

GAINING GRADS: TARGETING SCHOOL-BASED SOCIAL SUPPORTS & ADAPTATIONS TO THE
SCHOOL BREAKFAST PROGRAM TO INCREASE HIGH SCHOOL GRADUATION RATES IN
CLEVELAND COUNTY HIGH SCHOOLS

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of the requirements for the degree of Master of Public Health in the Public Health Leadership Program, Nutrition
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ABSTRACT

Hannah Archer, Grace Carstens, Hannah Hicks, Ashley Kelley, and Emily McCormick: **GAINING GRADS: Targeting School-Based Social Supports & Adaptations to the School Breakfast Program to Increase High School Graduation Rates in Cleveland County High Schools**
(Under the direction of Pam Silberman, Seema Agrawal and Dana Rice)

Education Access and Quality focuses on components of language, literacy, early development, and higher education attainment. Cleveland County (CC) has a high school (HS) graduation rate lower than the NC average. There are several factors influencing the number of students successfully graduating within four-years, including income disparities, the ease of transition into HS, and student mental health. Given the strong influence of mental health on student academic achievement, the High School Mental Health Program (HSMHP) proposes a requirement for all CC public HSs to have a ratio of 250 students to 1 counselor. The proposed nutrition program focuses on increasing participation in school breakfast to improve educational attainment by expanding the School Breakfast Program in CC HSs. The goals of the following policy and program aim to provide public CC HSs with the proper social and nutritional supports through targeted programs to increase HS graduation rates.

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PROBLEM STATEMENT AND GOALS

The Social Determinant of Health of Education Access and Quality focuses on the components of language, literacy, early development, and higher education attainment (CDC, 2021; U.S. DHHS, 2021). Education creates opportunities for better health throughout life and certain conditions, such as poor dietary behaviors and socioeconomic status, can negatively affect health and put educational attainment at risk (Azizi Fard et al., 2021; VCU, 2015). One short-term impact of poor educational achievement includes a knowledge deficit of proper health behaviors leading to issues navigating the health system and managing illnesses (Tulane University, 2021). In the long term, individuals with lower educational attainment are more likely to experience job insecurity, earn lower wages, and accumulate fewer assets, which can lead to poor nutrition and unmet medical needs (VCU, 2015).

According to the 2019 Cleveland County Health Assessment, Cleveland County (CC) is ranked 80th out of North Carolina's 100 counties for health and 81st for health behaviors (*2019 Cleveland County Community Health Assessment*, 2019). The county is economically disadvantaged and sits on the lower end of income levels, with a median household income of \$42,002 compared to North Carolina's median of \$50,320 (*2019 Cleveland County Community Health Assessment*, 2019). The chosen priority population is high school (HS) students living in poverty in Cleveland County, NC. As seen in Appendix A, Figure 1, low high school educational attainment is linked to poorer health outcomes. In addition, students living in poverty are even less likely to graduate from high school (Braveman and Gottlieb 2014; O'Neill Hayes and VanHorn 2021; USDHHS, 2021). High school students living in poverty represent the most vulnerable population as poverty rates (27.5% compared to NC's 22.9%) and low educational attainment remain prevalent (*2019 Cleveland County Community Health Assessment*, 2019; Cleveland County Public Health Center, 2019).

Quality education and higher attainment access focuses on one objective AH-08, "[To] increase the proportion of high school students who graduate in four years" (ODPHP, 2014, para. 1). Graduating from high school is linked to higher paying jobs, which increases one's ability to access health promoting resources throughout life (VCU, 2015). Due to high rates of poverty among CC's youth, these students are at an increased risk for poor academic attainment, leading to poorer health outcomes (USDHHS, 2021). The CC school system is a valuable platform for reaching the county's high school aged students through implementation of health promoting interventions. The goals of the following policy and program aim to provide CC HSs with the social and nutritional supports through targeted programs to improve educational attainment, specifically HS graduation rates.

POLICY AND PROGRAMMATIC CHANGES

Policy Proposal: High School Mental Health Program

Cleveland County (CC) has a high school (HS) graduation rate lower than the NC average. There are several factors influencing this number, including income disparities and poor mental health. More specifically, research indicates one-third of students cite poor mental health as a reason for dropping out of HS, and low-income students are more likely to struggle to graduate (Hjorth et al., 2016).

The American School Counselor Association recommends a ratio of 250 students to 1 school counselor (Sorrells, 2019). CC falls behind this benchmark with a ratio of 350:1 (Patel & Clinedinst, 2021). School counselors provide critical mental and emotional support along with post-graduation guidance to high schoolers. Given the influence of mental health on student academic achievement, the High School Mental Health Program (HSMHP) proposes a requirement for all CC public HSs to have a ratio of 250:1 student to counselors. Currently, there is one designated counselor at each HS in CC. To achieve this ratio, the HSMHP proposes hiring three counselors (Patel & Clinedinst, 2021).

Current research indicates improvements in student mental health are associated with higher HS graduation rates. Guidance counselors play an important role in promoting HS student mental health (Hjorth et al., 2016). A recent study indicated school counselors have the greatest impact on low-achieving and low-income students, particularly in their effectiveness to improve graduation rates (Sorrells, 2019). This is evidenced through Colorado's School Counselor Corps Grant Program (SCCGP). This program provides funding to lower-income school districts to increase the availability of school-based counseling to improve HS graduation rates. Results from this program indicate success in SCCGP-funded schools including raising graduation rates (Engelman et al., 2021).

There are four factors to assess when evaluating a proposed policy – political feasibility, cost to the county, impact on the county, and the extent the policy reduces income disparities in HS graduation. Given research and existing evidence, the political feasibility is high as this policy is founded on legislation already in place across NC schools (NC SBOE, 2019). Regarding cost, the HSMHP is inexpensive relative to other policies. The cost to the district solely pertains to the salary for three additional counselors. Next, the impact of the HSMHP indicates concrete success, particularly for low-income students. A recent study conducted in a Missouri school district depicted significantly different results, as high poverty schools with a ratio of 250:1 or less had higher graduation rates compared to schools with a greater ratio (Lapan et al., 2012). Finally, for equity, the HSMHP indicates success

in specifically reducing the graduation disparities influenced by income-level (Sorrells, 2019). Given the evidence indicating the association of more HS guidance counselors with higher graduation rates, the HSMHP is the most effective path to achieve this goal.

Policy Proposal: Breakfast in Classroom Service Implementation in Cleveland County High Schools

The purpose of this program is to increase School Breakfast Program (SBP) participation in CC HSs. Currently, all CC schools offer free breakfast for all students through the USDA School Meals Community Eligibility Program Provision (CEP) waivers (*Cleveland County Schools - School Nutrition And Fitness*, n.d.). While school breakfast is offered in CC schools, participation is low: in the 2016-17 school year, for every 100 students participating in the free National School Lunch Program (NSLP), only 53.3 students are participating in school breakfast, compared to the target 70 students per 100 using the NSLP (“North Carolina School Breakfast Report,” 2018). Yet, participation in the school breakfast program is associated with better test scores, fewer absences and incidences of tardiness, improved diet quality, and fewer visits to the school nurse, so increasing HS student participation is in the county’s best interest (“North Carolina School Breakfast Report,” 2018). Breakfast in classroom (BIC) with the SBP is a service method where the breakfast meals are delivered to the students’ classrooms during their first period class, and they are given class time to eat. The BIC model is associated with improved HS student participation in the SBP in North Carolina; North Carolina HS students who were offered free breakfast were 1.32 times more likely to participate in the SBP than when paid breakfast was offered through traditional cafeteria serving, but this increased to 7.42 times when free breakfast was offered via BIC (Soldavini & Ammerman, 2019).

This policy aims to implement BIC service in all seven CC HSs over a period of two years. After a project manager is hired to oversee the program, community meetings will be held at the schools with key stakeholders to gauge feelings about a BIC program, receive input, assess school readiness for BIC, as well as address common concerns such as messiness and class disruption. Pilot studies are crucial for assessing feasibility of programs before expansion, and sample size is dynamic depending on local circumstance (Moore, 2011). The two schools identified as most ready to transition, identified by school leadership using qualitative and quantitative input from the community such as staffing and current facilities, will pilot the program the first year. At the end of the first year, the program will be evaluated through staff feedback, SBP utilization data, and student feedback. The feedback will be incorporated in the following year and in the rollout of BIC service in the other five HSs in the area. At the end of

the second year, a second round of evaluation will occur to gauge the success of the program.

BUDGET

Personnel Costs

A principal and school superintendent will support the hiring process with a counselor supervisor to assist in the training and onboarding of the new personnel at no new cost to the schools. Primary personnel expenses will come from employment of the additional three counselors (Y1-Y3). The program includes allocation of funds for continued training and professional development. Total personnel costs range from \$187,000 to \$268,000 to account for 30% benefits and a 2% inflation increase per year and consists of the majority of anticipated expenses as seen in Table 1 and 2..

Non-Personnel Costs

Noted in the budget are items of administration, building expenses, tracking system, and technology. These services and facilities are integral to the program and will be absorbed into the existing CC school system costs. Essential to the program are the development of new materials, adequate facilities, and establishment of technology to support the new staff. Funding for these items will help the school counselors expand their reach and have the ability to meet all HS support-based needs. The total cost of non-personnel expenses is \$9,897 for all 3-years.

Income

Anticipated income for this program will come from grant-related revenues for Y1 through Y3 and funding requested from the CC Commissioners. The School Resources Officers Grant (\$1,007 for Y1), Title I, Part A of the Every Student Succeeds Act (ESSA) (\$250,000 for Y1), Title IV, Part A (\$30,000 for Y1 and Y3) consist of the majority of incoming funds (Cleveland County Board of Commissioners, 2022; Patrick, 2020). Counselors will also receive financial assistance through The American Counselor Association (\$1500 per year) and the NC School Counselors Association (\$1,125 per year) grants for professional development activities (ACA, 2021; NCSCA, 2021). The remaining income needed to fund the program will be requested from the CC Commissioners on an annual basis. The total program cost falls at \$370,995 over the course of 3-years, as seen in Table 3.

PROGRAM EVALUATION PROPOSALS

Success & Milestones

The number of HS students who participate in breakfast in the classroom at the beginning of the school year and the end of the school year during Year 1 and 2 are key milestones for the program. Increasing School Breakfast Program (SBP) participation, increasing breakfast consumption, increasing the proportion of HS students who graduate within four years, and reducing/mitigating the stigma associated with SBP participation are the deliverables for the program (Soldavini & Ammerman, 2019; Hearst et al., 2016; O'Neill Hayes & VanHorn, 2021; Ribar & Haldeman, 2013; Wisconsin Department of Public Instruction, 2005).

Assessment & Evaluation

The cafeteria workers will identify how many HS students receive breakfast, and the project manager will collect the data from the kitchen (i.e., each of the cafeteria workers who delivered the breakfasts) to determine how many students throughout the entire HS received breakfast. The number of students who actually consume breakfast once they have selected it as well as the amount of breakfast consumed will not be measured. The project manager will collect data regarding the number of students who participate at the beginning (pre-test) of the academic year and at the end (post-test) of the academic year. The project team will analyze the data collected by calculating the monthly, beginning, and ending averages. The project team will then use this data to conduct a matched-pairs t-test. The project team will also measure prevalence (participation percentage) for significance, and the post-test participation from each school will be compared to the county's average HS SBP participation.

The evaluation and stakeholder engagement activities will occur at baseline (previous year statistics), after the first semester, and after the first year. Only the pilot schools will be evaluated after the second year along with the completion of the stakeholder engagement activities, both of which will provide enough data to observe change. The project manager will define progress by the statistical and meaningful increase of student participation in the School Breakfast Program (SBP) (i.e., achieving the goal of a 200% increase by the second year). Per the Cleveland County Schools fact sheet, approximately 30% of all students participated in the School Breakfast Program (No Kid Hungry, 2017). However, if there is no statistical and meaningful increase after the first year (i.e., 25%), then the project manager will modify the program as necessary. The project manager will then disseminate the data to the county officials (i.e., County Commissioner), superintendents, and school boards via a presentation and briefing. Parents and students will receive the data via a newsletter in an email.

COMMON PROPOSAL



Gaining Grads

Targeting School-Based Social Supports and Adaptations to the School Breakfast Program to Increase High School Graduation Rates in Cleveland County High Schools

Hannah Archer, Grace Carstens, Hannah Hicks, Ashley Kelley, and Emily McCormick

Hannah Hicks

Good afternoon. We are Education Team #1 and we will be proposing our joint policy and nutrition program: Gaining Grads, Targeting School-Based Social Supports and Adaptations to the School Breakfast Program to Increase High School Graduation Rates in Cleveland County High Schools.

Social Determinant of Health Overview



Education Access and Quality

Main Goal

“Increase educational opportunities and help children and adolescents do well in school”¹

Objective AH-08

“Increase the proportion of high school students who graduate in four years”¹

Education creates opportunities for better health throughout life²

- Short-term impacts of poor educational attainment: a knowledge deficit of proper health behaviors³
- Long-term impacts of poor educational attainment: job insecurity, lower wages, and lack of assets/resources²



References: 1. (ODPHP, 2014, para. 1), 2. (VCU, 2015), 3. (Tulane University, 2021)

Hannah Hicks

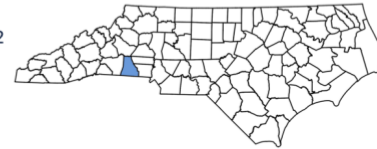
Social Determinants of Health are non-medical factors that account for up to 55% of all health outcomes. Healthy People 2030 groups these Social Determinants of Health into five domains. Our domain of interest is Education Access and Quality. The main goal of this domain is to increase educational opportunities and help children and adolescents do well in school, with one specific objective to “increase the proportion of high school students who graduate in four years”.

Education access is imperative as it creates opportunities for better health throughout life. One short-term impact of poor educational achievement includes a knowledge deficit of proper health behaviors leading to issues navigating the health system and managing illnesses. In the long term, individuals with lower educational attainment are more likely to experience job insecurity, earn lower wages, and accumulate fewer assets, which can lead to poor nutrition and unmet medical needs.

Cleveland County (CC) Overview



- 80th out of 100 NC counties for health and 81st for health behaviors ¹
- Economically disadvantaged county ¹
 - Median household income - CC: \$42,002 vs NC: \$50,320 ^{1,2}
 - Poverty rate - CC: 19.9% vs NC: 16.1% ^{1,2}
- Priority population: high school (HS) students ³
 - Students in poverty are 4.1 times more likely to not graduate from HS ⁴
 - Low educational attainment → poorer health outcomes ³



Goals of following policy and program: To provide Cleveland County high schools with the proper social and nutritional supports to better educational attainment and high school graduation rates

References: 1. (2019 Cleveland County Community Health Assessment, 2019), 2.(Cleveland County Public Health Center, 2019), 3. (Braveman and Gottlieb 2014; O'Neill Hayes and VanHorn 2021; USDHHS, 2021), 4. (ODPHP, 2014)

Hannah Hicks

Cleveland County is a rural county located east of Charlotte, NC. Out of the 100 counties in the state, Cleveland County is ranked 80th for health and 82nd for health behaviors. It is also considered an economically disadvantaged county, with a median household income more than \$8000 lower than the state. The overall poverty rate, in addition to the poverty rate for families with female householders and the poverty rate for children under the age of 18 are also higher than North Carolina as a whole. For our objective, high school students living in poverty are the priority population. Students living in poverty are 4.1 times more likely to not graduate from high school and low educational attainment is linked to poorer health outcomes, shorter life expectancy, and account for almost half of all deaths among working aged adults in the US. The goal for our policy and nutrition program is to provide Cleveland County high schools with the proper social and nutritional supports to better educational attainment and high school graduation rates.

HPM Policy: Proposal Overview



- Mental health influences HS graduation rates ¹
- ACA = 250:1 ²
- Cleveland County = 350:1 ³
- High School Mental Health Program
- Hire 3 additional school counselors



Academic
Guidance



Social-Emotional
Learning



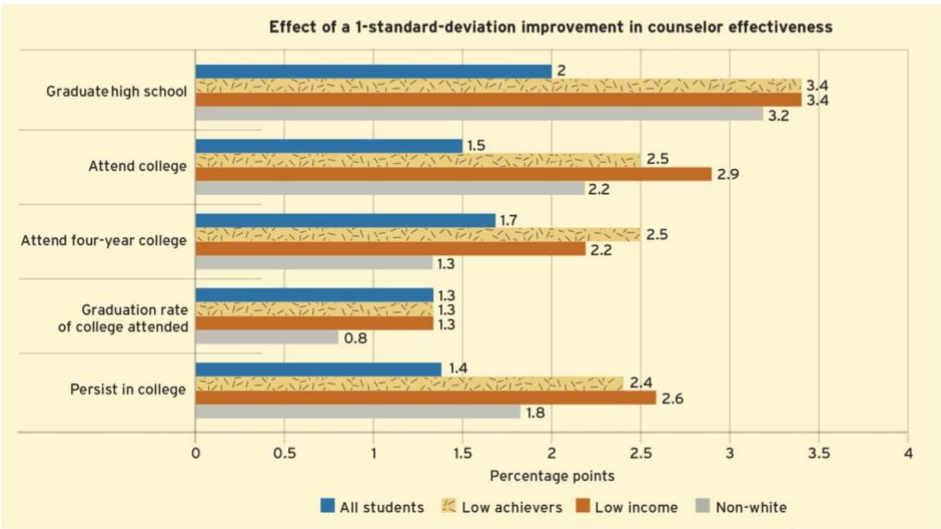
College, Career &
Military
Readiness

References: 1. (Hjorth et al., 2016), 2. (Sorrels, 2019), 3. (Patel & Clinedinst, 2021).

Hannah Archer

Several factors influence the number of students successfully graduating within four years. One-third of students cite poor mental health as a reason for dropping out of HS, particularly low-income students who have a higher likelihood of struggling to graduate. The American School Counselor Association recommends a ratio of 250 students to 1 school counselor but CC falls behind this benchmark with a ratio of roughly 350:1. School counselors play an important role in student well-being, including their mental health and academic achievement. Given this influence, our team decided to pursue the High School Mental Health Program which proposes a requirement for all CC public HSs to have a ratio of 250:1, and to reach this ratio, we propose hiring three additional counselors to serve.

HPM Policy: Evidence



References: 1. (Mulhern, 2020)

Hannah Archer

We based our recommendation on the successes of other school counselor programs, including Colorado’s School Counselor Corps Grant Program. This program provides funding to lower-income school districts to increase the availability of school-based counseling. Results from this program indicate significant success in these schools including achieving higher graduation rates and having the greatest impact on low-achieving and low-income students. This can be seen above in the top section of this graph.

HPM Policy: Evaluation



1. Political Feasibility^{1,2}
2. Cost to the county
3. Impact (influence to increase HS graduation rates)
4. Equity (ability to reduce income disparities in graduation rates)



References: 1. (NC SBOE, 2019), 2. (Engelman et al., 2021)

Hannah Archer

We assessed the following 4 factors for each proposed policy. For political feasibility, the HSMHP is founded on requirements already in place across schools in NC, such that the enhancement of this law is not much different than what is already in place and has existing proof of success. For cost, the HSMHP required the least complexity in its implementation and therefore less funding. Finally, both impact and equity are proven given large amounts of concrete success in previous school models, particularly for students from low-income households, as seen on the previous slides.

Policy Budget: Expenses



Personnel				
<i>Item</i>	<i>Y1</i>	<i>Y2</i>	<i>Y3</i>	<i>Total</i>
School Counselor #1	\$63,700.00	\$76,440.00	\$91,728.00	\$231,868.00
School Counselor #2	\$61,100.00	\$73,320.00	\$87,984.00	\$222,404.00
School Counselor #3	\$60,450.00	\$72,540.00	\$87,048.00	\$220,038.00
Superintendent	\$0.00	\$0.00	\$0.00	\$0.00
Principal	\$0.00	\$0.00	\$0.00	\$0.00
Counselor Supervisor	\$0.00	\$0.00	\$0.00	\$0.00
Training	\$1,890.00	\$1,890.00	\$1,890.00	\$5,670.00
Personnel Expenses	\$187,140.00	\$224,190.00	\$268,650.00	\$679,980.00

Emily McCormick

Thank you Hannah, now I will walk through our anticipated expenses and income for the High School Mental Health Program. For (Y1) a school superintendent, principal, and supervision counselor will lead the hiring process. We have noted that no additional expenses for these specific personnel will be incurred as this is within their existing scope of tasks. Primary personnel expenses will come from employment of the three counselors. We have accounted for varying educational and experience backgrounds, allocated for fringe, adjusted salaries for inflation, and included funding for training and development for the counselors.

Policy Budget: Expenses



Non-Personnel				
<i>Item</i>	<i>Y1</i>	<i>Y2</i>	<i>Y3</i>	<i>Total</i>
Administration	\$0.00	\$0.00	\$0.00	\$0.00
Building Expenses	\$0.00	\$0.00	\$0.00	\$0.00
Oversight Tracking System	\$0.00	\$0.00	\$0.00	\$0.00
Educational Materials/Supplies	\$2,371.71	\$2,419.14	\$2,467.52	\$7,258.37
Printing, copying	\$80.85	\$82.47	\$84.12	\$247.44
Conferences, Meetings	\$161.71	\$164.94	\$168.24	\$494.89
Communications	\$242.56	\$247.41	\$252.36	\$742.33
Technology, Equipment	\$377.32	\$384.86	\$392.56	\$1,154.74
Non-Personnel Expenses	\$3,234.14	\$3,298.83	\$3,364.80	\$9,897.78
Total Expenses	\$190,374.14	\$227,488.83	\$272,014.80	\$689,877.78

Emily McCormick

Noted our expenses are items of administration, building costs, and the school-based electronic tracking system. These services and facilities are integral to the program functions but can be utilized with no added cost to the school system. The remaining items highlighted here are other expenses that are needed for the newly added personnel. We recognized that funding must be allocated to these specific functions in order to ensure the impact and access of the new counselor additions.

Policy Budget: Income



Income Item	Y1	Y2	Y3	Total
School Resource Officers Grant	\$1,007.51	\$0.00	\$0.00	\$1,007.51
ACA Funding	\$1,500.00	\$1,500.00	\$1,500.00	\$4,500.00
Title IV, Part A ESSA Act	\$30,000.00	\$0.00	\$30,000.00	\$60,000.00
NCCSA Professional Development Grant	\$1,125.00	\$1,125.00	\$1,125.00	\$3,375.00
Title I, Part A	\$165,741.64	\$93,258.36	\$0.00	\$250,000.00
Total Income	\$190,374.15	\$95,883.360	\$32,625.00	\$318,882.51
Request to Cleveland County Commissioners (Total Net Gain/Loss)	\$0.00	-\$131,605.47	-\$239,389.80	-\$370,995.27

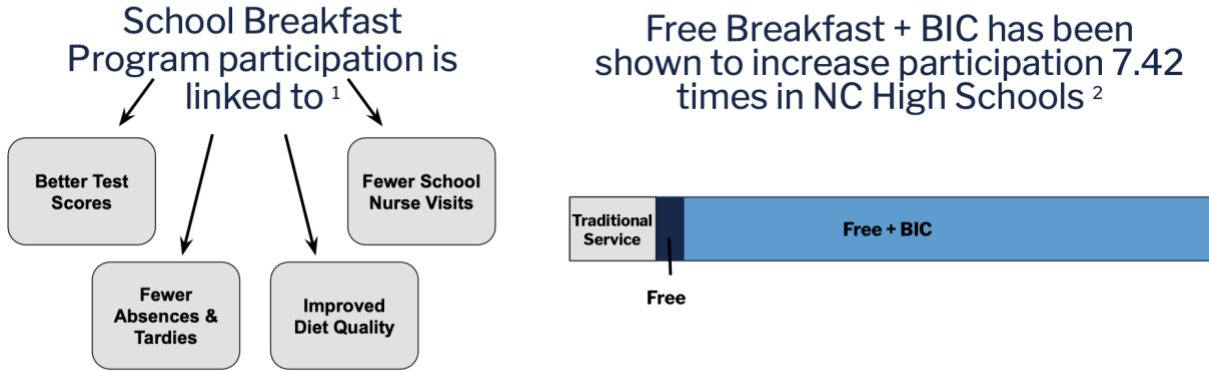
Emily McCormick

Part of the anticipated income for this program will come from grant related revenues. The American Counseling Association and the NC School Counselor Association provides funding specific for secondary school counselors and will be a guaranteed source of income for professional development across the program’s years. Two additional grants include the Every Student Succeeds Act (ESSA) for Title 1 and Title 4. Here local education agencies are eligible to apply and utilize funding to support school counselors in offering well-rounded educational opportunities. We will pursue this route to support funding for Y1 and Y3 and utilize excess funds for the remaining years. The leftover revenue needed to support this program falls at ~\$370,000 across the 3-year period. We are requesting your/Cleveland County Commissioners support to help us fund this project in order to improve the social and academic supports offered within CC High schools.

Nutrition Program



Proposal: Breakfast in Classroom (BIC) Service in Cleveland County High Schools

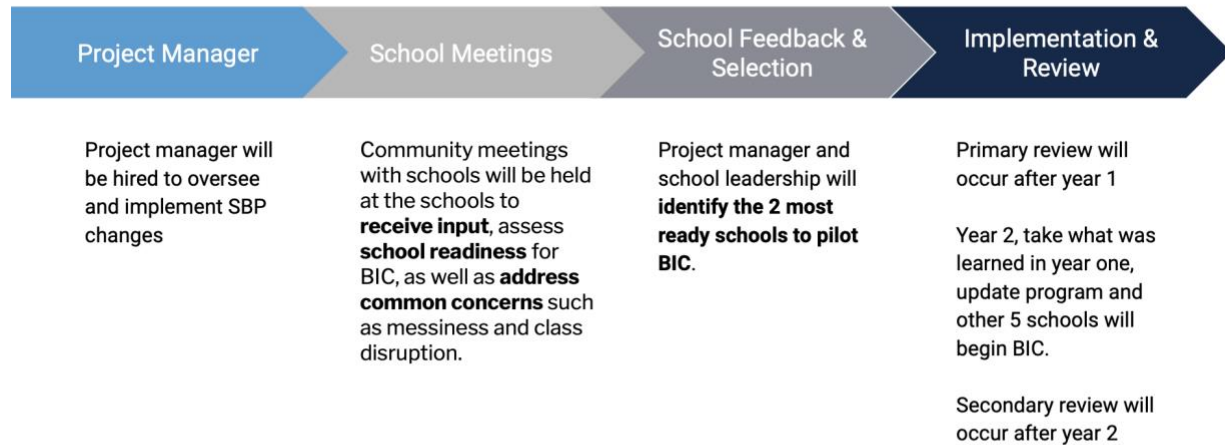


References: 1. ("North Carolina School Breakfast Report," 2018) 2. (Soldavini & Ammerman, 2019)

Ashley Kelley

The proposed nutrition program is to change the mode of breakfast service for Cleveland County HSs. Currently, the SBP is free to students via a government waiver, but only 53.3 students for every 100 students receiving free and reduced priced lunch are participating. The SBP participation is linked to better test scores, fewer absences and tardies, improved diet quality, and fewer school nurse visits, so increasing SBP participation is in the county's best interest. One barrier to participation is access, traditional school breakfast is served out of the cafeteria, which may be far from the classroom and require students to show up extra early for school, another is stigma, where students are embarrassed about needing free school breakfast, so they choose not to participate. This program proposes a BIC service model, where breakfast is served in the classroom during first period or homeroom and all students can grab breakfast from the service cart. This model is shown to adequately address the barriers to participation. In North Carolina, compared to paid cafeteria served breakfast, free breakfast increased participation 1.32 times, but free breakfast paired with BIC increased participation 7.42 times, demonstrating the efficacy of this model.

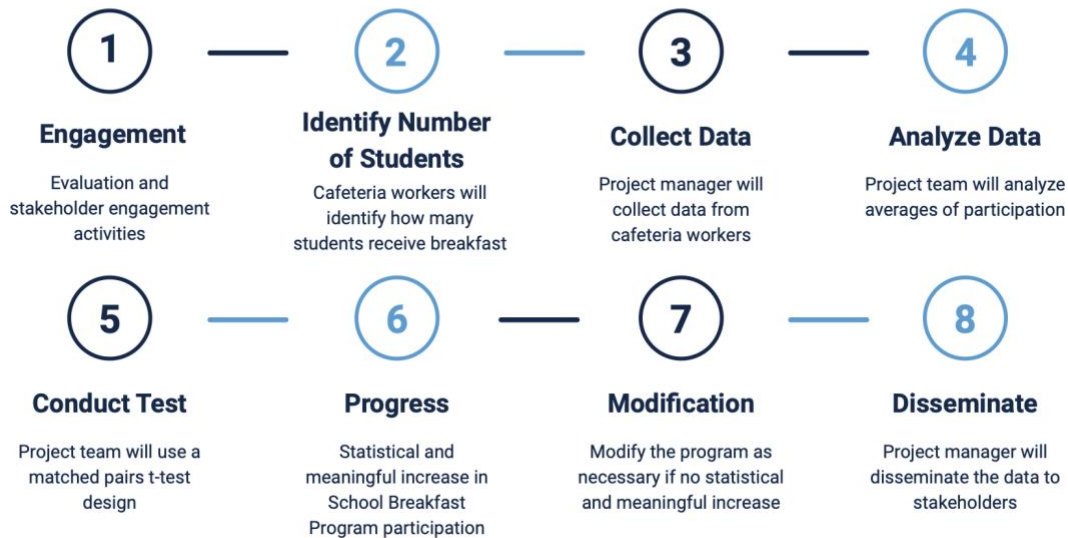
Nutrition Program: Implementation



Ashley Kelley

The first step of implementation is to hire a project manager, who will oversee and implement SBP changes to the 7 HS in Cleveland County. Next, community meetings will be held with school staff to receive input, assess school readiness such as current staffing, staff receptivity, and resources, and address common concerns from teachers such as messiness and class disruption. Following these meetings, the project manager and school leadership will identify the 2 schools most ready to transition to BIC as the pilot schools. The primary data review will happen after year one and the secondary review after year two. After year one, lessons learned will modify and update the program and the other 5 schools will begin with the updated program, meaning all 7 HSs will move to a BIC model by year 2.

Nutrition Program Evaluation Plan



Grace Carstens

For the nutrition program evaluation plan, the evaluation and stakeholder engagement activities will take place at the beginning of the academic year (which is the baseline), as well as after the first semester and after the first year. In each high school, the cafeteria workers will identify how many high school students receive breakfast, and the project manager will collect this data from the cafeteria workers. The number of students who actually consume the breakfast they receive as well as the amount of breakfast consumed by the students will not be measured. The data collection will occur at the beginning of the academic year, on a monthly basis, and at the end of the academic year. The data from the beginning of the academic year is the pre-test, and it is the number of students who participated in the School Breakfast Program in the previous year. The data from the end of the academic year is the post-test.

The project team will then analyze the data by calculating the monthly, beginning, and ending participation averages. This data will then be used to conduct a matched-pairs t-test and measure prevalence for significance. The matched-pairs t-test design was chosen because it measures if there is a significant difference between the pretest data and post-test data for each high school as well as between the high schools and the county.

Progress will occur if there is a statistical and meaningful increase in the School Breakfast Program participation based on the results of the test. However, if there is no statistical and meaningful increase after the first

year of approximately 25%, then the project manager will modify the program as necessary. This modification will be done through feedback received from the students.

Once the data has been collected and analyzed, the project manager will disseminate the information to the stakeholders including county officials such as the County Commissioner, superintendents, and school boards via a presentation and briefing. Parents and students will also receive the information through a newsletter in an email.



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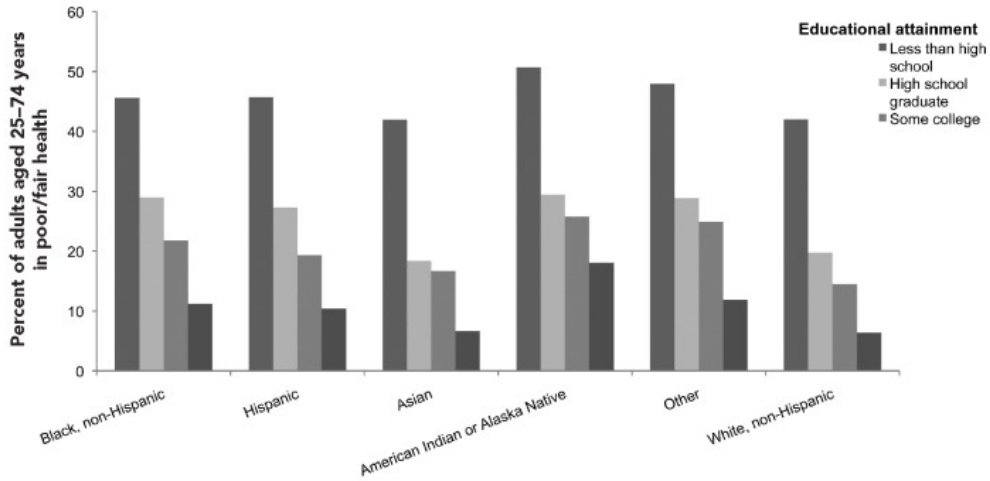


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APPENDIX A

Figure 1

Socioeconomic gradients in poor/fair health among adults aged 25–74 years



Note: Socioeconomic gradients in poor/fair health among adults aged 25–74 years within racial/ethnic groups in the U.S. Source: Analyses by Cubbin of Behavioral Risk Factor Surveillance System survey data, 2008–2010, reported in: Braveman P, Egerter S. Overcoming obstacles to health in 2013 and beyond: report for the Robert Wood Johnson Foundation Commission to Build a Healthier America. Princeton (NJ): Robert Wood Johnson Foundation; 2013.

Table 1*Staffing Plan (FTE) School Counselor Program*

Position	FTEs	Salary	Fringe (30%)	Personnel Cost
School Counselor #1	1	\$49,000.00	\$14,700.00	\$63,700.00
School Counselor #2	1	\$47,000.00	\$14,100.00	\$61,100.00
School Counselor #3	1	\$46,500.00	\$13,950.00	\$60,450.00
Superintendent	0	\$140,000.00	\$42,000.00	\$0.00
Principal	0	\$75,500.00	\$22,650.00	\$0.00
Counselor Supervisor	0	\$56,000.00	\$16,800.00	\$0.00
Totals	3	\$414,000.00	\$124,200.00	\$185,250.00

Table 2*Program 3-Year Line-Item Budget*

Personnel				
Item	Y1	Y2	Y3	Total
School Counselor #1	\$63,700.00	\$76,440.00	\$91,728.00	\$231,868.00
School Counselor #2	\$61,100.00	\$73,320.00	\$87,984.00	\$222,404.00
School Counselor #3	\$60,450.00	\$72,540.00	\$87,048.00	\$220,038.00
Superintendent	\$0.00	\$0.00	\$0.00	\$0.00
Principal	\$0.00	\$0.00	\$0.00	\$0.00
Counselor Supervisor	\$0.00	\$0.00	\$0.00	\$0.00
Training	\$1,890.00	\$1,890.00	\$1,890.00	\$5,670.00
Personnel Expenses	\$187,140.00	\$224,190.00	\$268,650.00	\$679,980.00
Non-Personnel				
Item	Y1	Y2	Y3	Total
Administration	\$0.00	\$0.00	\$0.00	\$0.00
Building Expenses	\$0.00	\$0.00	\$0.00	\$0.00
Oversight Tracking System	\$0.00	\$0.00	\$0.00	\$0.00
Educational Materials/Supplies	\$2,371.71	\$2,419.14	\$2,467.52	\$7,258.37
Printing, copying	\$80.85	\$82.47	\$84.12	\$247.44
Conferences, Meetings	\$161.71	\$164.94	\$168.24	\$494.89
Communications	\$242.56	\$247.41	\$252.36	\$742.33
Technology, Equipment	\$377.32	\$384.86	\$392.56	\$1,154.74
Non-Personnel Expenses	\$3,234.14	\$3,298.83	\$3,364.80	\$9,897.78
Total Expenses	\$190,374.14	\$227,488.83	\$272,014.80	\$689,877.78
Income				
Item	Y1	Y2	Y3	Total
School Resource Officers Grant	\$1,007.51	\$0.00	\$0.00	\$1,007.51
ACA Funding	\$1,500.00	\$1,500.00	\$1,500.00	\$4,500.00
Title IV, Part A ESSA Act	\$30,000.00	\$0.00	\$30,000.00	\$60,000.00
NCCSA Professional Development Grant	\$1,125.00	\$1,125.00	\$1,125.00	\$3,375.00
Title I, Part A	\$165,741.64	\$93,258.36	\$0.00	\$250,000.00
Total Income	\$190,374.15	\$95,883.360	\$32,625.00	\$318,882.51
Request to Cleveland County Commissioners (Total Net Gain/Loss)	\$0.00	-\$131,605.47	-\$239,389.80	-\$370,995.27

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APPENDIX B: HANNAH ARCHER

Problem Statement

Social Determinant of Health

Health is greatly influenced by a variety of upstream factors, including social class and the environment, known as the social determinants of health. Education Access and Quality is a critical aspect of these determinants and refers to one's ability to not only receive an education but to receive a quality education (Healthy People 2030, n.d.). Access issues to education might be because of one's geographic location or socioeconomic status (i.e. districted for a low-income school with limited resources based on home address) (Healthy People 2030, n.d.). Quality, on the other hand, can be influenced by different factors including the socioeconomic status of a school district, the quality of the educators themselves, and the funding available to the school (Healthy People 2030, n.d.). This may also include the availability of additional resources for students with intellectual or developmental disabilities.

More specifically, the combination of access and quality greatly influences high school graduation rates within four years. The completion of high school education has significant long-term influences on health, as a high school diploma ties closely to a continuation of higher education, employment, and/or income (Tulane University, 2021). In turn, employment and income impact the ability to access quality healthcare in addition to living in a safe and healthy environment (Tulane University, 2021). This impacts the health of not only the individual but also their family. Children that grow up in low-income neighborhoods with limited access to high quality education are then impacted in the same way their parents were, with more obstacles to achieve educational success and graduate high school. Ultimately, barriers to accessing quality education can create a cycle of poor health outcomes, such as hypertension and malnutrition, across generations (Tulane University, 2021).

Geographic and Historical Context

Cleveland County is located in the west of North Carolina (NC) and is on the southern border of the state. The county is rooted in agricultural history and continues to focus a large part of its market today from agriculture along with manufacturing. Cleveland County is significantly more rural (55.8%) compared to the NC average (33.9%), and 20% of the individuals in the county are classified below the federal poverty line (Cleveland County Public Health Center (CCPHC), 2019). The county is predominantly White and has less diversity than the average county in NC (CCPHC, 2019). In addition, according to the 2019 Community Health Assessment, the county is

considered the highest level of economically disadvantaged – Tier 1. This ranking indicates the county has a lower than average median household income and higher than average unemployment rate compared to other counties across NC (CCPHC, 2019). To combat poor health outcomes, the county strived to make significant changes over the past two decades. This includes surveys conducted in 2002, 2007, 2011, and 2015 to identify emerging needs, barriers to services, and current strengths in the county (CCPHC, 2019). Finally, the 2019 community health assessment indicated the greatest needs for the county based on the *Healthy NC 2030: A Path Toward Health* presentation in 2020 (NC Institute of Medicine, 2020). The needs assessment brought to light barriers to care and inspired the creation of new programs to enhance access and affordability of services in Cleveland County in the hopes of ultimately improving population health outcomes.

Priority Population

The priority population is adolescent children grades 9-12 attending high school, specifically in Cleveland County, NC. Roughly 28% of the county is composed of children under 18 years of age and children are disproportionately affected by poverty compared to other members of the community (CCPHC, 2019). According to the 2019 County Health Needs Assessment, adverse childhood experiences is the second-highest priority for county health, which includes higher than average rates of neglect and abuse of children. More specifically, high school students in Cleveland County face higher rates of anxiety and depression compared to other counties across NC (CCPHC, 2019). These factors portray the significant unmet needs of children within Cleveland County and the particular vulnerability of high schoolers. The poverty of children in the county, along with other social and environmental factors, diminishes the presence of positive health outcomes among adolescents. It is apparent there is a need for a safe and nurturing space during critical phases of childhood development indicating the significance of improved access to education, as this is a critical component influencing the health outcomes of adolescents.

Measures of Problem Scope

Cleveland County is ranked in the lowest quartile of health compared to other counties in NC. This, in part, can be explained by the fact that Cleveland County has a much lower average household income compared to the average across NC. As a result, 31% of children in Cleveland County live in poverty, which is significantly greater than the NC average (County Health Rankings and Roadmaps (CHRR), 2022). Poverty in childhood has direct impacts on a child's access to education. Access to education as a child is shown to influence outcomes including health outcomes as a child, high school completion, continuation to higher education, and health outcomes as an

adult (CCPHC, 2019). Regarding child health outcomes, the 2019 Community Health Assessment surveyed households with children ages 9-19 about the health issues of children in these homes (see table). Mental health issues ranked the top issue followed by nutrition, drug abuse, and sex education. All of these health topics could be improved, in part, through improved quality of health education in schools (CCPHC, 2019). However, this requires improved accessibility of education for high school to be able to attend school and continue beyond high school graduation. Eighty four percent of students in Cleveland County complete high school, which is lower than the NC average of 88% (CHRR, 2022). More specifically, 5% of the county has less than a 9th-grade education, and 10.7% of the county has a 9th-12th grade education with no diploma (CCPHC, 2019). These outcomes, in turn, influence the higher rates of poverty in Cleveland County compared to the rest of NC. These higher poverty rates then lead to worse health outcomes. Research indicates adults are at 80% greater risk for poor health outcomes without at least a high school education (Tulane University, 2021). Thus, improvements to education access can result in improved health outcomes for children and adults alike.

Rationale/Importance

Less than a quarter of adults in NC with less than a high school degree reported good health in 2020 (America's Health Rankings, 2022). Cleveland County has high school graduation rates below the NC average, which indicates a need for the improved educational attainment of a high school degree (CHRR, 2022). These improvements start in early childhood. High quality early education is proven to increase the likelihood children will not only complete high school but also attend higher education (Schanzenbach & Bauer, 2016). Greater educational attainment creates more opportunities for employment and income (Schanzenbach & Bauer, 2016). Families with higher incomes have a greater likelihood of living in high-quality school districts, continuing the cycle of better-quality education for children and thus better health outcomes as an adult (Schanzenbach & Bauer, 2016). Ultimately, addressing Education Access and Quality will have positive impacts on all members of the community.

Disciplinary Critique

Health policy professionals have the unique abilities to combine their classroom knowledge of health equity with their ability to advocate for change. In order to make a change of this magnitude and enhance high school graduation rates, health policy professionals hold the key to making long-term change by influencing policy. Health policy professionals are trained with the tools to create solutions to complex problems, formulate policies from these solutions, analyze the benefits to each policy option, and advocate to permanently implement policies to

create change. Health policy professionals are also given the tools to create detailed budgets with rational justifications regarding costs in the short and long- term. By making these predictions, health policy professionals are able to establish change that is effective and sustainable. In the case of Cleveland County, the implications of addressing education quality and access are significant. Improving the high school graduation rate, in particular, will improve other upstream factors (i.e. income and employment) that influence the health outcomes of every following generation of children in the county.

APPENDIX B1

Table 1

Priority Health Topics for youth 9–19 in Cleveland County. Results from the 2019 Community Health Assessment.

Rank	Health Topic
1	Mental health issues
2	Nutrition
3	Drug abuse
4	Sex education
5	Reckless driving/speeding
6	Suicide prevention
7	Sexually transmitted diseases
8	Alcohol
9	Dental hygiene
10	Tobacco
11	Eating disorders
12	Asthma management
13	Diabetes management

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Policy Analysis

Background

Cleveland County has a high school (HS) graduation rate lower than the NC average. There are several factors influencing the number of students successfully graduating within four years, including income disparities, the ease of transition into HS, and student mental health (Robertson et al., 2016). More specifically, research indicates students who struggle in their HS transition and fail 9th-grade classes have a 16% chance of graduating. Also, roughly one-third of students cite poor mental health as a reason for dropping out of HS (Hjorth et al., 2016; Korbey, 2015). Finally, low-income students have a higher likelihood of struggling to graduate (Hjorth et al., 2016). There are existing policies to help address these issues including the NC State Board of Education (SBOE) Strategic Plan. This was implemented by the NC Social and Emotional Learning (SEL) Team to reach several goals by 2025 including the reduction of HS dropout rates (NC SBOE, 2019). While existing policies are in place, further policies are necessary to increase the four-year graduation rate in Cleveland County public schools. The following policy options will be assessed – 1) change the 8th-grade curriculum to include a HS transition course and 2) hire more school counselors to establish a 250:1 ratio of students to HS counselors. These policies will be evaluated regarding the political feasibility, cost to the county, impact on the HS graduation rate, and equity.

Policy Option 1

Although the transition from middle school (MS) to HS is difficult for most students, many HSs fail to provide programs and guidance to ease this transition. While some schools provide transition assistance, this occurs once the students are already in HS, which is often too late (Xu et al., 2021). Rather, students should be prepared earlier through an 8th-grade program focused on HS preparation. Option 1 proposes a curriculum change in Cleveland County public schools to include a year-long course mandatory for all 8th-graders. This course would include academic interventions to provide HS-level MS curriculum, student visitation to HS classrooms, peer panels, pairing 8th-graders with upperclassmen, and increased support in the learning environment (Cohen & Smerdon, 2009; Letrello & Miles, 2003).

Research indicates there are a variety of factors negatively impacting a student's transition into HS including social adjustment issues and academic rigor (Erickson et al., 2013). These factors can cause freshmen to fall behind and struggle in subsequent years, leading to difficulties to graduate on time or at all (Erickson et al., 2013). This legislative proposal is based on evidence of successful 8th-grade transition programs such as

“SUCCESS” in Maryland public schools and “Project Transition” in Kansas City and Milwaukee public schools (Neild, 2009; Oakes & Waite, 2009). These program achievements and others indicate the value of supporting students before they enter HS, as these programs smooth this transition while also improving student attendance and achievement (Neild, 2009). Improving these factors for 9th-graders will improve student success and in turn, increase graduation rates. The primary stakeholder in support is Communities In Schools of Cleveland County, given their focus on removing barriers to student success, increasing attendance, improving student coursework performance, etc. (Communities in Schools, n.d.). In contrast, the primary stakeholder in opposition is the Cleveland County GOP, given their views against increased government funding for public use (Cleveland County GOP, 2021; Republican Views, 2014).

Policy Option 2

The American School Counselor Association recommends a ratio of 250 students to 1 school counselor (Sorrells, 2019). Cleveland County falls behind this benchmark with a ratio of roughly 350:1 (Patel & Clinedinst, 2021). School counselors provide critical mental and emotional support along with post-graduation guidance to high schoolers. Thus, school counselors play an important role in student well-being, including their mental health (Hjorth et al., 2016). Given the influence of mental health on student academic achievement, Option 2 proposes a requirement for all Cleveland County public HSs to have a ratio of 250:1. Currently, there is one designated counselor at each HS in Cleveland County. To achieve this ratio, this policy proposes hiring three additional counselors to serve these seven schools.

Current research indicates improvements in student mental health improve HS graduation rates and guidance counselors play an important role in improving HS student mental health (Hjorth et al., 2016; Collins, 2014). A recent study indicated school counselors have the greatest impact on low-achieving and low-income students, particularly in their effectiveness to improve HS graduation rates (Sorrells, 2019). Evidence of this is clear through Colorado’s School Counselor Corps Grant Program (SCCGP). This program provides funding to lower-income school districts to increase the availability of school-based counseling to improve HS graduation rates and increase the number of students attending post-secondary institutions (Engelman et al., 2021). Results from this program indicate significant success in SCCGP-funded schools including achieving higher graduation rates (Engelman et al., 2021). Teachers would be a proponent of this policy, as improvements to their student's well-being will translate to academic success (Wilhsson et al., 2017). In addition, additional staff will improve the mental health

of students without placing a greater workload on teachers. Similar to Option 1, the greatest opponents are the Cleveland County GOP, given the additional public funding required to implement the legislation (Cleveland County GOP, 2021; Republican Views, 2014).

Evaluation

As mentioned previously, there are four factors to assess when comparing the two policies proposed – political feasibility, cost to the county, impact on the county, and the extent the policy reduces income disparities in high school graduation. Political feasibility is the first criteria. Given research results, existing evidence, and stakeholders, Policy Option 2 has a significantly greater likelihood to be passed by the county commissioner. Policy 2 is founded on the SEL legislation requirements already in place across schools in NC (NC SBOE, 2019). Therefore, the enhancement of this law is not much different than what is already in place and has existing proof of success (Engelman et al., 2021). In contrast, option 1 is less feasible, given historical opposition to implementing new curriculum in schools (Pak et al., 2020).

Cost is the next evaluation criteria to consider. For Option 1, curriculum implementation takes significant time and money. After a recent curriculum shift, the state of Tennessee (TN) noted, in addition to the complexity of implementing new standards, the cost districts would incur for new materials, professional development, and planning would be substantial (Tatter, 2015). In one school year, a TN school district spent over \$8 million on textbooks roughly \$6,000 to \$8,000 per teacher for professional development (Tatter, 2015; Sawchuk, 2010). In contrast, Option 2 requires significantly less complexity in its implementation and less funding, as the cost to the district solely pertains to the annual salary for three additional counselors, which ranges from \$34,900 to \$64,800 per counselor (Career Explorer, n.d.).

Impact pertains to the impact of these policies reaching the goal – to increase HS graduation rates. Option 1 has mixed success in previous models. One study indicated at-risk students were more likely (81%) to graduate HS upon participating in a transition program compared to non-participants (63%) (Johnson et al., 2014). However, many of the results in these models are for 9th-grade transition programs, as there is little research for 8th-grade programs (Johnson et al., 2014). Option 2 indicates more concrete success, particularly for students from low-income households. A recent study conducted in a Missouri school district depicted significantly different results, as high poverty schools with a ratio of 250:1 or less had higher graduation rates compared to schools with a greater ratio (Lapan et al., 2012).

Equity is the final evaluation criteria and assesses the extent the policies reduce income disparities in HS graduation. Current models in place similar to Option 1 indicate success, but these examples are for 9th-grade based transition programs (Johnson et al., 2014). For 8th-grade specific programs, evidence is extremely limited and the data available shows an impact more generally across the student body, rather than specifically impacting low-income students (Christie & Zinth, 2008). Evidence for Option 2 indicates an impact for low-income students, working towards equity of HS graduation rates, regardless of income (Sorrells, 2019). Therefore, while both policy options influence graduation rates, Option 2 has more success specifically reducing the graduation disparities influenced by income-level.

Final Recommendation

Given the overwhelming evidence indicating the association of more HS guidance counselors with higher graduation rates, Option 2 is the superior choice. Guidance counselors play an important role in many aspects of student well-being and a student's academic achievement (Lapan et al., 2012). Process and outcome measures were established to ensure Option 2 is implemented appropriately and is achieving its intended outcomes – to increase four-year graduation rates. The process measure is the number of HS students receiving assistance from guidance counselors (i.e. attending a career workshop, mental health counseling, etc.), and the outcome measure is the number of students graduating in four years (Dafoe, 2018). Both measures will be critical to understand the impacts of the policy intervention. HS is an invaluable time in adolescent development and the likelihood to graduate influences student success in HS and beyond (Sorrells, 2019). Thus, Option 2 is the most effective path to achieve this goal.

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Policy Budget

Program Summary

The goal of the High School Mental Health Program (HSMHP) is to provide more support to students through an increase in the number of guidance counselors at the seven high schools in Cleveland County. Research indicates a ratio of 250 students to 1 guidance counselor improves the mental health of high school students and particularly provides improved support to students from low-income backgrounds (Sorrells, 2019). The ultimate goal of this program is to enhance the mental health of students to improve graduation rates within four years.

Each of the seven high schools currently has at least one guidance counselor (Patel & Clinedinst, 2021). The three additional counselors to be hired will alternate between schools. Each of the three counselors will be assigned to two or three schools and attend each of the schools on designated days of the week to provide more assistance to students. After hiring the three new counselors, additional programmatic activities include professional development for counselors and assembling a mental health committee at each of the seven high schools consisting of at least one administrator, one teacher, and one counselor to focus on ways to improve the mental health of their students. These activities were determined through the assistance of the Re-Thinking High-Performance report developed by the Cleveland County Manager (Epley, 2021). The professional development will consist of educating guidance counselors and other faculty with an overall goal to emphasize the connection between student mental health and graduation rates. Guidance counselors will learn more about the demographics of students along with common barriers they face to understand the services they need to provide. Guidance counselors will also spend time at the start of each semester educating faculty about student mental health and common signs faculty should look to identify to better support students. The administration will also spend more time working to provide room in student schedules to seek time with a guidance counselor or receive counseling in group sessions if needed. More generally, the primary goal is to increase student time with guidance counselors.

Budget Proposal

The three-year budget proposal is included in the appendices below for Tables 1 and 2.

Budget Narrative

The personnel expenses were calculated using the three full-time equivalents (FTE) listed in the budget to indicate the hiring of three additional guidance counselors to serve at each of the seven schools. The guidance counselor salaries were based on income averages for high school guidance counselors across NC listed on

indeed.com (Indeed, 2022). The assumptions for salary include one of the guidance counselors serving as head counselor and they will make a higher salary. Raises each fiscal year will match the estimated 2% inflation.

The non-personnel expenses were determined by utilizing the Summary of Expenditures for the 2017-18 school year NC budget (NCDPI, 2019). This budget indicates the percent of monetary expenses dedicated to a variety of non-personnel expenses including those listed on the budget that would support the HSMHP. The expenses were calculated by multiplying the total expenditure for the year for the CC School district along with the percent FTE of the new guidance counselors (NCES, 2020; NCDPI, 2019). The total non-personnel expenses for the HSMHP amounts to 2.65% of the CC school budget. Administrative and building cost refers to overhead building expenses. The instructional materials indicate necessary materials to train guidance counselors along with materials guidance counselors will use to educate teachers. Printing/copying refers to any resources printed, and equipment/supplies refer to office supplies. Communication services are for the counselor's use of virtual platforms to communicate with students, parents, and staff. Technology includes Wi-Fi, technical repair, and the purchase of new computers. Finally, workshops/meetings fund the costs for workshops counselors attend (NCDPI, 2019).

The primary source of income is the request from the CC Commissioner for \$652,477 – the salary request for three additional guidance counselors across three years. Additional income items include grants the schools will likely be awarded to help establish the HSMHP. First, the American Counselor Association (ACA) allows for each guidance counselor to apply for \$500. These grants can be renewed each year (ACAF, n.d.). Next, the Elementary and Secondary School Counseling Program has a grant competition that awards each school \$350,000 (non-renewable). Schools are eligible if their projects improve mental health through increasing the number of school counselors, enhancing professional development for counselors, etc. (OESE, 2014). In addition, Voya Unsung Heroes Awards Program provides a maximum award of \$25,000 (non-renewable) to an educator for a school program they initiate to enhance student learning (Scholarship America, 2022). Finally, the McCarthy Dressman Education Foundation provides Teacher Development Grants to teams of educators working to improve learning in K-12 classrooms using fresh and innovative strategies. The grant can be renewed for a maximum of three years (MDEF, 2022).

APPENDICES B3

Figure 1

Staffing Table

FULL TIME EQUIVALENT POSITIONS School Counselor Program

Position	FTEs	Salary	Fringe (30%) Benefits	Personnel Cost
School Counselor #1	1	\$58,000	\$17,400	\$75,400
School Counselor #2	1	\$53,000	\$15,900	\$68,900
School Counselor #3	1	\$53,000	\$15,900	\$68,900
TOTAL	3	\$164,000	\$49,200	\$213,200

Figure 2*Three Year Line Item***PERSONNEL EXPENSES**

Item	FY1	FY2	FY3	Total
School Counselor #1	\$75,400	\$76,908	\$78,446	\$230,754
School Counselor #2	\$68,900	\$70,278	\$71,684	\$210,862
School Counselor #3	\$68,900	\$70,278	\$71,684	\$210,862
PERSONNEL TOTAL	\$213,200	\$217,464	\$221,813	\$652,477

NON-PERSONNEL EXPENSES

Item	FY1	FY2	FY3	Total
Administration	\$2,502.73	\$2,552.78	\$2,603.84	\$7,659.35
Building Cost	\$27.20	\$27.75	\$28.30	\$83.25
Instructional Materials	\$2,393.91	\$2,441.79	\$2,490.63	\$7,326.33
Printing & Copying	\$81.61	\$83.24	\$84.91	\$249.76
Equipment & Supplies	\$380.85	\$388.47	\$396.24	\$1,165.55
Communication Services	\$244.83	\$249.73	\$254.72	\$749.28
Technology	\$1,088.14	\$1,109.91	\$1,132.10	\$3,330.15
Workshops & Meetings	\$489.66	\$499.46	\$509.45	\$1,498.57
NON-PERSONNEL TOTAL	\$7,208.95	\$7,353.12	\$7,500.19	\$22,062.26
TOTAL EXPENSES	\$220,408.95	\$224,817.12	\$229,313.47	\$674,539.54

INCOME

Item	FY1	FY2	FY3	Total
Request from County Commissioner	\$213,200	\$217,464	\$221,813	\$652,477
Elementary and Secondary School Counseling Program Grant	\$350,000	\$0	\$0	\$350,000
Voya Unsung Heroes Awards Program	\$27,000	\$0	\$0	\$27,000
McCarthy Dressman Education Foundation Teacher Development Grant	\$10,000	\$10,000	\$10,000	\$30,000
American Counseling Association	\$1,500	\$1,500	\$1,500	\$4,500
TOTAL INCOME	\$601,700	\$228,964	\$233,313	\$1,063,977
NET (GAIN/LOSS)				\$389,438

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HPM Policy: Proposal Overview

- Mental health influences HS graduation rates ¹
- ACA = 250:1 ²
- Cleveland County = 350:1 ³
- High School Mental Health Program
- Hire 3 additional school counselors



Academic
Guidance



Social-Emotional
Learning

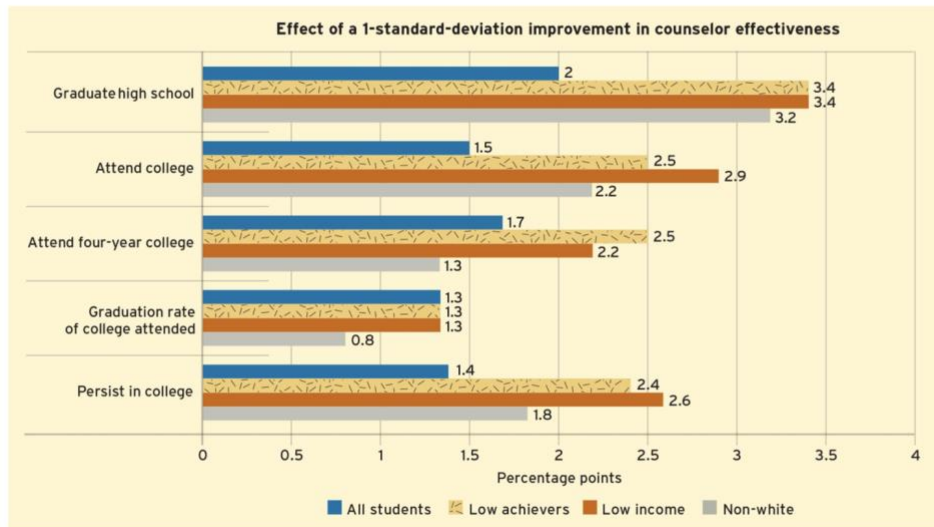


College, Career &
Military
Readiness

References: 1. (Hjorth et al., 2016), 2. (Sorrels, 2019), 3. (Patel & Clinedinst, 2021).

Script: Several factors influence the number of students successfully graduating within four years. One-third of students cite poor mental health as a reason for dropping out of HS, particularly low-income students who have a higher likelihood of struggling to graduate. The American School Counselor Association recommends a ratio of 250 students to 1 school counselor but CC falls behind this benchmark with a ratio of roughly 350:1. School counselors play an important role in student well-being, including their mental health and academic achievement. Given this influence, our team decided to pursue the High School Mental Health Program which proposes a requirement for all CC public HSs to have a ratio of 250:1, and to reach this ratio, we propose hiring three additional counselors to serve.

HPM Policy: Evidence



References: 1. (Mulhern, 2020)

Script: We based our recommendation on the successes of other school counselor programs, including Colorado’s School Counselor Corps Grant Program. This program provides funding to lower-income school districts to increase the availability of school-based counseling. Results from this program indicate significant success in these schools including achieving higher graduation rates and having the greatest impact on low-achieving and low-income students. This can be seen above in the top section of this graph.

HPM Policy: Evaluation



1. Political Feasibility ^{1,2}
2. Cost to the county
3. Impact (influence to increase HS graduation rates)
4. Equity (ability to reduce income disparities in graduation rates)



References: 1. (NC SBOE, 2019), 2. (Engelman et al., 2021)

Script: We assessed the following 4 factors for each proposed policy. For political feasibility, the HSMHP is founded on requirements already in place across schools in NC, such that the enhancement of this law is not much different than what is already in place and has existing proof of success. For cost, the HSMHP required the least complexity in its implementation and therefore less funding. Finally, both impact and equity are proven given large amounts of concrete success in previous school models, particularly for students from low-income households, as seen on the previous slides.

APPENDIX C: GRACE CARSTENS

Problem Statement

Social Determinant of Health (SDoH)

Social Determinants of Health (SDoH) are “the 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, 2020b). The social determinants of health (SDoH) consist of Education Access and Quality, Economic Stability, Health Care Access and Quality, Neighborhood and Built Environment, and Social and Community Context. Education Access and Quality is the SDoH of focus, and the goal is to provide children and adolescents high-quality educational opportunities as well as help them do well in school by increasing graduation rates and the number of children who are developmentally ready for school (Healthy People 2030, 2020a). AH-D08, “increase the proportion of high school students who graduate in [four] years,” is the key Education Access and Quality objective of interest (Healthy People 2030, 2020b). This objective aims to improve education access and quality by providing students with a greater opportunity to graduate from high school. Furthermore, Education Access and Quality can have short-term and long-term effects on the community and its members. For example, short-term impacts of this SDoH are dropping out of high school, poor education, and social discrimination (Healthy People 2030, 2020a). This can lead to long-term impacts, which consist of a lower probability of obtaining a safe, high-paying job, higher probability of developing health problems (i.e., heart disease, diabetes, and depression), and inadequate brain development (Healthy People 2030, 2020a).

Geographic and Historical Context

Cleveland County is a community located in the state of North Carolina. It is a rural county designated as Tier 1, which indicates that it is an economically disadvantaged county. The county is located in the Piedmont of southwestern North Carolina. Prior to the 1960s, Cleveland was known for its agriculture economy. In particular, cotton was the main crop grown while wheat, sweet potatoes, and oats were grown to a lesser extent, and more than 400 dairy farmers were operating in the county. After the 1960s, manufacturing and distribution began to contribute significantly to the economy; however, agriculture remained significant. As a result of the economic shift, 40% of the Cleveland workforce is currently employed in manufacturing (Cleveland County, 2019). According to County Health Rankings, Cleveland County is currently ranked 81 out of 100 for health outcomes and 72 out of 100 for health factors. 23% of the county population has poor or fair health, and the life expectancy is 74.6 years, which is

approximately four years lower than the state average. The median household income is \$46,000, and approximately 31% of the children are living in poverty. In terms of education, the high school completion rate is 84%, and the county consists of a diverse population as displayed in Table 1 in Appendices C1 (County Health Rankings, 2022).

Priority Population

The population of interest for Education Access and Quality is high school students, grades 9-12, in Cleveland County, North Carolina who live in low-income neighborhoods. There is no census data specifically regarding individuals in grades 9-12; however, approximately 19.3% of Cleveland County's population is 5 to 17 years old (Cleveland County, 2019). Furthermore, according to Cleveland County's 2019 Community Health Assessment, poverty disproportionately impacts children. The poverty rate for children under the age of 18 is 27.5%, which is higher than North Carolina's poverty rate for children 18 and younger of 22.9%. Cleveland County's poverty rate for children 18 and younger is also higher than North Carolina's overall poverty rate of 16.1% as well as Cleveland County's overall poverty rate of 19.9% (Cleveland County, 2019). During the 2018-2019 school year, 57.57% of K-12 students participated in the Free and Reduced Lunch Program (Cleveland County, 2019).

Measures of Problem Scope

In 2019, 5.4% of Cleveland County individuals surveyed had less than 9th-grade education while 4.9% of the individuals in North Carolina had less than 9th-grade education. 10.7% in Cleveland County had 9th to 12th-grade education but no diploma, and 8.2% of North Carolina had 9th to 12th-grade education but no diploma. The individuals who fall within these categories are at an increased risk for developing health issues (i.e., diabetes and heart disease), experiencing social discrimination, and are less likely to obtain higher income jobs (Healthy People 2030, 2020a). Thus, these individuals may have a lower income, which can impact their health due to inadequate housing, insufficient funds to buy healthy foods, and inability to maintain healthy behaviors (American Academy of Family Physicians, 2015). 35.1% of Cleveland County was a high school graduate or had a GED, and 26.1% of North Carolina was a high school graduate or had a GED (Cleveland County, 2019). Evaluating the percentage of high school students who graduate on time in North Carolina by race shows a disparity (refer to Table 2 in Appendices C1). Asian and White students have the highest graduation rates. Furthermore, 67% of children are eligible for free or reduced-price lunch, which is higher than the state average of 56%. For the county population,

approximately 16% are food insecure,¹ and 7% have limited access to healthy foods (County Health Rankings, 2022).

Rationale/Importance

Addressing Education Access and Quality by increasing the number of high school students who graduate in four years through nutrition-related approaches can have a beneficial impact. For example, graduating high school has been shown to decrease long-term morbidity as well as mortality rates as displayed in Figures 1, 2, and 3 in Appendices C1 (Hahn et al., 2015; Hummer & Hernandez, 2013). Individuals who do not have a high school degree have a lower life expectancy by approximately ten years compared to individuals who have a college degree (National Center for Health Statistics, 2012; Hummer & Hernandez, 2013). Having more years of schooling can also result in better health, choosing healthier behaviors, and promoting health equity (Feinstein et al., 2006; Hahn et al., 2015). Additionally, a review conducted by Bradley and Greene indicates that adequate access and intake of nutritious foods can improve students' grades, grade point average (GPA), and reduce the risk for grade-level retention (Bradley & Greene, 2013). Therefore, by addressing this Social Determinant of Health and objective, high school students can live longer, healthier lives.

Disciplinary Critique

Research indicates education impacts poverty and health equity. Thus, registered dietitians and public health professionals should work to improve the number of students who graduate high school in four years by providing high school students with the knowledge and skills they need to make healthier choices. For instance, dietitians can teach high school students how to budget and buy healthy foods, how to cook, and what constitutes a healthy meal. In doing so, high school students can afford nutritious foods as well as make healthier selections in the cafeteria. Improving access to adequate nutrition can then support and improve high school students' academic performance, which can lead to higher graduation rates. Furthermore, an article written by Hahn and Truman discusses how education impacts health equity by quoting Ross & Mirowsky: "...Structural amplification condemns some families to the concentration of low education with poor health across generations...Break that mediating link, and the moderating effect of higher education will suppress the health disadvantages of the socially disadvantaged

¹ Food insecurity: interruption of food intake or eating patterns due to inadequate funds and other resources (Nord et al., 2005).

origins” (Hahn & Truman, 2015; Ross & Mirowsky, 2011). Policy can break the link by providing support through programs and opportunities that help families and students who have been structurally condemned.

APPENDICES C1

Table 1

Demographics of residents in Cleveland County, North Carolina in 2019.

Race	Non-Hispanic Black	AIAN ^a	Asian	Hispanic	Non-Hispanic White
(%)	20.6%	0.4%	1.1%	3.8%	72.8%

^aAIAN stands for American Indian & Alaska Native

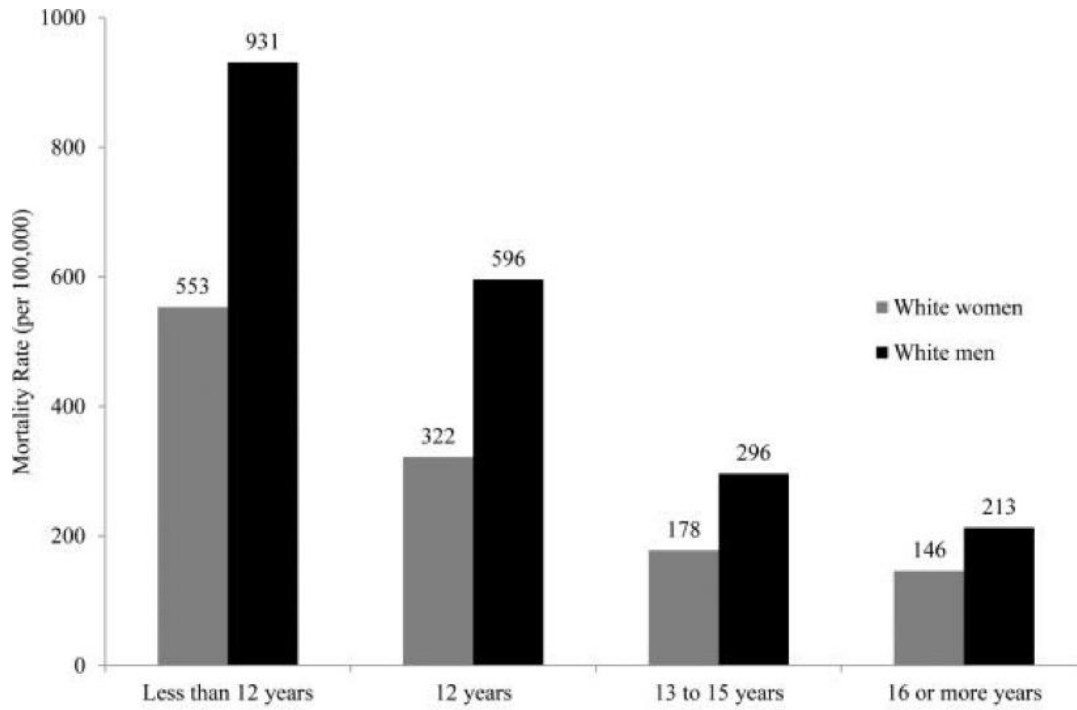
Table 2

Percentage of high school students who graduate on time per race in North Carolina in 2020.

Race	African American or Black	American Indian	Asian	Hispanic or Latinx	White	Other
(%)	85.2%	85.1%	94.4%	81.7%	90.8%	85.3%

Figure 1

Mortality Rates of US Adults Ages 25-64 by Educational Attainment, 2001^a

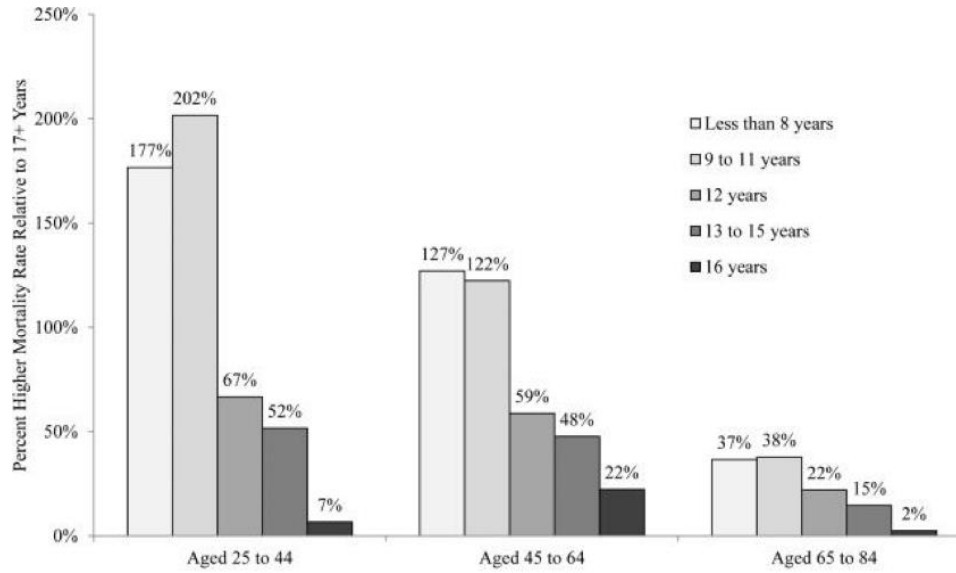


Source: Ahmedin Jemal et al., "Widening of Socioeconomic Inequalities in U.S. Death Rates, 1993-2001," *PLoS ONE*, no. 3, issue 5 (2008): 1-8.

^aHummer & Hernandez, 2013

Figure 2

Mortality Rate Differences Relative to Persons with 17+ Years of Education, U.S. Women by Age^a

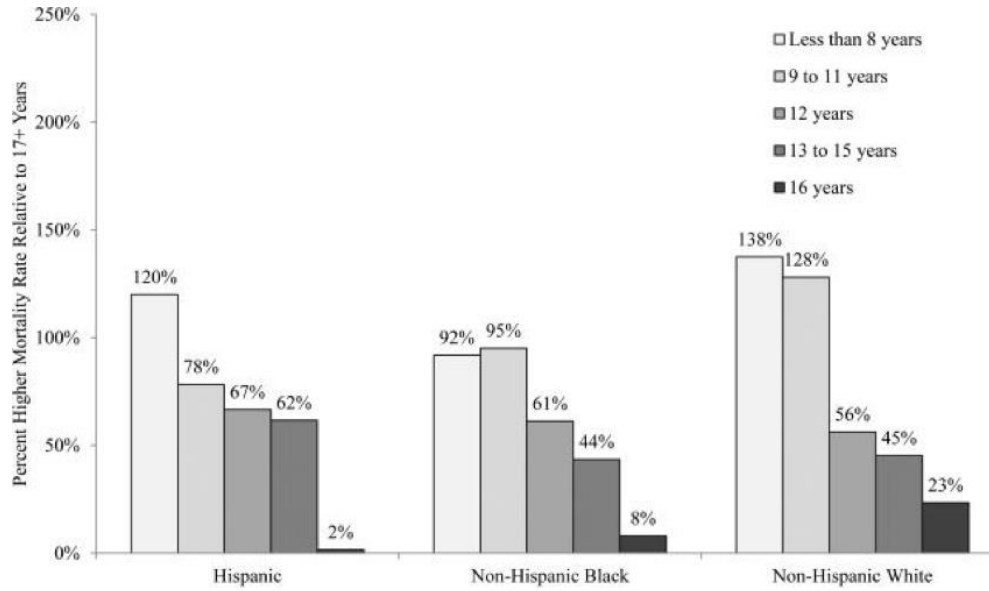


Source: Robert A. Hummer and Joseph T. Lariscy, "Educational Attainment and Adult Mortality," in *International Handbook of Adult Mortality*, ed. Richard G. Rogers and Eileen M. Crimmins (NY: Springer, 2011)

^aHummer & Hernandez, 2013

Figure 3

Mortality Rate Differences Relative to Persons with 17+ Years of Education, U.S. Women by Race/Ethnicity^a



Source: Robert A. Hummer and Joseph T. Lariscy, "Educational Attainment and Adult Mortality," in *International Handbook of Adult Mortality*, ed. Richard G. Rogers and Eileen M. Crimmins (NY: Springer, 2011)

^aHummer & Hernandez, 2013

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Implementation Plan

Background Information

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 affect a wide range of health, functioning, and quality-of-life outcomes and risks” (Healthy People 2030, 2020b). According to Healthy People 2030, Education Access and Quality is one of the domains of the SDoH, and the goal of this domain is to “increase educational opportunities and help children and adolescents do well in school.” The objective of interest in this domain is AH-D08, “increase the proportion of high school students who graduate in [four] years” (Healthy People 2030, 2020a).

Cleveland County is a rural county designated as Tier 1, which denotes it as an economically disadvantaged county (Cleveland County, 2019). The 2021 County Health Rankings indicate that the county has a high school completion rate of 84%, and approximately 19% of the county population is food insecure.² Poor educational attainment can negatively impact nutrition. For example, a study conducted by Fard and colleagues determined that individuals who had poor educational attainment were more likely to consume a diet higher in carbohydrates, sweets, and red meat and lower in fiber (Fard et al., 2021). Overconsumption of sugar has been shown to have negative health outcomes, such as obesity, metabolic syndrome, and inflammatory diseases (Freeman et al., 2018). For individuals who had high educational attainment, they were more likely to consume a diet high in fruits, vegetables, and fish (Fard et al., 2021). Feinstein and colleagues determined that individuals who have more years of schooling are more likely to have better health and practice healthier behaviors (Feinstein et al., 2006). Furthermore, Bradley and Greene conducted a review that shows how proper access and consumption of nutritious foods can contribute to students’ academic performance by improving grades, improving grade point average (GPA), and reducing the risk for grade-level retention (Bradley & Greene, 2013). Therefore, not only can high academic achievement result in healthier eating habits, but implementing nutrition-related programs can improve educational attainment by providing healthy meals and educating students on how to make healthier choices.

Purpose

Cleveland County Schools has implemented the Community Eligibility Provision, which indicates that all students, regardless of their income levels, can receive school breakfasts and lunches (Cleveland County School

² Food insecurity: interruption of food intake or eating patterns due to inadequate funds and other resources (Nord et al., 2005).

Nutrition Services). However, the provision does not guarantee that students will eat the school's breakfast. Barriers, such as late bus arrivals, long bus rides that decrease the amount of time students have to eat breakfast before class, and the stigma associated with participating in the program, can reduce the number of students who participate (Philbin, 2018). Allowing breakfast in the classroom can alleviate these barriers (Byrne, 2021). The stigma can potentially be removed, and students can more easily access breakfast, which can increase the number of students who participate (Soldavini & Ammerman, 2019). Additionally, participating in the School Breakfast Program can have a beneficial impact on students' academic performances and access to healthy foods (Au et al., 2018; Polonsky et al., 2018; Bartfeld & Ahn, 2011; Frisvold, 2015; Murphy et al., 1998). Participation has been shown to include "higher dietary quality, lower levels of food insecurity, and higher academic performance" (Au et al., 2018; Polonsky et al., 2018; Bartfeld & Ahn, 2011; Frisvold, 2015; Murphy et al., 1998). Eating breakfast can also result in increased energy, enhanced concentration in class, improved test scores, and improved academic achievement (Hearst et al., 2016; FRAC, 2018). A benefit of utilizing breakfast in the classroom is that it requires little to no extra labor hours for preparation, service, and clean-up, which means no additional costs (Byrne, 2021). Consequently, increasing school breakfast consumption through the implementation of breakfast in the classroom will allow students to experience beneficial academic and dietary outcomes at an affordable cost.

Evidence-Based Outcomes

There are four evidence-based outcomes for the program: two short-term outcomes and two long-term impacts.

Short-Term Outcomes

1. There will be a 200% increase in participation in the School Breakfast Program in Cleveland County high schools between August 2023 (start date) and May 2025 (end date) (Soldavini & Ammerman, 2019).
2. There will be a 200% increase in the percentage of Cleveland County high schoolers who report that they consume breakfast between August 2023 (start date) and May 2025 (end date) (Hearst et al., 2016; O'Neill Hayes, & VanHorn, 2021).

Long-Term Outcomes

1. Increase the proportion of Cleveland County high school students who graduate from high school in four years by May 2028.

2. The stigma of participating in the School Breakfast Program will be reduced or mitigated by the routine offering of free Breakfast in the Classroom (BIC) model via student surveys by May 2028 (Ribar & Haldeman, 2013; Soldavini & Ammerman, 2019; Byrne, 2021).

Strategies and Activities

The Wisconsin Department of Public Instruction's guide, *Serving Up a Successful School Breakfast Program: A Guide for School Breakfast Implementation*, provides the foundation for the intervention, and the intervention will focus on the breakfast in the classroom (BIC) portion of the Wisconsin guide (Byrne, 2021). Based on the guide, students will receive bagged or boxed breakfasts, which meet the USDA guidelines for the School Breakfast Program (i.e., include the correct amount of fruits/vegetables whole grain-rich foods and/or meats/meat alternatives, and milk; limit the amount of sodium, calories, saturated fats, and *trans* fats), to eat in the classroom (Food and Nutrition Service, 2019). Cafeteria workers will use bins or carts to deliver and serve the pre-packaged breakfasts to the students, or students can select foods that are individually wrapped from the cart. They will deliver the meals prior to the start of the school day or during the first period/homeroom, and students will consume meals in the classroom. School cafeteria workers will then collect the dishes and trash from the students (Byrne, 2021). Additionally, stakeholders will participate in focus groups that are held four times a year to determine their needs and suggested improvements for the program. The focus groups will take place halfway through the fall semester, at the end of the fall semester, halfway through the spring semester, and at the end of the spring semester. The project manager will evaluate and integrate the feedback from the focus groups into the program to ensure it is meeting the stakeholders' needs and is adjusted as necessary (Soldavini & Ammerman, 2019; Byrne, 2021).

The classroom is the setting of the intervention, and the school will hire a project manager from current staff at the Cleveland County High Schools. The project manager will implement and oversee the intervention while collaborating with the nutrition director, principal, County Commissioner, and other stakeholders. However, the project manager will continuously and directly work with the nutrition director while implementing the program. They will work together with the cafeteria workers to determine who will be serving and collecting the meals as well as discuss the components and preparation of the meals to ensure an appropriate implementation of the universal free breakfast. The project manager will hold community meetings to determine the needs as well as evaluate the readiness and ability of the high schools to implement the program. After the meeting, the project manager and community members will use the results of the needs assessment to select at least two high schools in Cleveland

County to participate in a pilot program for the first year. Two high schools are initially selected to develop trust between the project team and the county leaders and communities. Per a research study conducted by Penuel and colleagues, some district and school leaders may be hesitant to implement the research-based program (Penuel et al., 2017). However, implementing the program in two schools will allow the leaders to observe the outcomes and benefits of the program and encourage them to incorporate the program into the remaining schools (Penuel et al., 2017). After the first year, the project manager will incorporate the feedback from the aforementioned focus groups, and then, the program will expand to the rest of the high schools over the course of five years. However, if all of the schools are deemed ready, then each high school will implement the program after the first year.

Choosing to implement BIC as the intervention was derived from the positive impact it has on breakfast consumption as well as participation in the School Breakfast Program as determined by researchers (Soldavini & Ammerman, 2019; Corcoran et al., 2016; Anzman-Frasca et al., 2015; O’Neill Hayes, & VanHorn, 2021). Utilizing the program addresses two levels of the socioecological model. By offering students the option to eat breakfast in the classroom, the individual characteristics of the model are addressed by allowing the students to practice confidence, different behaviors, goals, and intentions. Having the community and stakeholder meetings allows for interpersonal connections in the socioecological model to be addressed. There is a potential for the policy level to be addressed in the model’s county, state, and national systems. Depending on the success of the program, policy makers across the state may decide to implement the intervention within their own county or city. Furthermore, once the intervention is implemented in every high school in Cleveland County, the expected reach is approximately 4,546 students (US News, 2022). Breakfast in the classroom is an intervention with a beneficial impact on students and will reach students across the county and potentially the entire state.

Stakeholders

The potential stakeholders are the County Commissioner, Cleveland County Public Health Department, Cleveland County School Board, project manager, principals, teachers, nutrition directors, cafeteria workers, students, and parents. The County Commissioner, Cleveland County Public Health Department, and Cleveland County School Board will approve the program and serve as the contact between the county level School Breakfast Program and the federal level School Breakfast Program. The roles and responsibilities of the project manager consist of overseeing the program implementation and evaluation as well as serving as the main point of contact between school staff and the county school board. The teachers’ roles and responsibilities are to allow students to eat

in the classroom and make sure the students dispose of their trash properly once they are finished eating. The nutrition directors' and cafeteria workers' roles and responsibilities are to ensure enough food is prepared for all of the students, prepare and bag the food, and that they get the food to the students while it is still warm. Nutrition directors will also ensure that the breakfasts meet the USDA guidelines for the School Breakfast Program. The students' roles and responsibilities are to grab their breakfast, eat it, and throw their trash away when they are done. The parents' role and responsibility is to get their children to school or the bus stop on time. With each stakeholders' contribution and collaboration, the students will be able to successfully eat breakfast in the classroom.

Budget

Funds for the program will go towards purchasing the necessary equipment, hiring a project manager, compensating the nutrition director and cafeteria workers for any additional hours needed to complete their jobs, and purchasing additional materials needed to implement the program. Cafeteria workers will use equipment such as warming plates, carts, and bins to bring a warm breakfast to the students. A project manager will be brought on for two years to manage the program and funds, work and meet with the stakeholders, and provide resources to the individual high schools as necessary. Additionally, depending on the equipment at the schools and the number of cafeteria workers, the budget may be \$0 to \$23,000 (Hilleren & Market, 2007). However, most of the equipment will be pre-existing, so the schools will require little to no additional funds for the equipment. Total per-meal costs (labor, food, equipment, services, and other) can range from \$0.93 to \$1.79 with per-meal labor costs ranging from \$0.38 to \$1.03 (Hilleren & Market, 2007). Also, the per-meal reimbursement price is \$1.97, which will offset some of the costs (School Nutrition Association, 2022).

Conclusion

Selecting only two high schools to potentially initiate the program could have either an adverse impact or a positive impact on the other schools. This will contribute to the students' rights to a free, healthy, warm breakfast. The advantages of utilizing breakfast in the classroom (BIC) are that it provides more opportunities for students to eat breakfast, reduces hunger, and contributes to higher academic achievement. The disadvantages of utilizing BIC are that it cannot guarantee students will actually eat breakfast, it can make the classrooms messy (i.e., syrup on the desks, crumbs that can lead to rodent infestations, etc.), and students may not eat all of the breakfast they select. Overall, it is a program that is beneficial to schools and has been shown to have a valuable impact on students.

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Evaluation Plan

Intervention Summary

Education Access and Quality is the Social Determinant of Health (SDoH) of focus in the implementation plan, and the objective of interest is AH-D08, “increase the proportion of high school students who graduate in [four] years” (Healthy People 2030, 2020). Utilizing breakfast in the classroom (BIC) will help increase graduation rates by increasing participation in the School Breakfast Program (SBP) as well as increasing breakfast consumption (Soldavini & Ammerman, 2019). Research indicates that SBP participation and breakfast consumption positively impacts students’ academic performances, increases access to healthy foods, includes a higher quality diet, and reduces food insecurity (Au et al., 2018; Polonsky et al., 2018; Bartfeld & Ahn, 2011; Frisvold, 2015; Murphy et al., 1998). Additionally, research suggests that breakfast consumption results in higher energy, enhanced concentration in class, and higher academic achievement (i.e., higher graduation rates) (Hearst et al., 2016; FRAC, 2018).

Two high schools selected by the communities will utilize the BIC program. Two high schools are selected to develop trust and demonstrate to the district and community leaders the effectiveness of the program (Penuel et al., 2017; Soldavini & Ammerman, 2019). In addition to the outcome listed below, the program will evaluate the outcomes: “there will be a 200% increase in the percentage of Cleveland County high schoolers who report they consume breakfast between August 2023 (start date) and May 2025 (end date) (Hearst et al., 2016; O’Neill Hayes, & VanHorn, 2021),” “increase proportion of Cleveland County high school students who graduate from high school in four years by May 2028,” and “the stigma of participating in the School Breakfast Program will be reduced or mitigated by the routine offering of free Breakfast in the Classroom (BIC) model by May 2028 (Ribar & Haldeman, 2013; Soldavini & Ammerman, 2019; Byrne, 2021).”

Evaluation Plan

Short-Term Outcome

There will be a 200% increase in participation in the School Breakfast Program in Cleveland County high schools between August 2023 (start date) and May 2025 (end date) (Soldavini & Ammerman, 2019).

Study Design/Data Collection

The program will utilize an observational cohort study design evaluation method because it will observe what occurs when BIC is incorporated into the two pilot high schools. The tool consists of a counting system in which the cafeteria workers identify how many students receive breakfast, and the project manager will collect the

data from each of the cafeteria workers who deliver the meals to determine how many students throughout the entire high school receive breakfast. The number of students who actually consume breakfast once they have selected it as well as the amount of breakfast consumed will not be measured.

Sample and Sampling Strategy

From the two pilot high schools, high school students that consume breakfast via the breakfast in the classroom intervention will participate in the evaluation. Participation will be measured by counting the students who receive breakfast. The project manager will collect data regarding the number of students who participate.

Specific Measures

The evaluation will include the main data points of average participants at the beginning/baseline (pre-test) and at the end (post-test) of the school year as well as the monthly participation at the two pilot high schools. The project manager will collect each school's SBP baseline participation percentage from the previous year. After each school's post-test participation percentage is collected, the project manager will compare it to the county's average high school SBP participation. The project manager and cafeteria workers will not measure the amounts consumed by the students nor the breakfast waste. The output of the program is the number of meals served by the two high schools in Cleveland County. The outcomes are the change in the number of students who participate in the SBP within each school as well as between each school. Furthermore, there is the potential for disparities (i.e., SES of the students, race/ethnicity) between high schools across the county.

Analysis Plan

The project manager will collect monthly, semester, and annual averages of SBP participation from the kitchen's service data. The project manager will use a matched pairs t-test design to analyze if there is a significant difference in SBP participation from baseline to post-test.

Timing

The evaluation and stakeholder engagement activities will occur at baseline (previous year statistics), after the first semester, and after the first year. The project manager will collect data from each school every month, semester, and at the end of the school year. Progress is defined by the portion of the program implementation plan in which the evaluation is conducted. After each semester, the project manager will analyze data to determine if SBP participation is increasing based on the monthly and entire semester data. At the completion of the first year, the project manager will know if there is a statistical and meaningful increase of student participation in the SBP from

baseline (i.e., achieving the goal of a 200% increase by the second year) (Hearst et al., 2016; O’Neill Hayes, & VanHorn, 2021). However, if there is no statistical and meaningful increase of 25% after the first year, then the project manager will modify the program as necessary by gathering and incorporating student feedback.

Sources of Funding

The project manager will apply for grants through organizations such as No Kid Hungry and Carolina Hunger Initiative. One grant the project manager will apply for is the Breakfast After the Bell grant provided by No Kid Hungry and Kellogg (No Kid Hungry, 2022). They will apply for the grants in the year prior to the start of the program, and the funds will go towards purchasing the necessary program materials. Additionally, the project manager will apply for grants on a yearly basis, as required, to sustain the program.

Data Use and Dissemination

The project manager will use the data to either propose and encourage other schools to implement the program or encourage the school boards to mandate the implementation of the program. The project manager will then disseminate the data to the county officials (i.e., County Commissioner), superintendents, and school boards via a presentation, briefing, and paper. Parents and students will receive the data and program information in a newsletter sent via email.

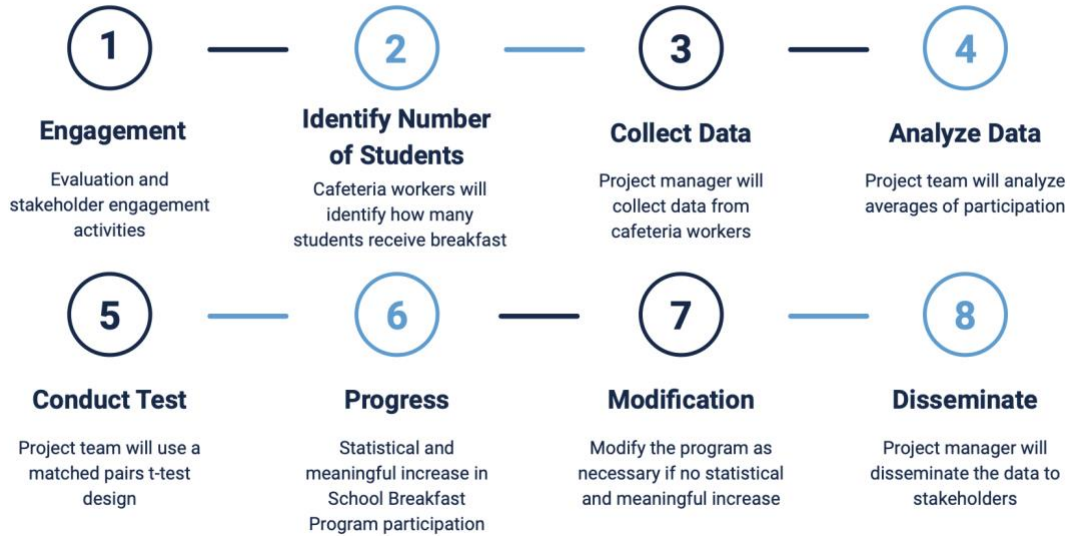
Strengths and Challenges

The program can increase participation in the SBP, which will potentially increase breakfast consumption (Soldavini & Ammerman, 2019). The strengths of the program consist of improved academic performance, increased access to healthy foods, and lower levels of food insecurity due to increased breakfast consumption (Au et al., 2018; Polonsky et al., 2018; Bartfeld & Ahn, 2011; Frisvold, 2015; Murphy et al., 1998; Hearst et al., 2016; FRAC, 2018). Another strength is the low cost burden due to the SBP currently being implemented in the school district (Cleveland County School Nutrition Services, n.d.). The challenges of the program include ensuring students are taking the breakfast that is offered, students are eating enough of the breakfast meal to remain satisfied until lunch, and students have enough time to eat the breakfast. Potential ways to mitigate this risk is by having the teachers encourage students to take the breakfast offered as well as having the cafeteria workers stop by classes a second time if students arrived late. The goal is to provide an additional opportunity for students to receive breakfast in the classroom and, ultimately, increase SBP participation throughout Cleveland County.

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Nutrition Program Evaluation Plan



Script: For the nutrition program evaluation plan, the evaluation and stakeholder engagement activities will take place at the beginning of the academic year (which is the baseline), as well as after the first semester and after the first year. In each high school, the cafeteria workers will identify how many high school students receive breakfast, and the project manager will collect this data from the cafeteria workers. The number of students who actually consume the breakfast they receive as well as the amount of breakfast consumed by the students will not be measured. The data collection will occur at the beginning of the academic year, on a monthly basis, and at the end of the academic year. The data from the beginning of the academic year is the pre-test, and it is the number of students who participated in the School Breakfast Program in the previous year. The data from the end of the academic year is the post-test.

The project team will then analyze the data by calculating the monthly, beginning, and ending participation averages. This data will then be used to conduct a matched-pairs t-test and measure prevalence for significance. The matched-pairs t-test design was chosen because it measures if there is a significant difference between the pretest data and post-test data for each high school as well as between the high schools and the county.

Progress will occur if there is a statistical and meaningful increase in the School Breakfast Program participation based on the results of the test. However, if there is no statistical and meaningful increase after the first

year of approximately 25%, then the project manager will modify the program as necessary. This modification will be done through feedback received from the students.

Once the data has been collected and analyzed, the project manager will disseminate the information to the stakeholders including county officials such as the County Commissioner, superintendents, and school boards via a presentation and briefing. Parents and students will also receive the information through a newsletter in an email.

APPENDIX D: HANNAH HICKS

Problem Statement

Social Determinant of Health (SDoH)

The World Health Organization explains how certain non-medical factors play a key role in health outcomes with these social determinants of health (SDoH) accounting for 30% to 55% of all health outcomes (WHO, 2022). HealthyPeople 2030 grouped the SDoH into five domains: education access and quality; economic stability; health care access and quality; neighborhood and built environment; and social and community context (ODPHP, 2014). Within education access and quality, the goal is to “increase educational opportunities and help children and adolescents do well in school,” with one specific objective AH-08, “Increase the proportion of high school students who graduate in four years” (ODPHP, 2014, para. 1).

Americans with more education tend to live longer, healthier lives (VCU, 2015). One short-term impact of poor educational achievement on health is an inability to recognize poor health behaviors such as issues navigating the health system and managing illnesses (Tulane University, 2021). In the longer term, individuals with lower educational attainment are more likely to obtain lower paying jobs or experience job insecurity (VCU, 2015). This results in individuals and families with lower wages and a lack of assets which can lead to poor nutrition and unmet medical needs (VCU, 2015).

The relationship between education and health is also defined by the ways in which one’s health status can affect their educational achievement (Azizi Fard et al., 2021; VCU, 2015). Varying conditions throughout life such as poor dietary behaviors and socioeconomic status create additional stress and cause illness that affects educational success (Azizi Fard et al., 2021; VCU, 2015). The majority of studies agree that higher educational attainment is positively associated with a more nutritious diet, specifically when looking at nutritional diversity and a diet high in fruits, vegetables, and fish and lower in calories (Azizi Fard et al., 2021; Burrows et al., 2017). This relationship in which educational and health impact one another is the basis for why it is such an important social determinant to focus on within community contexts.

Geographic and Historical Context: Cleveland County

Located between Charlotte, Asheville, and Greenville/Spartanburg at the foothills of the Blue Ridge Mountains, Cleveland County is a rural county spanning 465 square miles and consists of 15 cities and towns with a population of 99,519 (Cleveland County Public Health Center., 2019; U.S. Department of Commerce, 2020). The

largest city in the county is Shelby, North Carolina (NC) with 20,325 residents (Cleveland County Government, 2018). The county is made up of primarily white (75.8%) and Black/African American (20.8%) residents (U.S. Department of Commerce, 2020).

Cleveland County is an economically disadvantaged county and sits on the lower end of income levels with a median household income of \$42,002 compared to North Carolina's median of \$50,320 (Cleveland County Public Health Center., 2019). Additionally, the overall poverty rate (19.9%) and the poverty rate for families with female householders (45.9%) are all higher in Cleveland County than North Carolina overall (16.1% and 31.7%, respectively) (Cleveland County Public Health Center., 2019).

The Cleveland County Community Health Assessment (CHA) notes that educational attainment is a key factor in healthcare utilization (Cleveland County Public Health Center., 2019). While the report notes that there is an array of educational opportunities across the county, it also mentions that low educational achievement can negatively impact health literacy and that increasing educational opportunity and success is important to overall health outcomes (Cleveland County Public Health Center., 2019).

Priority Population

The population of interest are high school students in Cleveland County, NC who are living in poverty. Census data could not be found on children in 9th to 12th grade. There are seven public high schools within Cleveland County serving 4547 students (US News, 2022). The poverty rate for children under 18 is 27.5%, which is higher than the state average of 22.9% (Cleveland County Public Health Center., 2019). Additionally, in 2017, 75% of students were eligible for free and reduced meals, and all schools within the Cleveland County school district participate in the Community Eligibility Provision (CEP), a non-pricing meal service option that allows for students in low-income areas to receive free school breakfast and lunch (Cleveland County Public Health Center., 2019). However, there is a distinct underutilization of the School Breakfast Program in Cleveland County Schools, leaving room for further research into this topic and future innovative programming (NC Department of Public Instruction 2017).

Measures of Problem Scope

Education creates opportunities for better health throughout life and poor health puts educational attainment at risk (VCU, 2015). Specifically, factors associated with lower education status are linked to poorer health outcomes (see Figure 1 in Appendix B), lower life expectancy (see Figure 2 in Appendix C), and account for

almost half of all deaths among working age adults in the US (Braveman & Gottlieb, 2014). The high school graduation rate in Cleveland County is comparable to North Carolina (88% and 87%, respectively) (Cleveland County Public Health Center., 2019; MyFutureNC, 2020); however, this does not indicate that there is no room for improvement. Nationally, students living in poverty are 4.1 times more likely to not graduate from high school, yet no data was found showing disparities between higher- and lower-income high school students across Cleveland County (USDHHS, n.d.) (Cleveland County Public Health Center., 2019; MyFutureNC, 2020). As a Tier I economically disadvantaged county, Cleveland County may be subject to this pattern and it is pertinent that the county gains more information on income-based disparities within the county to find those who are particularly vulnerable to lower educational quality and access (Cleveland County Public Health Center., 2019).

Rationale/Importance

Graduating from high school is linked to obtaining higher paying jobs, which reduces financial burden and stress in a number of ways including having time and a safe space to exercise regularly, the ability to pay for health services, and making it easier to purchase healthy food (VCU, 2015). Therefore, students in poverty are particularly less likely to graduate from high school and then experience worse health outcomes than students who were more economically advantaged (USDHHS, n.d.). Research suggests that there is a direct relationship between nutrition and academic performance and providing breakfast in schools has been shown to improve attentiveness, reduce disciplinary problems and tardiness, and be a greater incentive for students to attend school each day than mandatory attendance policies (O'Neill Hayes & VanHorn, 2021). Since Cleveland County already participates in the CEP, utilizing school meals as a means to better academic performance is a simple avenue to take for future programs and policies.

Disciplinary critique:

When looking at health outcomes and the social determinants of health as a whole, it is not uncommon to find gaps in literature stemming from common biases and inequities. As public health leaders begin to look into the realm of how educational attainment, access, and quality impact health outcomes, it is easy to look at the current data and see no apparent issues. This is evident in Cleveland County, where the graduation rate is approximately equal to that of the state in which it resides. However, no research exists on the impact that poverty and income have on educational attainment within the county or the groups that are the most vulnerable to low educational access. In a county that claims there is a plethora of educational opportunities, there is no mention of who those opportunities

reach and, more importantly, who it does not. Public health professionals and dietitians are called today to find ways to address this research gap and improve the educational opportunities for all groups by calling for interventions and policies that promote healthy dietary behaviors and access to healthy food will, in turn, support students in reaching the highest educational attainment possible (Azizi Fard et al., 2021; Burrows et al., 2017).

APPENDICES D1

Table 1

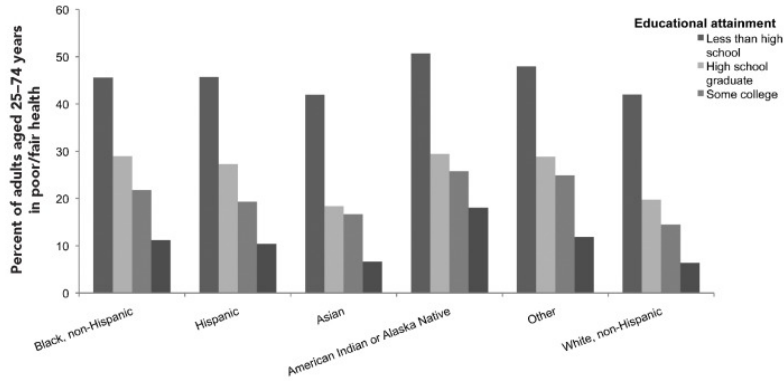
Race/ethnicity in Cleveland County

Race/Ethnicity	Percentage of Cleveland County Population
White	75.8%
Black/African American	20.8%
American Indian/Alaska Native	0.4%
Asian	1.1%
Pacific Islander	0.02%
Mixed/Other	1.9%
Hispanic/Latino	3.8%

(U.S. Department of Commerce, 2020)

Figure 1

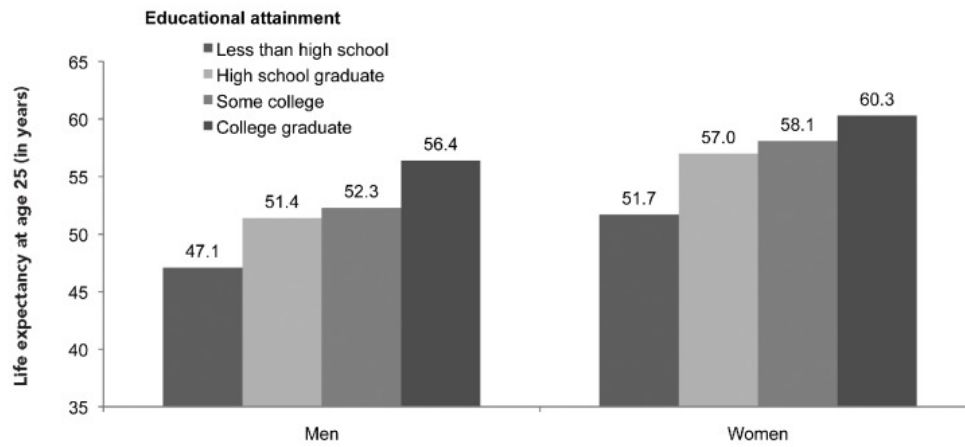
Socioeconomic gradients in poor/fair health among adults aged 25–74 years



Note: Socioeconomic gradients in poor/fair health among adults aged 25–74 years within racial/ethnic groups in the U.S. Source: Analyses by Cubbin of Behavioral Risk Factor Surveillance System survey data, 2008–2010, reported in: Braveman P, Egerter S. Overcoming obstacles to health in 2013 and beyond: report for the Robert Wood Johnson Foundation Commission to Build a Healthier America. Princeton (NJ): Robert Wood Johnson Foundation; 2013.

Figure 2

Life expectancy in the U.S. at age 25, by education and gender



NOTE: Source: Department of Health and Human Services (US), National Center for Health Statistics. Health, United States 2011: with special features on socioeconomic status and health. Life expectancy at age 25, by sex and education level [cited 2012 Nov 29]. Available from: URL: <http://www.cdc.gov/nchs/data/hus/2011/fig32.pdf>. Reported in: Braveman P, Egerter S. Overcoming obstacles to health in 2013 and beyond: report for the Robert Wood Johnson Foundation Commission to Build a Healthier America. Princeton (NJ): Robert Wood Johnson Foundation; 2013.

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Implementation Plan

Background Information

Certain non-medical factors play a key role in health with these social determinants of health (SDoH) accounting for 30% to 55% of all health outcomes (WHO, 2022). HealthyPeople 2030 identified educational access and quality as a key domain within the SDoH (ODPHP, 2014). The goal is to “increase educational opportunities and help children and adolescents do well in school,” with one specific objective AH-08, “Increase the proportion of high school students who graduate in four years” (ODPHP, 2014, para. 1). Education creates opportunities for better health throughout life and certain conditions, such as poor dietary behaviors and socioeconomic status, can negatively affect health and put educational attainment at risk (Azizi Fard et al., 2021; VCU, 2015). The majority of studies agree that higher educational attainment is positively associated with a more nutritious diet, particularly when considering nutritional diversity and a diet high in fruit, vegetables, and fish and lower in calories (Azizi Fard et al., 2021; Burrows et al., 2017).

Cleveland County (CC) is located in North Carolina (NC), approximately 44 miles west of Charlotte. It is a Tier I economically disadvantaged county with a median income nearly \$10,000 lower than the state (Cleveland County Public Health Center., 2019). CC also has a higher overall poverty rate (19.9%), child poverty rate (27.5%), and poverty rate for families with female householders (45.9%) compared to North Carolina (16.1%, 22.9%, and 31.7%, respectively) (Cleveland County Public Health Center., 2019).

The chosen priority population is high school students living in poverty in Cleveland County, NC. The high school graduation rate in Cleveland County is comparable to North Carolina (88% and 87%, respectively) (Cleveland County Public Health Center., 2019; MyFutureNC, 2020); however, this does not indicate that there is no room for improvement. Nationally, students living in poverty are 4.1 times more likely to not graduate from high school, making CC vulnerable to lower graduation rates (USDHHS, n.d.) (Cleveland County Public Health Center., 2019; MyFutureNC, 2020). Poor educational attainment and not graduating from high school are linked to poorer health outcomes as seen in Figure 1, lower life expectancy as seen in see Figure 2, and account for almost half of all deaths among working age adults in the United States (Braveman & Gottlieb, 2014; O’Neill Hayes & VanHorn, 2021). Cleveland County students are more likely to struggle with academic performance and attainment, leading to poorer health outcomes (USDHHS, n.d.) Nutrition knowledge, access to healthy food, and a proper diet are positively linked to academic achievement, therefore, focusing on policies and interventions that target people’s diet

can positively impact their health, as well as promote educational attainment and graduation (Azizi Fard et al., 2021; Burrows et al., 2017).

Purpose

The School Breakfast Program (SBP) is a national level program that reimburses schools and other childcare facilities for providing breakfast to students (USDA, n.d.). While no statistics were found on the usage of the SBP across CC high schools, a 2017-2018 SBP Fact Sheet compiled by the NC Department of Instruction summarizes the usage of the program across CC schools overall (NC Department of Public Instruction, 2017). Despite the fact that all 29 public schools provide breakfast to students and 75% (11360) of the students were eligible for Free and Reduced Price (F&RP) meals, there was an underutilization of the program, particularly when compared to participation in the National School Lunch Program (NSLP) (NC Department of Public Instruction, 2017). Participation in the NSLP and SBP differed significantly, with the NSLP having twice the participation rate of the SBP (60% and 30%, respectively) (NC Department of Public Instruction, 2017). The Food Research & Action Council (FRAC) uses the ratio of those participating in school breakfast per 100 participating in school lunch as an indicator of how much need for school breakfast is being met (Philbin, 2018). In Cleveland County schools, for every 100 who participated in the NSLP, only 53.91 students participated in the SBP (NC Department of Public Instruction, 2017). FRAC's goal for this utilization ratio is 70 students participating in the SBP per 100 participating in the NSLP, indicating that CC has not met this goal (NC Department of Public Instruction, 2017). This statistic becomes more alarming when noting that the utilization of the SBP decreases with age, with approximately 25% of high school students reporting they do not eat breakfast at all (O'Neill Hayes & VanHorn, 2021).

Research suggests that there is a relationship between nutrition and academic performance, with a study conducted by O'Neill Hayes and VanHorn discussing this relationship, focusing on increased productivity and better concentration in school (O'Neill Hayes & VanHorn, 2021). Specifically looking at breakfast and the SBP, providing breakfast in the classroom (BIC) has been shown to improve attentiveness, reduce disciplinary problems and tardiness, and be a greater incentive for students to attend school each day than mandatory attendance policies (O'Neill Hayes & VanHorn, 2021). Participation in the SBP also has a sizable impact on health outcomes including lower BMI and nutritional intake by students both in and outside of the school setting (O'Neill Hayes & VanHorn, 2021). During school breaks, participating students consumed fewer calories from fat; were less likely to have insufficient consumption of fiber, Vitamin C, Vitamin E, and folate; and were more likely to meet the

recommendations for potassium and iron (O'Neill Hayes & VanHorn, 2021). These improvements to health factors and behaviors were even more apparent in highly disadvantaged populations, with a greater consumption of a nutritious breakfast, a decreased rate of overweight children, and an increased health index in high poverty schools (O'Neill Hayes & VanHorn, 2021).

Evidence Based Outcomes

Short-term outcome objectives

One short-term outcome objective that will be measured for the proposed program is that by August 2024, participation in the School Breakfast Program in Cleveland County High Schools will increase by 200% (Soldavini & Ammerman, 2019). One short-term health outcome is that by August 2024, the percentage of Cleveland County High Schoolers reporting that they consume breakfast will increase by 200% (Hearst et al., 2016; O'Neill Hayes & VanHorn, 2021)

Long-term impact

In the five to ten years following the program, one long-term outcome objective is that there will be an increased proportion of Cleveland County High School students who graduate from high school within four years. One long-term health outcome is that any stigma associated with participation in the SBP will be reduced or mitigated by the routine offering of the free BIC model (Ribar & Haldeman, 2013; Soldavini & Ammerman, 2019; Wisconsin Department of Public Instruction, 2005).

Strategies and Activities

The proposed program to be implemented into Cleveland County High Schools is to expand the current status of the SBP to incorporate a new Breakfast in the Classroom serving model (Soldavini & Ammerman, 2019; Wisconsin Department of Public Instruction, 2005). Jessica Soldavini and Alice Ammerman's journal article *Serving Breakfast Free to All Students and Type of Breakfast Serving Model Are Associated with Participation in the School Breakfast Program* informed the selection of the proposed program (Soldavini & Ammerman, 2019). The combination of Universal Free Breakfast and BIC had the highest odds ratio of participating in the SBP (OR 7.42), compared to other alternative breakfast serving models. As Universal Free Breakfast is already offered across Cleveland County High Schools as part of the Community Eligibility Provision (CEP), a non-pricing meal service option that allows for all students to receive free school breakfast and lunch, the program adaptation necessary to improve participation in the SBP is integration of the BIC serving model (Cleveland County School Nutrition

Services, n.d.; Soldavini & Ammerman, 2019; USDA, 2019). The BIC model is also easily incorporated into the already existing school schedule, provides a nutritious meal for those who may not have time to or be hungry enough to eat at the start of the day, and requires few additional labor hours for preparation, service, and cleanup (Wisconsin Department of Public Instruction, 2005).

The Wisconsin Department of Public Instruction outlines different breakfast serving models and the most effective methods of implementation (Wisconsin Department of Public Instruction, 2005). BIC consists of two potential serving methods: (1) bagged or boxed breakfasts that are available to eat in the classroom, and/or (2) breakfast components delivered to the classroom or available on carts for students to choose their desired components. All served breakfasts must abide by USDA guidelines for the SBP. Meals can be served prior to the start of the day or during the first period and are intended to be eaten during the first period in the classroom (Wisconsin Department of Public Instruction, 2005). In the initial stages of program implementation, project managers and leadership staff will be hired or appointed from existing staff at Cleveland County High Schools. The project manager, school principals, and/or the heads of school nutrition at each high school will conduct community meetings to address common concerns in the community to ensure the program addresses issues voiced by the community. Leadership staff will evaluate all seven high schools within the county for readiness to identify the schools most ready to transfer to the new program. To increase feasibility of implementation, staff will then choose two pilot schools out of the seven schools in the county in which to implement the program in the first year (Moore et al. 2011). The intention is to expand to the remaining five schools the following semester or year, following further program evaluation and iteration. After selecting the two Cleveland County High Schools to pilot the program, leadership staff will identify members who will be preparing, bagging, and delivering BIC meals as well as collecting dishes (as applicable) after BIC is complete each day. This will be followed by implementation and rollout of the program in the beginning of the 2022-23 academic school year; there will be an option for schools to do a pilot program with a 1-grade rollout with the goal of expansion to the rest of the school by the end of the first semester. A mid-program evaluation will be conducted at the conclusion of the first semester and an overall program evaluation at the end of the 2022-23 academic school year. This evaluation will inform leadership staff and programs leaders on how to alter and better the program for full rollout to all seven high schools in the 2023-24 academic school year.

This expansion of the current SBP in Cleveland County High Schools addresses two levels of the socioecological model: individual and organizational. The program will begin by only reaching the high school students in attendance in the two high schools chosen to pilot the program, with the intention to expand to reach all 4547 high school students in Cleveland County (US News, 2022). After evaluation of the program after the first year, the team will be able to determine the percent increase and count of the students who participated in the SBP, which will indicate the achieved reach of the program.

Stakeholders

Stakeholders are an important part of program implementation and the team will take close care to incorporate them throughout the process. The NC State Board of Education and the County School Board will be key points of contact throughout the program as a go between the county level and federal level SBP. The appointed/hired program director of each high school will be the spearhead of program implementation and be the point of contact between the school staff and the state and county school board. High school kitchen staff will oversee breakfast preparation and bagging breakfast each morning. School dietitians will work closely with kitchen staff to ensure that all prepared breakfasts meet USDA guidelines for the SBP. Teachers must ensure that students are aware of the SBP expansion and encourage participation during their first period. They may also be responsible for picking up meals or carts for their first period class. Janitorial staff will be the clean up crew after BIC participation is over each day by picking up trash and dishes (as applicable). High school students attending Cleveland County High School are expected to participate in the program and provide feedback on the program. Finally, parents of high school students are in charge of getting their children to school or their bus on time so that they are able to participate in the SBP.

Budget

The program budget includes personnel, overhead, supplies, and equipment costs. CC participates in the CEP, therefore, all meal costs will be reimbursed through the SBP and NSLP. Personnel will receive their normal salary from the schools and a bonus from the project team for their work with the BIC program. All overhead costs will be in-kind because the program will utilize space within the already existing schools. Itemized costs of the budget can be found in Table I.

Conclusion

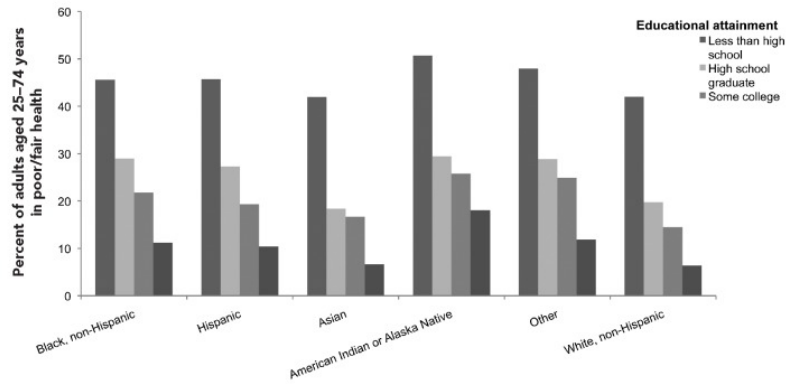
A primary value taken into consideration during the research and formation of this program was to reduce stigma associated with participation in the SBP (Soldavini & Ammerman, 2019). While a trade off to achieve this outcome is to no longer offer breakfast to be served and eaten in the cafeteria, research suggests that utilizing the BIC serving method in conjunction with Universal Free Breakfast will reduce overall stigma and increase SBP participation among all students (Soldavini & Ammerman, 2019).

The final recommendation for expansion of the current SBP to the new BIC serving model provides a low cost option for increasing participation while simultaneously requiring minimal additional labor personnel and hours and causing little to no disruption of the existing school schedule (Wisconsin Department of Public Instruction, 2005). However, potential disadvantages of the program are that hot breakfast options would be much more difficult or impossible to incorporate and that may cause breakfast options to get repetitive. This will require strategic planning on the part of the school dietitians and kitchen staff to create innovative menu options to reduce the chance that students become bored of the current options and stop eating them.

APPENDICES D2

Figure 1

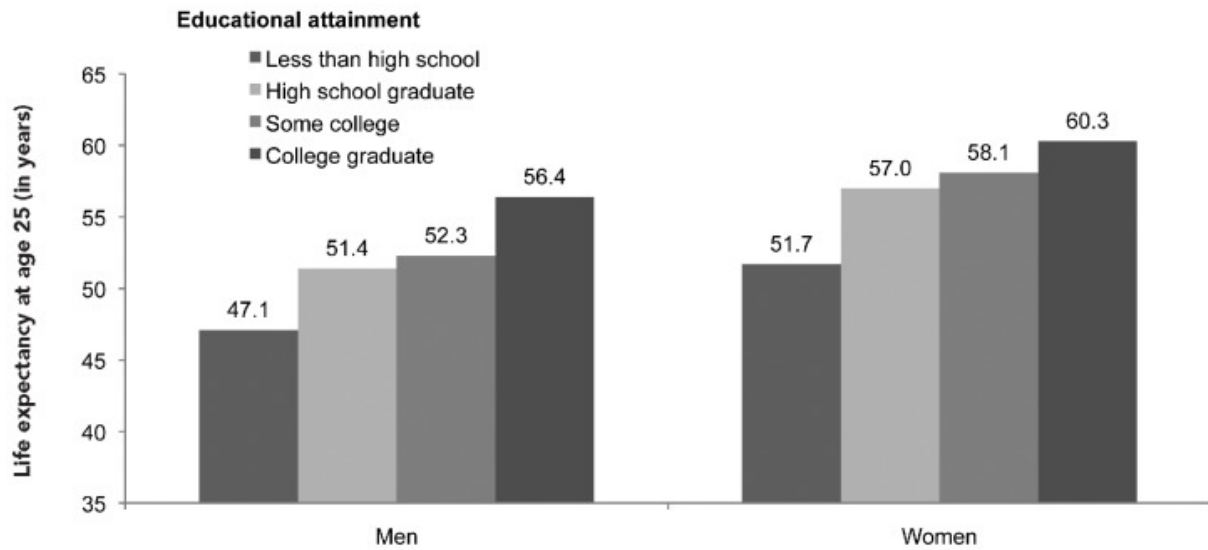
Socioeconomic gradients in poor/fair health among adults aged 25–74 years



Note: Socioeconomic gradients in poor/fair health among adults aged 25–74 years within racial/ethnic groups in the U.S. Source: Analyses by Cubbin of Behavioral Risk Factor Surveillance System survey data, 2008–2010, reported in: Braveman P, Egerter S. Overcoming obstacles to health in 2013 and beyond: report for the Robert Wood Johnson Foundation Commission to Build a Healthier America. Princeton (NJ): Robert Wood Johnson Foundation; 2013.

Figure 2

Life expectancy in the U.S. at age 25, by education and gender.



NOTE: Source: Department of Health and Human Services (US), National Center for Health Statistics. Health, United States 2011: with special features on socioeconomic status and health. Life expectancy at age 25, by sex and education level [cited 2012 Nov 29]. Available from: URL: <http://www.cdc.gov/nchs/data/hus/2011/fig32.pdf>. Reported in: Braveman P, Egerter S. Overcoming obstacles to health in 2013 and beyond: report for the Robert Wood Johnson Foundation Commission to Build a Healthier America. Princeton (NJ): Robert Wood Johnson Foundation; 2013.

Table 1

Itemized Program Budget

Program Budget	
Personnel	
Program director, school dietitians, kitchen staff, janitorial staff, teachers	\$___/person in a bonus for increased labor
Overhead	
Meeting space for leadership staff, preparation space/kitchen space, classrooms	In kind costs
Supplies and Equipment (equipment will be pre-existing and not require additional funds)	
\$1.97/meal reimbursement (4547, 185 school days) (School Nutrition Association, 2022; US News, 2022; World Population Review, 2022)	\$1,657,154.15 (reimbursed through SBP)

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Evaluation Plan

Intervention summary

Certain non-medical factors, labeled as social determinants of health (SDoH), play a key role in health outcomes (WHO, 2022). HealthyPeople 2030 identified educational access and quality as a key domain within the SDoHs, with one specific objective AH-08, “Increase the proportion of high school students who graduate in four years” (ODPHP, 2014, para. 1). Education creates opportunities for better health throughout life and certain conditions, such as poor dietary behaviors and socioeconomic status, can negatively affect health and put educational attainment at risk (Azizi Fard et al., 2021; VCU, 2015). Cleveland County (CC) is an economically disadvantaged county and sits on the lower end of income levels, with a median household income of \$42,002 compared to North Carolina’s median of \$50,320 (Cleveland County Public Health Center., 2019). The priority population is high school (HS) students living in poverty because low high school educational attainment is linked to poorer health outcomes (see Figure I) and students living in poverty are even less likely to graduate from high school (Braveman & Gottlieb, 2014; O’Neill Hayes & VanHorn, 2021; USDHHS, n.d.). Nutrition knowledge, access to healthy food, and a proper diet are positively linked to academic achievement, therefore, focusing on policies and interventions that target people’s diet can positively impact their health, as well as promote educational attainment and graduation (Azizi Fard et al., 2021; Burrows et al., 2017).

The proposed program expands Cleveland County’s School Breakfast Program (SBP) by incorporating a new breakfast serving model in which meals are served in the classroom (Soldavini & Ammerman, 2019; Wisconsin Department of Public Instruction, 2005). The decision to implement the program into two high schools is intended to increase feasibility of implementation within the first year (Moore et al., 2011). Criteria for choosing the two schools will be decided during an initial leadership team meeting. The program will be followed by implementation and rollout of the program in the beginning of the 2022-23 academic school year; there will be an option for schools to do a pilot program with a 1-grade rollout with the goal of expansion to the rest of the school by the end of the first semester. A mid-program evaluation will be conducted at the conclusion of the first semester and an overall program evaluation at the end of the 2022-23 academic school year. This evaluation will inform leadership staff and program leaders on how to alter and improve the program for full rollout to all seven high schools in the 2023-24 academic school year. A summary of all short- and long-term outcomes to be evaluated is in Table I.

Evaluation Plan

Short-Term Outcome Objective

By [two years from program start date], participation in the School Breakfast Program in Cleveland County High Schools will increase by 200% (Soldavini & Ammerman, 2019).

Study Design and Data Collection

This is an observational cohort study. The kitchen staff already collects data on students served for the SBP and National School Lunch Program for the purpose of getting reimbursed, therefore, the program can utilize this existing data collection method to track participation rates in the SBP throughout the study period.

Sample and Sampling Strategy

Initially, to increase the feasibility of implementation within Cleveland County High Schools, leadership staff will select two of the seven high schools that are most equipped to implement the pilot program based on criteria determined at an initial team meeting. The study sample will include all students at the two selected high schools because the program intends to reach the entire school.

Specific Measures

Kitchen staff are required to collect SBP participation daily for reimbursement purposes. Program staff will collect summary data on participation monthly. The main data points for evaluation will be the baseline (pre-test) participation and the 2022-2023 academic year average participation in the SBP (post-test). The baseline percentage will be taken from SBP participation data from the previous year for each school. Each school's post-test participation percentage will also be compared to the county's average high school participation in the SBP. The output of the program is meals served by each school within the school system. The outcome is changes in SBP participation within and between each school. Comparing SBP participation between schools will allow for disparities between schools within the system to be addressed.

Analysis Plan

The evaluation and leadership team will collect monthly, semester, and annual averages of participation in the SBP from the kitchen's service data. To analyze whether the program resulted in significant differences in SBP participation from baseline to post-test, the team will use a matched pairs t-test design.

Timing

Evaluation will start by collecting baseline data from the previous year. Data will be collected on a monthly, semester, and academic yearly basis for each school. Progress is defined based on when during program implementation the evaluation is occurring. After each semester, evaluation staff will assess data to see if utilization of the SBP is increasing based on monthly and semester long data. After the first year, statistical analysis will inform staff on whether statistical and meaningful increases have occurred from baseline. If there is no statistical/meaningful increase after the first year (eg. 25%), the team will iterate the program as necessary, potentially utilizing surveys to figure out why students aren't participating at the expected amount.

Sources of funding

Funding will cover the 2022-2024 academic school years. Funding sources include the Carolina Hunger Initiative and the Breakfast After the Bell grant supported by No Kid Hungry and Kellogg (Carolina Hunger Initiative, 2022; No Kid Hungry, 2022). The Carolina Hunger Initiative is a University of North Carolina project that works in conjunction with No Kid Hungry to award grants to schools that provide critical meals for kids (Carolina Hunger Initiative, 2022). The Breakfast After the Bell grant “supports schools with the purchase of equipment, materials and promotional initiatives” for implementing alternative breakfast serving models, including Breakfast in the Classroom (No Kid Hungry, 2022).

Data use and dissemination:

Data collected throughout the first year will be used to propose and motivate other schools to adopt the program and/or motivate the county school board to make it a mandate across all county high schools. Data dissemination will be dependent on the intended audience of the materials. Superintendents and school boards will receive detailed presentations & briefings to ensure that they receive all information regarding the implementation and outcomes of the program. Parents will receive newsletters via email at the start and conclusion of each semester to inform them of the program components and their impacts. Summary data will also be distributed via social media posts to reach a larger audience.

Strengths and Challenges

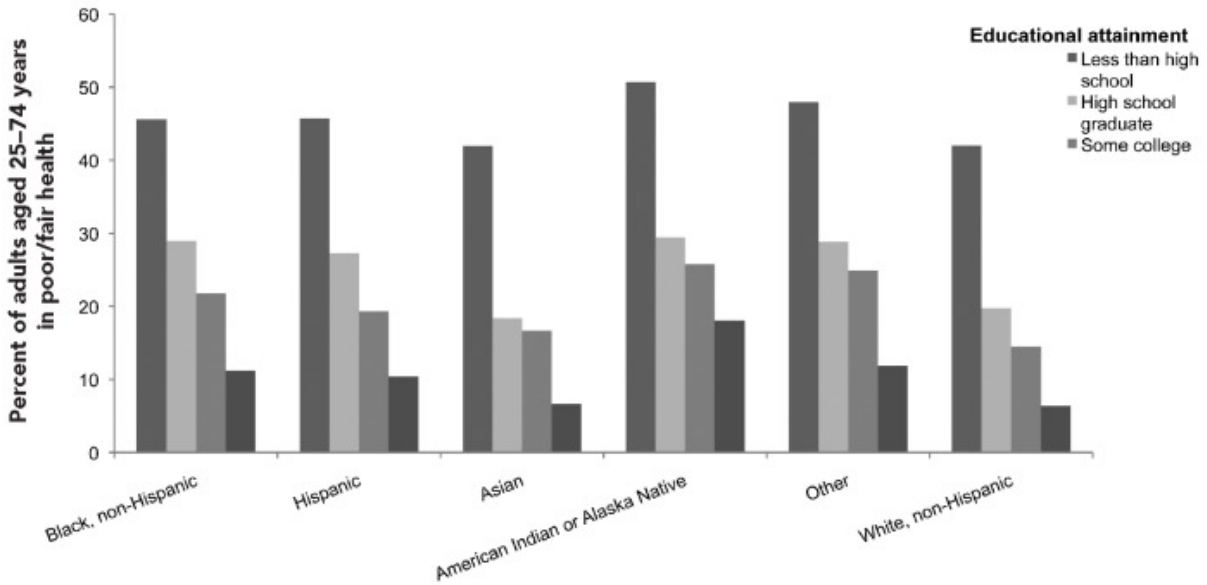
This program has the potential to increase participation in the SBP as well as increase the percentage of students who consume breakfast regularly (Soldavini & Ammerman, 2019). Since breakfast consumption and participation in the SBP are linked to better academic performance, this program has the potential to impact academic achievement for those that participate (O'Neill Hayes & VanHorn, 2021). Finally, as the SBP is already in

place in the county and all seven high schools participate in the CEP where all students can receive free breakfast and lunch, additional costs for the program will be minimal (Cleveland County School Nutrition Services, n.d.; Soldavini & Ammerman, 2019; USDA, 2019). However, while measuring the percent increase in participation based on meals served will be easily measured, it will be difficult to assess the extent to which meals were actually consumed. It is important to reach a larger group of students who participate in the program, yet it is equally as important to ensure that those that are participating are reaping the benefits of receiving breakfast items.

APPENDICES D3

Figure 1

Socioeconomic gradients in poor/fair health among adults aged 25–74 years within racial/ethnic groups in the U.S.



NOTE: Source: Analyses by Cubbin of Behavioral Risk Factor Surveillance System survey data, 2008–2010, reported in: Braveman P, Egerter S. Overcoming obstacles to health in 2013 and beyond: report for the Robert Wood Johnson Foundation Commission to Build a Healthier America. Princeton (NJ): Robert Wood Johnson Foundation; 2013.

Table 1

Short- and Long-Term Outcome Objectives

Short-term outcome objectives	
Short-term outcome objective:	By August 2024, participation in the School Breakfast Program in Cleveland County High Schools will increase by 200% (Soldavini & Ammerman, 2019)
Short-term health outcome:	By August 2024, the percentage of Cleveland County High Schoolers reporting that they consume breakfast will increase by 200% (Hearst et al., 2016; O’Neill Hayes & VanHorn, 2021)
Long-term impact	
Long-term outcome objective:	Increased proportion of Cleveland County High School students who graduate from high school within 4 years.
Long-term health outcome:	Stigma of participating in the SBP is reduced or mitigated by the routine offering of the free BIC model via student survey (Ribar & Haldeman, 2013; Soldavini & Ammerman, 2019; Wisconsin Department of Public Instruction, 2005)

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Social Determinant of Health Overview



Education Access and Quality

Main Goal

“Increase educational opportunities and help children and adolescents do well in school”¹

Objective AH-08

“Increase the proportion of high school students who graduate in four years”¹

Education creates opportunities for better health throughout life²

- Short-term impacts of poor educational attainment: a knowledge deficit of proper health behaviors³
- Long-term impacts of poor educational attainment: job insecurity, lower wages, and lack of assets/resources²



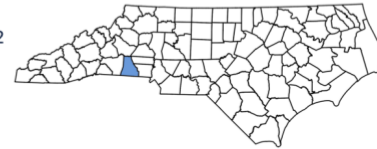
References: 1. (ODPHP, 2014, para. 1), 2. (VCU, 2015), 3. (Tulane University, 2021)

Script: Social Determinants of Health are non-medical factors that account for up to 55% of all health outcomes. Healthy People 2030 groups these Social Determinants of Health into five domains. Our domain of interest is Education Access and Quality. The main goal of this domain is to increase educational opportunities and help children and adolescents do well in school, with one specific objective to “increase the proportion of high school students who graduate in four years”. Education access is imperative as it creates opportunities for better health throughout life. One short-term impact of poor educational achievement includes a knowledge deficit of proper health behaviors leading to issues navigating the health system and managing illnesses. In the long term, individuals with lower educational attainment are more likely to experience job insecurity, earn lower wages, and accumulate fewer assets, which can lead to poor nutrition and unmet medical needs.

Cleveland County (CC) Overview



- 80th out of 100 NC counties for health and 81st for health behaviors ¹
- Economically disadvantaged county ¹
 - Median household income - CC: \$42,002 vs NC: \$50,320 ^{1,2}
 - Poverty rate - CC: 19.9% vs NC: 16.1% ^{1,2}
- Priority population: high school (HS) students ³
 - Students in poverty are 4.1 times more likely to not graduate from HS ⁴
 - Low educational attainment → poorer health outcomes ³



Goals of following policy and program: To provide Cleveland County high schools with the proper social and nutritional supports to better educational attainment and high school graduation rates

References: 1. (2019 Cleveland County Community Health Assessment, 2019), 2.(Cleveland County Public Health Center, 2019), 3. (Braveman and Gottlieb 2014; O'Neill Hayes and VanHorn 2021; USDHHS, 2021), 4. (ODPHP, 2014)

Script: Cleveland County is a rural county located east of Charlotte, NC. Out of the 100 counties in the state, Cleveland County is ranked 80th for health and 82nd for health behaviors. It is also considered an economically disadvantaged county, with a median household income more than \$8000 lower than the state. The overall poverty rate, in addition to the poverty rate for families with female householders and the poverty rate for children under the age of 18 are also higher than North Carolina as a whole. For our objective, high school students living in poverty are the priority population. Students living in poverty are 4.1 times more likely to not graduate from high school and low educational attainment is linked to poorer health outcomes, shorter life expectancy, and account for almost half of all deaths among working aged adults in the US. The goal for our policy and nutrition program is to provide Cleveland County high schools with the proper social and nutritional supports to better educational attainment and high school graduation rates.

APPENDIX E: ASHLEY KELLEY

Problem Statement

Social Determinant of Health (SDoH)

Education is a critical social determinant of health, or environmental factor that influences an individual's health (*Social Determinants of Health - Healthy People 2030 | Health.Gov*, n.d.). AH-08, "Increase the proportion of high school students who graduate in four years" is one avenue for improving education outcomes, and thus health outcomes (*Increase the Proportion of High School Students Who Graduate in 4 Years — AH-08*, n.d.). According to Healthy People 2030, failure to graduate high school is linked to limited employment, low wages, and poverty. Those who did not graduate were also more likely to report poor health, more likely to suffer at least one chronic condition, and had an increased risk of premature death (*High School Graduation - Healthy People 2030 | Health.Gov*, n.d.). Data from 2015 indicates the potential of a poverty positive feedback loop. Each year of completed high school is linked to a lifetime 15% wealth increase. Yet, in 2015, individuals aged 16 to 24 who didn't graduate nor were enrolled in high school were 4.1 times more likely to be from a low-income family than high income, indicating those who would most benefit from an increase in wealth are not benefiting. (*High School Graduation - Healthy People 2030 | Health.Gov*, n.d.). Lastly, higher educational attainment is linked to higher health literacy or the "degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate decisions about one's health" (*Cleveland County 2019 Community Health Assessment*, 2019). In all, increasing the high school graduation rate will increase individual and community health and wealth in the short term, such as increasing financial wealth out of high school, and long term, such as increasing health literacy for better health outcomes.

Cleveland County Geographic and Historical Context

Cleveland County is in southwest North Carolina, 42 miles west of Charlotte. While originally an agricultural county, this 465 square mile county's economy is now a mix of agriculture, manufacturing, and distribution. In 2019 there were 97,038 people living in Cleveland County and the population was 75.2% White, 20.8% Black, 2.2% Asian, 4.1% Multiracial, 3.3% Hispanic/Latino, and 0.3% American Indian/Alaska Native. The median household income was \$40,002, 19.9% of residents were living in poverty, and 10.9% of households brought in less than \$10,000 a year (*Cleveland County 2019 Community Health Assessment*, 2019). In the 2019 Community Health Assessment, Cleveland County identified two overall priorities: reducing the number of individuals at or below the 200% federal poverty level and adverse childhood experiences, and three top priorities

directly related to health: reducing tobacco use, reducing teen birth rate, and increasing access to healthy food (*Cleveland County 2019 Community Health Assessment*, 2019). Many of these priorities are directly or indirectly affected by the AH-08 social determinant of health.

Priority Population

The priority population for AH-08 is high school aged children, grades 9-12, living in or attending school in Cleveland County. While there is no census data for grades 9-12 specifically, 19.3% of Cleveland County is aged 9 to 17. In 2019 27.5% of children in Cleveland County lived in poverty which increased to 31% of children in 2021 (*Cleveland County 2019 Community Health Assessment*, 2019; *Cleveland County, North Carolina*, 2021).

Measures of Problem Scope

While current graduation rates are comparable to North Carolina overall, 88% and 86% respectively, this community experiences higher rates of poverty, 19.1% vs 14.1%, and 10.7% of the Cleveland County population 25 years and older started high school but did not receive a diploma (*Cleveland County 2019 Community Health Assessment*, 2019). Nationally, students in those who did not complete high school were 4.1 times more likely to be in poverty, so it can be inferred that a high proportion of those dropping out of school in Cleveland County are experiencing poverty and may be dropping out due to poverty-related stresses such as financial pressure to get a job or additional home responsibilities such as caretaking family members (*High School Graduation - Healthy People 2030 / Health.Gov*, n.d.). Furthermore, food access and school are intrinsically related, as most children in Cleveland County schools receive food assistance in school; 57.57% of K-12 students were enrolled in the Free and Reduced Lunch program and 17% of households experienced food insecurity (*Cleveland County 2019 Community Health Assessment*, 2019).

Rationale/Importance

High school graduation is directly linked to better health through lifetime increases in wealth, increased health literacy, and decreased chronic illness (*High School Graduation - Healthy People 2030 / Health.Gov*, n.d.). Increasing the graduation rate should be a priority as it could greatly benefit the health and wealth of this county, which is a Tier 1 Economically Disadvantaged county and is currently ranked amongst the least healthy counties in North Carolina (*Cleveland County 2019 Community Health Assessment*, 2019; *Cleveland County, North Carolina*, 2021).

Additionally, school is one of the few places that serves as a consistent and reliable food source in the US

for children in poverty or experiencing food insecurity. Participation in the National School Lunch Program has been shown to improve diet quality in low-income students and improve learning as hunger is associated with poorer grades, and poorer behavioral and mental health in school (“Benefits of School Lunch,” n.d.). With food poverty so high in Cleveland County, and such a high utilization of the Free and Reduced Lunch Program, Cleveland County should be invested in keeping teenagers in school as this also keeps them fed (*Cleveland County 2019 Community Health Assessment*, 2019).

Disciplinary Critique

Registered dietitians (RDs) should be invested in increasing high school graduation rates. Proper diet has a huge impact on students’ ability to learn. Adolescents experiencing hunger show worse behavioral, emotional, and mental health, poorer grades, and are more likely to have been suspended from school (“Benefits of School Lunch,” n.d.). For many students, school is their only access to consistent, healthy food. Food insecurity is a major social determinant of health that RDs are constantly fighting against, and high schools offer the unique opportunity of providing balanced and free meals to students in poverty. In addition, many high schools incorporate nutrition education in health programs, and it is in an RD’s best interest to disseminate proper nutritional information to young people so that they may have better health and fewer nutrition-related health conditions. Those who dropout of high school may miss vital nutrition information which could contribute to the health inequities observed between those who did and did not graduate high school. RDs should be invested in keeping teenagers in school and thus keeping them fed and improving their nutrition-related health outcomes.

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Implementation Plan

Background Information

The conditions in which people live, work, and play that affect health and quality of life are known as social determinants of health (*Social Determinants of Health - Healthy People 2030 | Health.Gov*, n.d.). Education is a key social determinant of health, and many subcategories and goals have been identified for improving education and thus health. The AH-08 goal, “Increase the proportion of high school students who graduate in four years,” is one avenue for improving education outcomes, and thus health outcomes (*Increase the Proportion of High School Students Who Graduate in 4 Years — AH-08*, n.d.). High school graduation is linked to increased employment opportunities, higher wages, fewer chronic health conditions, and reduced rates of poverty (*High School Graduation - Healthy People 2030 | Health.Gov*, n.d.) While current graduation rates in Cleveland County are comparable to North Carolina overall, 88% and 86% respectively, this community experiences higher rates of poverty than NC, 19.1% vs 14.1% respectively, and 10.7% of the Cleveland County population 25 years and older started high school but did not receive a diploma (*Cleveland County 2019 Community Health Assessment*, 2019). As such, increasing graduation rates has the potential to improve community health and poverty rates.

According to a Food Research and Action Center report on the Benefits of School Lunch, proper nutrition is key to educational success. The School Breakfast Program ensures that those participating are receiving proper morning nutrition and will not be distracted by hunger in the morning (“North Carolina School Breakfast Report,” 2018). Participation in the School Breakfast Program is linked to better behavioral, emotional, and mental health, better academic performance, and fewer disciplinary problems (“North Carolina School Breakfast Report,” 2018). Providing accessible, free breakfast for all students in high school has the potential to not only improve health outcomes but also reduce food insecurity, improve attendance, and improve students’ ability to participate and thrive in school, thus increasing graduation rates (“North Carolina School Breakfast Report,” 2018; Soldavini & Ammerman, 2019).

Purpose

The purpose of this program is to increase School Breakfast Program (SBP) participation in Cleveland County high schools. Currently, all Cleveland County schools offer free breakfast for all students through the USDA School Meals Community Eligibility Program Provision (CEP) (*Cleveland County Schools - School Nutrition And Fitness*, n.d.). CEPs are waivers for USDA school meal programs which reimburse schools that serve students in low-income areas (*Community Eligibility Provision | Food and Nutrition Service*, n.d.). While school breakfast is

offered in Cleveland County schools, participation is low: in the 2016-17 school year, for every 100 students participating in the free National School Lunch Program, only 53.3 students are participating in school breakfast (“North Carolina School Breakfast Report,” 2018). Roughly half the students who receive free lunch choose not to receive free breakfast. Participation in the school breakfast program is associated with better test scores, fewer absences and incidences of tardiness, improved diet quality, and fewer visits to the school nurse, so increasing high school student participation is in the county’s best interest (“North Carolina School Breakfast Report,” 2018).

Evidence Based Outcomes

Short-term Impacts

The program’s short-term outcome objective is: by [two years from implementation], participation in the School Breakfast Program in Cleveland County High Schools will increase by 200% (Soldavini & Ammerman, 2019). The short-term health outcome is: by [two years from now], the percentage of Cleveland County High Schoolers reporting that they consume breakfast will increase by 200% (Hearst et al., 2016; O’Neill Hayes & VanHorn, n.d.)

Long-term Impacts

The program’s long-term outcome objective is: an increased proportion of Cleveland County High School students graduate from high school within 4 years. The long-term health outcome is: stigma of participating in the SBP is reduced or mitigated by the routine offering of the free BIC model via student survey (Ribar & Haldeman, 2013; *Serving Up a Successful School Breakfast Program*, 2005; Soldavini & Ammerman, 2019).

Strategies and Activities

Breakfast in classroom (BIC) with the SBP is a service method where the breakfast meals are delivered to the students’ classrooms during their first period class, and they are given class time to eat. The BIC model is associated with improved high school student participation in the SBP in North Carolina; North Carolina high school students who were offered free BIC were 7.42 times more likely to participate in the SBP than when breakfast was offered through traditional cafeteria serving without the free breakfast for all CEP waiver (Soldavini & Ammerman, 2019). While all Cleveland County schools offer free breakfast, schools in North Carolina who offer free breakfast alongside BIC saw higher participation in the SBP. Schools in North Carolina where all students were offered free breakfast were only 1.32 times more likely to participate in the SBP compared to 7.42 more likely when free breakfast for all plus BIC was offered (*Cleveland County Schools - School Nutrition And Fitness*, n.d.;

Soldavini & Ammerman, 2019). As such, this program aims to implement BIC service alongside the current free breakfast in Cleveland County high schools. This program should be feasible to implement as Cleveland County high schools already offer free breakfast, so kitchen staff are already present for breakfast production, and the BIC has been successfully implemented in other North Carolina high schools (Soldavini & Ammerman, 2019).

The first order of business will be to hire a project manager to oversee the implementation of BIC service in the Cleveland County High Schools. Community meetings will be held at the schools with a particular focus on the voices of the teachers, kitchen staff, and janitorial staff to both gauge feelings about a BIC program, receive input, assess school readiness for BIC, as well as address common concerns such as messiness and class disruption. Pilot studies are useful for assessing feasibility of a program and identifying areas for improvement before larger and more involved programs are carried out (Moore, 2011). Two schools will be identified to carry out the pilot study and assess feasibility of a BIC service model in Cleveland County High Schools and identify improvements for implementation before rollout to all schools. The two schools assessed to be most ready to transition will be identified by school leadership using input from community meetings. BIC services will expand to the rest of the schools the following year. At each school, the principal and a school nutrition or kitchen manager, will be designated as project leaders to implement the change at the school level. The school level project leadership will work to decide what school staff will serve the BIC meals and how dishes will be collected, as well as work out other logistics. At the end of the first year, the program will be evaluated through staff feedback, SBP utilization data, and student feedback. The feedback will be incorporated in the following year and in the rollout of BIC service in the other five high schools in the area. At the end of the second year, a second round of evaluation will occur to gauge the success of the program.

This program touches all levels of the socioecological model. This intervention utilizes the SBP, which is a national systems program, funded by the US government. The program directly influences living and working conditions by offering breakfast at the school level and adjusting school level policies. At the intrapersonal level, this program aims to reduce stigma of the SBP amongst students, as the BIC classroom model is associated with reducing SBP participation stigma since individuals who qualify or need for free and reduced breakfast are not outed to their peers (Soldavini & Ammerman, 2019). Lastly, the program works at the individual level, improving breakfast consumption, improving individual health, and improving academic performance (“North Carolina School Breakfast Report,” 2018; Soldavini & Ammerman, 2019). In all this program is expected to reach all high school

students at the seven high schools in Cleveland County or 4,547 students (*High Schools in Cleveland County Schools District*, n.d.).

Stakeholders

There are many important stakeholders for this project. The school administration, dietitians, and kitchen leadership will all be tasked with organizing the rollout of the BIC service. The kitchen staff will be responsible for preparation of the school breakfasts and serving the meals in the classroom. As SBP participation is expected, kitchen staff will also need to adjust to increased production needs. The facilities and janitorial staff will be responsible for supplying classrooms with necessary equipment for managing any spills or small messes associated with BIC as well as providing adequate garbage receptacles for food waste. Student input is crucial to the success of SBP uptake. Obtaining student opinion on what is served and how food is being served will help the school adjust to what the students want, thus increasing participation. Parents, guardians, and supporting family members are responsible for helping students get to school on time to partake in the BIC SBP. Lastly, suppliers and local farmers are crucial to providing fresh and desirable ingredients to the program.

Budget

The funds allocated for this project will mainly go toward hiring a project lead and purchasing school equipment. A 2-year project manager will be needed to manage fund allocation, meet with superintendents and principals, and help provide resources to the individual schools as they implement BIC services. The rest of the funds will be allocated as grants to buy additional materials necessary for implementing BIC, such as food carts and dish bins for use during and after service.

Conclusion

This program aims to implement BIC in Cleveland County high schools. While there are some disadvantages to this program – the program doesn't have an educational component, the program doesn't address out of school food insecurity, and the program doesn't address nutrition in the home – we believe the trade offs are worth it. Taking a direct food service approach versus an education approach allows us to directly address food insecurity in schools. Additionally, taking a comprehensive intervention, applied to all students, as opposed to a targeted and focused approach allows benefit to all students, not just those most at risk, and can help reduce stigma associated with utilizing free school breakfast. The advantages of this program approach are huge. Free school breakfast paired with BIC service has been shown to decrease stigma associated with using the SBP, to improve

student physical and mental health, and improve school performance (“North Carolina School Breakfast Report,” 2018; Soldavini & Ammerman, 2019). We are confident that this program will be effective in Cleveland County high schools, as implementing BIC has been shown to be very effective in North Carolina high schools at increasing SBP participation (Soldavini & Ammerman, 2019). Using a human rights lens, this program aims to address the human right to safe and nutritious food and freedom from hunger, ensuring students are fed regardless of family income.

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Evaluation Plan

Intervention Summary

Education is a key social determinant of health, or environmental factor that influences an individual's health (*Social Determinants of Health - Healthy People 2030 | Health.Gov*, n.d.). High school graduation is linked to increased employment opportunities, better wages, and fewer chronic health conditions (*Increase the Proportion of High School Students Who Graduate in 4 Years — AH-08*, n.d.). Yet, 10.7% of adults 25 years and older in Cleveland County dropped out of high school (*Cleveland County 2019 Community Health Assessment*, 2019). Ensuring that children and teens have access to nutrition food and are fed is an important factor in educational success and can impact graduation rates, as children who are hungry show worse behavioral, emotional, and mental health, receive poorer grades, and are more likely to be suspended from school ("Benefits of School Lunch," n.d.). . Participating in the School Breakfast Program (SBP) has been shown to be associated with better test scores, fewer absences, and improved diet quality ("North Carolina School Breakfast Report," 2018). While Cleveland County offers free school breakfast through the SBP, for every 100 students participating in free and reduced lunch only 53.3 students participate in the SBP (*Cleveland County Schools - School Nutrition And Fitness*, n.d.; "North Carolina School Breakfast Report," 2018). This program aims to implement the breakfast in classroom (BIC) model of service in all seven high schools in Cleveland County. North Carolina high school students offered free breakfast with BIC has were 7.42 times more likely to participate in SBP compared to an in-cafeteria model without a free breakfast for all waiver, so increased participation is expected with the implementation of BIC in Cleveland County high schools (Soldavini & Ammerman, 2019). The two expected short-term outcomes are: by [two years from now], participation in the School Breakfast Program in Cleveland County High Schools will increase by 200% and by [two years from now], the percentage of Cleveland County High Schoolers reporting that they consume breakfast will increase by 200% (Hearst et al., 2016; O'Neill Hayes & VanHorn, n.d.; Soldavini & Ammerman, 2019). The two long term outcomes are: an increased proportion of Cleveland County High School students graduate from high school within 4 years and that the stigma of participating in the SBP is reduced or mitigated by the routine offering of the free BIC model via student survey (Ribar & Haldeman, 2013; *Serving Up a Successful School Breakfast Program*, 2005; Soldavini & Ammerman, 2019).

Evaluation Plan

Outcome

This evaluation plan will focus on the outcome “by [two years from now], participation in the School Breakfast Program in Cleveland County High Schools will increase by 200%.” (Soldavini & Ammerman, 2019)

Study Design/Data Collection

The evaluation will be an observational cohort design using data from the kitchen on the number of breakfast meals served daily. School kitchens already collect this information, as federal reimbursement for the SBP is based on the number of meals served, so there will be no extra burden on the school staff to collect data (“North Carolina School Breakfast Report,” 2018).

Sample and Sampling Strategy

This study will use the students from the two high schools that are identified as most ready to transition the BIC model as chosen by the planning focus groups and project manager (see Implementation Plan for selection process) (Moore, 2011). Consent forms will be sent home for students to participate in feedback surveys.

Specific Measures

This study will measure the percent participation in the SBP monthly, semesterly, and pre and post intervention. It will also measure the county average for high school SBP participation as a comparison. The output will be meals served and the outcome will be changes in SBP participation.

Analysis Plan

Prevalence means of SBP participation will be used in a match-paired t-test analysis design to compare each school’s final participation and their baseline participation to each other.

Timing

Since data is taken daily by the kitchen, it is only necessary to compile data during each analysis period. Baseline data will average previous SBP participation. Analysis will occur after the first semester, first year, and second year of intervention. After the first year, if a 25% increase in participation is not observed, we will take student feedback regarding participation in the program and make adjustments as needed. Since the overall intervention includes BIC implementation in all Cleveland County high schools, we want to work out any issues with the program within the first year, as it is easier to pivot two programs after one year versus seven programs

after two. Overall progress is defined as a statistical and meaningful increase in participation, with the goal of a 200% increase by the second year in the pilot schools, as defined in our target outcome.

Sources of Funding

This program and research will be funded by grants, as the program is self-sustaining after the two-year intervention period. The main sources of funding will come from the No Kid Hungry and Kellogg School Breakfast Grants and grants from the Carolina Hunger Initiative (*Carolina Hunger Initiative*, n.d.; *No Kid Hungry and Kellogg School Breakfast Grants* / *No Kid Hungry*, n.d.).

Data Use and Dissemination

The results from this study and data will be used to motivate other schools in other age groups in Cleveland County or other high schools in neighboring counties to adopt BIC. The results will also be used to proposition the school board to mandate that all schools in the county participating in the SBP to utilize BIC service. A presentation and briefing will be held for the superintendents and school board in Cleveland County. County officials will also be invited to the briefing. Additionally, parents will be sent a newsletter physically and electronically regarding the program, the benefits of the SBP, and any observed improvements in participation.

Strengths and Challenges

A major strength of this evaluation is the utilization of data already being collected by school kitchens, lowering the cost of the evaluation and burden on school employees. Another strength is that this plan incorporates student feedback after year one, allowing the program to pivot as needed to optimize success. Another challenge is that this program evaluates meals served but doesn't evaluate what parts of the meal are consumed, which may obscure the success of the program increasing breakfast consumption if students are saving food for later or not consuming major portions of the meal. This program has the potential to increase the proportion of all high school students in Cleveland County eating breakfast and thus impact student learning. The results of this evaluation will help analyze the impacts of the program and schools serving other age groups switch to a BIC model should this program prove successful, improving SBP participation in all Cleveland County schools.

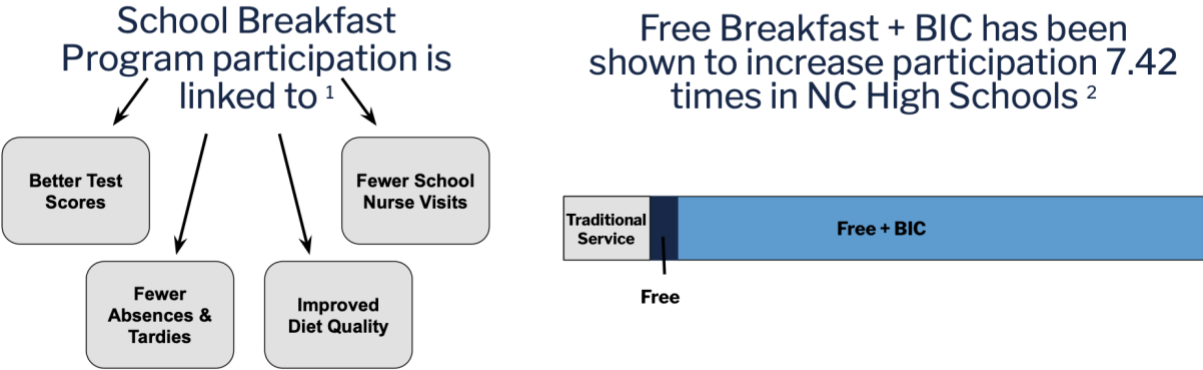
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Nutrition Program



Proposal: Breakfast in Classroom (BIC) Service in Cleveland County High Schools

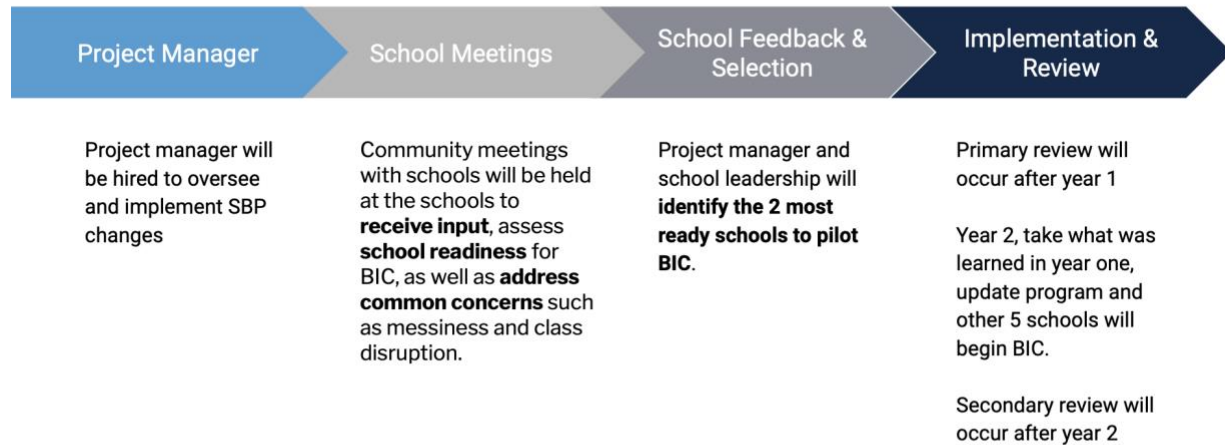


References: 1. ("North Carolina School Breakfast Report," 2018) 2. (Soldavini & Ammerman, 2019)

Ashley Kelley

The proposed nutrition program is to change the mode of breakfast service for Cleveland County HSs. Currently, the SBP is free to students via a government waiver, but only 53.3 students for every 100 students receiving free and reduced priced lunch are participating. The SBP participation is linked to better test scores, fewer absences and tardies, improved diet quality, and fewer school nurse visits, so increasing SBP participation is in the county’s best interest. One barrier to participation is access, traditional school breakfast is served out of the cafeteria, which may be far from the classroom and require students to show up extra early for school, another is stigma, where students are embarrassed about needing free school breakfast, so they choose not to participate. This program proposes a BIC service model, where breakfast is served in the classroom during first period or homeroom and all students can grab breakfast from the service cart. This model is shown to adequately address the barriers to participation. In North Carolina, compared to paid cafeteria served breakfast, free breakfast increased participation 1.32 times, but free breakfast paired with BIC increased participation 7.42 times, demonstrating the efficacy of this model.

Nutrition Program: Implementation



Ashley Kelley

The first step of implementation is to hire a project manager, who will oversee and implement SBP changes to the 7 HS in Cleveland County. Next, community meetings will be held with school staff to receive input, assess school readiness such as current staffing, staff receptivity, and resources, and address common concerns from teachers such as messiness and class disruption. Following these meetings, the project manager and school leadership will identify the 2 schools most ready to transition to BIC as the pilot schools. The primary data review will happen after year one and the secondary review after year two. After year one, lessons learned will modify and update the program and the other 5 schools will begin with the updated program, meaning all 7 HSs will move to a BIC model by year 2.

APPENDIX F: EMILY MCCORMICK

Problem Statement

Social Determinant of Health

Social Determinants of Health (SDoH) encompass the broad-scale environment in which people live and acknowledges the influence that the greater environment has on health outcomes. The Social Determinant of Health of Education Access and Quality focuses on the components of language, literacy, early development, and higher education attainment (CDC, 2021; U.S. DHHS, 2021). Poor education has been linked to lower income and socioeconomic status (Tulane University, 2021). Short-term impacts include higher risk taking (including smoking and underage pregnancy), and problems navigating the health system and managing illnesses (Tulane University, 2021). Proper education from an early age can promote one's ability to engage in healthier lifestyle decisions that promote long-term wellbeing (U.S. DHHS, 2021). This can lead to better paying jobs, improved ability to understand the healthcare system, and greater health literacy (including knowledge about how to better manage health conditions). Quality education has impacts beyond the scope of the individual. Adults that experience higher education attainment can inadvertently break the multigenerational cycle of low education and poor outcomes by creating opportunities for success and preparing a foundational base to maintain a stable life (Tulane University, 2021). Especially in rural communities, educational programs have shown promise in providing the resources needed to reduce disparities through improving quality of life and increasing health behaviors (RHI, 2020). Objective AH-08 focuses on increasing the proportion of students who graduate high school (HS). This promotion of this objective can improve the mental, physical, emotional, and financial health by increasing individual autonomy and knowledge in engaging in healthy behaviors for long-term success.

Geographic and Historical Context

Cleveland County (CC) is a primarily rural area with a population around 99,000 individuals with approximately 75.8% of the population identified as White (United States Census Bureau, 2021). According to the 2019 CC Health Assessment, Cleveland is ranked 80th out of North Carolina's (NC) 100 counties for health and 81st for health behaviors indicating worse health outcomes. The county's deep history rooted in agriculture and manufacturing industries influence a majority of the workforce distribution. More than 40% of the population work in manufacturing that provides high-paying opportunities, however, jobs remain limited given the need for personal transportation and location barriers. Many disparities exist within the county such as high rates of poverty, low

education attainment, as well as high rates of tobacco use, obesity, sexually transmitted infections (STIs), and teen pregnancy. The county has been involved in many efforts to promote the health of their population through establishment of educational pipelines into the county's large manufacturing industry, school-based educational programs targeting teen pregnancy and STIs, and health professional collaborations targeting smoking cessation and weight management (Cleveland County Public Health Center, 2019). However, poverty and poor health behaviors remain a contributing factor to the health issues in this county with potential for improvement.

Priority Population

Adolescents ages ten to 19 years encompass a population of interest in CC. Individuals under the age of 18 years make up 27.6% of the county's population (United States Census Bureau, 2021). Presently CC is ranked as the 23rd largest school district in the state with two colleges, four HSs, four middle schools, and 16 elementary schools with a 15.13 student to teacher ratio (NCES, 2020). Adolescents represent the most vulnerable population as high rates of teen pregnancy and STIs-and low educational attainment remain prevalent (Cleveland County Public Health Center, 2019). School-based education programs show promise in addressing these issues. Specifically, the *Wise Guys* and *Smart Girls* program has leveraged education to promote awareness of beneficial health behaviors and increase beliefs that have shown a reduction in outcomes of pregnancy and STIs. Additionally, expansion of industry and higher education programs in the county allow for upward mobility. Nevertheless, higher education attainment remains low compared to the NC average (Table 1). Low educational attainment contributes to poor health literacy, financial issues, and health disparities (Tulane University, 2021). This highlights the need for proper education and promotion of upward mobility in higher education for adolescents. Specifically, adolescents should have access and support to help them build a knowledge base for success to stimulate long-term lifestyle changes and support educational success.

Measures of Problem Scope

Educational attainment rates fall below the state of NC and US averages. A total of 84% of CC residents are HS graduates, compared to the respective North Carolina data of 87%, with graduation rates also below state averages (Towncharts, 2021). CC also falls short in other health measures that contribute to the prevailing disparities that plague the county. There is potential that lower education attainment contributes to the prevailing economic and health issues within the county. Particularly, the occurrence of poverty remains high as 19.9% of individuals live below the federal poverty line and 14.9% of adults are uninsured. Health specific rates of obesity, heart disease, teen

pregnancy, and tobacco use are also higher compared to overall state rates as shown in Table 1 (see Appendix). The 2019 Health Assessment lists the leading causes of death as diseases of heart, cancer, chronic respiratory disease, stroke, Alzheimer's (Cleveland County Public Health Center, 2019). It is noted 4 of the 5 causes of death can be prevented through education on healthy lifestyle choices and can be improved by the overall benefits of higher educational attainment (Cleveland County Public Health Center, 2019; Tulane University, 2021).

Rationale

Existing research supports a variety of benefits associated with higher education (Tulane University, 2021; VCU, 2015). Quality and access to higher education can result in better jobs, better financial status, better social skills, less stress, and proper knowledge to guide decisions regarding health behaviors (VCU 2015). Many studies citing the positive relationship of quality education with healthier lifestyles and greater well-being (RHI, 2020; Tulane University, 2021). Thus, there is importance in ensuring quality education to promote stability and wellbeing of the population. A focus on improving the SDoH of Education, specifically promotion of high school graduation and continued higher education (Education Objective AH-08), can have a broad impact on the health of the population and assist in reducing disparities originating from health behaviors (Cleveland County Public Health Center, 2019; Tulane University, 2021).

Disciplinary Critique

Health policy practitioners recognize the impact high quality educational attainment has in targeting factors that often lead to an unhealthy lifestyle, such as smoking, drug use, obesity, and limited health literacy that contribute to the cycle of poverty (VCU 2015). Educational programs serve as promising methods to address the high rates of low wage jobs, poverty, STIs, and teen pregnancy that remain a problem for CC. Present efforts exist using education as a method to combat lifestyle choices and health behaviors, such as *Making Proud Choices*, *Roadmap to STD Testing*, and *Drug Free Communities*. Over the years, CC has seen small improvements on health outcomes of teen pregnancy, smoking, and drug use through these educational programs. This shows how further investment into educational policies can be impactful in using higher education to target upstream lifestyle factors (Cleveland County Public Health Center, 2019). The CC school system, with its high ratings, is a valuable platform to use in implementing health interventions. However, there remains a need for greater promotion for pursuing higher education among adolescent residents through evidence-based policies that can be implemented along with existing programs (NCES, 2020; Niche, 2020). Therefore, a focus on higher education and overall greater wellbeing

is one strategy to break this cycle by targeting the younger population to encourage changes that have a significant impact on both the individual and county's wellbeing.

APPENDIX F1

Table 1

Cleveland County Measures

	Cleveland County	North Carolina
Education (%)		
9 th – 12 th Grade	10.7	8.2
High School or Higher	84%	87%
High School Graduation	84%	86%
Rate		
Cause of Death (rate per 100,000)		
Heart Disease	254.7	191.4
Diabetes Mellitus	47.4	27.0
Cancer	252.3	180.9
Lifestyle Choices		
Smoking (%)	24	18
Obesity (%)	37	32
Teen Pregnancy (cases per 1,000)	33	22
Sexually Transmitted Infections (cases per 100,000)	682.2	647.8

Note: This table represents Cleveland County Measures of Education, Cause of Death, and Lifestyle Choices (Cleveland County Public Health Center, 2019; County Health Rankings, 2021).

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Policy Analysis

Background

High school (HS) dropout rates in Cleveland County (CC) fall above the state of North Carolina (NC) and US averages (Town Charts, 2021). Specifically, low-income and minority students are at a higher risk for dropping out than their white counterparts (CCFP, 2008). CC is designated as a Tier 1 economically disadvantaged, which indicates many residents have lower median incomes and experience higher unemployment rates. Research shows at-risk students often lack the resources, academic, and social supports that influence successful graduation. Transitional periods into HS are a vulnerable time for students lacking support and are identified as a significant contributor to early dropouts (Clark et al, 2016). Mentor and family engagement programs are two methods used to combat high dropout rates by providing academic and social support to promote shared responsibility and continuous involvement (Jensen, 2017). Specifically, CC policies focus on issues of truancy, attendance, parent workshops, and early warning systems (NCCDP, 2011). The Roots & Wings Skills Development Program and Communities in Schools Mentor Program are existing opportunities for parenting programs related to school performance. However, these programs emphasize parental education with minimal school and student engagement (Cleveland County Government, 2018). There is a need for a multifaceted approach that promotes connection between parents, students, and school personnel in Cleveland County.

The following proposed policies aim to address the lack of support for at-risk students during their transition into HS to improve graduation rates. Policy Option 1: Add a yearlong mentoring and peer support course to the county HS curriculum mandatory for all incoming freshmen. Policy Option 2: Establish school-based family engagement programs in all the county HSs that require parent, student, and guidance bi-annual planning conferences with flexible accommodations to encourage family attendance.

Policy Option 1: Mentoring and Peer Support Freshman Program

Provision of mentor support is a common method to target dropouts. Mentors can provide both academic and nonacademic support to students throughout HS. Poor sense of peer connection, low emotional learning, and poor preparation during HS transition encompass some of the reasons that contribute to high dropout rates (Clark et al., 2016). Mentoring programs have the ability to address the academic as well as psychosocial factors seen in CC students (CIS, 2021). Mentoring programs can vary in frequency and scope. The Freshman Focus program is a hybrid mentor-peer support system that has shown positive impacts in both graduation rates and GPAs among

students within a short time. This program uses guidance counselors and selected upperclassmen as peer teachers. A daily year-long class offers students one-credit with a set 80 lesson curricula established specifically for this program. Findings from this program show increased GPAs across all students with noteworthy increases seen among at-risk low performing students. Additionally, overall graduation rates increased by 6.4% over a five-year period (Clark et al., 2016).

Policy Option 1 proposes to implement the Freshman First program into all CC HSs. This yearlong course incorporates a curriculum focused on the promotion of academic success through lectures, career readiness, homework acclimation, direct support, and social engagement. Freshman First aims to provide vulnerable and at-risk students with academic and social avenues of help to ensure continued success throughout HS by easing their transition and providing access to career and education materials (Clark et al., 2016).

A major supporting stakeholder for this policy is the Community in Schools of CC. Their past and current collaboration with CC schools includes providing enrichment opportunities, mentoring, and other support to ensure all students have the opportunity to graduate (CIS, 2021). As the establishment of this program would require significant funds, the CC GOP would be opposed to this policy. This republican group has expressed their concerns of increased funding to schools generally and would likely support a program that targets higher achieving students rather than students as a whole (Cleveland County GOP, 2021; Republican Views, 2014)

Policy Option 2: Family Engagement Program

Family engagement is a prominent method used across all levels of schooling. The benefits of parent involvement are vast, ranging from higher academic achievement and improvements in family-support systems (Jensen, 2017). Engagement programs incorporate parents, counselors, and students to participate in discussions to promote success. Regardless of a student's socioeconomic status, parental involvement can result in higher academic achievement, improved attitudes in school, and reduce risk of dropouts. The Family Engagement Program policy aims to create a standardized engagement program to require bi-annual parent, student, and guidance conferences targeting performance, individual assistance, goal planning, and college or career advising. Improvements in graduation were seen following year two of the program with low-income and disadvantaged students showing significant improvements in their academic performance and graduation rates (TN DoE, 2021, 2022)

The proposed policy intends to mimic the Family Engagement Program. This program involves schoolwide parent, student, counselor conferences twice a year with establishment of a Family Engagement Advisory Council to support and evaluate the program (Scott County School District, 2017; Sycamore Institute, 2020). Flexible accommodations of virtual meetings and various schedule offerings help minimize barriers for attendance for families to encourage engagement. The goal of this policy is to provide opportunities to all families to create an encouraging environment in which their students can excel, access resources, and promote high educational success.

The CC School Board will be a supportive stakeholder, as their strategic plan highlights initiatives to improve graduation rates and student success. The proposed policy aligns well with their comprehensive approach to improving education through collaboration with parents and the community (Cleveland County Schools, 2021). As mentioned in the first policy, the CC GOP would likely oppose this program. However, the presence of an oversight advisory board and reporting requirements for the program may make this more appealing to this stakeholder through monitoring the impact of county funds (Cleveland County GOP, 2021).

Evaluation

Each policy option will be evaluated based upon the following criteria: political feasibility, impact, equity, and cost to the county. There is a large evidence base supporting both mentoring and family engagement programs as methods targeting HS dropout rates. CC specifically has enacted and supported parental engagement and mentor programs similar to both policy options (CCC, 2021; CIS, 2021). The major difference between the two options for implementation is that option 1 requires a new curriculum while option 2 utilizes the existing counselor framework. Given the minimal changes needed for implementation and alignment of family engagement with the values of CC's strategic plan to improve positive relationships within families, option 2 would have a higher likelihood of being passed by CC Commissioners (CCC, 2021; Pak, 2020).

Impact of these policies includes the program's influence on improving the graduation rates in CC HSs. Policy option 1 targets all incoming freshmen, while option 2 focuses on all students and their families. Research indicates that both mentor programs and family engagement programs have positive impacts on HS graduation rates, especially among at-risk students (County Health Rankings, 2016; Jensen, 2017). Engagement programs have shown similar efficacy with additional positive impacts extended to students and their families through creation of a broad scale support system targeting factors beyond the student (County Health Rankings, 2016; Weiss et al., 2011;

Youth.gov, 2012). Successful outcomes for both policies were observed when implemented in rural, low-economic areas and thus would equally have a strong impact on CC HSs.

As for equity, both mentoring and family engagement programs have shown improvements within at-risk student groups. Students that lack proper economic, social, and emotional resources often have lower educational performance and attainment (Clark et al, 2016). Evidence from both programs highlight the positive impact on low-resource and poor performing students in improving GPAs and graduation rates (Sycamore Institute, 2020; Clark et al, 2016). However, family engagement programs have a greater impact on bridging the gap of at-risk and students of diverse cultural backgrounds by targeting a greater scope of support and engagement (Sycamore Institute, 2020).

Option 1 requires implementation of a new program curriculum in all seven HSs with evidence citing costs ranging from \$600-4500 per student (County Health Rankings, 2016). The cost of this policy would include factors of course development, school FTE to lead the course, supplies, and more. Alternatively, option 2 builds on the existing counselors in the county school system. Currently, CC employs 29 guidance counselors (US News, 2020). Salaries for all counselors is a significant cost, averaging \$49,000 per year (Career Explorer, 2018). However, the cost covering a mentor program serving 200 to 300 freshman students per year is far greater to the county (High-Schools.com, 2022).

Final Recommendation

Policy Option 2, the family engagement program, is the most favorable option given the evaluated criteria. A family engagement program can be a successful, evidence-based method to improve HS graduation rates in CC, especially among students from low-resourced backgrounds, and uses the existing framework of CC HSs. The following process and outcome measures have been identified to evaluate the success of this program in achieving the target goal: increasing graduation rates by 2.5 percentage points within a four-year period for all CC HSs. This would bring the graduation rate up from its current 85% to 87.5%, setting it on target to reach NC's 2030 goal (My Future NC, 2021; US News, 2020). The process measure includes the number of students that participated in all four years of the engagement program. The outcome measure is the number of students who successfully completed or graduated from HS within a four-year period (Tempe, 2021). A family education program has the potential to provide wide-ranging support to the school, students, and families of CC. Programs like this can address factors that contribute to dropouts and low graduation rates. Thus, it is critical to maintain family-wide engagement throughout a student's HS years to encourage academic and future success.

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Policy Budget

Policy Summary

Cleveland County (CC) high school (HS) dropout rates are higher than both North Carolina (NC) and US averages (Town Charts, 2021). Rates are even higher for low-income and minority students as they face greater risks for dropping out (CCFP, 2008). Research states that these at-risk students often lack the resources and support that help lead to graduation and higher education attainment (Clark, 2016). The presence of school counselors is one method that is commonly used to provide needed support and resources to students. However, understaffing of these personnel can limit the impact counselors have on their student body, especially reaching those students in need. The High School Mental Health Program (HSMHP) involves hiring three school counselors to serve across the HSs in CC. This will increase the student to counselor ratio from the current 350:1 to the recommended 250:1 that the policy requires for all public HSs in CC (Cratty, 2019; Patel, 2021). Programmatic goals focus on providing academic, social, and mental support to students through increased reach and availability of the HS counselors. Specifically, this program aims to increase the 4-year graduation rates across all CC HSs. Outcomes on the number of students obtaining assistance from counselors and the number of students graduating in four years will be collected to measure the success of this policy.

Impact of this policy revolves around the ability to recruit, train, and promote the presence of the new school counselors. A principal and school superintendent will support the hiring process and an existing counselor supervisor will assist in the training and onboarding of the new personnel. Each new hire would have already completed their certified training; however, the program allocates funding for continued training and professional development. The three counselors will be assigned to 2 schools each to establish strong relations with students and increase their scope of impact for all CC HSs. Additional support in materials and effort is anticipated in promoting the presence of the new hires, developing any needed materials, and ensuring adequate facilities are present to support the new staff. Lastly, outcome tracking measures will be implemented to assess the efficacy of the policy. The high schools will use the existing PowerSchool, SIS, framework to track attendance, graduation rates, and counselor visits (NCDPI, 2022).

Policy Budget

The full line-item budget, staffing table, and cost-related calculations are located in the Appendix.

Budget Justification

Personnel: Specific school personnel were identified in the recruiting, hiring, and onboarding process for selection of the three new counselors. During the initial year (Y1), the school superintendent, principal, and supervising counselor will lead the hiring process. No additional expenses were noted for the principal, superintendent, and supervising counselor as this is within their job description and would be no new cost to the schools. The counselor supervisor will assist in the onboarding process (Y1) and continue to provide oversight and assistance as needed throughout the program (NCDPI, 2013). Primary personnel expenses will come from employment of the three counselors (Y1-Y3). Salaries are in line with NC averages and account for varying educational and experience backgrounds (Career Explorer, 2018; Indeed, 2022). Additional allocation for fringe costs (30%) include benefits, taxes, and health insurance. All salaries that span across the program were adjusted for 2% increases per year to match inflation. A majority of webinars and trainings are located free of charge or with a minimal membership fee. Funds were allocated to anticipate the upkeep of our new counselor's trainings through the American School Counselor Membership, averaging \$130 per person, and an additional \$500 sum per counselor for any other conferences or professional development opportunities each year (ACSA, 2022; NCSCC, 2021; School Counselor, 2021; Walz & Bleuer, 2014).

Non-Personnel Expenses: Noted in the budget are items of administration, building expenses, tracking system, and technology. These services and facilities are integral to the program functions will be absorbed into the existing CC school system costs. There will be no additional cost for buildings and the oversight tracking system as these items will not be impacted by the addition of new personnel. Educational materials and supplies, communications, and conferences are other expenses that are needed for the newly added personnel. Cost estimates were calculated using the NC Public School Budget expenditures in relation to CC school expenses and the relative proportion of the FTE for the new counselors (NCDPI, 2018; NCES, 2020). All line item expenses were adjusted for a 2% inflation increase per year to represent the anticipated changes in costs and increasing school spending trends (Cleveland County Board of Commissioners, 2022).

Income: Anticipated income for this program will come from grant related revenues for Y1 through Y3 and funding requested by the CC Commissioners. The School Resources Officers Grant will provide support to school counselors for Y1 of the program (Cleveland County Board of Commissioners, 2022). The American Counseling Association provides funding for school counselors up to \$500 per counselor per year and the NCSCA grants for

professional development will be used to support additional incoming revenue for Y1 through Y3(ACA, 2021; NCSCA, 2021). Title I, Part A serves to provide supplemental funding targeting at improving opportunities for at-risk students. Part of this includes funds to support counseling in secondary schools. CC HSs meet eligibility requirements and will pursue this route to support funding for Y1 and utilize excess funds for the remaining years (DoE, 2018; WOSPI, 2020). Under the Title IV, Part A of the Every Student Succeeds Act (ESSA), the local education agency is eligible to apply and utilize funding to support activities for offering well-rounded education opportunities. School counselors meet eligibility to receive a portion of these funds and will be encouraged to apply for funding to support Y1 and Y3 (Patrick, 2020). The remaining income needed to fund the program will be requested from the CC Commissioners for each fiscal year (Y1-Y3).

APPENDICES F3

Figure 1

Staffing Table

Position	FTEs	Salary	Fringe (30%)	Personnel Cost
School Counselor #1	1	\$49,000.00	\$14,700.00	\$63,700.00
School Counselor #2	1	\$47,000.00	\$14,100.00	\$61,100.00
School Counselor #3	1	\$46,500.00	\$13,950.00	\$60,450.00
Superintendent	0	\$140,000.00	\$42,000.00	\$0.00
Principal	0	\$75,500.00	\$22,650.00	\$0.00
Counselor Supervisor	0	\$56,000.00	\$16,800.00	\$0.00
Totals	3	\$414,000.00	\$124,200.00	\$185,250.00

Figure 2*3-Year Line-Item Budget*

Personnel				
Item	Y1	Y2	Y3	Total
School Counselor #1	\$63,700.00	\$76,440.00	\$91,728.00	\$231,868.00
School Counselor #2	\$61,100.00	\$73,320.00	\$87,984.00	\$222,404.00
School Counselor #3	\$60,450.00	\$72,540.00	\$87,048.00	\$220,038.00
Superintendent	\$0.00	\$0.00	\$0.00	\$0.00
Principal	\$0.00	\$0.00	\$0.00	\$0.00
Counselor Supervisor	\$0.00	\$0.00	\$0.00	\$0.00
Training	\$1,890.00	\$1,890.00	\$1,890.00	\$5,670.00
Personnel Expenses	\$187,140.00	\$224,190.00	\$268,650.00	\$679,980.00
Non-Personnel				
Item	Y1	Y2	Y3	Total
Administration	\$0.00	\$0.00	\$0.00	\$0.00
Building Expenses	\$0.00	\$0.00	\$0.00	\$0.00
Oversight Tracking System	\$0.00	\$0.00	\$0.00	\$0.00
Educational Materials/Supplies	\$2,371.71	\$2,419.14	\$2,467.52	\$7,258.37
Printing, copying	\$80.85	\$82.47	\$84.12	\$247.44
Conferences, Meetings	\$161.71	\$164.94	\$168.24	\$494.89
Communications	\$242.56	\$247.41	\$252.36	\$742.33
Technology, Equipment	\$377.32	\$384.86	\$392.56	\$1,154.74
Non-Personnel Expenses	\$3,234.14	\$3,298.83	\$3,364.80	\$9,897.78
Total Expenses	\$190,374.14	\$227,488.83	\$272,014.80	\$689,877.78
Income				
Item	Y1	Y2	Y3	Total

School Resource Officers Grant	\$1,007.51	\$0.00	\$0.00	\$1,007.51
ACA Funding	\$1,500.00	\$1,500.00	\$1,500.00	\$4,500.00
Title IV, Part A ESSA Act	\$30,000.00	\$0.00	\$30,000.00	\$60,000.00
NCCSA Professional Development Grant	\$1,125.00	\$1,125.00	\$1,125.00	\$3,375.00
Title I, Part A	\$156,741.64	\$93,258.36	\$0.00	\$250,000.00
Total Income	\$190,374.15	\$95,883.36	\$32,625.00	\$318,882.51
Request to Cleveland County Commissioners (Total Net Loss)	\$0.00	\$131,605.47	\$239,389.80	-\$370,995.27

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Communication Plan

Policy Budget: Expenses



Personnel				
<i>Item</i>	<i>Y1</i>	<i>Y2</i>	<i>Y3</i>	<i>Total</i>
School Counselor #1	\$63,700.00	\$76,440.00	\$91,728.00	\$231,868.00
School Counselor #2	\$61,100.00	\$73,320.00	\$87,984.00	\$222,404.00
School Counselor #3	\$60,450.00	\$72,540.00	\$87,048.00	\$220,038.00
Superintendent	\$0.00	\$0.00	\$0.00	\$0.00
Principal	\$0.00	\$0.00	\$0.00	\$0.00
Counselor Supervisor	\$0.00	\$0.00	\$0.00	\$0.00
Training	\$1,890.00	\$1,890.00	\$1,890.00	\$5,670.00
Personnel Expenses	\$187,140.00	\$224,190.00	\$268,650.00	\$679,980.00

Emily McCormick

Thank you Hannah, now I will walk through our anticipated expenses and income for the High School Mental Health Program. For (Y1) a school superintendent, principal, and supervision counselor will lead the hiring process. We have noted that no additional expenses for these specific personnel will be incurred as this is within their existing scope of tasks. Primary personnel expenses will come from employment of the three counselors. We have accounted for varying educational and experience backgrounds, allocated for fringe, adjusted salaries for inflation, and included funding for training and development for the counselors.

Policy Budget: Expenses



Non-Personnel				
<i>Item</i>	<i>Y1</i>	<i>Y2</i>	<i>Y3</i>	<i>Total</i>
Administration	\$0.00	\$0.00	\$0.00	\$0.00
Building Expenses	\$0.00	\$0.00	\$0.00	\$0.00
Oversight Tracking System	\$0.00	\$0.00	\$0.00	\$0.00
Educational Materials/Supplies	\$2,371.71	\$2,419.14	\$2,467.52	\$7,258.37
Printing, copying	\$80.85	\$82.47	\$84.12	\$247.44
Conferences, Meetings	\$161.71	\$164.94	\$168.24	\$494.89
Communications	\$242.56	\$247.41	\$252.36	\$742.33
Technology, Equipment	\$377.32	\$384.86	\$392.56	\$1,154.74
Non-Personnel Expenses	\$3,234.14	\$3,298.83	\$3,364.80	\$9,897.78
Total Expenses	\$190,374.14	\$227,488.83	\$272,014.80	\$689,877.78

Emily McCormick

Noted our expenses are items of administration, building costs, and the school-based electronic tracking system. These services and facilities are integral to the program functions but can be utilized with no added cost to the school system. The remaining items highlighted here are other expenses that are needed for the newly added personnel. We recognized that funding must be allocated to these specific functions in order to ensure the impact and access of the new counselor additions.

Policy Budget: Income



Income Item	Y1	Y2	Y3	Total
School Resource Officers Grant	\$1,007.51	\$0.00	\$0.00	\$1,007.51
ACA Funding	\$1,500.00	\$1,500.00	\$1,500.00	\$4,500.00
Title IV, Part A ESSA Act	\$30,000.00	\$0.00	\$30,000.00	\$60,000.00
NCCSA Professional Development Grant	\$1,125.00	\$1,125.00	\$1,125.00	\$3,375.00
Title I, Part A	\$165,741.64	\$93,258.36	\$0.00	\$250,000.00
Total Income	\$190,374.15	\$95,883.360	\$32,625.00	\$318,882.51
Request to Cleveland County Commissioners (Total Net Gain/Loss)	\$0.00	-\$131,605.47	-\$239,389.80	-\$370,995.27

Emily McCormick

Part of the anticipated income for this program will come from grant related revenues. The American Counseling Association and the NC School Counselor Association provides funding specific for secondary school counselors and will be a guaranteed source of income for professional development across the program’s years. Two additional grants include the Every Student Succeeds Act (ESSA) for Title 1 and Title 4. Here local education agencies are eligible to apply and utilize funding to support school counselors in offering well-rounded educational opportunities. We will pursue this route to support funding for Y1 and Y3 and utilize excess funds for the remaining years. The leftover revenue needed to support this program falls at ~\$370,000 across the 3-year period. We are requesting your/Cleveland County Commissioners support to help us fund this project in order to improve the social and academic supports offered within CC High schools.