of developing anxiety and depression, reduce rates of chronic disease later in life, and increase lifelong economic prosperity.

APPENDIX 3A

Table 1. Cleveland County vs. State Population Characteristics

Characteristic	**Cleveland County**	**North Carolina**
Race/Ethnicity (%)		
Non-Hispanic White	72.8%	70.6%
Non-Hispanic Black	20.6%	22.2%
Hispanic	3.8%	9.8%
Median household income (USD)	$40,002	$54,602
Prevalence of population living in poverty (%)	19.9%	12.9%
Poverty in households with children <18 years-old	27.5%	16%
Households with children <18 years-old and single female caregiver	31.7%	--
Poverty in children <18 years-old	31%	19%
Prevalence of residents reporting poor health (%)	23%	18%

Sources: 1. *Cleveland County, North Carolina*
2. *U.S. Census Bureau QuickFacts*, *Cleveland County, NC*
3. *U.S. Census Bureau QuickFacts*, *North Carolina*

APPENDIX 3B

Figure 1: *The Socioecological Framework*

A Social-Ecological Model for Physical Activity - Adapted from Heise, L., Ellsberg, M., & Gottemoeller, M. (1999)

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Implementation Plan

Background Information

Healthy People 2030 (HP 2030) defines social determinants of health (SDoH) as "the conditions in the environments where people are born, live, work, play, worship, and age that affect a wide range of health, functioning, and quality of life outcomes and risks" (*Social Determinants of Health - HP* 2030). An objective of HP 2030 is to eliminate very low food security (VLFS) in children under 18 years of age. Cleveland County (CC) hosts nearly 100,000 residents in the Southwestern region of North Carolina (NC) (*Cleveland County, North Carolina*). According to the NC Department of Commerce, it is a tier one economically disadvantaged county (NCDoC, 2019). This distinction is generated via a four-factor assessment of average unemployment rate, median household income, percentage growth in the population, and adjusted property tax base per capita (NCDoC, 2019). Within this economically under-resourced area, 7% of residents have limited access to healthy foods and 15% are food insecure (*Cleveland County, North Carolina*). However, food insecurity (FI) affects certain groups disproportionately. Children under 18 years of age and non-White residents are much more likely to experience food insecurity than White, adult residents in the same geographic area (*Cleveland County, North Carolina*). Nearly a quarter (23%) of families with children under 18 years of age experience very low food security (VLFS)[1] (Feeding America, 2019; Economic Research Service, 2020). This phenomenon has far-reaching implications, affecting physical, mental, and intellectual health of children living in Cleveland County, and even following them as they transition to adulthood (Coleman-Jensen et al., 2013; 2016). The objective of this proposed

[1] Very low food security (VLFS) is the most severe manifestation of FI, in which "eating patterns of one or more household members [are] disrupted and food intake reduced because the household lacked money and other resources for food" (Feeding America, 2019; Economic Research Service, 2020).

intervention is to eliminate VLFS and significantly reduce FI among children under 18 years of age living and going to school in CC, NC.

Purpose

VLFS is characterized by "reports of multiple indications of disrupted eating patterns and reduced food intake" (Economic Research Service, 2020). Children living with VLFS may be forced to skip meals, sometimes multiple meals in a row, and may experience hunger as well (Coleman-Jensen et al., 2013). VLFS negatively affects both children and adults, but the effect in children is particularly concerning (Coleman-Jensen et al., 2013). VLFS in children is associated immediately with increases in the following: hospitalizations, behavioral problems, nutritional deficiencies, anxiety and depression, and chronic health conditions; and poorer overall health and physical functioning (Coleman-Jensen et al., 2013). In the long term, VLFS can impair psychosocial and cognitive development, hinder educational attainment, reduce lifetime economic productivity, and eventually lead to the development of chronic health conditions (Coleman-Jensen et al., 2013).

Black and Hispanic residents comprise just 20.6% and 3.8% of CC's population, respectively, yet represent 47% and 41% of residents experiencing FI (*Cleveland County, North Carolina*). White residents, comprising 72.8% of the population, account for 22% of those experiencing FI (*Cleveland County, North Carolina*). Low wages and unemployment-- issues that troubled the county before the COVID-19 pandemic and have worsened since-- also contribute to FI (*Cleveland County, North Carolina*; Feeding America, 2019). Unemployment rates were 4.7% in 2019, but increased to 12.7% by May of 2020 (*Cleveland County, North Carolina*). Given the structural factors contributing to the issue of FI and VLFS among children in CC, an intervention that targets higher levels of the Socioecological Framework (SEF) (See

Appendix 3B: *Figure 1)* is necessary. We propose the initiation of the Summer Electronic Benefit Transfer- Cleveland County (SEBT-CC) Program to address CC childhood food insecurity at the organizational and policy levels of the SEF (See Appendix 3B: *Figure 1)*. SEBT-CC is modeled after a 2016 USDA pilot which reduced childhood FI and VLFS by expanding EBT benefits to non-school days (Collins et al., 2016). (See "Strategies and Activities for a description of this pilot intervention.)

Evidence Based Outcomes

Short-Term Outcome Objectives

1. **Outcome Objective:** From implementation to June 30, 2025, 40% of students in Cleveland County Public Schools who qualify for free or reduced lunch will receive Summer Electronic Benefit Transfers (SEBT) monthly during the summer holiday. This is based on the 23-57% participation rate among sites who participated in the USDA's pilot of a similar program targeting a similar age group (Collins et al., 2016).
2. **Health Objective:** By June 30, 2025, very low food security among program participants will decrease 30% from baseline, based on the 30% decrease of very low food security among children in the USDA pilot of a similar program (Collins et al., 2016).

Long-Term Impact

1. **Goal Statement:** By June 30, 2032, the four-year graduation rates of economically disadvantaged children in Cleveland County Public Schools will increase 6% from baseline (based on 2019 rates of 85% for economically disadvantaged students and 90% for not economically disadvantaged students) (Cleveland County Schools 2019-20 District Profile)

2. **Health Outcome:** By June 30, 2032, hospital length of stay (LOS) for all conditions among food insecure children in Cleveland County will decrease 20% from baseline (Topal & Tolunay, 2021).

Strategies and Activities

To meet the objectives outlined here, we propose the interminable extension and expansion of a nutrition policy introduced at the beginning of the COVID-19 pandemic, Summer Electronic Benefit Transfer (SEBT) (*SEBTC Demonstration, FNS*; "Summer EBT"). As the intervention will be situated in Cleveland County (CC), the intervention is titled "SEBT-CC." SEBT-CC will provide families of schoolchildren qualified to receive free and reduced school lunch with funding to support food costs, equal to the value of the food the student would have received in school, on days in which children are not in school. Using federal EBT funding, SEBT-CC will distribute and additional $15 per week in instances of school calendar breaks greater than 2 weeks long. School administrators will contact eligible families, explain the potential benefits risks of participating in SEBT-CC (per IRB recommendations), and elicit information and consent documents from any who express a desire to participate in the program. SEBT-CC administrators will coordinate with the Supplemental Nutrition Assistance Program (SNAP) to determine which SEBT-CC participants are already receiving EBT and which will be new to the program. Existing EBT recipients will have SEBT-CC benefits applied directly to their EBT cards, while new recipients will receive new EBT cards in the mail.

SEBT-CC proposes the expansion of school-based meal funding in an effort to expand the demonstrated protective effect of the National School Lunch Program (SLP) against hunger and malnutrition (Ralston et al., 2008). The Food and Nutrition Service (FNS) created the Summer Food Service Program (SFSP) to provide meals and snacks to children <18 years of age

living in low-income areas during the summer months (*Summer Food Service Program | Food and Nutrition Service*). However, only 14% of children receiving free and reduced meals during the school year continue to receive meals during school breaks through SFSP, a reality often attributed to logistical barriers (like transportation) and the stigma related to food aid (Coleman-Jensen et al., 2013; Ralston et al., 2008). As congregation at meal sites was unsafe during the COVID-19 pandemic, the FNS rolled out SEBT to transfer the cash value of meals that would have been offered by SFSP directly to parents of children (*SEBTC Demonstration | Food and Nutrition Service*). In an SEBT demonstration program, 23-57% of eligible households consented to participate in the program and the majority (84-96%) of participating households utilized the provided benefits, significantly higher than the national average of 14% SFSP utilization (*SEBTC Demonstration | Food and Nutrition Service*). Additionally, the $60 monthly summer benefit reduced VLFS among participating children by 30%, as measured by the United States Department of Agriculture (USDA)'s Household Food Security Survey with a 30-day reference period (*SEBTC Demonstration | Food and Nutrition Service*). SEBT-CC addresses the public policy, community, and organizational levels of the Socioecological Framework (SEF) (See Appendix 3B: *Figure 1*) by modifying nutrition policy with programmatic elements distributed by the school to support student nutrition on days in which school is not in session. The goal of SEBT-CC is to reduce VLFS at the individual level, schoolchildren living in CC. The expected reach is 3,320 students/year, based on a goal utilization of 40% and 8,298 students eligible for free and reduced lunch. The goal utilization percentage is based on the findings of a similar intervention, in which 23-57% of eligible families chose to participate (*SEBTC Demonstration | Food and Nutrition Service*).

Each dollar spent by the federal government on SNAP benefits generates $1.54-$1.67 in economic activity ("*Delta Could Damage the Recovery"*; *USDA ERS - Economic Linkages*). As SEBT-CC works in a comparable manner to SNAP, CC can hope for a similar return, or $1.15-1.25 million.

Stakeholders

In order to involve stakeholders throughout SEBT-CC development, deployment, and analysis, the group will form a community advisory board (CAB). The CAB will offer historical context, represent the current perspectives of the community, and help to guide SEBT-CC towards the best intervention components and implementation strategy for the residents of Cleveland County. The previously described SEF is a useful tool for considering stakeholders interested/involved with the program at various levels of the intervention. At its core, SEBT-CC targets children living with VLFS in Cleveland County, and thus these are the stakeholders at the "individual" level of the SEF. Children can offer perspectives on stigma related to food aid and comment on feasibility of different implementation strategies. SEBT-CC will engage children through age-appropriate surveys within the classroom, during the school day, to avoid guardian/caregiver time and transportation burdens that would be provoked by out of school child-focused data collection. The next stakeholder group is that of guardians and caregivers of children with VLFS. Guardians are situated in the "relationship" level of the SEF. This group can offer much of the same information and perspectives as the children for which they care but may be better situated to identify and describe barriers, suggest potential solutions, and comment on feasibility from their perspective. Guardian involvement is legally required as SEBT-CC is focused on work with minors. SEBT-CC will connect with guardians and caregivers through calls to the home. SEBT-CC will invite any interested parents to sit in on CAB meetings.

The next level of the SEF is that of "community," in this context largely composed of workers based out of the children's schools. School teachers have the most contact with students, and might be able to distribute surveys to children and speak to the feasibility of intervention strategies proposed by SEBT-CC. The potential positive impact of the program upon students' standardized test scores is also a potential motivator for schoolteachers as they are often evaluated by student performance. School administrators could be motivated by the same potential effect, as schools are also evaluated by the overall school population's test scores. Administrators could provide a wealth of information and perform essential data collection for SEBT-CC, including monitoring performance outcomes, managing funding records, and liaising between school-associated stakeholders. The last stakeholder group based in schools is that of food service staff. These workers may have information as to which students receive free and reduced meals and strategies for connecting with guardians/caregivers regarding child food needs and options. SEBT-CC will connect with all school-based stakeholders at a group in-service meeting prior to the intervention, with targeted follow-up meetings with each sub-group of this community. A representative from each group will sit on the CAB. Situated between the "community" and "societal" levels of the SEF, the CC Department of Public Health (CCDPH) and CC School Board (CCSB) are additional important stakeholder groups with which to engage. CCDPH will be involved with SEBT-CC funding distribution and maintenance of public health records and CCSB will help with logistical challenges at the school level.

Budget

SEBT-CC will require a significant portion of funding to provide the benefits themselves to the families of children living with VLFS in CC. Based on the estimated reach of 3,320 students, and $15 funding per student-week, this will total around $747,000 in the first year.

Infrastructure and logistical costs, such as mailing costs for new EBT cards, and the price and upkeep costs of data monitoring systems will also pull from the total budget. The personnel involved in the research aspects of SEBT-CC will require payment, as well as those involved in data acquisition and management.

Conclusion

VLFS in children has negative implications in the immediate- and longer-term. Addressing VLFS among the children of Cleveland County will likely have a positive impact upon educational performance, school ratings, and overall economic productivity. That said, the cost of social programs can at times be poorly received by the community. Evidence from previous interventions might help to assuage these concerns. There is also a concern of low buy-in if SEBT-CC is not presented in a nuanced way, culturally appropriate and cognizant of the negative stigma often associate with federal aid. The CAB will be invaluable in this pursuit. The prospective benefits to Cleveland County of SEBT-CC are far greater than any potential pitfalls.

APPENDIX 3B

Figure 1: *The Socioecological Framework*

A Social-Ecological Model for Physical Activity - Adapted from Heise, L., Ellsberg, M., & Gottemoeller, M. (1999)

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Evaluation Plan

Intervention Summary

Healthy People 2030 (HP 2030) defines social determinants of health (SDoH) as "the conditions in the environments where people are born, live, work, play, worship, and age that affect a wide range of health, functioning, and quality of life outcomes and risks" (*Social Determinants of Health - HP* 2030). An objective of HP 2030 is to eliminate very low food security (VLFS) in children under 18 years of age. Food insecurity (FI) and very low food security (VLFS)[2] cause short and long term issues in children (*Effects of Hunger | Feeding America*; *USDA ERS*). Cleveland County (CC), North Carolina (NC) is an economically under-resourced area in which 23% of families with children under 18 years of age experience FI (*Cleveland County, North Carolina*; *USDA ERS*). The objective of Summer Electronic Benefit Transfer- Cleveland County (SEBT-CC) is to indefinitely extend the expansion of SEBT, implemented during the COVID-19 pandemic, to promote food security[3] among schoolchildren in CC, NC. SEBT-CC will provide families of schoolchildren qualified to receive free and reduced school lunch with funding to support food costs, equal to the value of the food the student would have received in school, on all days in which children are not in school. Researchers will directly assess program outcomes in the short term (3 years) by monitoring SEBT-CC participation rates and prevalence of FI and VLFS among school-aged children in CC. Researchers will assess long term impacts of the program (10 years) by assessing academic and

[2] Very low food security (VLFS) is the most severe manifestation of FI, in which "eating patterns of one or more household members [are] disrupted and food intake reduced because the household lacked money and other resources for food" (Feeding America, 2019; Economic Research Service, 2020).

[3] The United Nations define food security as "all people, at all times, hav[ing] physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life." (*Food Security | IFPRI*)

health metrics documented to be affected by FI (*Cleveland County*; FRAC, 2017; Topal & Tolunay, 2021).

Evaluation Plan

Outcome of Interest

SEBT-CC set a short-term goal to reduce VLFS among program participants by 30% from baseline by June of 2025. This goal assumes an intervention start date of June 2022 with continuous implementation through June 2025. Researchers determined the 30% reduction in VLFS to be achievable within the three-year timeframe as a USDA pilot study with the same intervention components, targeting the same age group, produced similar results (Collins et al., 2016).

Specific Measures

The USDA Food Security Index for Children (FSIC) is a validated tool to assess FI in households with children under 18 years of age (Coleman-Jensen & Nord, 2012). See Appendix 3C: *Figure 2* for survey questions and scoring methodology. SEBT-CC will utilize this survey to collect descriptive findings as to baseline VLFS and FI and the impact of the program.

Sample and Sampling Strategy

SEBT-CC will administer the FSIC to a random sample of program participants before the intervention to identify baseline prevalence of FI and VLFS within the population of interest. A statistician will determine the exact number of responses needed to potentially achieve statistical significance after all measurement tools have been finalized by the implementation team.

Outputs

SEBT-CC outputs include: total amount of funding dispersed to participants, percentage of dispersed funds utilized, number of participants offered participation in the program, number of households offered participation in the program, percentage of eligible participants participating, and percentage of eligible households participating. These measures will be stratified by race and ethnicity, socioeconomic status, and household composition (i.e., single parent vs. dual parent household) in order to assess equity concerns in program reach and impact.

Analysis Plan

SEBT-CC will utilize a pretest-posttest quasi-experimental study design to collect descriptive statistics. SEBT-CC will analyze the effect of the intervention using comparative t-tests associating the baseline prevalence of FI and VLFS and the prevalence at each follow-up timepoint. SEBT-CC will conduct internal analyses within five process evaluation periods across the 3-year intervention period. The goal for enrollment is >40% of eligible children and families and the goal for utilization is 75% of dispersed funds at each process evaluation point. If at any point data does not reflect achievement of these goals, SEBT-CC will hold focus groups with relevant stakeholders and implement suggested changes within the "modification periods" following process evaluation. Refer to the Gantt chart (Appendix 3D: *Table 2*) for a more detailed timeline of events.

Timing

To assess program impact over time, researchers will collect follow-up measures using the same survey at the 12-, 24-, and 36-month points in the intervention. While the prevalence of VLFS at the 36-month mark is the short-term outcome of interest, the prevalence data collected at the 12- and 24-month points will serve as critical process evaluation data. If the trajectory of

VLFS reduction does not meet expectations, researchers should make modifications to the implementation plan to address potential issues in utilization and dissemination of SEBT-CC benefits. Data collected at the 12- and 24-month points also has potential utility for the greater academic community. Researchers and policy experts either implementing or planning to implement similar programs could reference the longitudinal progress reports from SEBT-CC when both predicting and evaluating their own interventions. Refer to the Gantt chart (Appendix 3D: *Table 2*) for a more detailed timeline of events.

Sources of Funding

SEBT-CC will primarily utilize existing federal EBT funding from the United States Department of Agriculture (USDA). Cleveland County Social Services will provide funds to support project personnel. After the success of the USDA SEBT pilot study (described in "Strategies and Activities"), the Agriculture Appropriations Act of 2012 released additional funds for the implementation of additional programs like SEBT-CC (*SEBTC Demonstration | FNS*).

Sustainability and Timeline

SEBT-CC preparation, implementation, and evaluation will span a 3.5-year period, with the opportunity for extension should CC deem necessary. The program will recruit personnel and network with CC schools in April and May of 2022 and begin baseline data collection in June of the same year. Yearly evaluations will follow, with two midpoint assessments at the 12- and 24-month marks and a final evaluation at 36 months (June 2025). Refer to the Gantt chart (Appendix 3D: *Table 2*) for a more detailed timeline of events.

SEBT-CC builds upon SEBT infrastructure at the public policy level and CC schools at the organizational level of the Socioecological Framework (SEF) (Appendix 3B: *Figure 1*).

Utilizing existing infrastructure at high levels of the SEF increases the likelihood the program will not fail due to structural issues. Leveraging funding from federal and state sources also contributes to the sustainability of SEBT-CC.

Data Use and Dissemination

SEBT-CC researchers will share all findings with their partners in the CC school district and Department of Social Services (DSS). They will also publish progress reports for participants at the 12-, 24-, and 36-month points of the intervention. SEBT-CC will translate these reports into all primary languages spoken by SEBT-CC participants and will also hold in-person presentations with an online option to better include those with visual disabilities, with low literacy, and for those with limited immune function or mobility who would like to participate from home. SEBT-CC researchers will also publish study findings in at least one peer-reviewed journal and will present their findings before the CC and NC state legislatures as well.

Strengths and Challenges

Strengths

As this intervention targets multiple levels of the Socioecological Framework (Appendix 3B: *Figure 1*), it is more likely to be successful in reducing health disparities than uni-level interventions (Agurs-Collins et al., 2019) Further, SEBT-CC is modeled after a previous intervention, conducted in a similar population, that resulted in a 30% reduction in FI among participants (Collins et al., 2016). The electronic benefit format of this intervention avoids transportation barriers common in place-based interventions to address food insecurity (Nettles, 2012). Furthermore, electronic benefits allow participants autonomy over their own food choices.

This negates the possibility of participants receiving foods that they don't like, don't know how (or don't wish) to prepare, or even foods that may be culturally inappropriate (Chan, 2021).

Challenges

There is significant stigma associated with experiencing FI and VLFS, so it is likely CC county residents may not be willing to share their experiences with FI and VLFS or seek food assistance unless they trust SEBT-CC and know their identities will be protected. Beyond stigma, parents may worry about custody repercussions should Child Protective Services (CPS) find their children experience hunger. SEBT-CC will hold an informative session with CPS before program initiation in order to assuage parent worries and explain that good-faith efforts to secure additional food for their children will not result in CPS investigation. Finally, SEBT-CC places a high burden on school staff and administrators. Thus, these stakeholders must be involved through all steps of intervention design and implementation to ensure feasibility and buy-in.

Potential Impact

SEBT-CC has the potential to reduce the prevalence of FI and VLFS within CC, and ultimately address short- and long-term negative implications of FI as well. In the short term, reduced FI can lead to improved childhood behavior and school performance (FRAC, 2017). In the long term, CC may observe an increased high school graduation rate and a reduction in length of stay (LOS) of hospitalized children (Topal & Tolunay, 2021).

APPENDIX 3B

Figure 1: *The Socioecological Framework*

A Social-Ecological Model for Physical Activity - Adapted from Heise, L., Ellsberg, M., & Gottemoeller, M. (1999)

APPENDIX 3C

Figure 2. USDA Food Security Index for Children

1. [I/We] relied on only a few kinds of low-cost food to feed [my/our] [child/children] because [I was/we were] running out of money to buy food.
   1 = often/sometimes
   0=never true
2. [I/We] couldn't feed [my/our] [child/children] a balanced meal, because [I/we] couldn't afford that.
   1 = often/sometimes
   0=never true
3. [My/Our/The] [child was/children were] not eating enough because [I/we] just couldn't afford enough food.
   1 = often/sometimes
   0=never true
4. In the last 30 days, did you ever cut the size of [your child's/any of the children's] meals because there wasn't enough money for food?
   1=yes
   0=no
5. In the last 30 days, did [your child/any of the children] ever skip meals because there wasn't enough money for food?
   1=yes
   0=no
6. In the last 30 days, how many days did this happen?
   1= >/= 3 days
   0= < 3 days
7. In the last 30 days, was [your child/were your children] ever hungry but you just couldn't afford more food?
   1=yes
   0=no
8. In the last 30 days, did [your child/any of the children] ever not eat for a whole day because there wasn't enough money for food?
   1=yes
   0=no

Per the Food Security Index for Children, a score of 5 points or higher is indicative of very low food security among children (VLFS-C). A score of 2-4 points is indicative of food insecurity among children in the household.

APPENDIX 3D

Table 2. *SEBT-CC Gantt Chart*

	Timeline											
Activity												
Year 1				Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
SEBT-CC Team Assembly												
Network with CC Partners												
Baseline Measurement												
Process Evaluation Period 1												
Modification Period 1												
Process Evaluation Period 2												
Year 2	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
Modification Period 2												
Process Evaluation Period 3												
Modification Period 3												
12-Month Measurement												
Impact Analysis 1												
Process Evaluation Period 4												
Modification Period 4 Dissemination of Initial Findings												
Year 3	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
24-Month Measurement												
Impact Analysis 2												
Process Evaluation Period 5												
Modification Period 5 Dissemination of Initial Findings												
Year 4	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	
Final Measurement												
Final Impact Analysis												
Dissemination of results												

Legend:

- Intervention team activities
- Outcome evaluation
- Process evaluation
- Modification of intervention/implementation
- Research communications
- Not included in study period

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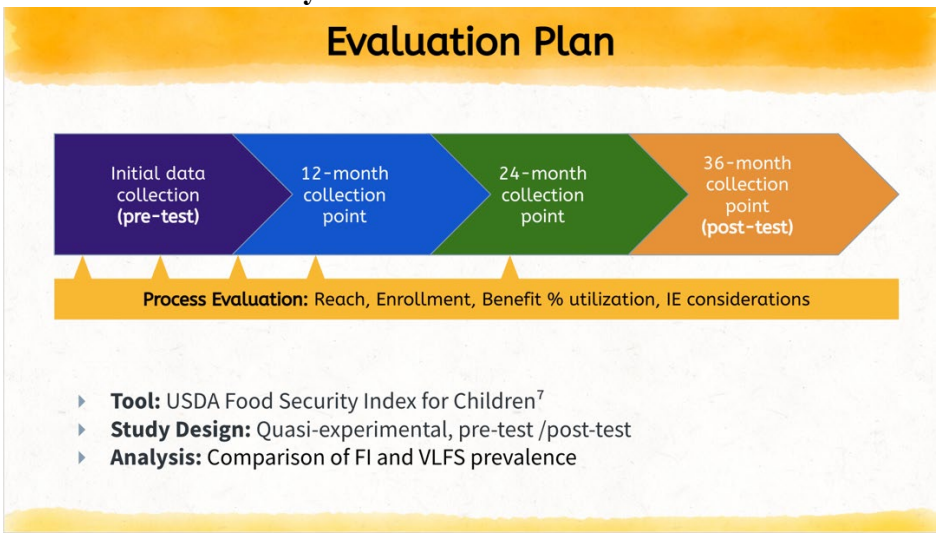
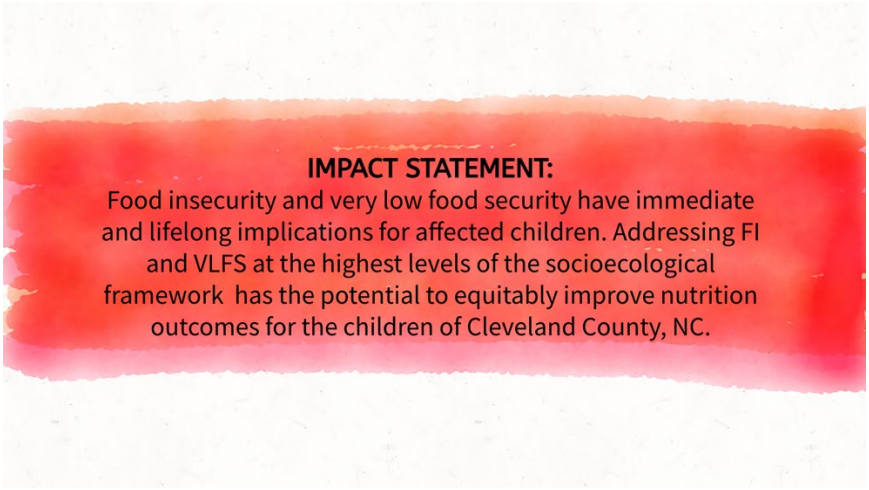
Presentation to County Commissioners



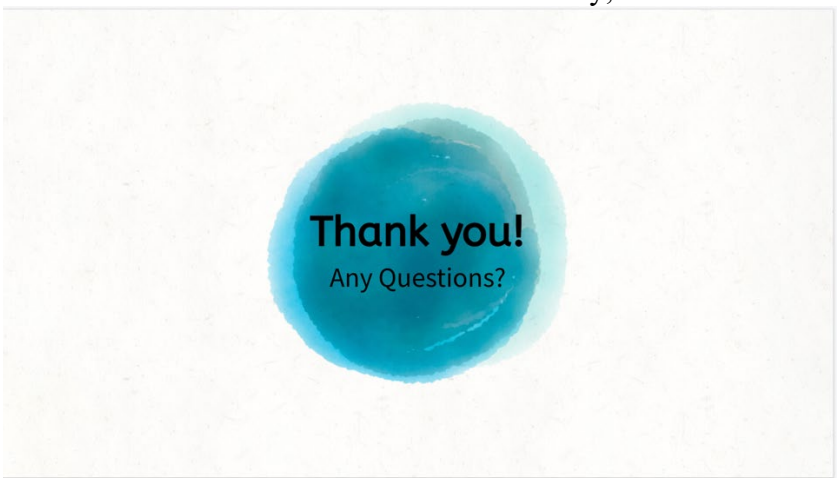
Script:

We will evaluate SEBT-CC throughout the entirety of program implementation. We will collect outcomes measures using the USDA Food Security Index for Children, a validated questionnaire with just 8 binary response questions, shown to consistently identify food insecurity and very low food security within children. We will collect baseline prevalence of FI and VLFS at the beginning of the intervention period, outcome data at two midpoints (12 and 24 months into the program), and final outcome data at the end of the 36-month-long intervention.

In addition to assessing outcomes, SEBT-CC is also committed to analyzing process evaluation data in order to ensure impactful and equitable implementation of the program. We will assess reach, enrollment of eligible children and families, percentage of financial benefits utilized, and equity and inclusion considerations such as racial and ethnic representation within intervention participants. Should any process measures not meet identified goals, we will conduct focus groups with participants and other relevant stakeholders to identify areas for improvement. Each process evaluation period (noted by the triangular protrusions on this timeline) is followed by an implementation modification period (noted on this timeline in light yellow bars). You may notice the process evaluation and modifications periods are more frequent in the first year and follow the midpoint evaluations within years 2 and 3 of the intervention. This is in an effort to react quickly to early challenges. Finally, we will analyze data utilizing comparative t-tests. SEBT-CC selected this analysis plan as we do not have a comparison group, and are assessing results based on a continuous variable (prevalence of FI and VLFS). We will conduct these analyses after each data collection point (12-, 24-, and 36-months). We will also conduct analyses controlling for race and ethnicity, household income level, and household parent/guardian structure (for example, single parent households). This will allow us to observe extra-intervention influences and assess program influence between diverse groups to then potentially adapt the intervention for a more equitable implementation.



Script:
In conclusion, food insecurity and very low food security have immediate and lifelong implications for affected children. Addressing food insecurity and very low food security at the highest levels of the socioecological framework has the potential to equitably improve nutrition outcomes for the children of Cleveland County, North Carolina.



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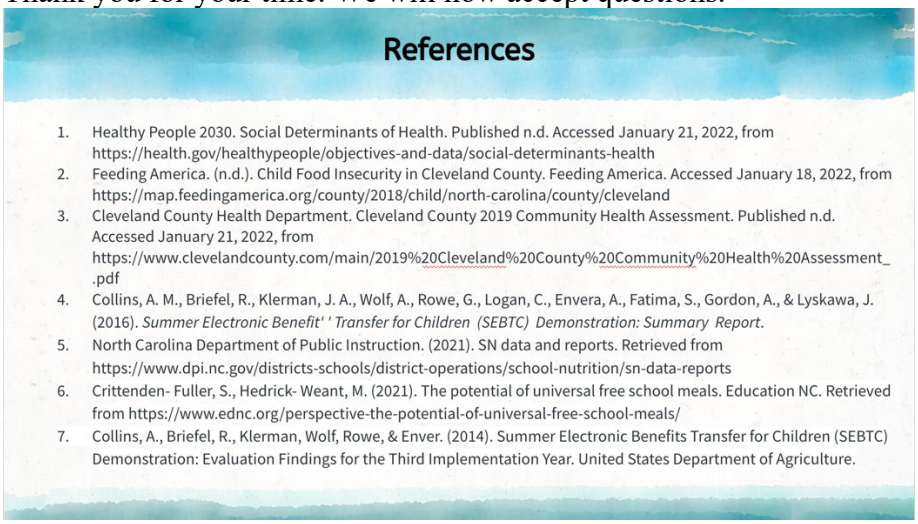
Thank you for your time. We will now accept questions.



APPENDIX 4: MARLEE MARROTTA'S INDIVIDUAL DELIVERABLES

Problem Statement

Social Determinant of Health

Social determinants of health (SDOH) are defined as, "the conditions in the environments where people are born, live, learn, work, play, worship, and age that affects a wide range of health, functioning, and quality-of-life outcomes and risks (Healthy People 2030, n.d.). Healthy People 2030 identifies five domains for SDOHs: economic stability, education access and quality, health care access and quality, neighborhood and built environment, and social and community context (Healthy People 2030, n.d.). The overarching goal of the SDOHs under social and community context is to increase the social and community support people need in all aspects of life, including the work, home, and community environment (Healthy People 2030b, n.d.). Within the social and community context SODH, Healthy People 2030 aims to eliminate very low food security in children (Healthy People 2030c, n.d.).

Food security is when "both physical and economic access to sufficient food to meet dietary needs for a productive and healthy life" are met (Healthy People 2030b, n.d.). Levels of food security fall on a spectrum from high food security, where individuals have no problems regarding food-access or sufficient food intake, to very low food security, where there are multiple signs of disrupted eating patterns and insufficient intake (Economic Research Service, 2021). Food insecurity is associated with a myriad of negative health outcomes, including increased rates of chronic disease and mental health problems, worse outcomes on health exams, and limitations in completing activities of daily life (Gundersen & Ziliak, 2015). Food insecure children are three times more likely to experience depression and suicidal thoughts later in life compared to food secure classmates (McIntyre, Williams, and Lavorato, 2013). Food insecure

children have twice the odds of developing asthma and are more likely to develop anemia (Gundersen & Ziliak, 2015).

Geographic and Historical Context

Cleveland County was established in 1841 and has strong ties to the Revolutionary War. (Cleveland County Health Department, 2020). The county itself is named after Colonel Benjamin Cleveland, and the City of Shelby is named after Colonel Isaac Shelby (Health Department, 2020). The Battle of Kings Mountain is now a national park that is between the City of Kings Mountain and South Carolina (Health Department, 2020). Shelby is implementing a "Rail to Trail" project, which will become a part of the Carolina Thread Trail Network (Health Department, 2020). Though the county does not offer a county-wide recreation center, Shelby and Kings Mountain offer several parks where community members can partake in recreational and other physical activities to support a healthy lifestyle (Health Department, 2020).

Cleveland County is a tier 1 economically disadvantaged, rural county located on the southwest border of North Carolina along the Piedmont mountains with a population density of 211.4 people per square mile (Health Department, 2020). The North Carolina Department of Commerce designates the 40 most distressed counties in the state as Tier 1 (NC Department of Commerce, n.d.). Cleveland County covers a 465 square-mile area and has access to four major North Carolina highways, I-85, I-40, I-77, and I-26. Cleveland County is within driving distance to Charlotte, North Carolina., Asheville, North Carolina., and Spartanburg-Greenville, South Carolina (Health Department, 2020). Shelby and Kings Mountain are the largest municipalities in Cleveland County, followed by thirteen smaller municipalities (Health Department, 2020).

Closely reflecting racial group proportions in North Carolina, White residents make up the largest racial or ethnic group in Cleveland County, followed by Black and Hispanic racial or

ethnic groups (see Appendix 4A Table 1). Racial and ethnic minority groups are present in lower proportions in Cleveland County when compared to North Carolina (See Appendix 4A Table 1). Among Cleveland County Community Health Assessment survey respondents, individuals living in poverty was the highest ranked concern (Health Department, 2020). Poverty disproportionately impacts Cleveland County residents and households compared to North Carolina, and a greater percentage of children live in poverty in Cleveland County than in North Carolina (see Appendix 4A Table 1).

The Cleveland County Public Health Center and the Eat Smart Move More Coalition of Cleveland County support ongoing efforts to address food insecurity in Cleveland County (Health Department, 2020). The Public Health Center is developing a comprehensive website residents can use to locate food in the community (Health Department, 2020). The Eat Smart, Move More Coalition actively supports the Satellite Foothills Farmers' Market to increase the availability of local foods to community members (Health Department, 2020).

Priority Population

Children in Cleveland County are the priority population for this SDOH. Due to the metabolic needs to support growth and development in childhood, children are especially at risk to the impacts of very low food insecurity (Currie & Vogl, 2013). Children in Cleveland County are disproportionately impacted by food insecurity, as the prevalence of food insecurity among children is 23.2%, compared to the county prevalence of 17% (Feeding America, n.d.; Health Department, 2020). Compared to children in food secure homes, children living in food insecure households are at higher risk for developing chronic health problems, such as asthma and behavioral disorders (Thomas, Miller, & Morrissey, 2019). Very low food insecurity negatively

impacts cognitive development, hinders educational attainment, and stunts economic productivity during adulthood (Currie & Vogl, 2013).

Measures of Problem Scope

Nationwide, 10.5% of United States households are food insecure (Feeding America, n.d.). This prevalence increases to 13.1% of North Carolina households and 17% of Cleveland County homes. Children are disproportionately burdened by food insecurity in Cleveland County, as 23.3% of children are food insecure (Feeding America, n.d.). Income is a driving factor in food security status (Wight, Kaushal, Waldfogel, & Garfinkel, 2014). Poverty disproportionately impacts residents of Cleveland County and North Carolina, as the poverty rate increases from 13.4% for the United States to 12.9% for North Carolina and 17% for Cleveland County (United States Census Bureau 2020; United States Census Bureau 2020b, Gundersen & Ziliak, 2015). The higher burden of food insecurity and percentages of persons living in poverty in Cleveland County may suggest that Cleveland County may be disproportionately affected by these issues (see Appendix 4A Table 1). Food insecurity is estimated to cost the U.S. economy $160 billion every year in poor health outcomes and additional health care (Cook & Poblacion, 2015). Table 2 outlines the factors that contribute to the estimated economic cost of hunger (see Appendix 4A Table 2).

Rationale

Food insecurity in childhood can have serious effects on growth and development as children move through the lifecycle. Food insecurity can cause irreversible damage to a child's social, emotional, and cognitive development (Chilton, Chyatte, & Breaux, 2007). Children living in food insecure homes are more likely to have vitamin, mineral, and protein deficiencies, which all contribute to poor development and hinder educational attainment, resulting in a cycle

of poverty that is difficult to escape (Chilton et. al, 2007). Increasing food security in Cleveland County can increase overall health of the population and increase economic productivity (Chilton et. al, 2007).

Survey respondents of the 2019 Cleveland County Community Health Assessment ranked "Limited Access to Healthy Food" as 7th highest priority and expressed interest in learning about nutrition, weight management, and physical activity (Health Department, 2020). Respondents also placed emphasis on health priorities that impacted the youth in the community. "Adverse Childhood Experiences" ranked as 2nd highest priority, which food insecurity may directly contribute to (Chilton et. al, 2007; Health Department, 2020).

Disciplinary Critique

For a dietitian and public health professional to understand food insecurity and its implications, a closer examination of the influence of inequity and systemic racism on the SDOH must be conducted. Though the prevalence of food insecurity in the United States is 10.5%, prevalence among Black and Hispanic households are 22.5% and 18.5%, respectively (Mumbi, Mare, & Yendelela, 2021). Disparities in food insecurity persist, and widen, among children, where more Black (14.1%) and Hispanic (13.7%) children are food insecure compared to White children (5.1%) (Nichol & Hunt, 2021). Social and economic disadvantage among minority populations, as well as structural racism in the United States both contribute to the disparities seen in food insecurity rates (Odoms-Young, 2018). Inequities in food insecurity prevalence display how the system perpetuates the cycle of poverty (Nichol & Hunt, 2021). In order to eliminate very low food insecurity among children in Cleveland County, an equity lens should be utilized to address structural racism and ensure perspectives and voices from all races and ethnicities in the area are heard.

APPENDIX 4A: TABLES

Table 1

Relevant Demographic Data from Cleveland County and North Carolina

Measure	Cleveland County, 2019	North Carolina, 2019
Race (%)		
White, non-Hispanic	75.8	70.6
Black, non-Hispanic	20.8	22.2
Hispanic or Latino	3.8	9.8
Asian	1.1	3.2
Multi-racial	1.9	2.3
American Indian/Alaska Native	0.4	1.6
Native Hawaiian & Other Pacific Islander	0	0.1
Income & Poverty		
Median Household Income	$42,247	$54,602
Persons in Poverty (%)	15.0	12.9
Children in Poverty (%)	28	20
Food Insecurity (%)	17	15

Note: Data from 2019 Census, as reported by the 2019 Cleveland County Community Health Assessment (Health Department, 2020) and U.S. Census Bureau (United States Census Bureau, 2020; United States Census Bureau b, 2020)

Table 2

Contributors to Estimated Cost of Hunger in the United States

Category	Estimated Cost (2016)
Mental Health Problems	$57,080,000,000
Poor General Health	$45,950,000,000
Suicide	$21,610,000,000
Hospitalizations	$11,510,000,000
Non-communicable Diseases	$7,120,000,000
Nutrition and Digestion Problems	$7,100,000,000
Lost Productivity	$5,480,000,000
Other	$4,230,000,000
Total Cost	**$160,000,000,000**

Note: Data from 2016 Hunger Report, The Nourishing Effect: Ending Hunger, Improving Health, Reducing Inequity (Cook and Poblacion, 2016).

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Implementation Plan

Background Information

Social Determinants of Health (SDOH) are "the conditions in the environments where people are born, live, learn, work, play, worship, and age that affects a wide range of health, functioning, and quality-of-life outcomes and risks, and cover five domains, one of which is social and community context (Healthy People 2030, n.d.). Healthy People 2030 targets many goals in the social and community context, one of which is to eliminate very low food security in children by improving healthy eating through increased access and nutrition education (Healthy People 2030b, n.d.; Healthy People 2030c, n.d.).

Very low food insecurity is the most severe form of food insecurity and occurs "when food intake of household members is reduced, interrupting normal eating patterns as a result of the household lacks money or other resources for food" (Gordon, Briefel, Collins, Rowe, & Klerman, 2017). Negative health outcomes associated with food insecurity include increased rates of chronic disease and mental health problems, worse outcomes on health exams, and limitations in completing activities of daily life (Gundersen & Ziliak, 2015).

Children have specific metabolic needs to support growth and development in childhood, placing them at greater risk to the impacts of very low food insecurity (Currie & Vogl, 2013). Impacts of very low food insecurity on children include damage to a child's social, emotional, and cognitive development (Chilton, Chyatte, & Breaux, 2007). Children living in food insecure homes are more likely to have vitamin, mineral, and protein deficiencies, which can hinder educational attainment, stunting economic productivity during adulthood, and result in a cycle of poverty that is difficult to escape (Chilton et. al, 2007; Currie & Vogl, 2013).

Purpose

Children in Cleveland County are disproportionately impacted by food insecurity, as the prevalence of food insecurity among children is 23.2%, compared to the county prevalence of 17% (Feeding America, n.d.; Cleveland County Health Department, 2020). Children living in a state of very low food insecurity may skip meals, experience hunger, or go without food for days (Coleman-Jensen, Gregory, & Singh, 2013). Compared to children in food secure homes, children living in food insecure households are at higher risk for developing chronic health problems, such as asthma, behavioral disorders, stunted psychosocial and cognitive development, and decreased educational attainment (Colemen-Jensen et. al, 2013; Thomas, Miller, & Morrissey, 2019). Depressive symptoms and asthma diagnosis among food insecure children are 19.1% and 27.9% higher than children who are food secure, respectively (Thomas et. al, 2019). Yearly health care expenditure among food insecure households total $77.5 billion dollars per year, and food insecure households spend an average of $6,072 on healthcare, compared to $4,208 among food secure households (Thomas et. al, 2019).

Though the prevalence of food insecurity in the United States is 10.5%, prevalence among Black and Hispanic households are 22.5% and 18.5%, respectively (Mumbi, Mare, & Yendelela, 2021). These disparities persist among children, as food insecurity prevalence among Black and Hispanic children are 14.1% and 13.7% food insecure, respectively, compared to their White counterparts (5.1%) (Nichol & Hunt, 2021). Social and economic disadvantage among minority populations, as well as structural racism in the United States, contribute to the disparities related to food insecurity (Odoms-Young, 2018). Inequities in food insecurity prevalence display how the system perpetuates the cycle of poverty (Nichol & Hunt, 2021).

Implementing the Summer Electronic Benefit Transfers for Cleveland County (SEBT-CC) may help address such disparities and decrease the prevalence of food insecurity in Cleveland County.

Evidence Based Outcomes

Short-term outcome objectives include:

1. Outcome Objective: By June 30, 2024, 40% of students in Cleveland County Public Schools who qualify for free or reduced lunch will receive Summer Electronic Benefit Transfers (SEBT) monthly during the summer holiday (Gordon et. al, 2017).
2. Health Objective: By June 30, 2024, very low food security among program participants will decrease 30% from baseline (Gordon et. al, 2017).

Long-term impacts include:

1. Goal Statement: By June 30, 2032, the four-year graduation rates of economically disadvantaged children in Cleveland County Public Schools will increase 6% from baseline (based on 2019 rates of 85% for economically disadvantaged students and 90% for not economically disadvantaged students) (Health Department, 2020).
2. Health Outcome: By June 30, 2032, hospitalizations among food insecure children in Cleveland County will decrease by 25%, indicated by SNAP participation reducing child hospitalizations by 25.3% in a previous study (Thomas et. al, 2019).

Strategies and Activities

The proposed intervention is titled Summer Electronic Benefit Transfers – Cleveland County (SEBT-CC). SEBT-CC will provide a monthly stipend of $60 per eligible child via electronic benefit transfers (EBT) during the summer months for children who qualify to receive free and reduced lunch (FRLP) during the school year. The United States Department of Agriculture (USDA) SEBT Pilot Program implemented a similar approach in 2012, where

families were given $60 per eligible child per summer month using Summer Nutrition Assistance Program (SNAP) or Women, Infants, and Children (WIC) EBT systems, which improved food security among children by 30% (Gordon et. al, 2017). In addition to monthly benefits during summer break, each eligible child will receive a $30 benefit in December to account for the two week of holiday leave from school. Five-year-old children who qualified for WIC prior to their fifth birthday but are not yet enrolled in Cleveland County Public Schools will receive a $60 monthly benefit during summer months. The research team will utilize SNAP and WIC EBT systems to deliver SEBT-CC funds to eligible children. If a child is eligible for funds but their family is not utilizing EBT services, the research team will work with the family, Cleveland County Food and Nutrition Services (CCFNS) and the Cleveland County Department of Social Services (CCDSS) to ensure they receive an EBT card with SEBT-CC funds. Members of the research team will conduct monthly telephone interviews with parents or guardians of the household and connect families with representatives and other needed resources (Gordon et. al, 2017). The SEBT-CC funds can purchase foods that qualify under the SNAP or WIC guidelines (Gordon et. al, 2017). Unused funds will roll over to the next summer month (Gordon et. al, 2017).

The research team will implement SEBT-CC in Cleveland County annually in June, July, August, and December for three consecutive years. To implement SEBT-CC effectively, the research team will encourage stakeholders, such as the North Carolina Department of Health and Human Services (NCDHHS), CCFNS, Cleveland County Public Schools (CCPS), and CCDSS, to collaborate with the intervention team to identify eligible students and allocate funds properly.

For children who are in the public school system, there are gaps in food assistance during summer months and holiday breaks, as school meals are not easily accessible or available during

these times. The Summer Food Service provides food for children under 18 during the summer months; however, only 14% children eligible for the Free and Reduced Lunch Program (FRLP) during the school year utilize the summer meals program (Food Research & Action Center, 2021). The proposed intervention will address these gaps by providing benefits to cover the costs of meals FRLP eligible children would receive during school when school is not in session.

The proposed intervention will address multiple levels of the socioecological model (see Appendix 4B Figure 1). At the policy level, the intervention will modify existing school-based nutrition policies to improve food security outside of the traditional school year. At the community level, schools will help the research team identify eligible children to participate in the program. As food security improves, individual health and nutrition status of children will likely benefit, thus addressing the individual and level of the model.

The research team expects to reach approximately 3.320 students in Cleveland County. 14,584 students are currently enrolled in CCPS (U.S. News & World Report, n.d.). Of the total number of students currently enrolled, 56.9%, or 8,298 students are economically disadvantaged and eligible for FRLP (U.S. News & World Report, n.d.). The SEBT pilot project displayed a utilization rate of 23-57%, where 40% is the midpoint of the range of utilization rates (Collins & Klerman, 2017). The goal utilization rate and expected reach of this intervention is 40% of students who receive FRLP in Cleveland County, which is roughly 3,320 students.

Stakeholders

Potential stakeholders include parents of eligible children, the eligible children, CCPS, CCFNS, CCDSS, and NCDHHS. Parents of eligible children and eligible children will be directly impacted by the intervention and gathering their input on the design of the intervention, potential barriers to use, potential solutions to barriers, and other concerns are vital to implement

an intervention that serves the target population. Support and input from CCPS and CCFNS are vital to identify eligible children through the public school system. CCPS and CCFNS will also provide insight into the feasibility of the intervention and will ensure the intervention is reaching those in need. Since the intervention will utilize the EBT system already in place, working with the CCDSS will be important, as both the WIC and SNAP offices are within CCDSS (Cleveland County Department of Social Services, n.d.). These stakeholders will provide important perspectives of how to implement the intervention efficiently and assist with fund management and distribution. NCDHHS distributes federal food assistance funds at the state level, thus their involvement is crucial to successful implementation.

Budget

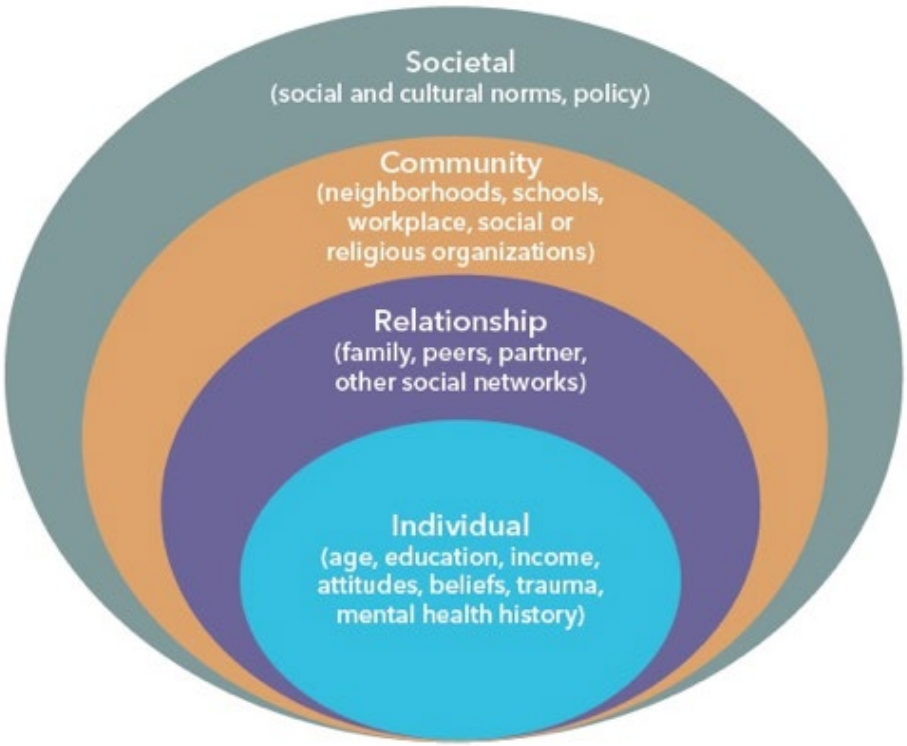
SEBT-CC will allot $210 in benefits to each eligible child. Assuming the utilization rate of 40% is met, 3,320 students will receive SEBT-CC benefits, which would cost an estimated $906,360 per year. In addition to SEBT-CC benefit funding, a principal investigator and research assistant, both full-time-equivalents, will work to implement and evaluate the intervention. Assuming that CCDSS has employees that are willing to work with the research team to build upon the EBT services already available, no additional cost should come from this collaboration. The principal investigator and research assistant can also assist CCDSS with the front-end work to get the intervention set up and running, also removing the need for extensive staffing. The research team is responsible for ongoing management of the SEBT-CC project to not put excess workload on the existing Cleveland County workforce. The research team will gather stakeholders throughout the implementation phase to address any possible opposition to the intervention and develop potential solutions.

Conclusion

The proposed intervention utilizes an infrastructure that is already in place in the target location and is modeled after a program with strong, statistically significant results. In addition to these advantages, the family remains in control of familiar food choices, as direct cash transfer allows for family members to choose foods that fit their specific needs. Though the proposed intervention has been shown to reduce very low food insecurity in children, the intervention does not address the root causes of food insecurity among children. Instead of addressing why families do not have appropriate funds for food security, the intervention subsidizes households with money to make up for disparities, which allows for the disparity to continue through time. The SEBT-CC program will hopefully address and fill those gaps by providing monetary allotments equivalent to what the National School Lunch Program and School Breakfast Program provide during the school year. The EBT delivery system is already in place in Cleveland County and SEBT-CC monthly benefits will use the current system, thus maximizing resources already in the community.

APPENDIX 4B: SOCIOECOLOGICAL MODEL

Figure. 1 The socioecological model (Safe States Alliance, n.d.)



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Evaluation Plan

Intervention Summary

Social determinants of health (SDOH) are defined as, "the conditions in the environments where people are born, live, learn, work, play, worship, and age that affects a wide range of health, functioning, and quality-of-life outcomes and risks (Healthy People 2030, n.d.). Healthy People 2030 targets eliminating very low food security in children as a goal under the social and community context SDOHs (Healthy People 2030c, n.d.). The proposed intervention, Summer Electronic Benefit Transfers - Cleveland County (SEBT-CC), will provide a monthly stipend of $60 per eligible child via Supplemental Nutrition Assistance Program (SNAP) or Women, Infants, and Children (WIC) electronic benefit transfers (EBT) during the summer months for children who qualify to receive free and reduced lunch (FRLP) during the school year. This intervention aims to reduce very low food insecurity[4] in children, a key objective in the social and community context of the Social Determinants of Health. The United States Department of Agriculture (USDA) Summer EBT Pilot Program implemented a similar approach in 2012 (Gordon, Briefel, Collins, Rowe, & Klerman, 2017). In addition to monthly benefits during summer break, each eligible child will receive a $30 benefit in December to cover two weeks of holiday leave from school. Five-year-old children who qualify for WIC prior to their fifth birthday but are not yet enrolled in Cleveland County Public Schools will receive a $60 monthly benefit during the summer months to address the lapse in benefits between aging out of WIC and enrolment in school.

[4] Very low food insecurity is defined as an individual reporting multiple indications of disrupted eating patterns and reduced food intake (Economic Research Service, 2020).

Evaluation Plan

Outcome of Interest

By June 30, 2024, very low food security among program participants will decrease 30% from baseline, based on the USDA Summer EBT pilot program that reduced very low food insecurity among children by 30**%** (Collins & Klerman, 2017).

Study Design and Data Collection

The research team will collect baseline and outcome data by conducting pre- and post-surveys in a random sample of program participants' caretakers. The survey assesses the food security status of children in the selected households using the USDA Food Security Index for Children (see Appendix 1). The pre-survey will be administered to caregivers during the first month of school after children return from Cleveland County Schools' summer break, prior to program implementation. Post-surveys will be administered 12, 24, and 36 months from the pre-test. The research team will collect monetary data from participant's EBT accounts to assess funds distributed versus funds used (Gordon et. al, 2017).

Sample and Sampling Strategy

The research team will adapt the sampling strategy from the USDA SEBT pilot study for this evaluation (Gordon et. al, 2017). The research team will randomly select SEBT-CC participants to participate in the evaluation. Random selection will occur before the start of the program so that baseline data collection can occur concurrently with program enrollment to reduce participant burden.

Specific Measures

Specific evaluation measures pertaining to food security status are sourced from the USDA Food Security Index for Children (United States Department of Agriculture Food and

Nutrition Service Office of Policy Support, 2014). The USDA Food Security Index is a validated tool that measures food insecurity among children (Food and Nutrition Service Office of Policy Support, 2014). Survey questions and scoring are detailed in Appendix 4C. The research team aims to enroll at least 40% of eligible children in the program, achieve at least a 75% participant utilization rate of dispersed funds, and decrease very low food security among participating children by 30% by month 24 of the program, as measured by the USDA Food Security Index for Children (Gordon et. al, 2017; Food and Nutrition Service Office of Policy Support, 2014).

Outputs

Key outputs are the amount of funds dispersed, percent of funds used, number of participants reached, number of unique households reached, and percent of eligible children who participate. Change in the prevalence of very low food insecurity among participating households in Cleveland County is the research team's primary outcome of interest. The research team will stratify change in prevalence of very low food security among participants, percent of funds used, and percent of eligible children who participate by racial and/or ethnic group to assess for racial disparities.

Analysis Plan

The research team will collect descriptive statistics to assess the change in prevalence of very low food insecurity among children and assess percent of funds used versus dispersed funds among participating households. Descriptive statistics include prevalence of food insecurity among the random sample. The research team will evaluate qualitative responses from the sample to assess how the program impacted those enrolled. To analyze interviews, the research team will independently read 2-4 interviews to develop independent code books. The research

team will then reconvene to develop a finalized codebook that clearly defines themes present in the qualitative answers.

Timing

The research team will collect baseline data during program enrollment. The research team will collect follow-up data at month 12, 24, and 36 of program implementation. Process evaluations from data collected at months 12 and 24 of the program will help the research team generate progress reports pertaining to program impact. The research team will assess the data from all three time periods to see how food security changes over time. The research team defines change as improvement in food security status among participating children. If program goals are not met at month 24, stakeholders and the research team will meet to assess potential barriers to effective program implementation and discuss solutions to address potential gaps.

Funding

The research team will use USDA funding, federal EBT funding, and Cleveland County Social Services funding for the intervention and program evaluation. The Agriculture Appropriations Act of 2012 funded the 2012 SEBT pilot study (Food Research & Action Center, 2021). Due to the pilot study's success, additional funds are now available for SEBT interventions (Food Research & Action Center, 2021).

Sustainability and Timeline

The research team will implement the program in Cleveland County for three years. After three years, the research team will evaluate the program for intended impact (Food & Research Action Center, 2021). The research team will decide to terminate or continue operating the program implementation based on progress toward program goals, input from stakeholders, and

availability of funding. The research team defines progress as any movement towards reaching the outcome and health objectives.

Data Use and Dissemination

The research team will extract and analyze program data to identify areas of improvement pertaining to program success, gaps in the intervention, and potential improvements for future program implementation. The research team will generate a program report to disseminate data to the public in a variety of ways. The research team will use social media to spread general messaging to increase awareness and understanding of the program and its impacts to community members. The research team will share the full research paper with Cleveland County Public Schools, the Cleveland County Department of Health and Human Services, and local policy makers to share results and potentially influence change in the county around SEBT. This report will help other school systems determine if SEBT is an appropriate approach to address very low food security among children in their community.

Strengths and Challenges

Strengths of this evaluation design include relative low cost and low participant and caregiver burden. It also uses federal and state infrastructure already in place in Cleveland County, meaning that the research team can analyze financial statistics using the existing EBT system (Gordon et. al, 2017). The evaluation plan is relatively low burden for caregivers, as they can simultaneously enroll in the program and fill out the pre-survey prior to program implementation. To further decrease participant burden, caregivers will only need to complete follow up surveys once per year while participating in the program. The research team understands some participants may move from Cleveland County or graduate from the school system during program implementation, impacting the amount of complete data collected.

Outside factors, such as changes in the economy, may impact program results, since food security status is impacted by a culmination of factors, not money alone (Thomas, Miller, & Morrissey, 2019).

Potential Impact

The proposed intervention has the potential to improve food security status among children in Cleveland County, increase the four-year graduation rate of economically disadvantaged children in Cleveland County, and decrease length of stay for childhood hospitalizations in Cleveland County **(**Thomas et. al, 2019; Topal and Tolunay, 2021).

APPENDIX 4C: USDA FOOD INSECURITY INDEX FOR CHILDREN

1. [I/We] relied on only a few kinds of low-cost food to feed [my/our] [child/children] because [I was/we were] running out of money to buy food.
    a. 1=often/sometimes
    b. 0=never true
2. [I/We] couldn't feed [my/our] [child/children] a balanced meal, because [I/we] couldn't afford that.
    a. 1=often/sometimes
    b. 0=never true
3. [My/Our/The] [child was/children were] not eating enough because [I/we] just couldn't afford enough food.
    a. 1=often/sometimes
    b. 0=never true
4. In the last 30 days, did you ever cut the size of [your child's/any of the children's] meals because there wasn't enough money for food?
    a. 1=often/sometimes
    b. 0=never true
5. In the last 30 days, did [your child/any of the children] ever skip meals because there wasn't enough money for food?
    a. 1=often/sometimes
    b. 0=never true
6. In the last 30 days, how many days did this happen?
    a. 1=often/sometimes
    b. 0=never true
7. In the last 30 days, was [your child/were your children] ever hungry but you just couldn't afford more food?
    a. 1=often/sometimes
    b. 0=never true
8. In the last 30 days, did [your child/any of the children] ever not eat for a whole day because there wasn't enough money for food?
    a. 1=often/sometimes
    b. 0=never true

A score of 5 points or higher indicates very low food security among children in the household.

A score of 2-4 points indicates food security among children in the household.

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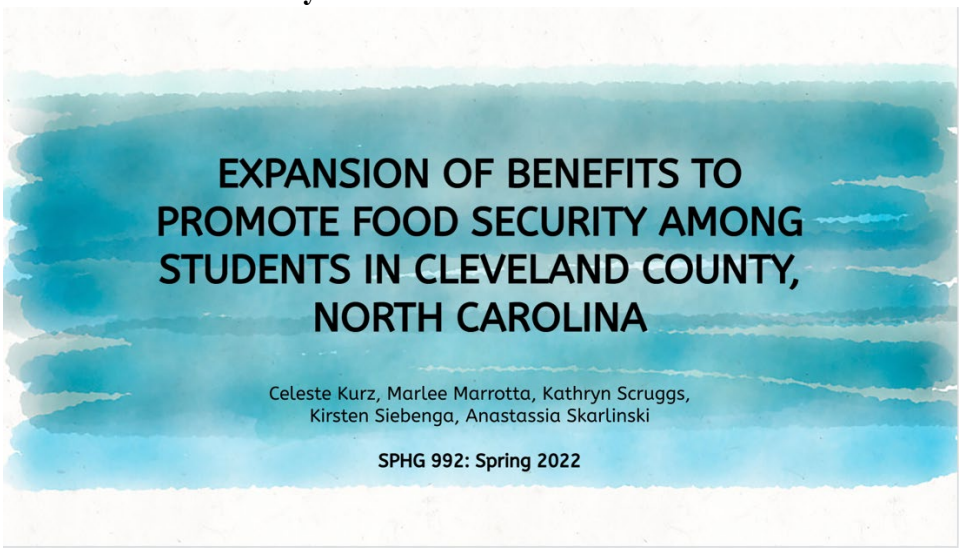
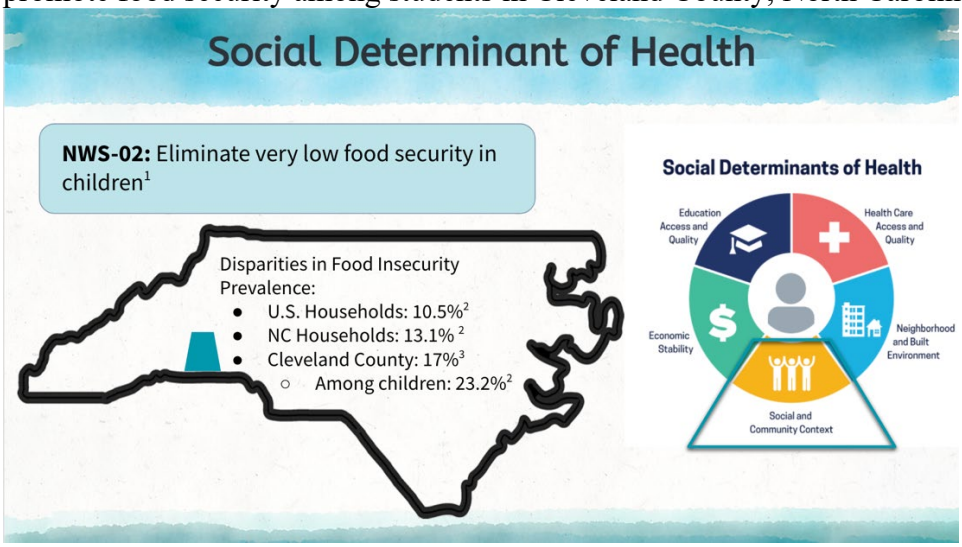
Presentation to County Commissioners



Script - Hello everybody. We are team 3 and we're proposing an expansion of benefits to promote food security among students in Cleveland County, North Carolina.



Script:

The conditions where people live and interact with the environment impact their health and quality of life. This idea is the basis for the social determinants of health (Healthy People 2030, n.d.). Economic stability, education access and quality, health care access and quality, quality of the neighborhood and built environment, and social and community context all impact an individual's health and well-being (Healthy People 2030, n.d.). The health objectives within Social and Community Context aim to increase social and community support. (Healthy People 2030, n.d.). The health objective the research team chose to address for this project is NWS-02: Eliminate very low food security in children. (Healthy People 2030, n.d.). Food security is when physical and economic access to food to meet both dietary needs and needs for a productive and healthy life are adequately met. (Healthy People 2030, n.d.). Food security falls on a spectrum from high food security, where individuals have no problems accessing food or sufficient intake, to very low food security, where there are multiple signs of disrupted eating patterns and insufficient intake. (Economic Research Service). Addressing very low food insecurity is

important because food insecurity is associated with increased rates of chronic disease, increased risk of mental health problems, and worse outcomes on health exams. Food insecure children have two times the odds of developing asthma and are three times more likely to experience depression and suicidal thoughts later in life when compared to their food secure classmates. Food insecurity is estimated to cost the U.S. economy $160 billion every year in poor health outcomes and additional healthcare. Compared to the United States and North Carolina, Cleveland County is disproportionately impacted by food insecurity. 10.5% of households in the country are food insecure and this increases to 13.1% among North Carolina Households. Food insecurity among children in Cleveland County is 23.2%, which is more than two times the country prevalence.

APPENDIX 5: KATHRYN SCRUGGS'S INDIVIDUAL DELIVERABLES

Problem Statement

Social Determinant of Health

Social determinants of health (SDOH) are "conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks" (Healthy People 2030, n.d.). SDOH often intersect, forming a complex web of factors that facilitate or challenge health at the individual and community level. Social and community context is a SDOH that describes the degree to which individuals have "social support they need in the places where they live, work, learn, and play" (Healthy People 2030, n.d.). An objective related to the social and community context SDOH is to eliminate very low food security among children. Very low food security is the most extreme form of food insecurity, a socioeconomic condition of "limited or uncertain access to adequate food" (Seligman et al, 2010). Negative health outcomes are associated with food insecurity at all life stages, from infancy and early childhood to older adulthood (Gundersen & Ziliak, 2015). Among children, the consequences of food insecurity and very low food security are dire. In the short term, food insecurity among children is associated with increased hospitalizations, increased behavioral problems, increased nutritional deficiencies, poorer health and lower physical functioning, increased anxiety and depression, increased chronic health conditions, and lower educational achievement (Coleman-Jensen et al., 2013). Longer term, food insecurity among children is associated with impaired psychosocial and cognitive development, impaired educational attainment, and decreased economic productivity (Coleman-Jensen et al., 2013; Currie & Vogl, 2013). Other SDOH, such as poverty, high housing cost, low wages, and high unemployment, increase the risk of food insecurity (Wight et al., 2014).

A key aspect of food insecurity in the United States is racial disparity. Racial gaps in food insecurity are well documented (Odoms-Young & Bruce, 2018). Between 2001 and 2016, prevalence of food insecurity among non-Hispanic Black and Hispanic households was consistently over twice that of non-Hispanic White households (Odoms-Young & Bruce, 2018). Additionally, a study in South Carolina found that increases in the frequency of racial discrimination were associated with increases in the odds of being very low food secure (Odoms-Young & Bruce, 2018).

Geographic and Historical Context

Cleveland County is located along the southwestern border of North Carolina in the Piedmont region of the state (Hamrick et al., 2020). It is considered a rural county with two major population centers in Shelby and Kings Mountain (Hamrick et al., 2020). Historically, Cleveland County's economy relied on cotton and other agricultural activities; manufacturing and distribution now predominate the economy (Hamrick et al., 2020). County residents have multiple avenues for outdoor recreation, including two nearby state parks, Moss Lake, a section of the Carolina Thread Trail, and the Broad River Greenway (Hamrick et al., 2020). The Eat Smart Move More Coalition of Cleveland County maintains a public database of local resources to help residents locate spaces for physical activity, as well as hot meal sites and food pantries for food insecure residents (Hamrick et al., 2020). Despite these efforts, food access is marginal on the county level (6.9 out of 10 on the Food Environment Index) and particularly challenging for rural residents who rely on corner and dollar stores (Hamrick et al, 2020).

Cleveland County has a higher proportion of White residents than the state of North Carolina as a whole [see Appendix 5A Table 1]. Black residents are the next largest racial or ethnic group in Cleveland County (in roughly equivalent proportion to the state), while other

racial and ethnic minorities are underrepresented as compared to the state, as seen in Table 1 (see Appendix 5A). Among residents participating in the 2019 Cleveland County Community Health Assessment, poverty and low income was the top issue impacting quality of life in the county (Hamrick et al, 2020). This is reflected in county data which indicate a disproportionate burden of poverty in Cleveland County as compared to the state (20% and 16%, respectively) [see Appendix 5A Table 1]. Furthermore, approximately one third to one half of the households with children in Cleveland County live in poverty, as visualized in Table 1 (see Appendix 5A). The COVID-19 pandemic notably impacted county unemployment rates that from 4.7% in April 2019 to 12.7% in May 2020 (Hamrick et al., 2020). Grocery stores are largely concentrated in the more populous areas of Cleveland County, such as Shelby and Kings Mountain; residents of more rural municipalities generally rely on gas stations, corner stores, and Dollar Generals for food access (Hamrick et al., 2020).

Priority Population

Children (under 18 years) experiencing very low food security in Cleveland County are a priority population. Very low food security is the most severe manifestation of food insecurity and is characterized by "reports of multiple indications of disrupted eating patterns and reduced food intake" (Economic Research Service, 2020). People experiencing very low food security may experience hunger, skip meals, or go entire days without food (Coleman-Jensen et al., 2013). Very low food security is more common at the household level than at the level of an individual child; adults commonly shield children from the impacts of very low food security by reducing their own intake (Coleman-Jensen et al., 2013). However, in extreme circumstances, children will also experience hunger, skip meals, or go an entire day without food (Coleman-

Jensen et al., 2013). This is termed “very low food security among children” (Coleman-Jensen et al., 2013).

Measures of Problem Scope

As the most extreme manifestation of food insecurity, very low food security among children is less prevalent as compared to low food security among children (Coleman-Jensen et al., 2013). Of all households with children in the United States, an estimated 7.6% had low food security among children and 0.8% had very low food security among children in 2020 (Coleman-Jensen et al., 2021). This is significantly increased from 2019 levels of 6.5% and 0.6%, respectively (Coleman-Jensen et al., 2021). At the state level, though data is household-level and not stratified by severity, North Carolina experiences a higher burden of food insecurity among households with children (18.3%) as compared to the nation as a whole (14.6%) (Feeding America, n.d.). Furthermore, Cleveland County has a nearly 50% higher prevalence of food insecure households with children (23.2%) as compared to the nation overall (14.6%) (Feeding America, n.d.). The high burden of food insecurity for households with children in Cleveland County, taken together with the high burden of poverty for households with children (see Appendix 5A Table 1), suggests that very low food security among children may also burden Cleveland County (Feeding America, n.d.).

Rationale/Importance

Multiple factors suggest children in Cleveland County bear a disproportionate burden of poverty and food insecurity. Over half of Cleveland County Schools students participate in the free or reduced lunch program, and a higher proportion of households with children in Cleveland County experience food insecurity as compared to state or nationwide (Feeding America, n.d.; Hamrick et al., 2020). From a community perspective, a group of community members identified

poverty as the top issue impacting quality of life and access to better foods as the sixth most important service needing improvement (Hamrick et al., 2020). Furthermore, the short- and long-term outcomes of food insecurity among children are significant, including poorer academic performance, increased mental health conditions and chronic diseases, impaired cognitive development, and lower economic productivity later in life (Coleman-Jensen et al., 2013; Currie & Vogl, 2013). These outcomes both reinforce food security as a social determinant of health and intersect with other social determinants of health, such as education attainment, mental health, and poverty (Healthy People 2030, n.d.). As the most extreme manifestation of food insecurity, it is imperative to address very low food security among children in Cleveland County in order to create an environment that facilitates, not impedes, health at the individual and community level.

Disciplinary Critique

As dietitians and public health leaders, it is imperative to recognize racism as a public health issue closely intertwined with food insecurity among children. In North Carolina in 2019, Black (33%), Native American (33.9%), and Hispanic children (35.5%) were over three times as likely to live in a household experiencing poverty as compared to White children (11.8%) (Nichol & Hunt, 2021). Thus, the far-reaching impacts of food insecurity on educational attainment, mental and physical health, and income reinforce health disparities in Black, Hispanic, and Native American communities (Coleman-Jensen et al., 2013; Currie & Vogl, 2013; Odoms-Young & Bruce, 2018). When conceptualizing and addressing very low food security among children in Cleveland County, it is imperative to recognize the disproportionate burden of food insecurity on these communities and commit to finding solutions that promote health equity. To do so, public health leaders in Cleveland County must prioritize the

experiences and perspectives of Black and Hispanic communities in Cleveland County and meaningfully collaborate with those communities to design and implement effective, equitable interventions for very long food security among children.

APPENDIX 5A: DEMOGRAPHIC TABLES

Table 1

*Select Cleveland County and North Carolina State Demographics, 2019**

Measure	Cleveland County 2019	North Carolina 2019
Race (%)		
White	75.2	69.0
Black	20.8	21.5
Asian	2.2	5.4
Multi-racial	4.1	7.6
Hispanic/Latino	3.3	9.1
American Indian/Alaskan Native	0.3	1.4
Native Hawaiian/Pacific Islander	0	0.1
Households in Poverty (%)		
Total	19.9	16.1
With children	27.5	20.0
Single female with children	45.9	--

**Note:* Data from 2019 Census, as reported by the 2019 Cleveland County Community Health Assessment (Hamrick et al, 2020)

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Implementation Plan

Background Information

Social determinants of health (SDOH) are "conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks" (Healthy People 2030, n.d.). SDOH often intersect, forming a complex web of factors that facilitate or challenge health at the individual and community level. This proposal centers on decreasing very low food security among children, a key objective within the social and community context SDOH that has downstream impacts on educational attainment and hospitalizations. Food insecurity, a socioeconomic condition of "limited or uncertain access to adequate food," increases risk for a range of chronic diseases, such as hypertension, diabetes, and hyperlipidemia (Seligman et al., 2010). Food insecurity is associated with increased annual healthcare expenditures, lower economic productivity, and lower educational attainment (Berkowitz, Basu, et al., 2018; Coleman-Jensen et al., 2013). Cleveland County, a rural county along the southwestern border of North Carolina, is significantly impacted by poverty and food insecurity among children. One-third to one-half of households with children in Cleveland County live in poverty (Hamrick et al., 2020). Furthermore, Cleveland County has a nearly 50% higher prevalence of food insecure households with children (23.2%) as compared to the nation overall (14.6%) (Feeding America, n.d.; Hamrick et al., 2020).

Purpose

Very low food security is the most severe manifestation of food insecurity and is characterized by "reports of multiple indications of disrupted eating patterns and reduced food intake" (Economic Research Service, 2020). Children experiencing very low food security may

experience hunger, skip meals, or go entire days without food (Coleman-Jensen et al., 2013). In the short term, food insecurity among children is associated with increased hospitalizations, behavioral problems, chronic health conditions, anxiety and depression, and nutritional deficiencies, as well as poorer health, physical functioning, and educational achievement (Coleman-Jensen et al., 2013). In the long term, food insecurity among children is associated with impaired psychosocial and cognitive development, impaired educational attainment, and decreased economic productivity (Coleman-Jensen et al., 2013; Currie & Vogl, 2013). The proposed program aims to decrease very low food insecurity among children in Cleveland County by providing monetary benefits during school holidays to children who qualify for free and reduced lunch.

Evidence Based Outcomes

Short-term outcome objectives

1. Outcome Objective: By June 30, 2024, 40% of students in Cleveland County Public Schools who qualify for free or reduced lunch will receive Summer Electronic Benefit Transfers (SEBT) monthly during the summer holiday. This is based on the 23-57% participation rate among sites who participated in the USDA's pilot of a similar program (Collins et al., 2016).
2. Health Objective: By June 30, 2024, very low food security among program participants will decrease 30% from baseline, based on the 30% decrease of very low food security among children in the USDA pilot of a similar program (Collins et al., 2016).

Long-term impact

1. Goal Statement: By June 30, 2032, the four-year graduation rates of economically disadvantaged children in Cleveland County Public Schools will increase 6% from

baseline of 85% (based on 2019 graduation data for Cleveland County Schools) (*Cleveland County Schools 2019-20 District Profile*, n.d.).

2. Health Outcome: By June 30, 2032, average length of stay for hospitalized food insecure children in Cleveland County will decrease 20% from baseline. This is a conservative goal based on data suggesting hospital length of stay for patients from food insecure households is roughly 50% higher than length of stay for patients from food secure households (Berkowitz, Seligman, et al., 2018; de Cuba et al., 2018).

Strategies and Activities

The proposed intervention (SEBT-CC) will provide a $60 monthly benefit during school summer break to children in Cleveland County Public Schools who are eligible for free and reduced lunch (Collins et al., 2016). This intervention is based on the USDA's Summer EBT for Children pilot program, which took place in 11 states and the Indian Tribal Organizations between 2011 and 2014 (Collins et al., 2016). The proposed intervention will also distribute $15 per week benefits during school calendar breaks of two weeks or greater, including December holiday leave and year-round school extended breaks. Families of children who qualify for free and reduced lunch will be contacted by school system staff and asked to fill out an information and consent form (Collins et al., 2016). Electronic Benefits Transfer (EBT) cards will be mailed to participating households and funds uploaded to each household's account monthly (Collins et al., 2016). The bulk of benefit distribution will take place during June, July, August, and December, when the majority of Cleveland County Schools students are on leave (Cleveland County Schools, n.d.). Specialty programs, including Cleveland County Early College High School and Graham Elementary School, operate on modified schedules (Cleveland County

Schools, n.d.). The students in these schools will receive $15 per week benefits during school calendar breaks of two weeks or greater, equivalent to $60 per month of benefits.

Food insecure children have less access to subsidized meals during school breaks than during the school year. (Food Research & Action Center, 2019). While the Summer Food Service Program (SFSP) addresses summer gaps in food access for children, its reach is limited; only 14% of children who receive free or reduced lunch during the school year also receive meals in the summer (Food Research & Action Center, 2019). The low utilization of the SFSP is attributed to logistical barriers, including transportation and limited hours of operation (Collins et al., 2016). The proposed program aims to help fill in the summer gap in food access by providing a monthly benefit ($60) during the summer that is roughly equivalent to what the National School Lunch Program provides in free breakfasts and lunches during the school year (Gordon et al., 2017). In an SEBT demonstration program, 23% to 57% of eligible households participated in the program and the majority (84-96%) of participating households utilized the provided benefits, indicating higher utilization than the SFSP (Gordon et al., 2017). Furthermore, evaluation of the SEBT demonstration program indicated that the $60 monthly benefit during the summer months reduced very low food security among children by 30% from baseline (Collins et al., 2016). This was measured using the United States Department of Agriculture (USDA)'s Household Food Security Survey with a 30-day reference period (Gordon et al., 2017). The proposed program primarily addresses the societal and community level of the socioecological model (Appendix 5B, Figure 1). The proposed program would change current policies related to EBT fund disbursement by providing additional funds to households with children during school breaks, which corresponds to the societal level of intervention. The policy changes related to EBT fund disbursement are also inherently linked to schools, as this program collaborates with

schools to identify and enroll children and serves to fill in the gaps in school food service as a crucial site of food access. The heavy involvement of the schools corresponds to the community level of the socioecological model. The expected reach for this program is 3,320 students annually, based on a goal utilization percentage of 40% and an estimated 8,298 students in Cleveland County Schools who are eligible for free and reduced lunch (Collins et al., 2016; Hamrick et al., 2020). The goal utilization percentage was selected as the midpoint in the utilization range of sites in the SEBT demonstration project (23-57%) (Collins et al., 2016).

Stakeholders

Households with children who are very low food secure are primary stakeholders. These households are important to include in the program planning and implementation process to ensure that the intervention is most tailored to their needs. This stakeholder will provide perspective on how well the proposed intervention addresses their needs, challenges and barriers to utilization, and idea to address those barriers. Other stakeholders are Cleveland County Schools social work and school nutrition staff. These stakeholders will identify eligible children, process participant information, and manage program execution throughout the duration of the intervention. These stakeholders are also familiar with their student population and may have insight into how to best identify and contact eligible students' caretakers. Cleveland County Food and Nutrition Services (FNS) and Women Infants and Children (WIC) departments are important stakeholders because the program aims to align benefit distribution with existing SNAP and WIC accounts. These stakeholders will design and implement logistics related to benefit distribution. Cleveland County Health Department and North Carolina Department of Health and Human Services are also key stakeholders because their infrastructure, institutional knowledge, and community relationships are foundational in implementing the proposed

intervention. These stakeholders will collaborate with FNS and WIC to design and implement benefit distribution, as well as securing funding sources. Cleveland County Commissioners are key stakeholders because they will approve the program, assist with securing funding, and help manage public opinion of the program.

Budget

Previous pilots of the SEBT program demonstrated an average of 30% administrative costs in addition to raw benefit costs (Collins et al., 2016). Based on expected reach of 3,320 students per year, $60 per month benefit, and an estimated 14 weeks of benefit-eligible holiday leave per year, this program will distribute $697,200 in benefits annually ($210 per participant) (Cleveland County Schools, n.d.; Collins et al., 2016; Hamrick et al., 2020). With an additional 30% in administrative costs ($209,160), this program will cost an estimated $906,360 annually. Administrative costs include EBT cards, mailing EBT cards and forms, program staff, and overhead costs such as space, computers, software, and office supplies.

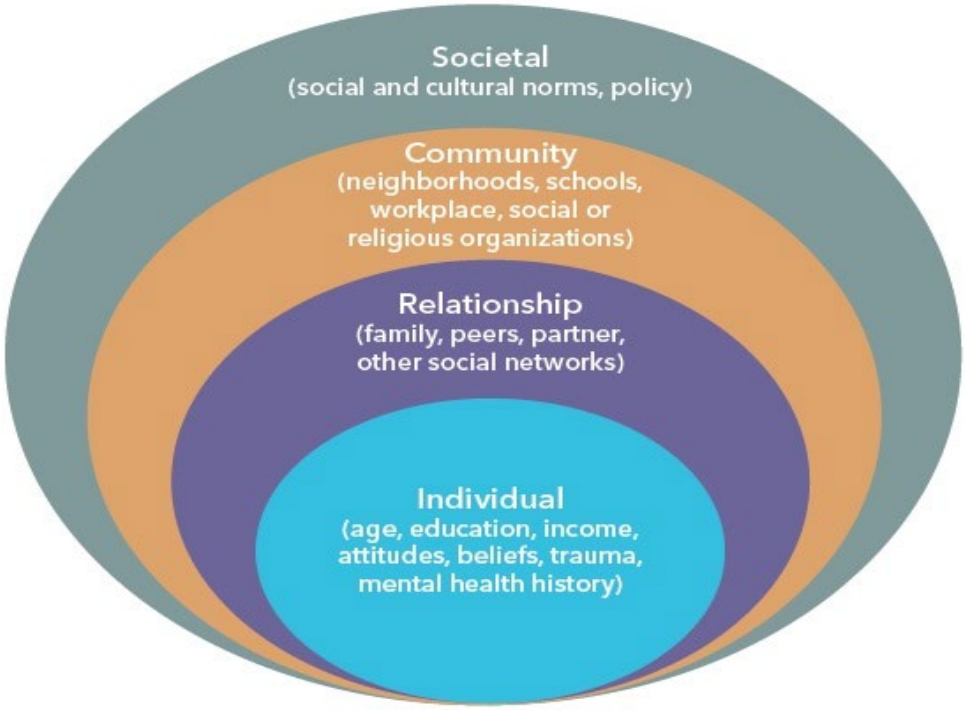
Conclusion

The proposed intervention makes a key tradeoff by focusing specifically on school-aged children, rather than all Cleveland County residents who are food insecure. The justification for this tradeoff is that children are developmentally most vulnerable to the effects of food insecurity (Coleman-Jensen et al., 2013; Currie & Vogl, 2013). Working within a system of limited resources, it is both ethical and an efficient use of monetary resources and social support to focus on those most impacted by the issue. Disadvantages of the proposed solution are that it does not address the root cause of insufficient household funds for food and that the effect on children may be dampened due to shared benefits among all household members. Advantages of the proposed solution are that it is an evidence-based intervention to decrease very low food security

among children (per SEBT-C pilot), it allows households to select preferred, culturally appropriate foods, it promotes health equity by addressing a public health problem with documented racial disparities, and it addresses documented gaps in the social support system for children (Food Research & Action Center, 2019; Odoms-Young & Bruce, 2018).

APPENDIX 5B: SOCIOECOLOGICAL MODEL

Figure 1: The socioecological model (Safe States Alliance, n.d.)



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Evaluation Plan

Intervention Summary

Social determinants of health (SDOH) are "conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks" (Healthy People 2030, n.d.). This proposal centers on decreasing very low food security among children, a key objective within the social and community context SDOH that has downstream impacts on educational attainment and hospitalizations (Berkowitz et al., 2018; Coleman-Jensen et al., 2013; Smith et al., 2020).[5] Summer Electronic Benefits Transfer in Cleveland County (SEBT-CC) aims to decrease very low food insecurity among children (VLFS-C) in Cleveland County by providing monetary benefits equivalent to $60 per month during school holidays to children who qualify for free and reduced lunch. This intervention is based on the United States Department of Agriculture's (USDA) Summer Electronic Benefit Transfer (EBT) for Children pilot program, which operated in 11 states and Indian Tribal Organizations between 2011 and 2014 (A. M. Collins et al., 2016). The proposed intervention will also distribute $15 per week benefits during school breaks of 2 weeks or longer. Eligible families will be contacted by school system staff and asked to fill out information and consent forms (Collins et al., 2016). EBT cards will be mailed to participating households and funds uploaded to each household's account monthly (Collins et al., 2016). The primary short-term outcomes are percent of qualifying Cleveland County Schools students who receive SEBT-CC and change in VLFS-C among participating children (Collins et al, 2016). The primary long-term outcomes are change in four-year graduation rates of economically

[5] Very low food security is the most severe manifestation of food insecurity and is characterized by "reports of multiple indications of disrupted eating patterns and reduced food intake" (Economic Research Service, 2020). People experiencing very low food security may experience hunger, skip meals, or go entire days without food (Coleman-Jensen et al., 2013).

disadvantaged children in Cleveland County and change in length of stay for hospitalized food insecure children in Cleveland County (*Cleveland County Schools 2019-20 District Profile*, n.d.; de Cuba et al., 2018; Secker & Jeejeebhoy, 2007; Topal & Tolunay, 2021). This is based on evidence that food insecurity is associated with decreased academic attainment and increased hospital length of stay (de Cuba et al., 2018; Coleman-Jensen et al, 2013; Secker & Jeejeebhoy, 2007; Topal & Tolunay, 2021).

Evaluation Plan

Outcome of Interest

By June 30, 2024, VLFS-C among program participants will decrease 30% from baseline, based on the 30% decrease of VLFS-C among participants in the USDA pilot of a similar program (Collins et al., 2016).

Study Design and Data Collection

The program will be implemented for 3 years. Identical pre- and post-test surveys will document outcomes in a random sample of 50% program participants' caretakers [Appendix A] (A. Collins et al., 2014). The pre- and post-test will assess food security status of children in the household using the USDA Household Food Security Survey Model for children, a validated tool to assess food insecurity among children (A. Collins et al., 2014; Marques et al., 2015). The pretest will be administered within the first month of school (August) following Cleveland County Schools' summer break and prior to program start. The posttests will be administered 12, 24, and 36 months from the pretest. We will also collect data annually from EBT accounts related to funds dispersed and funds used (A. Collins et al., 2014).

Sample and Sampling Strategy

SEBT-CC participants will be randomly selected to participate in the evaluation to minimize risk of selection bias. Randomization will occur via a random number generator. Evaluation participants will be selected prior to program start so that baseline data may be collected at the same time as program enrollment, minimizing participant burden.

Specific Measures

Specific evaluation measures are pulled from the USDA Household Food Security Survey Model for children [Appendix 5C] and are based on the USDA's demonstration program evaluation measures (A. Collins et al., 2014). A score of 5 points or higher on the Household Food Security Survey Model is indicative of very low food security among children (Collins et al., 2014). A score of 2-4 points is indicative of food insecurity among children in the household (Collins et al., 2014). A score of 0 or 1 points is indicative of food security among children in the household (Collins et a., 2014).

Outputs

Key outputs are the amount of funding dispersed, percent of funds used, number of participants reached, number of unique households reached, and percent of eligible children who participate. The primary outcome is change in prevalence of very low food security among participants. To identify racial disparities in program impact, change in prevalence of very low food security among participants, percent of funds used, and percent of eligible children who participate will be stratified by racial and/or ethnic group.

Timing

Baseline data will be collected during program registration and follow-up data at month 12, 24, and 36 of program implementation. Data from months 12 and 24 will be used to generate

progress reports related to program impact. Based on data from the USDA demonstration programs, progress is defined as enrolling at least 40% of eligible children in the program, participant utilization of at least 75% of dispersed funds, and decreasing very low food security among participating children by 30% (A. Collins et al., 2014). Failure to meet goals based on month 12 or month 24 data analysis will result in additional data collection via focus groups with stakeholders to identify barriers to programmatic effect and generate solutions.

Analysis Plan

Descriptive statistics will be utilized for analysis. The primary outcome will be analyzed by comparing change in prevalence of VLFS-C from baseline to month 36 of program implementation. The percent of total dispersed funds used by participants, the percent of households who utilized 75% or greater of dispersed funds, and the percent of eligible children whose households enrolled in the program will also be assessed. If focus groups are conducted based on preliminary data analysis, a content analysis of focus group transcripts will be conducted to identify themes in stakeholder responses.

Sources of Funding

USDA funding, federal EBT funding, and Cleveland County Social Services funding will be used for this intervention and evaluation.

Sustainability and Timeline

After three years of implementation, the program will be assessed for intended impact. Based on the assessment of program impact, a decision will be made regarding if the program should continue in the future.

Data Use and Dissemination

Data will be used to assess programmatic success, identify any subgroups of participants for whom program impact is blunted, and make applicable changes to the program for the future. Data will also be shared via a program report that is publicly accessible on the websites and social media channels of Cleveland County Schools, Cleveland County Food and Nutrition Services, and Cleveland County WIC. The purposes of publicly sharing the program report are to provide insights to other school systems who are considering similar programs and to share progress with stakeholders.

Strengths and Challenges

A strength of this evaluation design is that it has a low burden on participants and caregivers. Participants' caregivers will fill out the brief pretest survey during program enrollment, creating a streamlined process. The pretest and posttest surveys will be identical and post-test surveys will be filled out annually during program implementation. A challenge of this evaluation design is that it does not randomize program participation (treatment) and non-participation (control) among all eligible children. Rather, this evaluation design compares post-program data to baseline data among participating children only. The lack of randomized treatment and control group limits the ability of the evaluation to draw conclusions about causality. Additionally, outside factors, such as economic changes in the county or concurrent public health interventions, may impact program results.

Potential Impact

This intervention has the potential to decrease very low food security among children, increase four-year graduation rate of economically disadvantaged children in Cleveland County,

and decrease length of stay for hospitalized food insecure children in Cleveland County (de Cuba et al., 2018; Coleman-Jensen et al, 2013; Secker & Jeejeebhoy, 2007; Topal & Tolunay, 2021)..

APPENDIX 5C: SURVEY

1. [I/We] relied on only a few kinds of low-cost food to feed [my/our] [child/children] because [I was/we were] running out of money to buy food.
    a. 1 = often/sometimes
    b. 0=never true
2. [I/We] couldn't feed [my/our] [child/children] a balanced meal, because [I/we] couldn't afford that.
    a. 1 = often/sometimes
    b. 0=never true
3. [My/Our/The] [child was/children were] not eating enough because [I/we] just couldn't afford enough food.
    a. 1 = often/sometimes
    b. 0=never true
4. In the last 30 days, did you ever cut the size of [your child's/any of the children's] meals because there wasn't enough money for food?
    a. 1=yes
    b. 0=no
5. In the last 30 days, did [your child/any of the children] ever skip meals because there wasn't enough money for food?
    a. 1=yes
    b. 0=no
6. In the last 30 days, how many days did this happen?
    a. 1= >/= 3 days
    b. 0= < 3 days

7. In the last 30 days, was [your child/were your children] ever hungry but you just couldn't afford more food?
    a. 1=yes
    b. 0=no
8. In the last 30 days, did [your child/any of the children] ever not eat for a whole day because there wasn't enough money for food?
    a. 1=yes
    b. 0=no

Per the Household Food Security Survey Model for Children, a score of 5 points or higher is indicative of very low food security among children (VLFS-C). A score of 2-4 points is indicative of food insecurity among children in the household (Collins et al., 2014).

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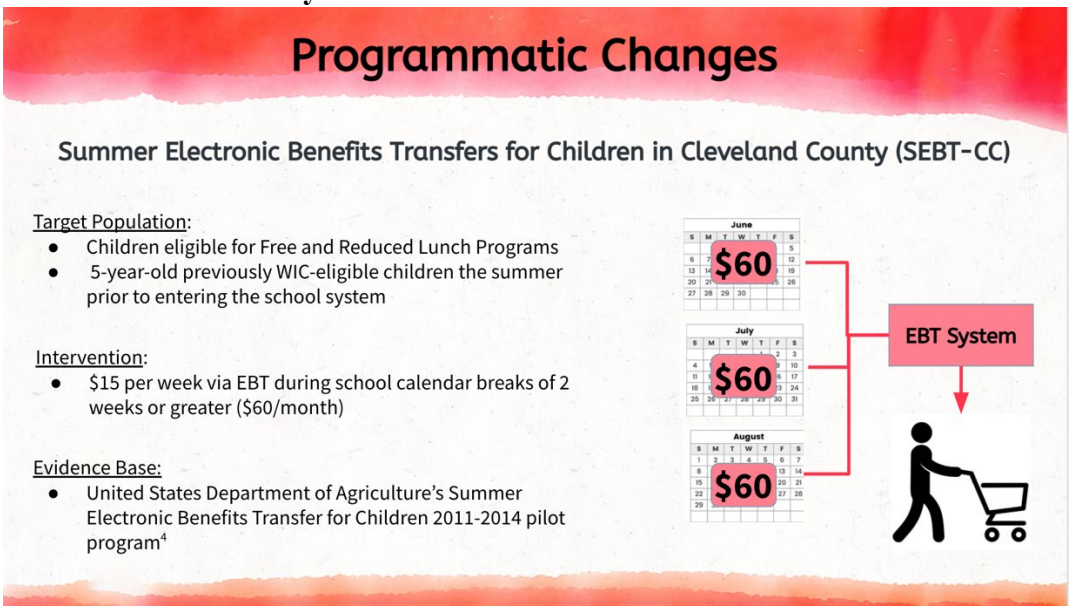
Presentation to County Commissioners



Script:

The intervention we proposed to address very low food security among children in Cleveland County was a Summer Electronic Benefits Transfer program. This program includes children enrolled in Cleveland County Public Schools who are eligible for free and reduced lunch, and any 5 year old children who were eligible for WIC prior to aging out but have not started kindergarten yet. Program participants will receive funds for food via EBT card during summer months, when school is out of session, and during any break in the school year that is greater than or equal to 2 weeks. Funds will be prorated based on the length of the break, with the baseline of $15/week or $60/month per participant. We also did want to note that some schools in Cleveland County operate on modified, or year-round, schedules, and those children will be able to participate in the program and will receive funds equal to $15/week for any break of 2 weeks or greater. This program is based on the USDA's summer EBT for children pilot programs that were conducted 2011-2014. These programs were found to be highly effective in decreasing food insecurity among children, and they specifically found that the $60/month benefit reduced very low food security among children by 30%. Evaluation data also noted that 90% of enrolled participants utilized the monetary benefits and that a total of 75% of benefits were utilized. Taken together, these results suggest this approach is both acceptable to participants and effective.

APPENDIX 6: KIRSTEN SIEBENGA'S INDIVIDUAL DELIVERABLES
Problem Statement

Social Determinant of Health

Social and community context is a core social determinant of health (SDOH). Our relationships with our family, neighbors, and the greater community around us all have profound impacts on our health. One objective identified under the scope of this social determinant is, very low food security in children (Healthy People 2030, n.d.). This should be a pressing concern for public health experts and communities everywhere because of the short- and long-term impacts food insecurity has on children's health and well-being. Very low food insecurity is defined by the United State Department of Agriculture as, "reports of multiple indications of disrupted eating patterns and reduced food intake" (USDA, 2021). Among children, low food security was associated with an increased likelihood of anemia, consumption of fewer essential nutrients, oral health issues and cognitive problems (Gundersen and Ziliak, 2015). Food insecure children from homes living in poverty had twice the odds of also having asthma (Magini et al. 2015). Outside of impacts on the physical body, childhood food insecurity can negatively influence a student's ability to learn "soft social skills," like connecting with their peers (McIntyre et al. 2013). In a large national study, food-insecure children's non-cognitive development, or behaviors like making friends, expressing their emotions, self-control, and even their approach to learning was negatively impacted (Howard, 2011).

Over time, very low food insecurity can have long-term impacts on a child's health as the relationship between food insecurity in children and obesity has been well established (Kaur et al. 2015). The Centers for Disease Control and Prevention warn that obesity can lead to hypertension, high cholesterol, Type II diabetes, heart disease, stroke, and certain types of cancers (CDC, 2020). Childhood obesity is a concerning issue because children who are obese

have an increased risk of being obese in adulthood (Singh et al. 2008). In one study, using data from the National Health and Nutrition Examination Survey (NHANES), children who reported being food insecure were nearly twice as likely to be obese compared to their non-food insecure classmates (Kaur et al. 2015). In part, food insecurity can develop irregular eating patterns as children are unsure where their next meal will come from (Tester et al. 2016). This can cultivate binge eating behaviors in adulthood contributing to obesity. Over time, very low food insecurity can have long-term impacts on one's health.

Beyond physical health, food insecurity can have damaging effects on a child's mental health. Childhood food insecurity is a risk factor for mental health conditions like depression and suicidal ideation later in life (McIntyre et al. 2013). In a large study, using over 10 years of data from the National Longitudinal Survey of Children and Youth in Canada, researchers found a relationship between experiencing food insecurity in childhood and developing some mental health issues as adolescents and adults (McIntyre et al. 2013). Food insecure children were nearly three times more likely to experience depression and suicidal ideation later in life compared to their non-food insecure classmates (McIntyre et al. 2013).

Geographic and Community Context

Cleveland County, North Carolina is a largely rural region in the southern part of the state. In the 2020 census, Cleveland County had a population of around 99,500 (US Census Bureau, 2021). The county's primary industry is manufacturing, while other industries include textiles, and mining (Cleveland County Economic Partnership, 2019). As a largely working-class community, the median household income was lower than the state average at around $42,247 (US Census Bureau, 2021).

The 2019 Cleveland County Health Assessment is a report that was put together by stakeholders in the county to list health priorities and develop of a vision for the future of the county. The 2019 health assessment identified the primary health concerns in Cleveland County as tobacco use, teen birth rate, and limited access to healthy food (Cleveland County Health Department, 2019). The food environment in Cleveland County has shown some modest improvement from 2014 as measured by the food index (Cleveland County Health Department, 2019). The food index is scored 0 to 10 based on the food environmental factors like distance to the grocery store (Cleveland County Health Department, 2019).

While Cleveland County improved the food index from 6.7 in 2014, to 6.9 in 2019, there are still real challenges for Cleveland County residents accessing food (Cleveland County Health Department, 2019). Cleveland County is a largely rural region, and grocery stores are limited to the more populated towns like Shelby, Kings Mountain and Boiling Springs, leaving the other parts of the county without access to a grocery store. These rural communities then depend on gas stations, corner stores, and Dollar Generals to support their food needs (Cleveland County Health Department, 2019). Current and previous efforts to better support the food environment and the food insecure population in Cleveland County have primarily included hot lunch programs and food pantry programs hosted once or twice a week at various churches around the county (Live Healthy Cleveland County, 2018). There has not been any attempt by the state or county public health department to address this on a large scale.

Priority Population

The priority population for this social determinant of health is children under 18 years of age. In Cleveland County, around 22% or 22,000 children of the population are under 18 years (US Census Bureau, 2021). This is roughly the same percentage as the North Carolina average

(US Census Bureau, 2021). Demographically, Cleveland County is composed of 75% white residents, while Black (20%), Asian (1%), Hispanic or Latino (4%) fill out the rest of the county (US Census Bureau, 2021).

Measure and Scope of the Problem

NC Child, a prominent childhood advocacy organization, reported that in 2018, around 23% of children lived in a household that was food insecure in Cleveland County (2021). While nearly 60% of children were from poor or low incomes homes (NC Child, 2021). Cleveland county is a working-class community that reports that 56.3% of children are from poor or low-income homes compared to the North Carolina state average of 44.5% (NC Child, 2021). Covid-19 has surely only exacerbated the level of very low food insecurity in the county, as nationally the trends of food insecurity have more than tripled (Wolfson and Leung, 2020). In the spring of 2020, food insecurity in the US had ballooned from 10.5 to 38% in the U.S population (Wolfson and Leung, 2020). Covid-19 has had a compounding effect of socio-economic factors like job loss paired with the safety challenges that Covid-19 poses for those using public transportation to access food (Center on Budget and Policy Priorities, 2021). While there isn't any data on how Covid-19 has impacted very low food insecurity in Cleveland County specifically, we can assume that it has a similar effect on food insecurity in the community.

This problem disproportionately falls on communities of color and their children. Families of color are twice as likely to be food insecure compared to white families (Odoms-Young, 2018). Due to connection between childhood food insecurity and chronic conditions like asthma and obesity, the implications of food insecurity only continue to burden these communities into adulthood.

Rationale

The impacts of food insecurity can follow a child into adulthood and put them at an increased risk for becoming obese as adults (Singh et al. 2008). In addition, food insecurity has a negative effect on childhood social development and mental health (Howard, 2011) (McIntyre et al. 2013). Food insecurity is an ongoing challenge and priority for Cleveland County residents as evidenced by their county health assessment (Cleveland County Health Department, 2019). In light of the Covid-19 pandemic, very low childhood food insecurity has likely only been exacerbated and disproportionally burdens families of color. The ramifications of childhood food insecurity, if not addressed, will continue to weigh on the current community and future generations in Cleveland County.

Disciplinary Critique

Food insecurity disproportionality impacts low-income children and families (Coleman-Jensen et al., 2017). In the United States, 31.6% of low- income homes reported food insecurity or nearly 3 times the national average (Coleman- Jensen et al., 2017). Low- income communities of color disproportionately carry this burden as Black families were twice as likely to report food insecurity compared to the rate nationally (Coleman- Jensen et al., 2017). This issue should be a key policy priority because the effects of childhood food insecurity follow children into adulthood showing up as an increased risk of obesity, depressive symptoms, and a decreased rate of college graduation (Singh et al. 2008) (McIntyre et al. 2013) (Wolfson et al., 2021). Failing to address food insecurity in Cleveland County will result in perpetuating cycles of poverty among low-income populations and communities of color.

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Policy Analysis

Background Information

Food insecurity during childhood is associated with negative health outcomes including an increased likelihood of anemia, consumption of fewer essential nutrients, oral health issues and cognitive problems (Gundersen and Ziliak, 2015). Food insecure children are less likely to graduate from college compared to their non-food insecure classmates (Wolfson et al. 2021). College graduation is a key indicator of future socioeconomic status as students who graduate from college have a higher median annual earning (Broady and Hershbein, 2020). Childhood food insecurity can also negatively influence a student's ability to learn "soft social skills," like connecting with their peers (McIntyre et al. 2013). Children's non-cognitive development, or behaviors like making friends, expressing their emotions, self-control, and even their approach to learning was negatively impacted by food insecurity (Howard, 2011). The impacts of childhood food insecurity don't end in childhood. Children who experience food insecurity are twice as likely to be obese as adults (Kaur et al. 2015). This is concerning because obesity has been associated with an increased risk of chronic diseases like heart disease and stroke (CDC, 2020).

In Cleveland County, North Carolina 23% of children come from food insecure homes, higher that the North Carolina state average of around 21% of children (NC Child, 2021). Access to food was identified as a top health priority within the county in 2019 in the Cleveland County Health Assessment (Cleveland County Health Department, 2019). Cleveland County is a largely working-class community and the median household income was lower than the state average at around $42,247 (US Census Bureau, 2021).

Short Description of Policy Options

The Supplemental Nutrition Assistance Program (SNAP) is a federal nutrition program that provides money for eligible individuals and families to use for food purchases

("Supplemental Nutrition Assistance Program", n.d.). The amount that eligible individuals receive is calculated by the number of qualified individuals in a household and the household's income (United States Department of Agriculture, 2021). SNAP benefits are not designed to cover an individual or family's full cost of food, but rather serve as a financial "supplement" (Carlson et al., 2021). For many families SNAP benefits are not enough of a supplement, as beneficiaries spent 50% of their SNAP dollars within one week of receiving them (Carlson et al., 2021). SNAP participants are more likely to go without eating later in the month when their SNAP benefits run out (Hamrick and Andrews, 2016). Additionally, students are more likely to have behavior and lower academic performance at school later in the month (Carlson et al. 2021).

One promising program that has been shown to increase the purchase of fruits and vegetables, while giving SNAP participants the financial means to do so, is the Health Incentives Pilot (HIP). HIP is a program that gives SNAP participants an extra 30 cents back on their SNAP card for every SNAP dollar spent on fruits and vegetables (USDA, 2014). The program gives SNAP participants more financial means to purchase fruits and vegetables (USDA, 2014). Participating households reported eating more fruits and vegetables than non- participants (USDA, 2014).

Another potential solution is working with schools and the National School Lunch Program. The National School Lunch Program is the second largest food assistance program in the United States behind SNAP (United States Department of Agriculture, 2022). In North Carolina, 57% of students on average were eligible for free breakfast and lunch through the program (National Center for Educational Statistics, 2018). Beginning in 2014-2015 school year under the Community Eligibility Provision (CEP), eligible schools could provide free school

meals, breakfast and lunch, to all students regardless of whether they individually qualify (Crittenden- Fuller and Hedrick- Weant, 2021). CEP also reduces administrative burdens to schools and to families because households don't need to reapply for the program each year (Crittenden- Fuller et al., 2021). To participate in the CEP program, schools must report around 65% or more students that eligible for free and reduced lunch (Fuller et al. 2021).

In 2018-2019 school year, 67% of Cleveland County students were eligible for free and reduced lunch making them eligible to participate in CEP ("North Carolina", 2022). The CEP would expand free school meals to all students in the Cleveland County School district. While individual schools in Cleveland County participate in the program, the whole school district does not currently participate in the CEP program leaving out 10 eligible schools or a total of 6,050 eligible students in the county (North Carolina Department of Public Instruction, 2021). The outcomes of the program are promising as schools that used the CEP in North Carolina saw more school meals served, fewer absences, and even higher tests scores (Fuller and Comperatore, 2020).

The criteria used to evaluate these two policy options, expanding the Healthy Incentive Pilot and implementing the CEP to the Cleveland County School District include: political feasibility, cost to the county, impact on the problem, and equity.

Analysis of Different Options

Healthy Incentives Pilot

The HIP was implemented in a low-income county in Massachusetts where 7,500 SNAP participants were randomly selected to take part in the pilot program (USDA, 2014). The HIP resulted in participants increasing their fruit and vegetable intake by over 25%, compared to those not enrolled in the HIP (USDA, 2014). Those enrolled in the pilot program spent more of

their SNAP dollars on fruits and vegetables (USDA, 2014). The average monthly incentive participants received from purchasing fruits and vegetables was an extra $3.65 each (USDA, 2014).

This policy was evaluated based on four criteria: political feasibility, cost to the government, impact on the problem, and equity. Political feasibility for this policy is lower than for the school meal program because the policy is for all SNAP participants not just children. Conservative legislators may feel that some SNAP participants are "undeserving" of the extra funds. The cost to the government for the incentive part of the program would range from 6 to 31 cents per household per day. In Cleveland County, around 19,000 residents participate in SNAP. Using the USDA estimates as a guide, the cost of SNAP incentives in Cleveland County would range between $2,146,200- $11,088,700 per year. This is more expensive than the school meal program discussed below. The impact this policy has on the problem is unknown. Research shows participants in the HIP spent more of their SNAP funds on fruits and vegetables opposed to other processed foods. But it is unclear how this program directly impacts childhood food insecurity. Finally, equity is higher for this policy as it is only supporting low-income individuals who qualify for SNAP.

Stakeholders in favor of this policy would be the food assistance programs in Cleveland County. They would be in-favor of expanding the financial means of this population to purchase food. A stakeholder opposed to this policy proposal would be the Cleveland County Republicans. The Cleveland County Republicans is a conservative group that has historically been opposed to the expansion of need-based programs.

Community Eligibility Provision

In schools in North Carolina that have implemented CEP, the number of school breakfast and lunches rose by 18 and 20 meals on average per student respectively (Crittenfuller et al., 2021). CEP helps contribute to an equitable environment where all students have equal access to school meals. In North Carolina, CEP participating schools were composed of more schools with 80-85% low-income students (Crittenfuller et al. 2021). Eligibility for CEP in North Carolina is based on an identified student percentage (ISP) of above 40% (Crittenfuller et al. 2021). This percentage is unique from a schools free and reduced lunch percentage and instead is based on the percentage of student enrollment in multiple social programs including SNAP, TANF, the foster care program, or other criteria (Crittenfuller et al. 2021). Other states have had similar success with implementing free school meals and have seen an uptick in both the number of breakfasts and lunches served; in part, this may decrease the stigma associated with getting free meals at school (Leos-Urbel et al. 2013). In New York, after implementing free schoolwide breakfast, there was a 33% increase in breakfasts served among low-income students (Leoa-Urbel et al. 2013).

This policy is politically more feasible than the SNAP option because some schools in Cleveland County have already implemented CEP. Other counties in North Carolina have implemented CEP in entire school districts and had similar success. The cost to the local government would be limited. Under CEP, Federal reimbursement is calculated by taking the ISP multiplied by 1.6 (National Conference of State Legislature, n.d.). On average in Cleveland County, this would equate to the schools only being responsible for roughly 10.8% of the students' lunch at the paid rate of .35 cents per lunch ("National School Lunch", 2021). In 2021, there were 6,050 students at eligible schools who were not participating in CEP. The cost to

expand free lunch to those students would be roughly $400,000 for one school year. The impact on equity would be lower than the HIP program as all students benefit from this policy solution.

A community stakeholder in favor of this proposal would be the Feeding Kids in Cleveland County Food Program. This program provides backpacks with food for students over weekends and holiday breaks and they would strongly support this proposal. There are not many stakeholders that will be actively opposed to feeding hungry students, but it would be important to consider conservative groups, like Cleveland County Republicans, who may think this proposal is financially irresponsible.

Final Recommendation

Addressing childhood food insecurity in Cleveland County is a complex issue that would benefit from multiple policies and programs as it is a multidimensional issue. From this policy analysis, implementing CEP in the Cleveland County School District is the most beneficial solution to addressing childhood food insecurity based on our policy evaluation criteria. In North Carolina, communities that implemented CEP increased the number of school meals served to students while also seeing improvement in student attendance and even test scores (Fuller and Comperatore, 2020).

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Budget and Budget Narrative

Table 1

Community Eligibility Provision Program Budget

	Year 1	Year 2	Year 3	Total (Years 1-3)
Direct- Personnel Expenses				
Salaries	**$38,500.00**	**$16,830.00**	**$17,166.50**	**$72,496.50**
Fringe Benefits (30%)	**$11,550.00**	**$5,049.00**	**$5,149.95**	**$21,748.95**
Personnel Total	**$50,050.00**	**$21,879.00**	**$22,316.45**	**$94,245.45**
Direct-Non-Personnel				
Cost of School Meals	**$9,604,800.00**	**$9,604,800.00**	**$9,604,800.00**	**$28,814,400.00**
Printing, copying	**$10,000.00**	**$10,000.00**	**$10,000.00**	**$30,000.00**
Non-Personnel Total	**$9,614,800.00**	**$9,614,800.00**	**$9,614,800.00**	**$28,844,400.00**
Total Direct Costs	**$9,664,850.00**	**$9,636,679.00**	**$9,637,116.45**	**$28,938,645.45**
Total Indirect Costs	**$0.00**	**$0**	**$0**	**$0.00**
Total Direct and Indirect Costs	**$9,664,850.00**	**$9,636,679.00**	**$9,637,116.45**	**$28,938,645.45**
Income				
Federal Reimbursement	**8,529,062**	**8,529,062**	**8,529,062**	**25,587,187**
County Grant	**$1,117,153**	**$1,117,153**	**$1,117,153**	**$3,351,459**
Total	**$9,646,215**	**$9,646,215**	**$9,646,215**	**$28,938,646**

Table 2

Community Eligibility Provision Full Time Equivalent Years 1-3

	Year 1 FTE	Year 2 FTE	Year 3 FTE
Director of Nutrition Services Cleveland County Schools	**0.1**	**0**	**0**
Supervisor of Nutrition Services Cleveland County Schools	**0.25**	**0**	**0**
Nutrition Administrative Assistant Cleveland County Schools	**0.25**	**0.25**	**0.25**
Nutrition Administrative Assistant Cleveland County Schools	**0.25**	**0.25**	**0.25**
Total	**0.85**	**0.5**	**0.5**

Table 3

Community Eligibility Provision Full Time Equivalent Years 1-3 Cost Allocation

Community Eligibility Provision Staff-Salaries	Salary Year 1	Total FTE for CEP Year 1	CEP Salary Cost Year 1	Salary Year 2 (2% Increase)	Total FTE for CEP Year 2	CEP Salary Cost Year 2	Salary Year 3 (2% Increase)	Total FTE for CEP Year 3	CEP Salary Cost Year 3
Director of Nutrition Services Cleveland County Schools	$75,000.00	0.1	$7,500.00	$76,500.00	0	0	$78,030.00		$0.00
Supervisor of Nutrition Services Cleveland County Schools	$58,000.00	0.25	$14,500.00	$59,160.00	0	0	60,343		$0.00
Nutrition Administrative Assistant Cleveland County Schools	$33,000.00	0.25	$8,250.00	$33,660.00	0.25	$8,415.00	$34,333.00	0.25	$8,583.25
Nutrition Administrative Assistant Cleveland County Schools	$33,500.00	0.25	$8,250.00	$33,660.00	0.25	$8,415.00	$34,333.00	0.25	$8,583.25
Total Year 1			$38,500.00						
Total Year 2						$16,830.00			
Total Year 3									$17,166.50
Total for 3 years	$72,496.50								

Summary of the program that is the focus of your budget

The Community Eligibility Provision (CEP) allow schools with a qualifying percentage of high needs students serve free school meals to all students, regardless of individual family income (Food Research and Action Commission, 2022). The percentage is calculated by taking the school or school districts Identified Student Percentage (ISP) multiplied by 1.6 (United States Department of Agriculture, 2020) (see Appendix 6A). The ISP is a percentage of the students that are enrolled in other need-based programs like the Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), or in the foster care program (FRAC) (United States Department of Agriculture, 2020). To qualify for the CEP, schools must report greater than 40% ISP (United States Department of Agriculture, 2020). In Cleveland County, North Carolina the ISP is 55.5% making the entire school district not just individual schools eligible for the program (North Carolina Department of Public Instruction, 2021).

Federal meal costs at the free rate are calculated by taking the ISP multiplied by 1.6 (United States Department of Agriculture, 2020). In Cleveland County, 88.8% of student meals are served at the free rate, leaving the remaining 11.2% of meals at the paid rate of .36 cents per meal (United States Department of Agriculture, 2020). Cleveland county therefore would only be responsible for the 11.2% at the paid rate or a total of $108,158.40. Currently, there are 10 schools in the Cleveland County School District that are eligible but not participating in the CEP (North Carolina Department of Public Instruction, 2021). These 10 schools leave out 6,050 eligible students from receiving free school meals. If implemented, CEP would help to work towards the program goal of reducing childhood food insecurity.

Major program activities would be heavily concentrated in the planning and first year of the program, as collecting student and family participation in SNAP, TANF, or the foster care

program are a key component in the school districts eligibility. After collect this data the district would apply as a whole, rather than individual schools to implement the CEP district wide in Cleveland County. Finally, serving the free school meals would be the final component of the program. One of the major benefits of CEP is schools and school districts only need to reapply for the program every four years.

Budget Narrative

A. Salary- Total $72, 496.50-

- The Director of Nutrition Services Cleveland County Schools will oversee the initial implementation of the CEP in addition to their other responsibilities. The total FTE during the first year was estimated at .1 and 0 during years 2 and 3 because there are very limited administrative requirements following the first year. Totaling $7,500 during year 1.
- Supervisor of Nutrition Services Cleveland County Schools will support the director during the first year of implementing CEP and oversee the administrative assistants. FTE for the first year is estimated during the first year for the Supervisor and 0 during years 2 and 3. Totaling $14,500 during the first year.
- Nutrition Administrative Assistants will help collect student data to support the CEP application materials and the reapplication process. The two administrative assistants will contribute .25 FTE over the 3-year period for a total of $50,496.50.

B. Benefits- $21,748.95

- Benefits were calculated as 30% of the employee's yearly salary
- Salaries increased by 2% each year

C. Cost of School Meals- $9,604,800

- Cleveland County Schools will be eligible for 88.8% of school meals at the free rate and will be reimbursed at the free rate of $3.68 per lunch.
    - **i.** 14,500 total students X $3.68 X 180 school days= $9,604,800 per year X 88.8%= $8,529,062.40
- The remaining 11.2% would be at the paid rate and be the responsibility of Cleveland County Schools for a total of $108,158.40 per year.
    - **i.** 14,500 total students X .37 X 180= $965,700 X 11.2%= $108,158.40

D. Printing and Copying- $30,000

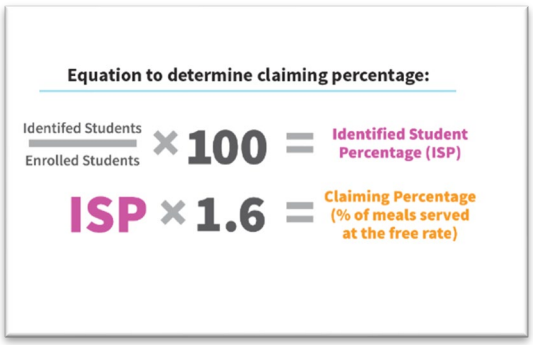
- Background about the CEP will be sent out to all Cleveland County families prior to beginning the program
- Educational materials will be available to bring awareness to the program at school events
- Materials will be mailed and sent home with students to request student participation in need-based programs like the Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), or in the foster care program (FRAC).

The CEP is budget includes several major assumptions. When developing the budget, I was operating under the assumption that the program and reimbursement by the Federal government will continue in the future. The program was authorized in 2010 by the Healthy, Hunger-Free Kids Act. While unlikely, the legislation or reimbursement could change in the future. While allocating staff time for this program, I was also assuming that the bulk of the administrative burden and application process would take place once every four years. As students move from elementary, to middle, to high school and beyond staff will need to determine the ISP to continue

to apply for the CEP. When developing this program, I was also assuming the students are able to eat school meals. By this I mean we are assuming that students get to school in time to eat school breakfast, for example, if they want it. We are also operating under the assumption that students like the food that is being served at school and take school meals over not eating.

APPENDIX 6A

Figure 1. Equation to Determine Claiming Percentage



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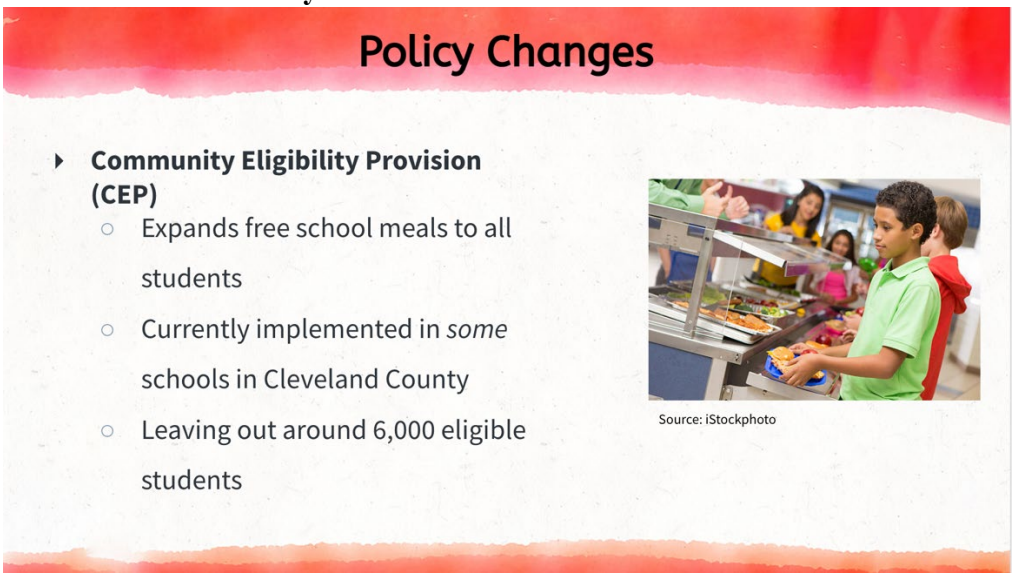
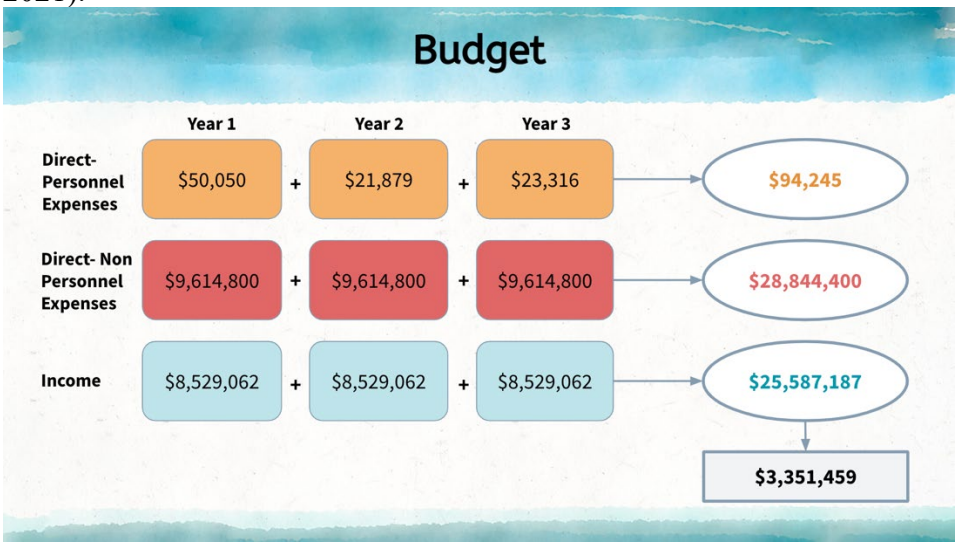
Presentation to County Commissioners



Script:
CEP expands free school breakfast and lunch to all students at participating schools. One of the additional benefits of the program is that schools only need to reapply every 4 years. Saving administrative time. In Cleveland County, some schools have implemented CEP even though the entire district is eligible. This leaves our around 6,000 students from the program. Eligibility for CEP in North Carolina is based on an identified student percentage (ISP) of above 40% (Crittenfuller et al. 2021). This percentage is unique from a schools free and reduced lunch percentage and instead is based on the percentage of student enrollment in multiple social programs including SNAP, TANF, the foster care program, or other criteria (Crittenfuller et al. 2021). In schools in North Carolina that have implemented CEP, the number of school breakfast and lunches rose by 18 and 20 meals on average per student respectively (Crittenfuller et al., 2021).



Script:
The majority of the administrative time and effort for the CEP program will be in the initial year of implementation as the application process only takes place every four years. The total amount requested from the county commissioners for the CEP is 3.3 million dollars over three years. The

competitive Federal reimbursement rate for the cost of the school meals will cover most of the school meal costs. Additionally, expenses include reallocating current staff time to the program. Other expenses include the copying and printing costs for materials that will be distributed to families and parents to educate them about the CEP program.

APPENDIX 7: ANASTASSIA SKARLINKSI'S INDIVIDUAL DELIVERABLES

Problem Statement

Social Determinant of Health (SDoH)

Healthy People 2030 is a set of objectives with the goal of improving the health and well-being of Americans over the decade ("Healthy People 2030 | health.gov," n.d.). An important aspect when considering these objectives is the concept of Social Determinants of Health (SDoH). These are conditions in a person's greater environment, such as their education level, their access to healthcare, and the way their town is designed, that affect their health. Health People 2030 identifies five SDoH of interest for the next decade with social and community context being one of interest ("Healthy People 2030 | health.gov," n.d.). A goal under the heading of Social and Community Context is that of Eliminating very low food security in children (NWS-02) ("Healthy People 2030 | health.gov," n.d.).

Food security is a spectrum that details a person or family's ability to procure safe, legal, and appropriate food that is sufficient for a productive and healthy life. Levels of food security typically range from high security (no problems accessing adequate food) to very low food security (marked disruptions to adequate food intake due to limited resources) ("USDA ERS - Key Statistics & Graphics," n.d.). Poor food security, also known as food insecurity, is an issue that can profoundly affect the lives of children and their families for years. Living in a food insecure household can cause irreversible damage to the cognitive, social, and emotional development of children (Chilton, Chyatte, & Breaux, 2007). Children who experience food insecurity are more likely to have linguistic, motor, and social developmental delays as well as poorer outcomes in school (Chilton et al., 2007).

Historical Context

Cleveland County is located in the Piedmont region of North Carolina, near the South Carolina boarder. The county is named for a Revolutionary War hero, Col. Benjamin Cleveland, who made his name at the battle of King's Mountain ("Cleveland County (1841) - North Carolina History Project," n.d.). Cotton became an important crop for the county starting in the 1920s ("History of Shelby--Shelby, North Carolina: A National Register of Historic Places Travel Itinerary," n.d.) However, a series of droughts, insect infestations, and government control measures caused a decline in production and, by the mid-1970s, this was no longer the case. Accompanying the decline in cotton production was a move to shift textile manufacturing overseas. Since the 1970s, Cleveland County's economy has been diversified to include industry, agriculture, merchandising, and manufacturing ("History of Shelby--Shelby, North Carolina: A National Register of Historic Places Travel Itinerary," n.d.). Today over 40% of the workforce in Cleveland County are employed by manufacturing firms ("Welcome to Cleveland County, NC," n.d.).

Despite an unemployment rate (4%) close to the state average, the poverty rate is higher (19.0%) than the state average of 13.60% ("Cleveland County - NCIOM," n.d.). Poverty is a leading driver in food insecurity, which in part explains the general food insecurity rate of 16.2% in Cleveland County ("Cleveland County - NCIOM," n.d.). The food insecurity rate for families is higher at 22.2% ("ncchild.org/wp-content/uploads/2020/03/Cleveland.pdf," n.d.). There are number of federal and private food assistance programs in the county including: the supplemental nutrition assistance program (SNAP), the special supplemental nutrition program for woman, infants, and children (WIC), the national school lunch program (NSLP), and local

food banks. However, these programs are often underused ("Food Insecurity Statistics in NC | Hunger Research," n.d.).

Priority Population

Food insecurity can cause a lifetime of issues for children and their families, often starting in pregnancy. Poor nutrition during this life stage can lead to stunting, or reduced growth. Stunting has been shown to cause cognitive deficits and poor social relationships (De Sanctis et al., 2021). Further, this leads to complications for later generations as women who were stunted at birth often give birth to stunted children (Chilton et al., 2007). It has also been shown that children who live with food insecurity often have poor development and educational attainment, leading them to enter a cycle of poverty (Chilton et al., 2007).

For this reason, children and their families in Cleveland County are a priority population for concern. As previously stated, the rate of families in this county experiencing food insecurity is higher than average for the state of North Carolina at 22.2% ("ncchild.org/wp-content/uploads/2020/03/Cleveland.pdf," n.d.). In most households, children are often protected from experiencing the same level of food insecurity as the adults. However, in about 0.8% of US households at least one child experiences disrupted eating patterns as well ("USDA ERS - Key Statistics & Graphics," n.d.).

Scope and Rationale

Living with food insecurity can delay a child's social and cognitive development (Chilton et al., 2007). These delays can lead to poor educational attainment and limited job prospects (Hines, Markowitz, & Johnson, 2021). Studies have shown that workers who have experienced food insecurity face a number of disadvantages, from physical to mental that limit work quality or choices ("Children and Families - Hunger and Health," n.d.). The effects of this can

reasonably be extrapolated in Cleveland County, US census data shows 17.6% of the population has a Bachelor's degree or higher, and 15% of the population living in poverty ("U.S. Census Bureau QuickFacts: Cleveland County, North Carolina," n.d.).

The food available to families living in food insecurity often does not offer optimal nutrition (Hines et al., 2021). Children in food insecure households often experience vitamin and mineral deficits such as iron, zinc, and iodine, all of which have been linked to neuropsychological impairment (Hines et al., 2021). These children often lack access to adequate protein, resulting in reduced growth potential for body and brain development as well as fatigue (Hines et al., 2021). Further, it has been found that children who live in food insecure families are sick more often, and are more likely to require hospitalization ("Children and Families - Hunger and Health," n.d.). These illnesses harm not just healthy development but education as well.

Studies have found that adults who live with food insecurity are more likely to eat more saturated fats, added sugars, salty snacks, and higher fat dairy products, while consuming fewer fruits and vegetables (Leung, Epel, Ritchie, Crawford, & Laraia, 2014). These food choices, which are likely consumed by children in the same household, have been shown to increase the risk of chronic disease. The results of these food choices can be seen in the leading causes of death in Cleveland County ("2019 Cleveland County Community Health Assessment," n.d.). The 2019 Cleveland County Community Health Assessment lists cancers, heart disease, and cerebrovascular diseases as leading causes of death in the county, all of which have links to poor nutrition.

Disciplinary Critique

Eliminating very low food insecurity among children and their families has been noted by the Cleveland County Community Health Assessment as being of great concern to the community. It is clear from the stated community goals that the people of Cleveland County wish for all children to have their best shot at a happy healthy life. The biggest barriers to attainment of this problem are the higher-than-average poverty rate, the low higher education rate, and ensure access to healthy nutritious foods for all families in Cleveland County.

Eliminating very low food insecurity requires a multi-faceted approach, it will require a team of people in and around the community to identify and tackle gaps in the system in which food insecurity to exists. It is this sort of collaborative effort that will ensure a healthier, more productive future for the people of Cleveland County.

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Implementation Plan

Background Information

Healthy People 2030 has set objectives with the overarching goal of improving the health and wellbeing of Americans over the next decade ("Healthy People 2030 | health.gov," n.d.). These objectives are only achievable when the Social Determinants of Health (SDoH) are considered. The SDoH are conditions in a person's greater environment, such as access to healthcare and education, that affect their health and wellbeing.

The objective of eliminating very low food insecurity in children (NWS-02) falls under the heading of social and community context ("Healthy People 2030 | health.gov," n.d.). Food security covers a wide spectrum, ranging from high security (no problems accessing adequate food) to very low food security (marked disruptions to adequate food intake due to limited resources) ("USDA ERS - Measurement," n.d.). Poor food security, also known as food insecurity, is an issue that can have a profound effect on the lives of children and their families. Living in a food insecure household can cause irreversible damage to the development of children and to their future educational and employment prospects (Chilton, Chyatte, & Breaux, 2007).

Purpose

Food insecurity can affect a child's development at any stage of their development (Chilton et al., 2007). Children who are born to a mother who lack access to sufficient nutrition are more likely to be born stunted (De Sanctis et al., 2021). Stunting, or reduced growth, has been shown to cause cognitive defects and poor social relationships. This can lead to further complications for subsequent generations as women who were stunted at birth often give birth to stunted children themselves (Chilton et al., 2007). Food insecurity can cause delays in a child's

development, poor educational attainment, and limited job prospects (Hines, Markowitz, & Johnson, 2021).

For these reasons children, and their families, in Cleveland County are a priority population for concern. Families in the county experience food insecurity at a higher rate (22.2%) than the state of North Carolina average ("ncchild.org/wp-content/uploads/2020/03/Cleveland.pdf," n.d.). In most households, children are protected from experiencing the same level of food insecurity as the adults. However, in 0.8% of US households at least one child experiences disrupted eating patterns ("USDA ERS - Key Statistics & Graphics," n.d.).

There are federal and private food assistance programs that address food insecurity including; the Supplemental Nutrition Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), the National School Lunch Program (NSLP), as well as local food banks. However, these programs are often underutilized in the community ("Food Insecurity Statistics in NC | Hunger Research," n.d.). A novel program that has seen success in recent studies has been the use of Summer Electronic Benefit Transfers (SEBT-CC) (Collins et al., 2016). This program provides benefits through SNAP or WIC with the aim of reducing the impact of providing children's meals during extended school breaks (Gordon, Briefel, Collins, Rowe, & Klerman, 2017). Previous implementations of this program, in eight states and two Indian Tribal Organizations, showed a statistically significant reduction in food insecurity experienced over school breaks as well as increased consumption of health promoting foods (Gordon et al., 2017).

Evidence Based Outcomes

Short-term outcome: Within 2 years of implementation 40% of students in the Cleveland County Public Schools who qualify for free or reduced lunch will receive SEBT-CC. (Collins et al., 2016).

Short- term health objective: Within 2 years of implementation very low feed security among program participants will decrease 30% from baseline (Collins et al., 2016)

Long-term outcome: Within 10 years of implementation the four-year graduation rates of program participants will increase 6% from baseline (Bailey, Hoynes, Rossin-Slater, & Walker, 2020).

Long-term health objective: Within 10 years of implementation hospitalization among food insecure children will decrease 20% from baseline (Gambra-Arzoz et al., 2020)

Strategies and Activities

The proposed implementation extends SNAP benefits of $30 for every two weeks that school is not in session. This amounts to $60 in the summer months and $30 over winter break for each child eligible for free or reduced-price meals in the Cleveland County School district. This program would be applied for while applying for free or reduced-price meals and would be managed by the Cleveland County SNAP program. There are 14,584 children in the Cleveland County Schools, 8,300 of whom (57%) are eligible for free or reduced-price meals ("Cleveland County Schools - U.S. News Education," n.d.). We expect 50% of eligible families to participate in this program. Families who receive SNAP benefits may opt into having this balance transferred into their pre-existing EBT card. Alternatively, a new benefit card may be issued to each eligible participant at the end of the school year. Purchases would be subject to normal SNAP rules and regulations as to purchase type and usage (Collins et al., 2016).

This program would help to alleviate the stress and strain experienced by families feeding their children over extended school breaks (Collins et al., 2016). School based nutrition programs are designed to relieve the experience of food insecurity for children in the United States. These programs provide breakfast and lunch for children who live in households at or below 185% of the poverty line (Holley & Mason, 2019). Subsidized meals are available through the use of the Summer Food Service Program (SFSP) and other summer food congregate serving programs. These meals are often underutilized, with 16% of eligible children participating on average (Gordon et al., 2017). Limited funding, locations, and requirement for congregate setting are all potential barriers for family participation in SFSPs (Gordon et al., 2017). The introduction of School Break Electronic Benefit Transfer (SB-EBT) would allow families to sidestep these barriers and offer better household nutrition during extended school breaks.

The proposed intervention of SB-EBT would target all levels of the socioecological model. On the individual and relationship levels it would target the family and child to have access to safe nutritious meals year-round. The community and societal levels are also targeted by modifying current school and community nutrition policies. This program will also open up new levels of choice and self-efficacy for families allowing them to make new relationships in the community by widening their shopping budget.

Stakeholders

Important community stakeholders include; business owners, healthcare professionals, teachers and counselors from the local school system, religious and community leaders as well as the program families. As these stakeholders have vital first-hand experience in the community, they can give valuable insight into the feasibility of implementation, potential barriers to program usage and provide important feedback into program perception and utilization.

Professional stakeholders would likely include; dietitians, public health experts, social workers, and employees at SNAP and WIC. These members would offer professional insight into challenges and benefits offered in this community.

Budget

There are approximately 8,300 eligible children currently attending Cleveland County Schools ("Cleveland County Schools - U.S. News Education," n.d.). At $30 for each child, and 50% program participation, this would amount to $250,000 per every 2- week period that children were not in daily school instruction. Potential budgetary requirements would include card issuance, advertising, postal based family communication, and web page communication. Initial start-up costs are likely to be higher for this program than with other SNAP programs due as the costs must be spread out over a period of three months rather than a whole year (Collins et al., 2016).

Conclusion

Food insecurity has both personal and societal costs. It has been estimated that the median county-level cost of food insecurity is $4,433,000 solely in increased health care requirements. There are further costs of food insecurity including low educational attainment, greater incarceration rates, and reduced employment prospects (Berkowitz, Basu, Gundersen, & Seligman, 2019; Hines et al., 2021).

This program can help families by reducing the stress and strain associated with ensuring children have access to adequate safe and nutritious foods. Children who are adequately nourished are less likely to have problems with illness and are more likely to graduate high school (Bailey et al., 2020). This program has shown effectiveness, in both urban and rural settings in reducing food insecurity. While this program will not solve all potential issues with

healthy food access it will be an important step in ensuring a happier healthier future for the children of Cleveland County.

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Evaluation Plan

Intervention Summary

Healthy People 2030 has set objectives with the overarching goal of improving the health and wellbeing of Americans over the next decade ("Healthy People 2030 | health.gov," n.d.). These objectives are only achievable when the social determinants of health (SDoH) are considered. The SDoH are conditions in a person's greater environment, such as access to healthcare and education, that affect their health and wellbeing. The objective of eliminating very low food security (NWS-02) falls under the heading of social and community context, in terms of SDoH ("Healthy People 2030 | health.gov," n.d.).

Food insecurity, defined as a person's ability to secure safe nutritious foods covers a spectrum ranging from food secure to very low food insecurity ("USDA ERS - Measurement," n.d.). It has been estimated that in 2017 22.2% of the children in Cleveland County lived in a food insecure household ("Cleveland County - NCIOM," n.d., "ncchild.org/wp-content/uploads/2020/03/Cleveland.pdf," n.d.). Studies have shown that childhood food insecurity can offer a host of problems including; poor health, increased rates of hospitalizations, and decreased academic achievement ("Children and Families - Hunger and Health," n.d.; Cook et al., 2004). It is for this reason that Cleveland County has stated a goal of eliminating very low food security for children in their county ("2019 Cleveland County Community Health Assessment," n.d.).

During the school year, school age children are eligible to receive free or reduced-price breakfast and lunch at their school (Collins et al., 2016). During the summer breaks there are Summer Food Service Program (SFSP), and other USDA sponsored meal programs, these programs are underused and do not address the needs of children over extended school breaks

(Gordon, Briefel, Collins, Rowe, & Klerman, 2017). The intervention proposed to address this issue is the creation of a School Break Electronic Benefit Transfer (SB-EBT) program. This program would provide eligible families $30 per child for every 2 weeks of school break. This program has shown to reduce the financial impact of providing children's meals during extended breaks (Gordon et al., 2017).

Evidence Based Outcomes

Short-term Objective- Within two years of program implementation very low food security among program participants will decrease 30% from baseline (Collins et al., 2016).

Long-term Objective- Within ten years of program implementation the hospital length of stay for food insecure children will decrease 20% from baseline (Topal & Tolunay, 2021).

Evaluation Plan

Study Design

In order to evaluate the effectiveness of the SEBT-CC program we will use pre and post surveys evaluation measures created by the United States Department of Agriculture (USDA). The USDA Food Security Index for Children provide a reliable estimate of food insecurity with low participant burden ("USDA ERS - Survey Tools," n.d.). (See example in appendix 7A) Data will be collected in August, at the beginning of each school year. Monetary data will be collected from the EBT accounts in order to assess funds distributed and use.

Sampling Strategy

In order to evaluate the effectiveness of the SB-EBT program a random sample of families participating in the program will be selected. Evaluation participants will be chosen via simple random selection of program participants at enrollment in order to establish baseline data. This sampling strategy has been adapted from a previous USDA SEBT pilot study (Gordon et

al., 2017). There is a goal of reaching at least 75% of SEBT-CC participating families as survey participants.

Specific Measures

Survey questions will assess general food availability and burden. A score of two to four indicates food insecurity, five indicates very low food security, for the family. Socioeconomic data such as racial or ethnic group, estimated family income, and parental educational level will also be assessed at these times.

Key outputs that will be measured and documented will include the amount of funds dispersed and used per family, number of participants reached, and percentage of eligible children who participate. Racial disparities in reach and utilization will be assessed as will change in experienced food insecurity among participants.

Analysis Plan

Descriptive statistics will be used to illustrate change in prevalence of the primary outcome of reduced very low food insecurity. Prevalence of food insecurity among children, as well as qualitative responses of food insecurity perceptions will be gathered and evaluated.

Timing

The pre-survey will be administered in August when families are applying for the free and reduced-price lunch program. Post surveys will be administered annually in August. Data will also be collected from SB-EBT accounts related to funds dispersed and used. Participants will be screened and enrolled at the beginning of the school year when applying for free and reduced-price meals. First disbursement of funds would happen during that year's winter break with a sum of $30 per participating child. Second disbursement would begin on the last day of school before summer break with $60 per month per participating child. Families will be

screened yearly for perceptions of food insecurity at the end of the summer break when re-enrolling for free and reduced-price school meals and SB-EBT program. If the family participates in all three years of implementation, they would participate in three total survey periods.

Sources of Funding

This program will offer a three-year run of SB-EBT benefits for food insecure families in Cleveland count, paid for and managed by Federal EBT programs. Program evaluation will be funded by Cleveland County Social Services.

Dissemination

Once data has been collected and analyzed this information will be disseminated in a report to the Cleveland County commissioners. This data can be used in county health and school ratings as well as inform future steps in expanding EBT access to families in Cleveland County. Further a version of the full report as well as a summarized document will be available on an advertised website for perusal as to data collected and implications. A number of papers will be written for academic journals detailing racial and ethnic disparities, progress, and challenges encountered.

Strengths and Challenges

The SB-EBT program offers a number of strengths in implementation. It uses the existing infrastructure of the Federal EBT program as well as local schools. This offers a gravitas of establishment to a novel program, potentially increasing participant faith in the program. Further it addresses gaps in the existing food insecurity measures such as underutilization of summer meals, and allows families the ability to choose the foods that best meet their specific needs and

wants. The evaluation program has low participant burden and a relatively low cost of implementation.

There are some disadvantages to this program and its evaluation plan as well. There is a risk of stigma to be experienced by those receiving aid. Although steps have been taken to reduce the identification of people who use this service there is still a chance for stigma to be felt. Further there is a risk of loss to follow up for participants if the children leave school or move.

Impact

Stated goals of this program will be to reduce rates of food insecurity experienced by the children of Cleveland County. This program has previously shown to offer decreased prevalence of very low food insecurity oy one third, and general food insecurity by nearly a fifth (Collins et al., 2016). There was also a marked improvement in the nutritional quality of foods accessible to children during extended breaks (Collins et al., 2016). These previous experienced benefits should translate well to the setting of Cleveland County and will offer benefit to its people.

APPENDIX 7A

Sample of pre/post evaluation participant questionnaire

This survey will assess levels of food insecurity experienced by the family and has been validated by the USDA. ("USDA ERS - Survey Tools," n.d.)

9. [I/We] relied on only a few kinds of low-cost food to feed [my/our] [child/children] because [I was/we were] running out of money to buy food.	1=often/sometimes 0=never true	Children
10. [I/We] couldn't feed [my/our] [child/children] a balanced meal, because [I/we] couldn't afford that.	1=often/sometimes 0=never true	Children
11. [My/Our/The] [child was/children were] not eating enough because [I/we] just couldn't afford enough food.	1=often/sometimes 0=never true	Children
12. In the last 30 days, did you ever cut the size of [your child's/any of the children's] meals because there wasn't enough money for food?	1=yes 0=no	Children
13. In the last 30 days, did [your child/any of the children] ever skip meals because there wasn't enough money for food?	1=yes 0=no	Children
13a. In the last 30 days, how many days did this happen? [2]	1= ≥3 days 0= <3 days	Children
14. In the last 30 days, [was your child/were your children] ever hungry but you just couldn't afford more food?	1=yes 0=no	Children
15. In the last 30 days, did [your child/any of the children] ever not eat for a whole day because there wasn't enough money for food?	1=yes 0=no	Children

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Presentation to County Commissioners

Script:

There are a number of people and organizations that we feel would be essential stakeholders for this enterprise. We would want to work with people in the community, such as church leaders, food service and retail workers, teachers, guidance counselors, and social workers in the local schools, and of course, the people who live with low food security in Cleveland County. We feel that as these groups of people are such vital components of the community they would be able to give us insight into how our program could be implemented, potential barriers, and how the program and its advertising is perceived in the community. We feel that it would be important to gauge these issues, and more, so that we do not overstep bounds or disrupt the skillful running of the community. We also feel that it would be important to work with a number of professional organizations in Cleveland County, such as the health department, the department of health and human services, local food charitable organizations such as feeding kids in Cleveland County, and the department of social services. The people who work in these organizations will have invaluable insight into how to best approach and work within the community of Cleveland County. They will also be essential in the running and maintenance of this intervention.

As we lack an expert in stakeholder engagement in this group, we also would seek the assistance of a program such as NC TRACKS.