

PROJECT KNOWLEDGE IS POWER (KIP): CREATION OF AN ACCOUNTABLE CARE
COMMUNITY IN CUMBERLAND COUNTY TO IMPROVE MENTAL HEALTH STATUS
BY INCREASING COLLEGE ENROLLMENT

By

CLOIE CHIONG, ALEXANDRIA GRIFFIN, ISAIAH KIM, DONNA KRZASTEK, & KELLIE

MARKERT

A Capstone Project submitted to the faculty of the
University of North Carolina at Chapel Hill in
partial fulfillment of the requirements for the degree
of Master of Public Health in the School of Global
Public Health.

Chapel Hill

Spring 2021

First Reader: Lead Faculty

Date

Second Reader: Support Faculty

Date

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Cloie Chiong, Alexandria Griffin, Isaiah Kim, Donna Krzastek & Kellie Markert

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Abstract

Education access and quality is one social determinant of health outlined by Healthy People 2030, with a key objective to increase the proportion of high school graduates in college the October after graduating. Those with a higher level of education have opportunities for jobs that can offer safer work environments and higher income, which can lead to mental stability. Without these opportunities, mental health can suffer due to stress, anxiety, and depression. The Accountable Care Community (ACC) intends to address mental health outcomes in Cumberland County through improving educational attainment via increasing the number of high schoolers who enroll in college after graduation. The priority population will be high school students ages 13-18. To achieve this, we hope to accomplish: 1) Expansion of Cumberland County's dual enrollment program, the High School Connections; 2) Expansion of the Free Summer Meals program; and 3) Eliminating the SAT requirement.

Keywords: adolescence, mental health, education, Cumberland County, equity, social determinant of health, (SDoH), Accountable Care Community (ACC), food insecurity, high school, college, dual enrollment, SAT testing, Free Lunch

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LIST OF ABBREVIATIONS

ACC	Accountable Care Community
CCDPH	Cumberland County Department of Public Health
CHSA	College in High School Alliance
CCP	Career and College Promise
CCSB	Cumberland County School Board
CCSD	Cumberland County School District
FAFSA	Free Application for Federal Student Aid
FTCC	Fayetteville Technical Community College
HSC	High School Connections
NGT	Nominal Group Technique
PTA	Parent Teacher Association
RD	Registered Dietitians
SDOH	Social Determinant of Health
SEF	Socioecological Framework
SGA	Student Government Association
SMART	Specific, Measurable, Attainable, Relevant, and Timely
STEM	Science, Technology, Engineering, & Math
UNC	University of North Carolina
USDA	United States Department of Agriculture

Common Proposal

Education access and quality is one social determinant of health outlined by Healthy People 2030, with a key objective to increase the proportion of high school graduates in college the October after graduating (USDHHS, n.d.). Higher levels of education are associated with higher-paying jobs, better healthcare, and better health outcomes. One particular health outcome that can improve as a result of better education is mental health (Cohen et al., 2020). Those with a higher level of education have opportunities for jobs that can offer safer work environments and higher income, which can lead to mental stability (Cohen et al., 2020). Without these opportunities, mental health can suffer due to stress, anxiety, and depression (Steele et al., 2007).

In Cumberland County, NC, 91% of the population ages 25 and older have obtained a high school diploma, and 25.5% acquired at least a bachelor's degree compared to 29% in North Carolina. While the high school graduation rate is higher than the state of North Carolina, the percentage of citizens with at least a bachelor's degree is lower (NCDOC, 2020). It is also notable that 18% of the population lives below the poverty level, and the unemployment rate is 8.4% (NCDOC, 2020).

According to the State of the County Health Report in Cumberland of 2019, suicide was one of the leading causes of death between the ages of 22 to 39, highlighting mental health care as a need in the county (CCDPH, 2020). The mental health statistics reveal a higher rate of poor mental health and frequent mental distress compared to the state (CCDPH, 2019).

The Accountable Care Community (ACC) intends to develop a coalition of stakeholders within Cumberland County's Community with key partners to increase college enrollment and improve mental health outcomes. The priority population will be high school students ages 13-

18, as poor mental health in adolescence can worsen general, mental, and physical health in the long-term (Otto, et al., 2020). To achieve this, we hope to accomplish: 1) Expansion of the current College and Career Promises (CCP) dual enrollment program; 2) Expansion of the Free Summer Meals program; 3) Eliminating the SAT requirement.

The short-term objective of ACC is to increase the number of high school students that attend college the October after graduating. Dual enrollment programs provide high school students with the opportunity to obtain free college credits before entering college, which helps mitigate the high costs of enrollment (Chen, 2020). By adopting the current CCP to increase the high school counselor-to-student ratio and cover the costs of textbooks and additional fees, the ACC aims to achieve a 10% increase in CCP enrollment by the beginning of year three. By eliminating the SAT requirement from college applications, more high school students will be able to apply (Anderson, 2021). Some schools that have halted the requirement are seeing an increase in applications; the University of Virginia is up 15%, the University of California is up 28%, and Harvard University is up 42% of applications submitted (Anderson, 2021).

Overall, the ACC's long-term goals include an increase in the Cumberland County adult population who have a bachelor's degree or higher by 5% and a decrease in reported poor mental health conditions such as suicide rates, depression, and anxiety by 5% by the end of year 6.

Proposed Innovation/Transformation

Leadership

Currently, every eligible North Carolina high school student has the opportunity to enroll in the CCP in either the College Transfer Pathway or the Career and Technical Education Pathway. For the year 2017-2018, 59.5% of high school graduates earned college credit and the state dropout rate was 2.31% (NCDPI, 2019). However, it is important to note who is benefiting

from the program and if it is equitable. The North Carolina General Assembly reported that the Fall 2017 enrollment in the CCP consisted of 59% females and 41% males. When examining enrollment by race/ethnicity, it is notable that 61% are white, 13% black, and 12% Hispanic (NCDPI, 2019). As the data demonstrates, certain racial and ethnic groups are underrepresented in enrollment. We intend to increase funding to expand the current dual enrollment program focusing on increasing diversity of enrollment into the program. One way to accomplish this goal is to provide students with additional high school counselor support. These high school counselors will be trained to encourage and simplify the enrollment process for students of all racial, ethnic, and economic backgrounds. According to a report in EdNC, as of 2018, "the ratio of school counselors to students in North Carolina was 1 to 386. However, the American School Counselor Association recommends a ratio of 1 to 250, which is lower than most states" (Sorrells, 2019). High school counselors play a vital role in identifying students for dual enrollment opportunities and are certainly an area to invest in further funding and diversity training. A study examining the impact of high school counselors on college enrollment found that an additional high school counselor is predicted to increase four-year college enrollment by 10 percent (Hurwitz, 2013).

Another aspect of the CCP program that the ACC intends to address is covering the costs of student fees and textbooks for courses. According to the NCDPI, students still faced various barriers to participating in the CCP, such as needing to pay for non-tuition-related costs not covered by the program, such as textbooks, equipment, and supply fees (NCDPI, 2021). As of the 2019-2020 school year, the average full-time, on-campus undergraduate at university spent an estimated \$1240 on books and supplies (Powell & Kerr, 2020). Considering the high cost of additional expenses and how it impacts student enrollment, having the CCP expand financial

support to cover these costs for participating students can eliminate a significant barrier that inhibits current enrollment rates.

Policy

Many education experts are stating that the SAT and ACTs are a poor indicator of whether a student will succeed in college or not, (Brooks, 2020). Studies demonstrate that the Asian American and white student's SAT scores tend to predict lower grades than were attained in college, (Zwick, 199). The studies also demonstrated that the SAT scores predicted higher college grades than were attained by African American, Latino, and American Indian students, (Zwick, 1999).

In a 1997 interview, the Dean of the School of Education at Berkeley stated, “We have evidence that the SAT loses us 2,000 Latino students this year alone,” (Zwick, 1999). There are multiple bills proposed to make changes to the SATs requirements, and testing methods. One bill stated, “a test discriminates if there is a statistically significant difference in the outcome on test performance when test subjects are compared on the bias of gender, ethnicity, race, or economic status, (Zwick, 1999).

Nutrition

From a nutrition lens, college admissions can be indirectly affected by food insecurity. Food insecurity can affect the physical ability to perform well in school (Nazmi et al., 2018). It can also lead to anxiety and depression, which can result in poor school performance and discouragement from enrolling in college (Eccles et al., 2004). The proposed nutrition project will use the Free Summer Meals model to provide students access to free, nutritious meals whenever schools are closed (weekends, holidays, etc.). There are currently five sponsors in

Cumberland County responsible for implementing this program, including the Cumberland County School Child Nutrition Services (2020 Summer Nutrition Program, 2020).

Potential Public Health Impact

The multifaceted program seeks to improve mental health outcomes within Cumberland County by achieving higher educational attainment. As a result of this ACC, we would see an increase in college enrollment and a decrease in negative mental health outcomes in Cumberland County. In addition to increasing the overall enrollment, we aim to also increase the diversity within the enrollment to close the educational gaps in marginalized communities, which will improve overall health as well as improve mental health outcomes. This ACC can be the framework for other counties in North Carolina and other states to increase college enrollment and decrease negative mental health outcomes.

The potential obstacles that can inhibit the implementation of the ACC include ensuring that the program provides equal access to students from all high schools across Cumberland County, maintaining communication and accountability amongst all stakeholders, and obtaining funding to ensure the continuation of the program for future years. To address these challenges, it is essential that all ACC stakeholders who work directly with the high school students be well-trained in navigating student relationships with empathy and respect. For proper implementation of the programs and policy at Cumberland County high schools, a protocol for communicating all information to students, families, and faculty will also be established to ensure that everyone is thoroughly informed. Maintaining communication with students and families will also be essential for gathering public support that will help incentivize policymakers to author bills requesting additional federal funding to support the program. Finally, to ensure that roles are established amongst all stakeholders, a team charter and Memorandum of Understanding will be

created for each member of the ACC to define responsibilities and establish a mode of rapid communication for all stakeholders to utilize for any immediate questions, concerns, or discussion.

Outcomes, Milestones, and Deliverables

The main outcome that will be measured will be college enrollment statistics. This program is designed to increase college enrollment, so increased college enrollment will be considered a success for this program.

Long-term health metrics that will be assessed will include mental health parameters such as death rates, rate of frequent mental distress, depression, hospitalizations related to mental health, and an average number of poor mental health days (Cumberland County Department of Public Health, 2019). These metrics will be assessed with the assistance of the Cumberland County Public Health Department during the next two Community Health Needs Assessments to be conducted in 2023 and 2027. To ensure sustainability, the ACC will apply for available public health and education grants to fund any costs that exceed the \$500,000 provided to the ACC. A Return on Investment will incorporate factors such as money saved on healthcare expenditures related to mental health, profitability due to jobs obtained following college completion,

Policy and Leadership

The outcome measured through this policy will be the college application statistics. This program has already been used in some colleges and they have seen a positive impact on their application submission rates, (Lash, 2016). Increasing the rates of high school students applying to college will increase the number of students who enroll and attend college. This in the long-term will increase both the mental and physical health of the community and the workforce of the community. Metrics that the expansion of the current dual enrollment program will assess

include the number and demographics of Cumberland County high school students enrolled in the CCP program, the percentage of CCP and non-CCP students who attend college the October after graduation and utilized their counselors, and college graduation rates of Cumberland County students.

Nutrition

Specific nutrition outcomes include the number of meals served, the number of days each meal site is open, demographics, and participant satisfaction. These outputs can be measured with a simple daily record and survey administered by on-site staff. A multivariate analysis between these measures and mental health outcomes could reveal correlations that may be useful in guiding the future of the program.

Team

ACC partners will include the Cumberland County Public Health Department Representative, Dr. Jennifer Green; Cumberland County School District Chair, Alicia Chisholm; Kimberly van Noort, the Senior Vice President for Academic Affairs and Chief Academic Officer of the UNC School System; Mark Peevy, Representative from the College in High School Alliance; NC General Assembly Representative, Marvin J Lucas; representatives from Parent Teacher Associations; representatives from Student Government Associations; counselors from various high schools; Beth Maynard, Executive Director of Child Nutrition Services of Cumberland County, nutritionists and dietitians, and Christopher Callagy, Head of the Fayetteville Technical Community College High School Connections Program.

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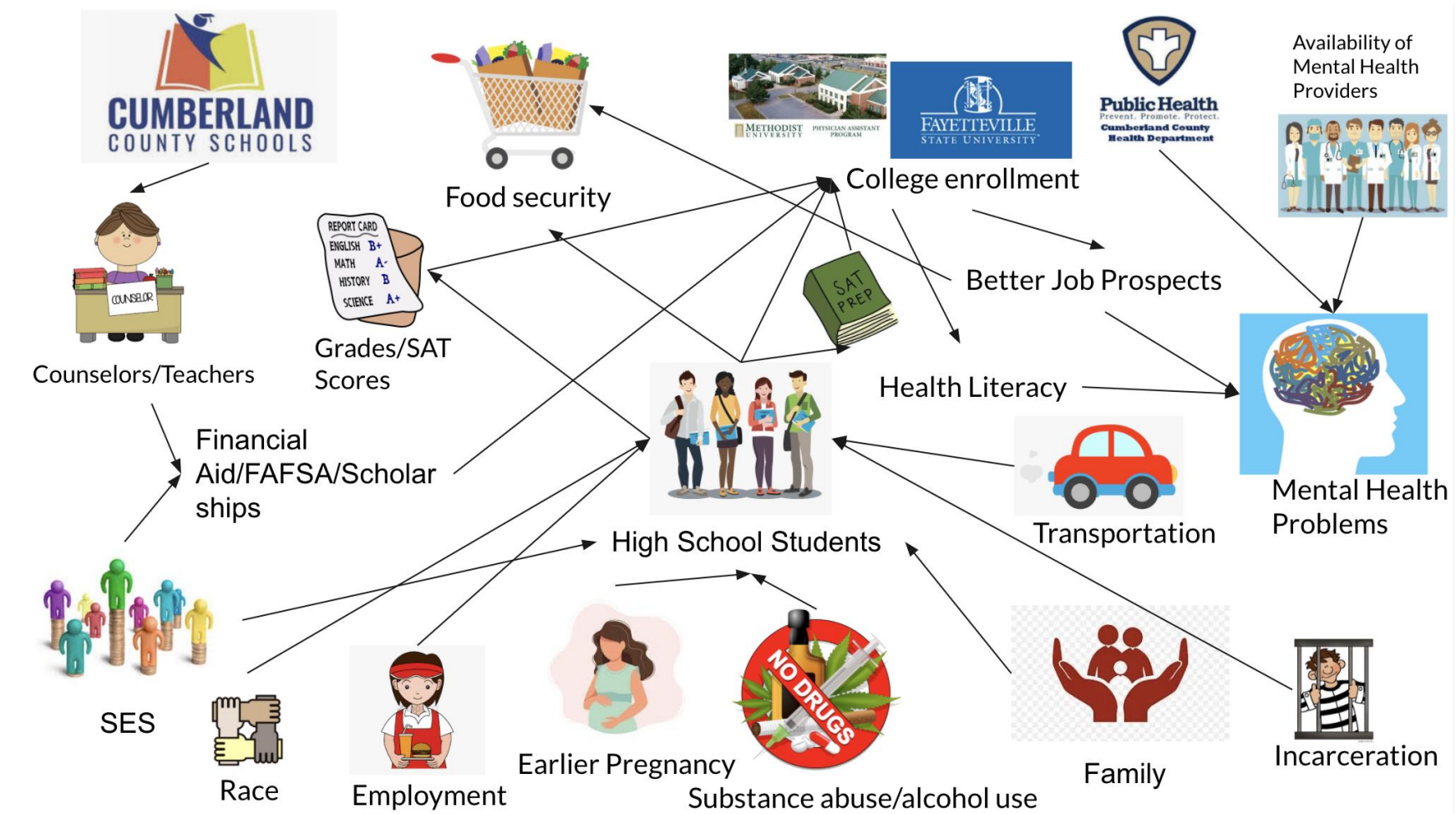
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Appendix A: Group Deliverables

Figure 1: Rich Picture



Group Policy and Program Options

The focus population for this intervention in Cumberland County is high school students 13 to 18 years of age. Cumberland County has a low number of residents with a bachelor's degree at 25.5% compared to the state average at 29% (Green, 2020). The programs researched focus on ways to increase the proportion of high school graduates who were enrolled in college the October immediately after completing high school in Cumberland County, North Carolina.

Policy Concentration Policy: Eliminating SAT Requirement on College Applications

A policy that would increase college enrollment would be eliminating the standardized test score requirement on applications to attend North Carolina public colleges/universities. One reason this requirement should be eliminated is the heavy financial cost of test prep and test taking. Currently with the Covid-19 pandemic, across the country many students no longer have access to test prep, or to their school's free test date, or whose living situation has been changed and no longer have time to study for standardized tests, (Lee, 2020). Records show that in 2021, there are 1,600 colleges, including all of those in the Ivy League, that have eliminated the requirement for submitting test scores on their college applications, (Adams, 2020). Schools that have changed their requirements are seeing an increase in college applications and enrollment rates, (Lash, 2016). Schools are also seeing an increase in class diversity within applicants, and an increase in first-generation in their families to attend college in new applications, (Lash, 2016).

Another reason the SAT requirement should be eliminated is that many educational experts are stating that the SAT and ACT tests are a poor indicator of whether a student will succeed in college or not, (Brooks, 2020). Research has shown that most individual's scores are

not accurate at predicting their grades in college courses, the students are achieving grades that are higher or lower than what was originally predicted, (Brooks, 2020).

Nutrition Concentration Program: Free Summer Meals

One of the factors affecting the number of students who enroll into college is food insecurity. Although food insecurity does not directly affect whether an adolescent enrolls in college or not, it does affect factors such as math and reading scores, and developmental and social skills (Nazmi et al., 2018). Food insecurity can also lead to anxiety, mood, behavior, and substance disorders that can have an effect on school performance (McLaughlin et al., 2012). Because of this, food insecurity can have an indirect effect on a student's ability to enroll in college.

In the 2018-2019 school year, 58.6% of North Carolina students were enrolled in free and reduced lunch (Kids Count Data Center, 2020). This is an amazing program that provides food to many students, however, during summer and when school is not in session, these same students may have difficulty finding a meal. Free Summer Meals helps to address this issue. During the summer, Free Summer Meals provides food to adolescents at almost 3000 distribution sites across North Carolina (No Kid Hungry, n.d.).

There are several benefits to this program. First and foremost, this program provides free meals to students who need them. These meals follow USDA nutrition guidelines, so students are able to receive at least one nutritious meal per day. Additionally, there is no requirement for students to register for the program or show any kind of ID or documentation. If someone under the age of 18 shows up to a distribution site and requests a free meal, they are able to receive one. This helps to reduce stigma and increase participation in the program.

There are some downsides to the program. According to the No Kid Hungry website, 85% of children from economically-challenged families are not accessing summer nutrition programs. Outreach and awareness of this program could help increase participation. Another downside is transportation. Because these distribution sites are physical locations, some students may not have the resources to personally go to the site to receive their meal.

By taking advantage of these strengths, and noting and planning for the downsides, the Free Summer Meals program could help to address food insecurity, resulting in better performance in schools and higher enrollment in college.

Leadership Concentration Program: Covering Costs of Textbooks and Student Fees and Adding High School Counselors from Diverse Racial/Ethnic/Socioeconomic Backgrounds

A recent study using student enrollment and degree records reviewed more than 200,000 high school students who were participating in dual enrollment in community college courses. Results demonstrated 88% of students continued in college after high school. Success varied state by state showing disparities in completion rates related to the income status of the students (Fink 2017). While Cumberland County already has a dual enrollment program present for its high school students, the High School Connections, there are several areas for improvement that, if addressed, can help increase college enrollment of high school graduates.

One example of a successful dual enrollment program is the College Credit Plus Program in Ohio, a dual enrollment program that enables students in grades 7 through 12 to simultaneously earn college and high school credits by taking courses at community colleges or universities. All expenses for enrolled students who attend a public school in the state of Ohio are paid, including tuition or books. This program successfully addresses health equity by minimizing the time and cost required to obtain a college degree (Ohio Dept of Higher

Education, 2020). The success of the College Credit Plus Program in Ohio is demonstrated by the positive results. In the 2019-2020 school year, 76,973 students participated in the program. Female students comprised 58% of the class and 19.3% were considered economically disadvantaged. Of the students who graduated high school in the 2015-2016 academic year, 78% matriculated to post-secondary institutions (20.31% in 2-year colleges and 79.69% in 4-year colleges), with 93.61% of students continuing to sophomore year, 92.21% to junior year, and 84.83% to senior year. In subsequent years, approximately 75% of the program's students matriculate into college each year. The total tuition saved for the 2019-2020 school year was \$155,704,864 (Ohio Dept. of Higher Education, 2020).

One of the advantages of such programs is that students do not need to pay for the costs of tuition, books, or fees as long as they attend a public school in Ohio. However, a disadvantage is that students who are enrolled in a private school or are homeschooled are charged a small fee to enroll in the program. Additionally, states still show disparities in completion rates between lower and higher-income students (Fink, 2020). To address this, budgeting and demographic data will be collected to assess barriers that inhibit student success in the dual enrollment program.

A component of another program of interest is through increasing the number of high school counselors who are able to effectively boost college attendance. Based on a study of a public school in Massachusetts, it was found that students assigned to counselors who are one standard deviation more effective than the median are two percentage points more likely to graduate high school and 1.7 percentage points more likely to attend a four-year college. In addition, a minority student assigned to an effective counselor is 3.2 percentage points more likely to graduate high school and 2.2 percentage points more likely to attend college than are minority students with white counselors (Mulhern, 2020). A benefit of this program component

is by improving the diversity of high school counselors and matching counselors to students based on factors such as race and background, there is potential to increase college enrollment for students from disadvantaged and minority backgrounds. However, many counselors lack the proper training on college advising (Mulhern, 2020). Therefore, proper training and evaluation of counselor success must be considered to truly benefit high school students.

Overall, successful expansion of dual enrollment for students in Cumberland County will lead to an increase in college enrollment. A careful examination of existing programs and strategies to improve or expand these programs to increase enrollment is needed. In particular, developing strategies to increase enrollment in lower-income families and marginalized communities is paramount to the success of the program.

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[lunch#detailed/2/any/false/1696,1648,1603,1539,1381,1246,1124,1021,909,857/any/468](https://datacenter.kidscount.org/data/tables/2239-percent-of-students-enrolled-in-free-and-reduced-lunch#detailed/2/any/false/1696,1648,1603,1539,1381,1246,1124,1021,909,857/any/468)

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Group Presentation

The Team
Head in the Game



Cloie Chiong
Leadership

Alex Griffin
Leadership

Isaiah Kim
Nutrition

Donna Krzastek
Leadership

Kellie Markert
Policy

Knowledge is Power (KIP)

**Creation of an Accountable Care Community in
Cumberland County to Improve Mental Health Status
by Increasing College Enrollment**

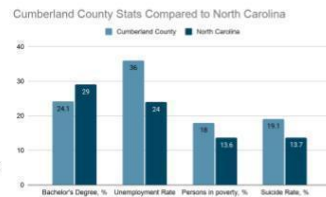
Presented By: Cloie Chiong, Alexandria Griffin, Isaiah Kim, Donna Krzastek, & Kellie Markert



Olshansky 2012
Torpey 2018

Problem and Priority Population

- 90.3% of Cumberland County residents who have a high school degree or higher versus 86.3% of the state.
- However, Cumberland County residents with a Bachelor's degree or higher is 24.1% vs 29% in the state.
 - Lower educational attainment is correlated with poorer mental health outcomes: linked to factors such as employment and socioeconomic status
 - Unemployment rate as of Dec 2019 is 8.2%
 - 18% Cumberland County residents live in poverty
- Poor mental health outcomes in Cumberland County are poorer than state averages
 - As of Dec 2019, suicide is one of the leading causes of death ages 22 to 39
 - 13.2% of Cumberland County experience frequent mental distress vs 12.3 percent of state population
 - Age-Adjusted Death rate due to suicide is 14.6 deaths /100,000 population vs state average of 12.9 deaths/100,000 population
- Priority Population: Cumberland County High School students ages 13 to 18.



Cumberland County Community Health Needs Assessment, 2019
Steele et al., 2007

Objectives

Primary Objective:

- Increase proportion of Cumberland County high school graduates enrolling in college

Secondary Objective:

- Improve overall mental health statistics in Cumberland County
- Increase diversification of enrollment to close equity gaps

Our ACC

- Program: Expansion of Current Dual-Enrollment Program and Increase Number of High School Counselors and Diversity in Background
- Program: Free Summer Meals
- Policy: Eliminate the SAT requirement



Memorandum of Understanding (MOU) Goals

- Create an Accountable Care Community (ACC) in Cumberland County
 - Cumberland County Department of Public Health (CCDPH) as the backbone agency
- Use an equity lens when developing the proposed solution
- Develop a committee comprised of stakeholders from different sectors surrounding education
- All stakeholders will have equitable roles in outlining project development and implementation
- Ensure evaluation of program impact are being documented throughout implementation process and after
- Generate clear modes of communications tailored to each stakeholder

Key Partners



- Cumberland County Department of Public Health
- Cumberland County School District
- Fayetteville Technical Community College
- UNC School System
- College in High School Alliance
- Teachers
- School Administrators
- High school and college Counselors
- Student Government Associations (SGAs)
- Parent Teacher Associations (PTAs)
- Marvin Lucas, Representative of North Carolina's 12th District
- Nutritionists
- Dietitians





Cumberland County School District (CCSD): Alicia Chisholm, Chair

- Why is CCSD an important stakeholder?
 - Oversees 17 high schools with 15,000 students
 - High school teachers and counselors have large impacts on students' academic success, attendance and college enrollment rates
 - Seeks to provide students with equitable access to quality education
- How do we want CCSD to be involved?
 - Provide office spacing to accommodate additional counselors
 - Be an active partner in identifying barriers that inhibit students from accessing higher educational attainment
 - Obtain local support and lobby for increased funding to cover additional dual enrollment fees and additional counselor salaries
- What can we accomplish together?
 - Increase the number of students who attend a postsecondary institution after graduating from high school
 - Decrease the disparities of low educational attainment and training skills to fulfill labor market needs
 - Achieve long-term goal of improving mental health outcomes of the adult population in Cumberland County

Cumberland County Schools, n.d.
Hurwitz & Howell, 2014

Stakeholder: College in High School Alliance (CHSA)

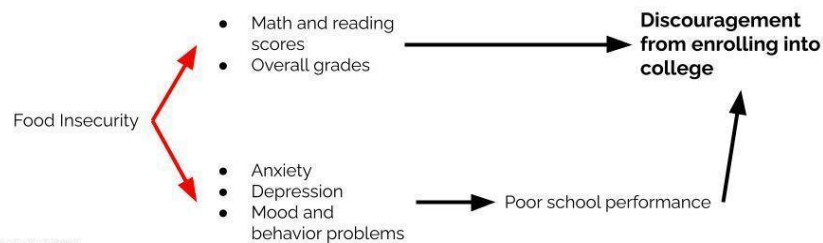
- Why is CHSA an important partner?
 - You are a coalition of 62 national and state organizations who are dedicated to this cause
 - Have 20 + years of experience
 - Developing equitable and diverse programs
- How we want CHSA to be involved?
 - Provide insight on how to develop successful dual enrollment program
 - Connect us with additional resources that will be needed for program sustainability
 - Share their resources on early college high school policy
- Together we can accomplish?
 - Lasting change
 - Expand your network to include Cumberland Co.

(College in High School Alliance, 2020)



Nutrition Program: Free Summer Meals

Background



Eccles et al., 2004
McLaughlin et al., 2012
Nazmi et al., 2019

Nutrition Program: Free Summer Meals

Background

77.0% of public school students in Cumberland County are enrolled in Free and Reduced-price lunches (NC average: 58.6%)

This meal supplementation disappears during the summer

Free Summer Meals fills the gap during the summer (June through August)



Kids Count Data Center, 2020

Nutrition Program: Free Summer Meals

Program Components

Free, nutritious meal to anyone under the age of 18
No ID or registration required!

Meals served are reimbursed by USDA



Example of a meal distribution site

No Kid Hungry, n.d.

Nutrition Program: Free Summer Meals

Program Evaluation

Strengths and Challenges

- Reduce food insecurity
- Large commitment of time and resources

Estimated cost

- ~\$500,000 per year
- Grants, USDA meal reimbursements

Stakeholder Engagement

- Site visitation
- Volunteer day

Outcomes

- College enrollment, mental health status
- Total meals served, demographics, participant satisfaction

Program Fact Sheet

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Table 1: RASCI Analysis of all Stakeholders for Leadership Program, Policy, and Nutrition Program

RASCI Levels	Accountable Care Community Goals	
Who is...	Stakeholders	Rationale for Participation
Responsible: Owns the problem/project	CCSD, FTCC, CCDPH	The CCSD's mission is "to provide a safe, positive, and rigorous learning environment to prepare lifelong learners to reach their maximum potential" and is dedicated to engaging schools, parents, and community partners in building student success. The CCSD school officials will be in charge of working with county commissioners to obtain the appropriate funding to support and implement the dual enrollment program expansion to accommodate all participating students; FTCC will serve as host to a majority of the students who participate in the dual enrollment program. Therefore, they will be in charge of helping to mitigate the costs of textbooks and student fees, identifying ways to improve equity and representation in the student body, and increase overall enrollment in the program; The CCDPH has a variety of different stakeholder connections throughout the county, as well as resources such as providers and data analysis tools to help assess the program's success.
Accountable: ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who delegates the work to those <i>responsible</i> .	CCSD, FTCC	The programs require curriculum adaptations and meal distribution at school locations. Therefore, the school district will be in charge of coordination and overseeing the implementation of these changes within high schools; Along with providing the programs, textbooks, and supplies that are administered to high school students enrolled in the dual enrollment program, FTCC will be in charge of providing information that will be administered to the CCSD, teachers, and counselors to help better educate the students about the dual enrollment program's benefits.
Supportive: can provide resources or can play a supporting role in the implementation	CCDPH, FTCC, UNC, CHSA, Marvin Lucas	Admissions counselors from the UNC System and FTCC can help provide guidance to high school students about curriculum/course selection that will be cost-effective to the student and fulfill graduation requirements; Marvin Lucas will be essential in creating and passing legislation approving these programs and policy changes. The other organizations have the tools, resources, and staff necessary to develop and grow the programs and implement the policy within Cumberland County Schools. They will also have knowledge on how to assess the progression and outcomes of these changes.
Consulted: has information and/or capability necessary to complete the work	CCSD, FTCC, UNC, CHSA, CCDPH, teachers, counselors, SGAs, PTAs, Nutritionists and Dietitians	These organizations have knowledge about the student population, benefits of the programs and policy on student success and graduation rates, as well as factors affecting enrollment; Teachers and counselors may have direct knowledge about student barriers to accessing higher education through their individual interactions in the school setting; The ACC will require direct input from SGAs and PTAs to further identify how they perceive the importance of higher educational attainment, their knowledge about the dual enrollment program, and whether the solutions that will be implemented will serve as a significant change that will help increase enrollment in the dual enrollment program; Nutritionists and Dietitians have information on the nutritional needs of the students and how to adequately reach these goals.
Informed: must be notified of results, process, and methods, but need not be consulted	SGAs, PTAs, Student Voice non-profit	Students, parents, and teachers must continuously be informed as the recipients of the programs and policy. It is important that they are educated and receive proper instruction from counselors that best fit their needs and are notified of all changes that will be made to the school and curriculum for their knowledge and benefit; Student Voice non-profit is a supportive organization that advocates for positive education experiences for all students. This organization would support our policy through the entire policy development and implementation and could share it with their network.

Appendix B: CLOIE CHIONG'S INDIVIDUAL DELIVERABLES

Individual Problem Statement

Social Determinant of Health: Education

The social determinants of health are “the conditions under which people are born, live, grow, work, and age, and the wider set of forces and systems shaping the conditions of daily life” (World Health Organization, n.d.). Education is a critical determinant, as those who obtain higher education are more likely to make healthy decisions, have higher wages, increased social standing, and support systems (Shankar et al., 2013). In contrast, those who do not graduate high school are more likely to have poorer self-rated health, higher rates of infant mortality, and live five fewer years compared to college graduates (Schrag, 2014).

Healthy People 2030 established a set of objectives to address health outcomes through improving education (HealthyPeople.gov, n.d.). One of these objectives is “SDOH-06: Increase the proportion of high school graduates in college the October after graduating” (HealthyPeople.gov, n.d.). Educational disparities can lead to many illnesses, such as mental health illness, in different ways: those who have lower levels of education may not have the knowledge or access to resources to address their mental health; lower levels of education impact socioeconomic status, resulting in poorer self-perception about social standing and higher odds of depression; finally, higher education improves access to job opportunities with increased creativity, mental stimulation, and autonomy (Cohen et al., 2020). Additionally, those who have lower educational attainment are more likely to have depression and anxiety disorders compared to those who have higher levels of education (Steele et al., 2007).

Geographic and Historical Context: Cumberland County

Cumberland County is located in the southeast region of North Carolina that spans 652 square miles and is home to approximately 327,000 residents (Table 2). From 1729 to 1736, the county was known as Campbellton, a settlement and central transportation area (Cumberland County Government, n.d.). In 1754, the Colonial Legislature passed an act that led to the political division of Bladen County, forming Cumberland County, named after the Duke of Cumberland. Campbellton was renamed Fayetteville in honor of Marquis De Lafayette in 1783. Over time, the county developed from a riverfront distribution center to a commercialized area (CCDPH, 2019). Currently, its unemployment rate is 5.1 percent, poverty rate is 17.6 percent, and median household income is \$44,810 (Table 3).

As of the 2018-2019 school year, Cumberland County has 87 schools (52 elementary schools, 18 middle schools, 17 high schools) with 50,888 total enrolled students (Cumberland County Schools, n.d.). The county also has three public four-year universities: Fayetteville State University, Methodist University, and the Carolina College of Biblical Studies (Google, n.d.).

In 2017, Cumberland County had 278.5 mental health providers per 100,000 residents (CCDPH, 2019). The county has extensive inpatient and outpatient services to tend to the mental health needs of children and adults (Cumberland County Government, n.d.). The main center is Cape Fear Valley Behavioral Health Care, which offers psychiatric treatment, medical management, and family and individual therapy (Cumberland County Government, n.d.).

Priority Population

The identified priority population is Cumberland County adolescents ages 13-18. In the 2018-2019 school year, the county's 4-year high school graduation rate was 84.6 percent (NCIOM, n.d.). Following graduation, 61 percent of high school graduates enroll in college

within 12 months of graduation versus 62 percent for peer counties such as Cabarrus, Catawba, and Iredell (MyFutureNC, 2020). Only 46 percent of Cumberland County high school graduates who enroll directly in postsecondary education complete their degree in six years, in comparison to 54 percent of the suburban county average (MyFutureNC, 2020). Additionally, the proportion of residents over 25 years old with a Bachelor's degree or higher falls below the state average at 24.1 percent (CCDPH, 2019). Additional education indicators are listed in Table 4.

Cumberland County adolescents face several social determinants that can affect their mental health. As of 2019, 23 percent of children are growing up with adverse childhood experiences, 22.1 percent are food insecure, or “lack consistent access to enough food for an active healthy life”, and 5.6 percent lack health insurance (Table 3) (Green, 2019 & Feeding America, n.d.). From 2012-2016, 25.7 percent of children were living below the poverty line, with Black children being disproportionately affected by these factors (CCDPH, 2019).

Measures of Problem Scope

The dropout rate of high school students is 2.3 percent, while the suspension rate is 26.6 per 100 students (Table 5). From 2015-2017, the juvenile delinquent rate of adolescents ages 6-15 years old increased from 19.6 to 30 percent. The child abuse rate of adolescents 0-18 is higher than the state average at 0.35 children per 1,000 population (CCDPH, 2019). Mental health illnesses make up 16 percent of the global burden and injury in 10–19-year-olds (WHO, 2020). In the United States, about 50 percent of mental illnesses begin at 14 years old, with an 11-year average delay from onset to treatment (NAMI, 2020). In North Carolina, 88,000 adolescents ages 12-17 experienced a major depressive episode in 2013-2014 (SAMHSA, 2015). In 2014, 59,712 North Carolina adolescents received mental health services, with 68.2 percent reporting improved functioning after treatment (SAMHSA, 2015).

In Cumberland County, the age-adjusted death rate of residents ages 0-65+ due to suicide was 14.6 deaths per 100,000 residents. In 2016, 13.2 percent of the population felt frequent mental distress, reporting an average of 4.3 days of poor mental health (CCDPH, 2019). In 2017, the rate of emergency department visits related to mental health and substance abuse was 1173.1 per 100,000 residents (NCIM, n.d.). Additional mental health indicators are listed in Table 5.

Rationale/Importance

While Cumberland County demonstrates a strong high school graduation rate, the prevalence of college graduates is low. Therefore, increasing the number of high school graduates who enroll in college may serve as an effective long-term method to improve mental health outcomes in Cumberland County, as higher education is associated with “increased insight into symptoms of mental health disorders and attitudes toward treatment”, which can lead to a higher likelihood of accessing mental health services (Steele et al., 2007). Additionally, addressing mental health outcomes in adults can have positive impacts that extend into their children’s lives, further reducing the prevalence of mental illness in the future (WHO, 2004).

Disciplinary Critique

By improving populations’ educational attainment, students will benefit by developing health literacy and behaviors, having employment opportunities that offer a healthy and safe work environment and higher income, and improving their self-control and support systems (National Academy of Sciences, n.d.). Additionally, higher educational attainment is associated with decreased morbidity and mortality, as people who have a higher education have increased self-reported rates of health conditions, allowing them to address illness in its early stages, and increasing their lifespan by 11-15 years versus those who lack a high school education (Hahn & Truman, 2015). From a leadership in practice perspective, increasing the number of students who

go to college after high school graduation can help address the current career vacancy gap in North Carolina. Currently, the top gap in educational attainment and labor market needs is in the field of health sciences (MyFutureNC, 2020). Therefore, by creating a pathway that encourages students to attain higher education and pursue a career in the health sciences, the county will be able to minimize gaps in health inequities and improve mental and physical health outcomes.

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Appendix B1: Tables

Table 2. Demographics and Socioeconomic Indicators of Cumberland County vs. North Carolina¹

Demographic	Cumberland County	North Carolina
Population	327,127	10.5 million
Male (%)	49.0	48.6
White (%)	51.8	71.0
Black (%)	38.7	22.2
Hispanic (%)	11.3	9.2
Military (%)	11.6	1.2
Median Age (Years)	31.5	38.9

¹Data obtained from Cumberland County 2019 Community Health Needs Assessment & U.S. Census Bureau

Table 3. Socioeconomic Indicators for Priority Population in Cumberland County vs. North Carolina¹

Indicator	Cumberland County	North Carolina
Median Household Income	\$44,810	\$48,256
Population Living Below Poverty Level (%)	17.6	16.8
Children Living Below Poverty Level (%)	25.7	23.9
Children Growing up with Adverse Childhood Experiences (%)	23.0	--
Children ages 0-17 who are Food Insecure (%)	22.1	20.9
Households with Children Receiving SNAP Benefits (%)	54.9	52.6
Unemployment Rate	5.1	3.9
Children Who Lack Health Insurance (%)	5.6	--

¹Data obtained from Cumberland County 2019 Community Health Needs Assessment & 2019 State of the County Health Report

Table 4. Education Indicators of Cumberland County vs. North Carolina¹

Indicator	Cumberland County	North Carolina
Population Ages 25+ With a High School Degree or Higher (%)	90.7	87.4
Population Ages 25+ With a Bachelor's Degree or Higher (%)	24.1	29.0
2016-2017 High School Dropout Rate (%)	2.3	2.3
2016-2017 High School Suspension Rate (%)	26.6	18.2
2019-2020 4-Year High School Graduation Rate (%)	84.6	87.6

¹Data obtained from Cumberland County 2019 Community Health Needs Assessment & North Carolina Institute of Medicine

Table 5. Mental Health Indicators of Cumberland County vs. North Carolina¹

Indicator	Cumberland County	North Carolina
Juvenile Crime Rate (Per 1,000 Youth)	0.7	1.5
Juvenile Delinquent Rate (Per 1,000 Youth)	30.0	19.6
Child Abuse (Per 1,000 Population)	0.35	0.22
Incarceration Rate	262.7	276.7
Mental Health Provider Rate (Per 100,000 population)	169.7	102.5
Age-Adjusted Death Rate due to Suicide (Per 100,000 Population)	14.6	12.9
Poor Mental Health (Average Number of Days)	4.3	3.9
Depression: Medicare Population (%)	16.1	17.5
Frequent Mental Distress (%)	13.2	12.3
Rate of Substance Abuse and Mental Health-Related Visits to Emergency Departments (Per 100,000 Population)	1173.1	1902.3

¹Data obtained from Cumberland County 2019 Community Health Needs Assessment & North Carolina Institute of Medicine

System, Stakeholder, and Transformation Analysis

The Educational System and Mental Health

Education as a social determinant of health is essential to one's overall well-being and is linked to factors such as socioeconomic status, life expectancy, health behaviors, and mental health (The Lancet Public Health, 2020). Mental health disorders in particular have been correlated to low educational attainment in nine high-income countries and seven low- and middle-income countries (Veldman et al., 2014). The objective of the Accountable Care Community is to increase the number of students who enroll in college in October after graduating from high school in Cumberland County (HealthyPeople.gov, n.d.).

The success of high school students, their college enrollment rates, and mental health outcomes are a result of the interactions between various systems, organizations, and stakeholders in Cumberland County. The Rich Picture (Figure 1) depicts systems and factors that play a significant role in addressing this issue such as education, socioeconomic status, health, and policy. The state sees lower college graduation rates due to reasons such as difficulties between balancing work and being a part-time student, poor college preparation, and the high costs of college education and student debt (Waugh, 2019). In Cumberland County, high school graduation rates may vary based on the socioeconomic need and poverty rate of the specific geographical region (CCDPH, 2019). For example, the 28301 zip code region, which has a high poverty rate, has a high school graduation rate of 81.3 percent. In contrast, the 28391 zip code area has a graduation rate of 85.2 percent and the 28312 zip code area has a graduation rate of 87.1 percent (CCDPH, 2019). This is important as educational attainment is associated with favorable socioeconomic outcomes, such as higher-paying jobs, achievements in the workplace,

and healthier lifestyle behaviors (Veldman et al., 2014). In contrast, low educational attainment is found to be related to poorer mental health outcomes (Peyrot et al., 2015).

Creating Educational Reform

Factors that affect college enrollment include academic performance, being from a low-income, minority, or disabled background, student behaviors and engagement, the school environment and expenditures, and teacher and parent influence (Fogg & Harrington, 2010). While essential stakeholders will represent all of the influential factors and systems shown in the Rich Picture (Figure 1), to increase college enrollment in Cumberland County, policy and program interventions will primarily be targeted towards the educational system.

To increase college enrollment of high school graduates the October after they graduate, an expansion of North Carolina's dual enrollment program, the Career and College Promise Program (CCP), will be proposed for implementation in Cumberland County's local branch of the program, the High School Connections (HSC). Currently, the CCP does not cover the costs of books, supplies, and student fees (Deal, 2020). Furthermore, low-income and minority students are still underrepresented, as students who participate in the program are more likely to be female (63 vs. 50 percent), white (76 vs. 56 percent), and speak English at home (93 vs. 86 percent) (Deal, 2020). Therefore, the Accountable Care Community aims to address the inequities in CCP student enrollment by covering the costs of additional fees and increase the number of high school counselors from racially and socioeconomically diverse backgrounds to provide academic support to low-income and minority students and encourage them to enroll in the HSC. In similar dual enrollment programs such as the Ohio College Credit Plus Program, the costs of tuition, fees, books, and supplies are all covered (Ohio Department of Higher Education,

n.d.). Additionally, a study found that matching a minority student to an effective counselor with a similar background can increase their likelihood of attending college (Jaschik, 2020).

Addressing these factors is key, as covering the high costs of textbooks and student fees, as well as providing additional student support can help overcome significant barriers that impact student enrollment (Douglas-Gabriel, 2016 & Jaschik, 2020).

Stakeholder Analysis

The Stakeholder Analysis Matrix (Table 6) and Power Interest Grid (Figure 2) were used to identify relevant stakeholders and their involvement in implementing programs and policies. The Stakeholder Analysis Matrix is used to identify stakeholders and assess their level of influence, contributions, assets, and what is most important to them (Tools4dev, n.d.). The Power-Interest Grid assesses the level of power, influence, and interest that a stakeholder may have. Depending on their capabilities and extent of engagement, the tool is used to determine the actions taken to keep stakeholders involved throughout the project (Mind Tools, n.d.).

The Rich Picture (Figure 1) depicting the county educational system's impact on college enrollment provides insight into valuable stakeholders who should play a role in the project. Stakeholders include Greg West, Chair of the Budget and Finance Committee and Susan Williams, Chair of the Student Support Services Committee of the Cumberland County School District (CCSD); Dr. Jennifer Green, Director of the Cumberland County Department of Public Health (CCDPH); Kimberly van Noort, Senior Vice President for Academic Affairs and Chief Academic Officer of University of North Carolina System (UNC); Christopher Callagy, head of the Fayetteville Technical Community College (FTCC) HSC Program; teachers, counselors, student government associations (SGAs), and parent teacher associations (PTAs); Verenisse Ponce Soria, an ambassador from the College in High School Alliance (CHSA); and Marvin W.

Lucas, Representative of North Carolina's 42nd District and member of the House Appropriations, Education and K-12 Education Committees.

The CCSD, UNC, and FTCC have high impact and influence in the project. Greg West and Susan Williams are heads of various CCSD committees, which help establish the policies and regulations by which each CCSD school operates (Cumberland County Schools, n.d.). These committees will be beneficial in advocacy and funding efforts to supply more counselors at CCSD high schools and pay the costs of non-covered fees in the HSC. Kimberly Van Noort and Chris Callagy will help identify additional costs of HSC courses, barriers that inhibit student success in college based on student backgrounds, and the resources needed to improve the dual enrollment program for underserved students (UNC System, 2021 & FTCC, n.d.).

Dr. Green of the CCDPH has high impact and influence in the project, as she has the assets, skills and resources to conduct data collection and analysis, understands how socioeconomic factors and race impact education outcomes and access, and has likely built connections and relationships with several stakeholder groups. The Community Development and Budget departments of the CCDPH will also be beneficial in increasing stakeholder buy-in and allocating budget costs to the program (Cumberland County Government, n.d.). Additionally, the CCDPH may have a network of mental health providers who will be able to assess the long-term outcomes of our students who participate in the program versus those who do not. Therefore, it is important that together with the CCDPH, we build measures to analyze the impact of higher education attainment in mental health outcomes.

Verenisse Soria Ponce from the CHSA will have high impact and influence, as she has a background in Education Policy and Social and Economic Justice and works as a Policy and Program Specialist at LatinxEd, a North Carolina nonprofit that addresses barriers to educational

opportunities for Latinx students (CHSA, n.d.). As someone who works with minority populations in North Carolina and works on similar education programs, the team can better understand obstacles and adaptations that need to be made in order to successfully add these changes to the program. Additionally, the CHSA works to develop policies on a state and federal level that prioritize equity, quality, and success in pursuing higher education and can be an influential lobbyist and advocate (CHSA, n.d.).

Teachers and counselors will have a medium influence and impact throughout the program. As those who regularly interact with students and equip them with the tools and resources needed to access higher education, teachers and counselors can provide insight into the barriers that students face in college enrollment. Teachers and counselors who communicate consistently with their students can obtain insight into student performance and behavior, build a safe and open learning environment, and establish a stronger sense of respect and trust. These can encourage powerful faculty-student relationships and help faculty properly guide students towards being successful in the dual-enrollment program (Lee, 2019). Furthermore, teachers and counselors will be key in informing and guiding students through the dual enrollment process.

Students and parents will have high interest and medium impact in the program. SGAs and PTAs, as advocates and liaisons to their respective student bodies and school families, relay information about school changes to their local communities. They will likely want the schools to outline student responsibilities for the program, assist students throughout the program, educate parents and families about financial benefits with the waived costs of textbooks and fees, and provide guidance for what classes they should take depending on their career interests. Because we are assessing the success of the students in this program, it is essential that they are well-informed and involved throughout the entire process. The insight and opinions from

students and parents about course costs, financial needs, and achieving academic success through effective counselors will be vital to ensure the success of the program.

Finally, Marvin Lucas will have high impact and influence in obtaining the funding needed to support the dual enrollment program but may have low interest if his constituents do not support the program's expansion. As a local policymaker, he will have the power to strengthen investments through tax and budget allocations through higher education (Center on Budget and Policy Priorities, 2015). Therefore, it is important for us to engage with him and lobby for support from fellow stakeholders to obtain the funding needed to cover the costs of supplies, fees, and counselor salaries and also discuss the potential return on investment associated with the program.

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Appendix B2. System, Stakeholder, and Transformation Analysis Tables and Figures

Table 6. Stakeholder Analysis Matrix

Stakeholder Name	Impact: How much does the project impact them?	Influence: How much influence do they have over the project?	What is important to the stakeholder?	How could the stakeholder contribute to the project?	How could the stakeholder block the project?	Strategy for engaging the stakeholder
Greg West and Susan Williams, Cumberland County School District (CCSD)	High	High	Ensuring that the curriculum and school environment for all Cumberland County Schools set students up for long term success	Expand Dual Enrollment financial support and increase the number of counselors; Build partnerships with high schools and local colleges to support participating students	Not interested in participating in the project; Lack of funds/resources/staffing to support project	Attend School District meetings, provide resources and information on similar programs implemented in suburban areas in other states, provide weekly email updates, work with the District as a partner in the project; Build relationships with UNC, CCDPH, CHSA
Dr. Jennifer Green, Cumberland County Department of Public Health (CCDPH)	High	High	To maintain the overall health of the county	Assess mental health outcomes through data collection and analysis; Have affiliated psychiatrists participate in measuring mental health outcomes long term; Has leverage in building coalitions and community partnerships with fellow stakeholders	Not interested in participating in the project; Lack of funds/resources/staffing to implement project	Set monthly meetings with CCSD, CHSA, UNC and other stakeholders, send weekly emails with updates; Work alongside Community Development and Budget departments and mental health providers to determine financial support, how to increase stakeholder buy-in, and how to best access outcomes.
Kimberly van Noort, University of North Carolina System Office (UNC)	High	High	Provide quality instruction, research, outreach and service through its 4-year university public school system	Work alongside the CCSD and FTCC to obtain funding to cover textbook and supply fees and high school counselors for CCP Program; Provide guidance and support to students	Refuse to participate in Dual Enrollment Program expansion	Build relationships with CCSD, FTCC, CCDPH, CHSA; Provide resources and information on similar programs and resources implemented in other states, provide weekly email updates, work with the UNC system as a partner in the project
Christopher Callagy, Fayetteville Tech High School Connections Program	High	High	Provide support to high school students participating in the High School Connections Program	Work alongside the CCSD and UNC system to obtain funding to cover textbook and supply fees and high school counselors for HSC Program; Provide insight into student success in the program and what needs to be improved	Refuse to participate in the Dual Enrollment Program expansion	Build relationships with CCSD, UNC, CCDPH, CHSA; Work with FTCC to obtain funding support to ensure program sustainability
Teachers	Medium	Medium	Ensure that students are academically successful	Provide students with assistance and guidance with financial aid, program enrollment and course selection; Teach dual enrollment courses	Refuse to provide support	Include in monthly stakeholder meetings, supply with resources and handouts to distribute to students, provide benefits for teaching courses
Counselors	Medium	Medium	Ensure that students are academically successful	Provide students with assistance and guidance with program enrollment and course selection; Build strong relationships with students and encourage them to pursue higher education	Refuse to provide support	Include in monthly stakeholder meetings, supply with resources and handouts to distribute to students
Student Government Associations (SGAs)	High	Medium	To do well in school and have affordable access to college	Provide insight into barriers affecting participation in the CCP program and resources needed to achieve academic success	Refuse to support program	Obtain insight from students about Dual Enrollment structure, financial barriers and academic support needs; Weekly emails to keep them informed
Parent Teacher Associations (PTAs)	High	Medium	Ensure that their children are successful, obtain financial support for college enrollment	Provide support and advocacy for the program, send letters to legislators to pass program	Not allow their children to participate	Provide weekly emails about available support resources at school and financial aid assistance; Involve parents in monthly stakeholder meetings to provide input into the program
Verenisse Ponce Soria, Ambassador of College in High School Alliance	High	High	To build college in high school programs around the country	Provide guidance to expand funding and academic resources for the North Carolina CCP program	Be too busy to assist and guide with program expansion	Work in partnership with Marvin Lucas, CCSD, FTCC, and UNC to develop program; Provide funding and resources to help support program implementation
Marvin W. Lucas, Representative of North Carolina's 42nd District	Low	High	Obtain public support from constituents to ensure re-election	Author bill and obtain support to approve into law	Decline to support authoring bill	Have other stakeholders express verbal and written support for program, provide letter template to share with fellow policymakers for them to also share support

Figure 2. Power/Interest Grid of Dual Enrollment Program Stakeholders



Engagement Plan

The purpose of the Accountable Care Community is to address the social determinant of education in Cumberland County by increasing the number of high school graduates who attend college the October after graduation to ultimately improve mental health outcomes within the county. To achieve this, we intend to expand Cumberland County's current dual enrollment program and branch of North Carolina's Career and College Promise Program (CCP), the High School Connections (HSC), by covering student fees associated with enrollment and textbooks and providing high school students with access to a variety of counselors with different racial, ethnic, and socioeconomic backgrounds. While the CCP waives the cost of tuition for participating students, additional student fees and textbook costs are not covered (North Carolina Department of Public Instruction. n.d.). Additionally, compared to the College Transfer Pathway, which focuses on providing free credits that transfer to associate's and bachelor's degrees, more Black (20 vs. 11 percent), Latinx (11 vs. 6 percent), and economically disadvantaged (11 vs. 5 percent) students are enrolled in the Career and Technical Education Pathway which focuses on providing students with a certificate, diploma, or state/industry recognized- workforce credential (Deal, 2020 & NC Community Colleges, n.d.). This is potentially because these groups are less likely to pursue higher education due to factors such as low parental income and the learning curve associated with being a first-generation college student, indicating they may not be aware of the resources available to access higher education and may require assistance in transitioning into college and to complete their degree (Tippett & Stanford, 2019). Therefore, increasing access to Cumberland County's dual enrollment program to students from disadvantaged backgrounds can potentially improve knowledge about college resources and increase the number of students who enroll in college after high school graduation.

To achieve our goal of waiving additional student fee charges and developing a pipeline to more diverse counselors, the team intends to use a variety of methods and tools to engage stakeholders throughout the planning and implementation process such as the Give-Get Grid, the Nominal Group Technique (NGT) and Delphi Method, and structured Zoom meetings (Table 7). The Give-Get Grid helps identify individual expectations, what assets and resources they intend to “give” and “get”, and build and maintain a long-term relationship between each stakeholder (Southerland et al., 2013). Utilizing this tool in a group setting also enables participating partners to acknowledge the need for negotiations within the team to come to a mutual consensus regarding program implementation. The NGT and Delphi Methods will be used to identify stakeholder perceptions in terms of general knowledge about the High School Connections Program, the barriers students face in accessing the program and achieving higher educational attainment, and ways to improve the program’s resources to increase the prevalence of underrepresented students enrolled in the program (McMillan, King & Tully, 2016). The Zoom meetings will be used to engage stakeholders individually in order to obtain continuous input as to how to formulate and adopt the project over time. Events that will take place during Zoom meetings include interviews, surveys, and addressing stakeholder concerns.

Key project stakeholders and their affiliations are listed in Table 8. For initial engagement, stakeholders will convene in-person to begin introductions, define the program, and establish the group’s mission, expectations, goals, and assets. Prior research, information, and statistics about education in Cumberland County and the program’s potential impact will also be shared. Then, stakeholders will participate in completing the Give-Get Grid (Table 9) to identify contributions and benefits from their participation in the program. The Give-Get Grid will be utilized quarterly during so that stakeholders can readapt these factors as necessary.

An initial Give-Get Grid was developed for all participating stakeholders (Table 8). For example, the Accountable Care Community lead, Team Head in the Game, will assist in planning and facilitating stakeholder meetings and lead program development, aiming to be more informed about the current assets and needs of underrepresented high school students in Cumberland County. Greg West and Susan Williams of the Cumberland County School District, Dr. Jennifer Green of the Cumberland County Department of Public Health, and teachers and counselors from various high schools will discuss topics such as counselor diversity in staffing, student performance according to demographics, and county mental health assessments (Cumberland County Schools, n.d. & CCDPH, n.d.). Kimberly van Noort, Christopher Callagy, and Verinisse Ponce Soria will discuss the required resources for student success in college, assess budgets for classes, and identify ways to improve accessibility of the current program to students (UNC System, 2021, FTCC, n.d., & CHSA, n.d.). Student Government Associations and Parent Teacher Associations from local high schools will discuss barriers that students face in participating in dual enrollment programs. Finally, Marvin Lucas, North Carolina's District 42 Representative, will author and advocate for a bill to expand program benefits and staffing (North Carolina General Assembly, n.d.).

The NGT (Appendix B4) will be used at the initial stakeholder meeting to obtain insight into the barriers that students and families face in participating in the dual enrollment program and whether the county is providing a sufficient number of resources and guidance to ensure that students feel prepared for college. To begin, all stakeholders will be seated together and provided with questions surrounding their knowledge about the CCP, dual enrollment opportunities offered to students, and resources used to address program barriers for underserved groups. Participants will have twenty minutes to individually answer these questions silently.

Stakeholders will then take turns verbally stating answers to each question. Responses will be grouped in categories based on similarity and stakeholders will vote on the responses they believe are most feasible for successful expansion of the dual enrollment program. This will help identify areas in which students require resources and guidance in order to apply for college, such as identifying their career interests, having a counselor with whom they are comfortable, or financial aid. The NGT will be used in tandem with the Delphi Method (Appendix B4), which aims to help identify guidelines for the program (McMillan et al., 2016). Prior to meetings, stakeholders will be emailed and asked to rank a series of statements about the dual enrollment program, counselor availability, and equity and accessibility on a nine-point Likert scale, commonly used in the Delphi technique, and provide commentary (McMillan et al., 2016). Responses will be assessed to determine whether there is a group consensus (median score of 7 or higher) or not. For statements that do not reach a consensus, revised statements for updated program policies will be presented in a second questionnaire with commentaries from the previous questionnaire. Stakeholders will again rank statements, and the process will be repeated until there is a consensus for all statements.

Finally, Zoom meetings will be held with each stakeholder monthly. Stakeholders will be asked questions in relation to the program's success, whether they feel supported and heard within the group, and for any clarification regarding their roles and responsibilities in the project process. Additionally, stakeholders will have the opportunity to privately discuss any questions or concerns that they have for Team Head in the Game to address prior to the next individual meeting. This method of engagement provides the involved groups with a safe space in which they can address all potential problems hindering their ability to participate in the program, have interactions with the team leaders on a personal level, and increase trust within the group.

MEMORANDUM OF UNDERSTANDING
BETWEEN THE CUMBERLAND COUNTY DEPARTMENT OF HEALTH AND
CUMBERLAND COUNTY SCHOOL DISTRICT

1.0 PURPOSE

The purpose of this MOU is to establish an agreement between the Cumberland County Department of Public Health (CCDPH) and Cumberland County School District (CCSD) to increase underrepresented Cumberland County high school students' access to the High School Connections Dual Enrollment program. This partnership intends to increase accessibility by waiving costs for student fees and textbooks and increasing the accessibility of diverse guidance counselors at each high school, with the ultimate goals of improving higher educational attainment and long-term mental health outcomes in the county.

2.0 SCOPE OF ACTIVITIES

2.1 The CCDPH and CCSD will act as primary agencies responsible for outlining the framework of program expansion and addressing the issue of education access in the county.

2.2 The CCDPH and CCSD will both contribute resources and assets that help better the work of all participating parties.

2.3 CCDPH and CCSD will share data and information with one another for use of future school evaluation reports and community health assessments.

2.3 CCDPH will provide insight into successful program planning and implementation methods.

2.4 CCDPH will provide mental health providers to conduct mental health assessments of participating high school students.

2.5 CCSD will inform all staff, students, and families about changes being adapted to the program and provide resources to help inform and guide them with changes.

2.6 CCSD will provide new counselors with office space, access to technology, and connections with the school district.

2.7 CCSD and CCDPH will both agree to adhere to a monthly meeting schedule to discuss progress and areas of concern with regard to the dual enrollment program's expansion.

2.8 CCDPH and CCSD will both agree to identify and establish a mode of communication with one another for information exchange and task allocation on a regular basis.

3.0 Payment

3.1 Any activity that involves the exchange of funds between parties will be established in a separate agreement.

3.2 Any funds that are attained for the program use from the state budget will be managed by CCSD to cover counselor salary, costs of spacing, office technology and resources to be used by counselors, and to cover fees of textbooks, supplies needed for High School Connections courses.

4.0 Evaluation

4.1 Evaluation of the program impact will be on account of all stakeholders but will primarily be led by CCDPH and CCSD.

4.2 CCDPH will identify and students participating and not participating in the High School Connections Program and obtain contact information to assess mental health outcomes approximately three years after high school completion.

4.3 CCSD will conduct quantitative and qualitative assessment of student demographics at each high school, the number of students enrolled and not enrolled in each Career and College Pathway, and reasons why students wanted to/were able to participate in the program and did not want/were not able to participate in the program for future evaluation and adaptation for student success.

4.4 CCDPH and CCSD will work together to identify how educational attainment and health are interconnected to one another, incorporating factors such as income, employment status, and geographical location in Cumberland County.

4.5 Metrics that will be assessed by CCDPH and CCSD include student-to-counselor ratios, High School Connections participation rates and demographics, college enrollment rates, suicide rates, poor mental health days, and depression.

5.0 Renewal, Termination, and Amendment

5.1 Renewal

5.1.1 This MOU will remain in effect for 5 years unless either party provides a notice of termination is provided by either party. The MOU can also be renewed/extended given formal, written consent from both parties.

5.2 Termination

5.2.1 This MOU may be terminated by either party. The party terminating the agreement must provide formal written notice of termination at least 90 days prior to termination date.

5.2.2 Termination of this MOU does not revoke any prior activity agreements or allocation of program funds, so long as they are being utilized for the sole use of the program.

5.3 Amendment

5.3.1 This MOU may be amended upon written consent from both parties.

6.0 Signatures

By signing this MOU, each party agrees to the terms in the MOU and have the legal authority to enter into this MOU.

Cumberland County Department of Public Health

Dr. Jennifer Green
Director

Signature: _____

PRINT: _____

Date: _____

Cumberland County School District (CCSD)

Greg West
Chair of Budget and Finance Committee

Signature: _____

PRINT: _____

Date: _____

Cumberland County School District (CCSD)

Susan Williams
Chair of Student Support Services Committee

Signature: _____

PRINT: _____

Date: _____

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Appendix B3. Tables and Figures

Table 7. List of Engagement Methods

Method of Engagement	Stakeholders	Input on...	Involvement
1) Give-Get Grid	All	-Resources, assets, and expectations -Scope of project planning and implementation -Communication methods	Quarterly
2) Nominal Group Technique	All	-Planning and implementation process and methods -Identify project concerns and solutions -Address gaps and strategies to address problem	Once at the first group stakeholder meeting
3) Zoom Sessions	All	-Feedback on project or general concerns	Once a month for each stakeholder

Table 8. List of Participating Stakeholders

Name	Organization
Greg West, Chair of Budget and Finance Committee and Susan Williams, Chair of Student Support Services Committee	Cumberland County School District (CCSD)
Dr. Jennifer Green, Director	Cumberland County Department of Public Health (CCDPH)
Kimberly van Noort, Senior Vice President for Academic Affairs and Chief Academic Officer	University of North Carolina School System (UNC)
Christopher Callagy	Fayetteville Tech High School Connections Program
Teachers	Cumberland County High Schools
Counselors	Cumberland County High Schools
Student Government Associations (SGAs)	Cumberland County High Schools
Parent Teacher Associations (PTAs)	Cumberland County High Schools
Verenisse Ponce Soria, Ambassador	College in High School Alliance (CHSA)
Marvin W. Lucas, Representative of North Carolina's 42nd District	North Carolina House of Representatives Relevant Committees: Appropriations, Education and K-12 Education

Table 9. Give-Get Grid

Participant	Contributions	Benefits
Team Head in the Game	Plan and facilitate stakeholder meetings, lead program development; Provide methods, tools, resources and research to work in team settings; Train stakeholders through development and implementation; Conduct research on similar programs; Manage assessment of study outcomes and compile results into audience appropriate report	Obtain more insight into Cumberland County assets and stakeholder needs; Assist in acquiring funding and expansion of coverage and counselors; Improved enrollment rates; Improved long-term mental health outcomes
Greg West and Susan Williams	Provide knowledge surrounding current counselor staff, high school demographics, and budgeting; Understands student population and how to improve students' academic success; Committees can contribute knowledge about what makes an effective proposal to the board to obtain support for program expansion	Increased student success in high school and higher post-graduate college enrollment rates
Dr. Jennifer Green	Identify strengths and limitations of the program expansion; Provide mental health assessments and providers who can determine long-term outcomes of the project	Improved mental health outcomes and higher educational attainment
Kimberly van Noort	Provide knowledge surrounding the facilitation of student success in college and budgeting; Provide funding for students to enroll in courses without cost; Identify areas of dual enrollment curriculum where additional supply purchases are necessary and resources to help students	Increase in student enrollment rates; Higher output of college graduates
Christopher Callagy	Identify specific barriers that inhibit dual enrollment in the High School Connections Program; Discuss current costs of supplies required in different courses; Provide evaluation of student performance	Increase enrollment of underserved groups in High School Connections Program
Teachers	Inform students about the new program benefits; Provide guidance and assist students in being successful in the classroom and techniques to adapt to college courses	Develop better student relationships; Increased student success in the classroom
Counselors	Inform students about the program; Develop connections and relationships with students in underrepresented groups; Aid students in class selection to meet high school and college requirements	Increased job opportunities; More interactions with students; Identified methods to better engage with and support students
Student Government Associations	Provide insight into current student life, obstacles, needs; Provide continuous feedback about pros and cons of the program for adaptation	Increased access to resources that will enable them to be successful in both high school and college; Decreased barriers to enroll in and attend college
Parent-Teacher Associations	Discuss issues such as financial barriers to paying for college, student support systems, student resources; Provide continuous feedback about pros and cons of the program for adaptation	Obtain support for children to attend college; Decreased financial burden; Additional support systems and guidance for children
Verenisse Ponce Soria	Help identify equity challenges to dual enrollment access specific to Cumberland County	Develop and expand additional dual enrollment program
Marvin Lucas	Author and advocate for passage of bill obtaining funding and agreeing to expand program	Increased support from constituents

Appendix B4. Initial Questions and Statements Asked in the Nominal Group Process and Delphi Method

Nominal Group Process

1. What aspects of North Carolina's dual enrollment program, Career and College Promise, and more specifically, Cumberland County's High School Connections Program, are you aware about?
2. What benefits do you understand students receive from participating in the program?
3. What barriers do you think prohibit underrepresented students from attending college after graduating from high school?
4. What barriers do you think prohibit underrepresented students from participating in the High School Connections Program?
5. What additional resources can we provide to help increase student enrollment in the High School Connections Program?

Delphi Method

1. All students are knowledgeable about the available dual enrollment program, High School Connections, at their respective schools.
2. All students are able to participate in the High School Connections Program without problem.
3. Hiring additional counselors will improve students' knowledge about the High School Connections program.
4. Waiving fees of textbooks and additional supplies will improve enrollment in the High School Connections program.

5. Students feel that the diversity of the teachers and counselors adequately match the student population.
6. Higher enrollment rates in the High School Connections Program and higher educational attainment can improve mental health outcomes in adulthood.

Persuasive Pitch Presentation



Cumberland County School District (CCSD): Alicia Chisholm, Chair

- Why is CCSD an important stakeholder?
 - Oversees 17 high schools with 15,000 students
 - High school teachers and counselors have large impacts on students' academic success, attendance and college enrollment rates
 - Seeks to provide students with equitable access to quality education
- How do we want CCSD to be involved?
 - Provide office spacing to accommodate additional counselors
 - Be an active partner in identifying barriers that inhibit students from accessing higher educational attainment
 - Obtain local support and lobby for increased funding to cover additional dual enrollment fees and additional counselor salaries
- What can we accomplish together?
 - Increase the number of students who attend a postsecondary institution after graduating from high school
 - Decrease the disparities of low educational attainment and training skills to fulfill labor market needs
 - Achieve long-term goal of improving mental health outcomes of the adult population in Cumberland County

Cumberland County Schools, n.d.
Hurwitz & Howell, 2014

Here is a list of the key partners who will be essential in developing our accountable care community. The ones we will focus on include the Cumberland County School District, the College in High School Alliance, and Fayetteville Technical Community College.

Good Afternoon Ms. Chisholm, we see you as a key stakeholder involved in the expansion of our dual enrollment program, as the CCSD oversees 17 high schools with 15,000 students. For young students, the school setting and having interactions with quality teachers and counselors can have largely significant impacts on academic success, attendance rates, and increase college enrollment (Hurwitz & Howell, 2014). We believe that the goals of our ACC align with your mission of providing your students with equitable access to quality education and preparing them to be collaborative, competitive, and successful in the world (Cumberland County Schools, n.d.).

You would provide office spacing to accommodate the increased number of high school counselors we hope to add to each high school. We also want to obtain insight from you as an

active partner about the barriers that inhibit students from being able to access the opportunities such as the dual enrollment program and college. Finally, we hope that you will provide advocacy and lobbying efforts towards encouraging local legislators to author bills to increase funding to cover the costs of this program.

With your help, we will be able to increase the number of students who enroll in college after graduation, improve the overall educational attainment of the adult population which can decrease the gaps between skills and training with current workforce needs, and achieve our long-term goal of improving mental health outcomes in Cumberland County. Thank you.

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Appendix C: ALEXANDRIA GRIFFIN'S INDIVIDUAL DELIVERABLES

Individual Problem Statement

Social Determinant of Health (SDoH)

According to Healthy People 2020, “Health starts in our homes, schools, workplaces, neighborhoods, and communities” (“Social Determinants of Health”, 2020). Our health is impacted by our choices, actions of others, along with other outside forces that we cannot necessarily control. With this in mind, it is important to address these factors, known as social determinants, when attempting to improve the health of a population. “Social determinants of health are conditions in the environments in which 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” and are broken into five categories (“Social Determinants of Health”, 2020). These key determinants include economic stability, education, social and community context, health and health care, and lastly neighborhood and built environment (“Social Determinants of Health”, 2020). Although these all play a large part in the health of the population, we will tackle the social determinant of education for this project. We specifically will focus on the Healthy People 2030 objective SDOH-06 of “Increas[ing] the proportion of high school graduates in college the October after graduating” (“Increase the proportion of high school graduates in college the October after graduating”, 2020).

Improving the number of high school students who matriculate to college has both long and short-term health impacts (Cohen, et al., 2020). These individuals, in general, have better job prospects, can secure insurance through their employer, and have a safer work environment

(Cohen, et al., 2020). Those without these benefits may develop serious mental health illnesses such as anxiety and depression (Cohen, et al., 2020). One study found a relationship between “educational attainment and health including, SF-12 PCS scores, self-rated health, and activity limitations. In addition, education was associated with having more office visits and outpatient visits and less risk tolerance” (Kaplan et al., 2017, p. 603). Also, it is known that people who have completed higher levels of education are healthier and are likely to live longer than those who have not completed higher education (“Education Access and Quality”, 2020).

Geographic and Historical Context

Cumberland County, which is located in the coastal plain region of North Carolina, was formed in 1754 from Bladen County and it was then renamed after the son of King George II, Prince William Augustus (“Cumberland County | NCpedia,” 2006). Although it was first settled in the 1720s, it was not highly populated until 1919 when Fort Bragg was built in the county and later became one of the largest military bases in the county (“Cumberland County | NCpedia,” 2006). As a result, the county has grown and flourished to meet the demand of the now three military installations in the area (“County Health Rankings,” 2020). According to the Census, the population of this county is 335,000 with the majority being white (51.1%) than Black (39.1%) and Hispanic (12.1%) (“U.S.,” 2020).

Cumberland County in North Carolina ranks 69:100 for health outcomes in 2020 (“County Health Rankings,” 2020). Around 18% of the population lives in poverty and 11% of people under 65% are living without healthcare (“U.S.,” 2020). Cumberland county houses multiple public and private colleges including Fayetteville State University, Fayetteville Technical Community College, and Methodist University (“U.S.,” 2020). Regarding education, 91% of those 25 and older have a high school degree, which is higher than the state average

(“U.S.,” 2020). However, around 25% of the population has a bachelor’s degree or higher, which is lower than the state average of 34% (“U.S.,” 2020).

Priority Population and Measures of Problem Scope

The priority population identified are high school residents, aged 13-18, within Cumberland County (“Adolescent health,” 2019). This county has 17 high schools and around 15,000 students enrolled across the Cumberland school district (US News, n.d.). In the 2019-2020 school year, 87.4% of high school students in Cumberland County graduated (*Cumberland County Schools*, 2020). This is slightly lower than the state’s 87.6% of high school students who graduated in the same year (NC Graduation Rate Continues to Climb; Gaps Narrow | NC DPI, 2020). Additionally, after graduation, 61% of these students enrolled in secondary education programs, compared to 62% in their peer counties (*Cumberland County*, 2020). However, in Cumberland County 74% of students who enrolled in these programs matriculated for a second year compared to 54% of students in peer counties (*Cumberland County*, 2020).

Within North Carolina in 2014-2015, around 4.7% of the population aged 18 and older had serious mental illness in the past year (“County Health Rankings,” 2020). This is higher than the national average of 4.1% for this same measure (“County Health Rankings,” 2020). However, in North Carolina, less than half received mental health services to help treat their mental illness (48.5%) (“County Health Rankings,” 2020). In 2017, the average number of poor mental health days for Cumberland County residents was 4.4 days in the past 30 days (“County Health Rankings,” 2020). This was higher than both the US average (3.4 days) and the state average (4.1) (“County Health Rankings,” 2020). Further, according to new research, “more than 1 in 5 teens will experience a first episode of major depression before the end of high school” (Michael, 2020).

Rationale/Importance

Education is a pressing issue that can impact their mental health, along with other health indicators, as they enter adulthood. Students' lack of access to education tools impacts their educational attainment, which can impact their health indicators later in life (Cohen, et al., 2020). Additionally, the COVID-19 pandemic, which began in 2019, has taken a toll on the mental health of the nation. One article stated, "as the number of cases of COVID-19 increases, so does the associated anxiety. For the general public, the mental health effects of COVID-19 are as essential to address as are the physical health effects" ("COVID-19," 2020). Data is not yet available showing to what extent COVID-19 has impacted this particular community in Cumberland County, and likely will not for a while, however, studies have been released to address COVID's impact on mental health in other communities. Research from Cambridge University found "negative physical health consequences such as poorer sleep, poorer diet, increased sedentary behavior and loss of cardiometabolic fitness are more common and these are likely to relate to poorer mental health during COVID: (Power et al., 2020, p. 304) This mental health crisis can be compared to the effects the recession or mass job loss has had on mental health in the past (B, 2011). With this in mind, steps to ensure young people continue their education are an important preventative way to guarantee positive health outcomes, especially mental health outcomes.

Disciplinary Critique

As a public health leader, it is important to work with the community to address issues they find important. Educational attainment has shown to be a challenge that this community is facing. By using public health knowledge of the social determinants, we can create something sustainable and effective for the community. Access to secondary education impacts a diverse

array of the population in Cumberland County making it applicable to a broad sector of the community. Any strategies developed to address this problem will be inclusive for all of the population.

The Accountable Care Community has been unsuccessful in identifying a multifaceted program that addresses the ‘wicked problem’ of education access in Cumberland County. In other words, public health leaders are not looking at the multi-faceted reasons why high schoolers may be unable to attend or continue their collegiate studies. As a result, any program they create will be a small band-aid that attempts to fix a very large problem.

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Individual Stakeholder Analysis

Introduction

Education is a social determinant of health that impacts all aspects of an individual's ability to live an overall healthy life (Education Access and Quality, 2021). One study found a relationship between “educational attainment and health including, SF-12 PCS scores, self-rated health, and activity limitations. In addition, education was associated with having more office visits and outpatient visits and less risk tolerance” (Kaplan et al., 2017, p. 603). Also, studies show that people who have completed higher levels of education are healthier and are likely to live longer than those who have not completed higher education (“Education Access and Quality, 2020). Further, mental health disorders have a connection to “low educational attainment” and “socioeconomic health differences in adulthood” (Veldman, 2014). Within North Carolina in 2014-2015, around 4.7% of the population aged 18 and older had serious mental illness in the past year (“County Health Rankings,” 2020). This is higher than the country's average of 4.1% for this same measure which shows a need for public health intervention. This program aims to address the Healthy People 2030 objective SDOH-06 of “Increas[ing] the proportion of high school graduates in college the October after graduating” in order to prevent negative health outcomes in the future (“Increase the proportion of high school graduates in college the October after graduating, 2020).

The advancement of these high school students, their enrollment in higher education programs, and their positive mental health outcomes is impacted by a multitude of stakeholders and structured systems (Griffiths, 2008). The Rich Picture shown in Figure 1 displays these interconnected systems that are in play when addressing this topic. Issues that are important to consider include: family dynamics and support, socioeconomic status, housing, food security

level, initial health, educational preparedness, and policies in place. Cumberland County experiences lower graduation rates in those students who are from an economically disadvantaged background (Reports, 2019). In Cumberland County, 74% of students who enroll in college continue a second year, compared to 78% of students in neighboring counties (My Future North Carolina, 2020). Also, 46% of those who attend college graduate within 6 years compared to 54% in other peer counties (My Future North Carolina, 2020). This may be due to these students being burdened with jobs or other stressors from their situation (The Unseen Reason Working-Class Students Drop Out, 2019). Further, these students may experience trouble navigating financial aid, funding school supplies, or may not feel adequately prepared for the college course-load (The Unseen Reason Working-Class Students Drop Out, 2019).

Lack of access to quality education and secondary education can lead to several impacts on the health of the individual and the wellbeing of the community as a whole (Cohen, et al., 2020). Inadequate secondary education can lead to limited job prospects or only low-paying job opportunities, which do not have great health care for the individual (Cohen, et al., 2020). These poor job prospects increase an individual's risk of continuing living in poverty, having less access to healthcare and healthcare literacy, and being at greater risk of being unhealthy (Cohen, et al., 2020).

The system of education that influences health in Cumberland County, North Carolina has several key stakeholders that are needed to enact lasting and effective change. These diverse stakeholders represent sectors such as the educational, governmental, and public sectors. The long-term and sustainable success of any program aimed at increasing the educational attainment of Cumberland County high school students is reliant on the collaborative efforts of these stakeholders.

Leadership Program

Currently, Cumberland School District does have a dual enrollment program called Career & College Promise Program. Although this program is available, only 12% of high school students take advantage of it (Reports, 2019). This existing program is also doing a poor job reaching underserved populations in the Cumberland County community. Students who participate in the Career & College Promise Program “are more likely to be female (63% compared to 50%) and white (76% to 56%), to speak English at home (93% compared to 86%) (Deal, 2020).” Due to these factors, it is evident a rehaul of the dual enrollment system is needed to better serve the Cumberland County high school students. As a result, the Accountable Care Community (ACC) was created to reimagine and implement the new program.

Using a leadership perspective, tailoring the College Credit Plus Program, based in Ohio, to the Cumberland County community would improve diversity and overall access to the dual enrollment program. This program, focused on high school students, would allow students to take college classes free of charge while in high school. An advantage of this program is that it reduces the time and money students spend in college after high school, increasing their chance of graduating (Ohio Dept of Higher Education, 2020). During the 2016-2017 school year alone, over 800 students participating in the College Credit Plus program received a degree or certification while still in high school (College Credit Plus | Info for Students & Families | Ohio Higher Ed, 2020). Further, more than \$262 million in tuition savings to Ohio families were attributed to this program (College Credit Plus | Info for Students & Families | Ohio Higher Ed, 2020). A disadvantage is that this program is not free for those who are homeschooled or those attending private schools. This is a disadvantage for these groups and may lead to fewer of these students participating in this program. However, it should be noted that these groups can apply

for funding through the College Credit Plus program (College Credit Plus | Info for Students & Families | Ohio Higher Ed, 2020).

Although the Accountable Care Community (ACC) would like to use the Ohio program as a starting point, there are some changes to be implemented. In addition to ensuring all supplies are paid through the program, the ACC would also improve the diversity of high school counselors assisting with the program. Further, one study found that intentionally matching high school counselors to students was associated with better educational attainment from the student (Mulhern, 2020).

The tool used in this stakeholder analysis was an all-encompassing stakeholder analysis matrix, found in Table 10. This tool asked detailed questions including what is important to the stakeholder, how the stakeholder can contribute, how the stakeholder could block the project advancement, and how to engage the stakeholder in order to provide insights about and deeply understand each stakeholder chosen. It also includes a reformed power-interest grid that helps to better understand the level of management each stakeholder requires.

Program Stakeholders

The stakeholders that have been pinpointed as important to this program are Student Government Association (SGA) representative David Andrews; College in High School Alliance (CHSA) Ambassador Mark Peevy; Parent Teacher Association (PTA) member Sandra Howard; North Carolina Policy Maker Dean Arp; School board member Charles Mckellar; Cumberland CO HS College counselor Mrs. Robin Hulland and Mrs. Ann Howard college admissions counselor; Cumberland County Department of Public Health Community Development director Dr. Jennifer Green; and high school teacher Sara Mullins and college teacher Bill Scott. These stakeholders are key to the success of the program, but they all play different roles in the process.

The SGA, PTA, teachers, and counselors all are highly impacted by this proposed program. With this in mind, they will play a consulting role in the decision-making of this program. Understanding their point of view and concerns around the program ensures that the program is meeting their needs. Based on the stakeholder analysis, the CHSA representative, health department, policymaker, and the school board members have a high influence on this program. These few stakeholders will be the key decision-makers of this program development process.

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Appendix C1. Table

Table 10. Stakeholder Analysis Matrix

Stakeholder Name	Impact	Influence	Importance	Stakeholder Contribution	Stakeholder block	Strategy for engagement
SGA member	<i>High</i>	<i>Low</i>	<i>Students want options post-high school, don't have to take the prerequisites in college</i>	<i>Share student POV, able to convince other students this is a positive change</i>	<i>Unwillingness to participate, tell students to not participate</i>	<i>Monthly meetings, texts</i>
College in High School Alliance (CHSA)	High	Medium	CHSA's goal is that every state has a program where every state has a college in the high school program	Have the knowledge and resources to start a new college in, Supporting and consulting lead high school programs	Not share their knowledge- not likely	Information and feedback meetings every 6 months
PTA member	Medium	Medium	Their student be equipped with the tools to be successful in college, pay less for college	Advocate for the program, enroll children in the program	Not allow the student to participate	Emails, <i>Monthly meetings</i>
NC Policy Maker in budget	Low	High	Look good to their constituents	Allow policy to be voted on by NC policymakers	Refuse to support policy	emails
School Board Member/ school administrator	Medium	High	Rating of school, a continuation of school funding, student outcomes	Agree to host program at their school	Refuse to allow programs in their school	emails
College and admissions Counsellor	medium	High	Graduation rate, retention rate	Access to colleges, knowledge about FAFSA and application process	Unable to meet with students to share knowledge	Emails
Cumberland Co dept of public health – Director	medium	High	They will be the liaison between us and the community.	Gain community's support	Busy, other priorities	Connect with community development director- use emails

High school/ college teachers	High	Medium	They do not have extra work to do. They are compensated for the time and effort to teach the classes.	Volunteer to teach the classes	Refuse to teach	Make sure to listen to their requests, meetings during lunch, and provide lunch.
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Individual Engagement Plan

Purpose of ACC and the Proposed Program

Social determinants of health are “conditions in the environments in which 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” and in Cumberland County it is necessary to improve the social determinant of health of education (Social Determinants of Health | Healthy People 2020, 2014). In the 2019-2020 school year, after graduation, 61% of Cumberland County high school students enrolled in secondary education programs, compared to 62% in their peer counties (*Cumberland County*, 2020). Studies have found inadequate secondary education can lead to limited job prospects or only low-paying job opportunities, which do not have great health care for the individual (Cohen, et al., 2020). These poor job prospects increase an individual’s risk of continuing living in poverty, having less access to healthcare and healthcare literacy, and being at greater risk of being unhealthy (Cohen, et al., 2020). As a result, there is a need to increase the number of high school graduates who enroll in college the October after graduation to improve their health in the long run.

To address this, the Accountable Care Community (ACC) was formed with the goal to increase access and funding to the North Carolina dual enrollment program. The expansion of the North Carolina dual enrolment program will mirror the Ohio College Credit Plus Program and will focus on eligible students in high school (Ohio Department of Higher Education, 2020). Even though there is an existing dual enrollment program in North Carolina, entitled the Career and College Promise Program, the ACC has indicated multiple areas for improvement and expansion. This existing program is not reaching underserved populations in the Cumberland County community. Students who participate in the Career & College Promise Program “are

more likely to be female (63% compared to 50%) and white (76% to 56%), to speak English at home (93% compared to 86%)” (Deal, 2020). Also, only 12% of high school students take advantage of it (Reports, 2019). Due to these factors, it is evident a rehaul of the dual enrollment system is needed in order to better serve the Cumberland County high school students. As a result, the Accountable Care Community (ACC) was created to reimagine and implement the new program.

The ACC would like all expenses associated with the program, like books, transportation, and other study materials, to be paid for by the dual enrollment program. This would address a large equity piece that is missing from the original North Carolina dual enrollment program. Also, the ACC hopes to increase the diversity of the students participating in the dual enrollment program by increasing the number and diversity of academic counselors in the Cumberland County School District, a tactic that has not been used in the original dual enrollment program. This is essential because studies have found intentionally matching high school counselors to students was associated with better educational attainment from the student (Mulhern, 2020).

Purpose and Rationale of Engagement Plan

From the Stakeholder Analysis that was conducted previously, the ACC pinpointed key stakeholders to the implementation of this program. These stakeholders are: Student Government Association (SGA) representative David Andrews; College in High School Alliance (CHSA) Ambassador Mark Peevy; Parent Teacher Association (PTA) member Sandra Howard; North Carolina Policy Maker Dean Arp; School board member Charles Mckellar; Cumberland CO HS College counselor Mrs. Robin Hulland and Mrs. Ann Howard college admissions counselor; Cumberland County Department of Public Health Community Development director Dr. Jennifer Green; and high school teacher Sara Mullins and college teacher Bill Scott.

Looking forward, the engagement plan is key to the success of the program. Its goal is to identify and convey how the ACC will interact and communicate with the stakeholders. Also, this plan allows the ACC to understand more fully how to successfully interact with each stakeholder (Stobierski, 2021). How high school students (i.e. PTA representative) prefer to receive information is exceptionally different from how a legislator likes to receive information. Thinking through an engagement plan helps to tailor communication for each stakeholder and ensure each member of the group feels that they are valued and welcomed. This makes certain that “expectations, decisions, risk/issues, and project progress information is delivered to the right person at the right time with the most efficient and effective level of information” (Stobierski, 2021).

Engagement Methods

Three engagement methods were used to understand and assess the viewpoints and needs of the stakeholders and develop different methods to engage them. For reference, the engagement methods used can be found in Table 12. The first engagement method used is utilizing the Zoom platform to facilitate a semi-structured conversation with the stakeholders. During this meeting, the ACC members would introduce themselves, the program being addressed, and allow the stakeholders to get to know one another. Providing everyone with the same base knowledge allows the stakeholders, who may be less informed on the issue, to feel more confident that they are on the same level as other stakeholders in the group. Also, by having the ACC members and the stakeholders introduce themselves the group will become more comfortable with each other. In addition, being the first meeting, the stakeholders must spend time setting ground rules during this time.

The Nominal Group Process is another engagement tool used when working with the stakeholders. This is a more structured approach that will be used when the group is brainstorming on program ideas. This tool emphasizes full group engagement by giving everyone in the group time to speak. This tool is important to this group of stakeholders specifically because of the power dynamics that are in play. Students and teachers may shy away from sharing with the larger group with fear of how their parents or administrators (respectively) will respond. However, this process will be used by first posing a question, listed in Appendix C3, then allowing time for the stakeholders to write their answers. These answers then can be read by one person in the group, so everyone remains anonymous, and the discussion goes from here.

The Give-Get Grid, shown as Table 11, is the last engagement tool used to understand the needs of the stakeholders. This tool looks at what the stakeholder is providing to the program and what they are receiving from the program. The stakeholders mustn't be giving more than they get in return. If this is the case they may feel used and could stop working with the ACC. With this in mind, the teachers and counselors do not receive much in return for assisting with this program. Some sort of incentive may have to be considered to keep the teachers and counselors engaged and ensure their sustained participation.

Accountability Plan

MEMORANDUM OF UNDERSTANDING

Between

**CUMBERLAND COUNTY DEPARTMENT OF PUBLIC HEALTH (CCDPH) and
College in High School Alliance (CHSA)**

1. PURPOSE

The MOU's purpose is to outline an agreement between the Cumberland County Department of Public Health (CCDPH) and the College in High School Alliance (CHSA). Together, these two aim to improve the accessibility of the dual enrollment programs for all high school students in Cumberland County.

2. SCOPE OF ACTIVITY

- CCDPH and the CHSA will guide the strategy and vision of the project, drive the mission, and vision of the program
- CCDPH will oversee the data collection and analysis pertaining to the mental health outcomes of the students.
- The CHSA will track the student participation in the program
- The CCPHD will share best practices pertaining to creating successful programs with the CHSA
- The CCPHD will provide mental health professionals to assist with data collection concerning mental health in high school students
- The CCPHD and the CHSA will attend all scheduled meeting

- The CCPHD will create an effective communication method to share information with the other stakeholders and will seek and implement input from key stakeholders.

3. EVALUATION

Evaluation of ACC co-lead by CCDPH and the CHSA:

- The CHSA will provide CCDPH with the names and contact information of students participating in the dual enrollment program in Cumberland County.
- CCDPH will connect with these students in order to analyze mental health outcomes 2 years after high school graduation.
- SMART (Specific, Measurable, Attainable, Relevant, and Timely) goals will be used to help define and articulate the goals of the ACC.
- Surveys will be provided to the students to learn their demographic information, barriers to higher education, their motives for participating in the program, and how the program can be improved.

4. PAYMENT

- Any payment received from the state budget by the ACC for programs such as administrative costs, supplies, or salaries will be handled by the CCDPH
- The terms for any additional funds that are exchanged between the CCDPH and the CHSA will be agreed upon and added as an addendum

5. TERM AND TERMINATION

This MOU is in effect immediately following the signing of the document by CCDPH and the CHSA. The MOU is effective for 5 years and can be extended if both parties agree and funding allows.

Both parties can submit an MOU termination notice. A formal notice of termination by either CCDPH or CHSA requires a 3-month notice.

6. MODIFICATION OF THE AGREEMENT

This MOU can be modified or added to at any time. Both parties are required to agree to the changes and sign the revised MOU.

7. AUTHORITY TO SIGN

By signing this MOU, each party agrees to the terms in the MOU and has the legal authority to enter into this MOU.

Cumberland County Department of Public Health

Signature: _____ PRINT: _____

Date: _____

College in High School Alliance (CHSA)

Signature: _____ PRINT: _____

Date: _____

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plan/#:%7E:text=Its%20purpose%20is%20to%20identify,and%20communicate%20with
%20those%20stakeholders.

Appendix C2. Tables and Figures

Table 11. Give-Get Grid

Stakeholder	Give	Get
SGA member- David Andrews	Time by attending stakeholder meetings	Increased access to college courses
College in High School Alliance (CHSA) Ambassador- Mark Peevy	Guidance on how to successfully start program	More schools are participating in the program.
PTA member- Sandra Howard	Time by attending stakeholder meetings	Their children have increased academic opportunities for free.
NC Policy Maker in budget and education- representative Dean Arp (Rep)	Allocation of state funds to program Outward support to program	Positive view from constituents
School Board Member- Charles Mckellar school administrator (Cumberland Co HS Principal) - Josh Henderson	Approval for program to be implemented in schools Easiest way to communicate with parents	More funding for school Better rating for school
Cumberland CO HS College counselor– Mrs. Robin Hull admissions Counsellor- Mrs. Ann Howard	Link to colleges	Recognition for their hard work by school
Cumberland Co health dept director - Dr. Jennifer Green	Connections they have to the community	Data on how program improves retention rates in college students
high school teacher– Sara Mullins college teachers – Bill Scott	Time prepping and teaching college courses	Recognition for their hard work by school

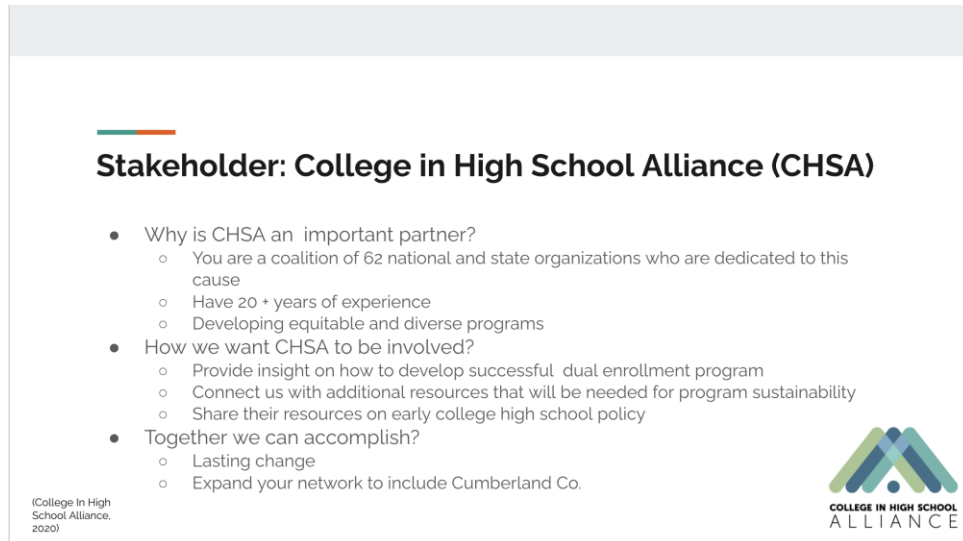
Table 12. Engagement Methods Used

Engagement method	Level of approach
Give get grid	Group Level
Nominal Group Process (NGP)	Group Level
Zoom Meetings	Individual Level

Appendix C3. NGP Leading Question

Nominal Group Process (idea generation) leading questions to ask
What would you like the program to accomplish?
Who do you imagine the program helping the most?
What are you willing to contribute to the program?
What do you expect to get from the program?
What are your concerns about the program?


Individual Pitch Presentation Script



Stakeholder: College in High School Alliance (CHSA)

- Why is CHSA an important partner?
 - You are a coalition of 62 national and state organizations who are dedicated to this cause
 - Have 20+ years of experience
 - Developing equitable and diverse programs
- How we want CHSA to be involved?
 - Provide insight on how to develop successful dual enrollment program
 - Connect us with additional resources that will be needed for program sustainability
 - Share their resources on early college high school policy
- Together we can accomplish?
 - Lasting change
 - Expand your network to include Cumberland Co.

(College in High School Alliance, 2020)



Good Evening Mark Peavy! We thank you for representing the College in High School Alliance in this introductory meeting. My colleagues and I view the CHSA as a key stakeholder and we hope you will join the Accountable Care Community (ACC). The CHSA is composed of 62 national and state organizations that are dedicated to supporting dual enrollment programs for high school students. Your coalition members not only have decades of combined experience in this area, but there is research that shows your work has positively impacted education. Also, your principles and adherence to supporting diversity and equity align with our MOU goals.

If you agree to join the ACC, the CHSA would be a crucial asset to the team. Because you have experience developing and funding dual enrollment programs, we know you could provide insight on how to develop a successful program. Also, your immense connections in the government, school systems, and non profits would help with the sustainability of our program.

Together, we can create lasting positive change in the lives of high school students within Cumberland County. Also, by joining the ACC, we will assist with the CHSA's network

expansion into North Carolina. My colleagues and I believe the CHSA is a perfect fit for this ACC and we hope you do as well. THANK YOU!

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Appendix D: ISAIAH KIM'S INDIVIDUAL DELIVERABLES

Individual Problem Statement

Social Determinants of Health and Related Key Issue

Social determinants of health are the conditions in which people live, work, and interact that can have an effect on their health (USDHHS, n.d.). Education access and quality is one of these social determinants outlined by Healthy People 2030; people who have obtained a higher level of education tend to be healthier and live longer (USDHHS, n.d.). One key objective within this social determinant is to increase the proportion of high school graduates in college the October after graduating, which is important because increasing the number of students who attend college can improve future health outcomes (USDHHS, n.d.). There are many layers to this; for example, those who have a higher level of education tend to have higher paying jobs and can afford better healthcare, which can then lead to better health outcomes through higher quality treatments and prevention of disease (USDHHS, n.d.).

One health outcome that could be improved as a result of increased college enrollment is mental health (Cohen et al., 2020). Those who have a higher education have opportunities for jobs that offer safer work environments and higher income, which can lead to mental stability (Cohen et al., 2020). Without these opportunities, mental health can suffer due to stress, anxiety, and depression (Steele et al., 2007).

Geographic and Historical Context

Cumberland County, named after the Duke of Cumberland, was created as a result of an Act passed in 1754 by the Colonial Legislature (Cumberland County Government, n.d.). In 1783, the city of Campbellton was renamed to Fayetteville in honor of Marquis De La Fayette

(Cumberland County Government, n.d.). Fayetteville's growth was hindered due to a fire in 1831 and an invasion by General Sherman in 1865, but slowly began recovering when Camp Bragg was opened nearby as a temporary military training facility in 1918 (Cumberland County Government, n.d.). Camp Bragg was later made into a permanent army post and renamed Fort Bragg which still stands today (Cumberland County Government, n.d.).

Today, Cumberland County is home to over 327,000 people. This population houses an above-average minority and military population compared to the rest of North Carolina (Appendix H1). The median household income is \$44,810 compared to the NC average \$48,256, and 54.9% of households are food-insecure compared to the NC average 51.5% (CCDPH, 2019).

The largest employers in Cumberland County include the US Department of Defense (civilians), Cumberland County Schools, Wal-Mart Associates Inc., and Goodyear Tire and Rubber Company (CCDPH, 2019). Workers at these establishments make an average of \$820 per week (\$42,640 per year) (CCDPH, 2019). The top five employment occupations are food preparation and serving occupations, retail salesperson, cashiers, office clerks, and general and registered nurses (CCDPH, 2019).

There are several public and private colleges within Cumberland County: Methodist University, Fayetteville State University, Fayetteville Technical Community College, Carolina College of Biblical Studies, and Grace College of Divinity. All of these colleges are located within the city of Fayetteville. Although the percentage of people aged 25+ with a high school diploma is higher than the NC average (90.3% vs. 86.3%), the number of people with a bachelor's degree is lower (24.1% vs. 29.0%) (CCDPH, 2019).

Priority Population

The priority population identified is high school students aged 13-18. Cumberland County has over 15,000 high school students enrolled in its 17 high schools (US News, n.d.). As of the 2018-2019 school year, 83.8% of these students graduate high school in four years compared to the NC average 86.5% (Kids Count, 2020). Among these graduates, 61% enroll in postsecondary education, 74% who enroll in postsecondary education continue into their second year, and 46% who enroll in postsecondary education earn a degree or credential within 6 years (MyFutureNC, 2020). These percentages are lower than peer counties (Hoke, Scotland, Robeson, Bladen, Sampson, Columbus) who average 62%, 78%, and 54% respectively (MyFutureNC, 2020).

In terms of mental health, the CDC has identified that nationally, 9.4% of children and adolescents aged 2-17 have received an ADHD diagnosis, 7.4% have a diagnosed behavior problem, 7.1% have diagnosed anxiety, and 3.2% have diagnosed depression (CDC, 2020). The prevalence of depression and anxiety have been increasing with time; children and adolescents aged 6-17 who have been diagnosed with depression or anxiety increased from 5.4% in 2003 to 8% in 2007 and 8.4% in 2012 (CDC, 2020). This is worrisome because although the prevalence of depression and anxiety is increasing, only 40% of these adolescents are receiving treatment in North Carolina (SAMHSA, 2015).

Measures of Problem Scope

As mentioned above, Cumberland County has a below-average number of people with a bachelor's degree compared to North Carolina (24.1% vs. 29.0%). Cumberland County also has above-average rates of suicide, poor mental health days, and percentage of frequent mental distress (Appendix D1). The county does have resources to address these issues with an above-

average number of mental health providers compared to North Carolina and the US (Appendix D1).

Increasing the number of students enrolled in college after graduating high school can help decrease the prevalence of these negative mental health outcomes (Niemeyer, 2019; Cohen et al., 2020). It is important to focus on this age group because poor mental health in adolescence can lead to worse general, mental, and physical health in the long-term (Otto et al., 2020).

Rationale/Importance

Educational attainment and expectations can have an effect on future mental health outcomes (Cohen et al., 2020). Lack of higher education can be a barrier to higher paying jobs, which can lead to increased stress and worse mental health outcomes (Cohen et al., 2020). On the other hand, those with a higher level of education are more likely to see psychiatrists and psychologists who can help manage mental health issues (Steele et al., 2007). Given Cumberland County's lower than average percentage of people with bachelor's degrees, increasing college admissions and enrollment can be a way to address and prevent mental health problems and other negative health outcomes down the road.

Disciplinary Critique

From a nutrition lens, addressing the amount of high school graduates who enroll into college can help address equity gaps that exist both in the nutrition field and the community. As of March 2021, 93.9% of registered dietitians (RD) are female, and 81.1% are white (CDR, 2021). The most populated area of practice for these dietitians is in the clinic (21.1%) and the next highest is community nutrition (8.1%) (CDR, 2021). By encouraging more students to attain higher education, especially those in marginalized populations, the nutrition field as a whole may

become more diverse, leading to a wider range of services offered in more varied areas of practice.

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Appendix D1: Tables

Table 13. Cumberland County Demographics Compared to NC.

	Cumberland County	North Carolina
Total Population	>327,000	10.5 million
White	51.8%	71.0%
Black or African American	38.7%	22.2%
Hispanic or Latino	11.3%	9.2%
Military	10.1%	1.0%

Table 14. Cumberland County Mental Health Statistics Compared to NC and US.

Mental Health and Mental Disorder	Units	Cumberland County	North Carolina	United States
Age-adjusted death rate due to suicide	deaths/100,000 population	14.6	12.9	13
Poor mental health: average number of days	days	4.3	3.9	3.8
Frequent mental distress	percent	13.2	12.3	15
Mental health provider rate	providers/100,000 population	278.5	215.5	214.3

Program Analysis

Background

Education access and quality is one social determinant of health outlined by Healthy People 2030 with a key objective to increase the proportion of high school graduates in college the October after graduating (USDHHS, n.d.b). There are many factors that affect an adolescent's decision to enter college, one being food insecurity, which is the disruption of food intake because of lack of money and other resources (USDHHS, n.d.a). Food insecurity not only affects the physical ability to perform well in school (Nazmi et al., 2018), but it can also lead to negative mental health outcomes such as anxiety, depression, and mood and behavior problems that could affect a student's performance in school (McLaughlin et al., 2012). If a student does not do well in school as a result of these factors, they can be discouraged from enrolling into college (Eccles et al., 2004).

As food insecurity clearly impacts the ability to do well in school and enroll in college, addressing food insecurity in high school years would reduce one barrier to college enrollment. In Cumberland County, 77% of public-school students are enrolled in the free and reduced-price school meal program (Kids Count, 2020), but this meal supplementation disappears during the summer months when schools are closed. Free Summer Meals fills this gap and provides free meals to students during the summer when school meal supplementation is unavailable.

Purpose

The goal of the Free Summer Meals program is to reduce the prevalence of food insecurity for adolescents during the summer. Currently, this program occurs from June through August, but has potential to be expanded to all times when schools are not in session, such as weekends, school breaks, and unexpected school closures, such as what happened with the

COVID-19 pandemic. Providing food outside of regular school hours will help in reducing food insecurity, which can help students focus on school, leading to higher grades and mental health status in students (Alaimo et al., 2001), which can result in higher college enrollment (Eccles et al., 2004).

Strategies and Activities

The Free Summer Meals program consists of several moving parts that work harmoniously to provide free meals to anyone under the age of 18 during the summer (No Kid Hungry, n.d.). One of the keys to the success of this program is that students do not need to register or show any ID in order to receive a free meal (No Kid Hungry, n.d.), which means literally anyone under the age of 18 who shows up to a meal distribution site can receive a free meal. This helps to increase participation in the program, remove barriers to participation, and reduce stigma around receiving a free meal.

The Free Summer Meals program in Cumberland County was hosted by five sponsors in 2020 who are responsible for implementing the program, including the Cumberland County Schools Child Nutrition Services (2020 Summer Nutrition Program, 2020). There are currently 80 meal distribution sites in Cumberland County (2020 Summer Nutrition Program, 2020). Up to two meals or snacks are reimbursable at each site daily, and meals can be served seven days a week (2020 Summer Nutrition Program, 2020). These meals follow the USDA nutrition recommendations and are also reimbursed by the USDA (No Kid Hungry, n.d.). Additionally, these sites provide safe spaces for adolescents to gather, and many provide educational and recreational activities that adolescents can participate in (No Kid Hungry, n.d.).

In the summer of 2020, Cumberland County served 570,899 total meals to local students, which was 5 times more meals compared to 2019 (2020 Summer Nutrition Program, 2020).

However, this large increase in the number of meals still only met less than 30% of the estimated needs in Cumberland County (2020 Summer Nutrition Program, 2020). Distribution sites in Cumberland County had an average daily attendance of 6,000-7,000 students, with a higher average of 13,000 during the month of August (2020 Summer Nutrition Program, 2020).

On the socioecological framework (SEF), the Free Summer Meals program acts on the “interpersonal connections” and “living and working conditions” levels. On the “interpersonal connections” level, many of the distribution sites provide activities along with the meals which creates opportunities for adolescents to make friends and build a community of peers. Additionally, adolescents can connect with employees and potentially receive mentorship and guidance from them. On the “living and working conditions” level, offering free meals improves the community. Not only does it provide for community members, but it also brings money into the local economy through creation of jobs, meal reimbursement, and increased buying and selling of food products (2020 Summer Nutrition Program, 2020).

Outcomes

Long-term impact

In the long-term, distribution sites will be able to readily provide meals 7 days a week. The Free Summer Meals sites will hopefully be able to provide for these students not only during summer, but during all times when schools are closed (No Kid Hungry, n.d.).

Short-term outcome objective

Within two years of implementation of the program, Free Summer Meals will have met 50% of the estimated needs of Cumberland County. This would be an increase of about 20% from the estimated met needs in summer of 2020 (2020 Summer Nutrition Program, 2020).

Stakeholders

First and foremost, adolescents should be considered during implementation of the program. This is who the program will directly affect, and their needs should be considered above all else. The success of the program is dependent on how well their needs are met.

Parents and families are also stakeholders who could play a key role in the success of the program. They could be the ones who discover the program, provide transport to the program, or encourage their children to attend the program. Many parents want what is best for their children, so marketing this program toward parents may be an effective strategy.

School teachers and administrators can help promote the program to students and parents. They are in direct contact with students, and also have access to email or text alerts to market the program toward parents and families. Depending on the sponsor, teachers and administrators could also help implement the program and serve meals directly to their students. Administrators will also be key for helping the program track college applications and attendance.

Nutritionists and dietitians can provide nutrition recommendations and suggestions for meal components. Because meals need to follow USDA nutrition guidelines, it would be wise to consult with nutritionists and dietitians to determine how to get nutritionally dense meals for a low cost. They can also help strategize for food allergies or sensitivities to ensure that anyone who needs a meal can get one.

Policymakers will be able to lobby for increased funding for the program. Increased funding could help open more sites, hire more employees, and reach out to more students.

The Cumberland County Public Health Department can also help play a role in implementing the program. They are the local public health experts, so they can assist in identifying sponsors, allocating resources, and providing suggestions for improvement.

Budget

Funds will be used solely for improving the program. Some examples of where funds could be allocated include staff, food, meal preparation, transportation, supplies, equipment, and overhead costs. This program is unique in that increasing the number of students who participate in the program also increases the amount of money that is brought into the county's economy. In 2020, \$2,040,482 was brought into Cumberland County's economy as a result of the Free Summer Meals program (2020 Summer Nutrition Program, 2020). However, if every student who was eligible for free and reduced-price lunch participated in the Free Summer Meals program, \$17,840,137 would have been brought into the county through USDA supplementation (2020 Summer Nutrition Program, 2020).

Conclusion

Direct benefits of reducing food insecurity include improved grades in school, social skills, and mental health status (Alaimo et al., 2001), which in turn can increase students' ability to enroll into college (Eccles et al., 2004). The local economy also gets a boost through USDA meal reimbursements.

One of the challenges is that it is hard to get sponsors for the program because it can be such a large commitment of time and resources. Keeping distribution sites open can also be challenging due to limited funding, staff, and resources. In the summer of 2020 (June through August), Cumberland County sites were open between 6- and 61-days total, with an average of 25 days (2020 Summer Nutrition Program, 2020). Given that summer break is about 10 weeks, an average of 25 days is not nearly enough to provide for the total needs of the community (2020 Summer Nutrition Program, 2020).

Despite these challenges, Free Summer Meals has amazing potential to combat food insecurity, increase college enrollment, and improve mental health outcomes.

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Appendix D2

Edible Campus Program

The program that was not included in this analysis is the Edible Campus program. Although this program also works to reduce food insecurity, it was not selected because it would have taken longer to implement and may not have had the same impact on the community as the Free Summer Meals program.

Implementation and Evaluation

Intervention Summary

Education access and quality is one social determinant of health outlined by Healthy People 2030 with a key objective to increase the proportion of high school graduates in college the October after graduating (USDHHS, n.d.b). Food insecurity is one factor that can affect an adolescent's decision to enroll into college. Food insecurity is the disruption of food intake because of lack of money and other resources (USDHHS, n.d.a). This not only affects the physical ability to perform well in school (Nazmi et al., 2018), but it can also lead to anxiety and depression (McLaughlin et al., 2012), which can result in poor school performance and discouragement from enrolling into college (Eccles et al., 2004). Therefore, addressing food insecurity in high school years reduces one barrier to college enrollment.

The Free Summer Meals program reduces food insecurity during the summer (June through August) and provides free, nutritious meals to any adolescent who arrives at one of the summer meals sites (No Kid Hungry, n.d.). This program is effective because it works to reduce food insecurity on multiple levels of the socioecological framework (SEF), specifically the “interpersonal connections” and the “living and working conditions” levels.

In 2020, the Free Summer Meals program served 570,899 total meals to local adolescents, but this was still less than 30% of the total estimated needs in the county (2020 Summer Nutrition Program, 2020). The short-term goal of the program will be to reach 50% of estimated needs within two years of implementation. The long-term goal of the program will be to readily provide meals any time schools are closed, such as during weekends, school vacations, and unexpected school closures, which will allow adolescents to have access to a free meal regardless of whether schools are open or not.

Evaluation Plan

Outcomes

The key objective is to increase college enrollment. Statistics on college enrollment can be tracked with the help of school administrators. Collaboration with high school faculty and staff will be essential for the success of the program, both for implementation of the program and for tracking data. The percentage of needs met in Cumberland County will also be measured. This is calculated by the average daily attendance at summer meals sites compared to the number of students eligible for free and reduced-price meals.

Mental health status will be tracked to measure the health impact of the program. Increasing the number of students enrolled in college after graduating high school can help decrease the prevalence of poor mental health outcomes (Niemeyer, 2019; Cohen, 2020). Food insecurity is also associated with poorer mental health outcomes (McLaughlin et al., 2012). Therefore, increasing college enrollment through reduced prevalence of food insecurity should lead to better mental health overall. Baseline mental health during high school can be measured with surveys that are administered in the classroom or at the meal sites. Follow-ups can occur over the summer when students return home from college. These surveys can be distributed through high school alumni records with the help of school administrators. The program staff can develop their own survey to measure mental health outcomes, or use other surveys that are available, such as the PHQ-9 (Spitzer et al., n.d.) or the online screening tool provided by Mental Health America (MHA, 2020).

Specific Measures

Specific measures include the total number of meals served and number of days each site is open. Measuring these outputs can be as simple as keeping a daily record. Demographics and

participant satisfaction should also be measured through surveys. These can help identify what is going well and areas for improvement. Both of these outputs can be measured as part of the baseline mental health survey administered by on-site staff. This survey will also either be created by staff, or utilize the PHQ-9 (Spitzer et al., n.d.) or the MHA's online screening tool (MHA, 2020).

A multivariate analysis between these measures and mental health outcomes could reveal correlations that may be useful in guiding the future of the program. For example, if there is a correlation between number of days a site is open and improved mental health, then future efforts could focus on keeping sites open more frequently.

Stakeholder Engagement Activities

The first activity to engage stakeholders (Appendix D3) would be a site visitation. This would allow stakeholders to see the success of the program, the quality of the meals served, the number of meals served, and the activities that are available. The site visitation can happen at any point during the program but should take place during a time when meal sites have developed a strong base of regular participants.

The second activity would be a volunteer day, where stakeholders could help with preparation and/or distribution of meals. This would allow them to interact directly with the adolescents and get further engaged with the inner workings of the program.

Budget and Funding

Estimated costs for the program are approximately \$453,400.00 per year, or \$2,267,000.00 over five years (Appendix). Funding for the program can be in the form of grants or USDA meal reimbursements. No Kid Hungry offers \$10,000 grants to help feed students over

the summer (Craft, 2019). If food for the program is sourced locally, the USDA Farm to School Grant Program also offers several grants to help fund the program (USDA, 2021).

Reimbursement for healthy meals served is provided through the USDA. In 2020, Cumberland County was reimbursed \$2,040,482 for healthy meals served over the summer (2020 Summer Nutrition Program, 2020). However, this number is only 11% of the potential funding that could have been accessed. If 100% of needs were met, an additional \$15,799,655 could have been brought into the county through USDA reimbursement (2020 Summer Nutrition Program, 2020).

Any funds would be invested directly into the program and be used to pay for staff, food, meal preparation, supplies, and equipment. Funds would also be used to keep meal sites open more often and create more meal sites which will increase participation in the program.

Strengths and Limitations

The biggest strength of the program will be reducing food insecurity. This can lead to further benefits, such as improved grades, social skills, and mental health status (Alaimo et al., 2001), which can increase students' ability to enroll into college (Eccles et al., 2004). The local economy will also get a boost through USDA supplementation, creation of jobs, and increased buying and selling of food products.

One challenge is that it could be difficult to get sponsors to implement the program because of the large time and resource commitment. Keeping sites open frequently can also be a challenge due to limited funding, staff, and resources.

Data Dissemination

Any data collected will be made available to the public. The progress made year-to-year will be used to lobby for additional funding and increase stakeholder engagement in the program.

There will be two types of data collected: program statistics and outcomes statistics. The program statistics will include factors such as how many meals were served, how many sites served meals, and average daily attendance. Outcomes will include the number of high school graduates who enrolled into college and mental health survey results.

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Appendix D3

Table 15. Stakeholders for the Free Summer Meals Program

Stakeholder	Impact
Adolescents	This is who the program will directly affect, and their needs should be considered above all else. The success of the program is dependent on how well their needs are met.
Parents and Families	Depending on the family, parents could play a key role in the success of the program. They could be the ones who discover the program, provide transport to the program, or encourage their children to attend the program. Many parents want what is best for their children, so marketing this program toward parents may be an effective strategy.
School Teachers and Administrators	They can help promote the program and administer surveys to students and parents. They are in direct contact with students, and also have access to email or text alerts to market the program toward parents and families. Depending on the sponsor, teachers and administrators could also help implement the program and serve meals directly to their students.
Nutritionists and Dietitians	Provide nutrition recommendations and suggestions for meal components. Because meals need to follow USDA nutrition guidelines, it would be wise to consult with nutritionists and dietitians to determine how to get nutritionally dense meals for a low cost. They can help plan for students with food allergies or sensitivities to ensure that anyone who needs a meal can get one.
Policymakers	Able to lobby for the program. Increased funding could help open more sites, hire more employees, and reach out to more students. Policymakers will be instrumental in getting increased funding and assistance.
Cumberland County Public Health Department	Can help play a role in implementing the program. They are the local public health experts, so they can assist in identifying sponsors, allocating resources, and providing suggestions for improvement.

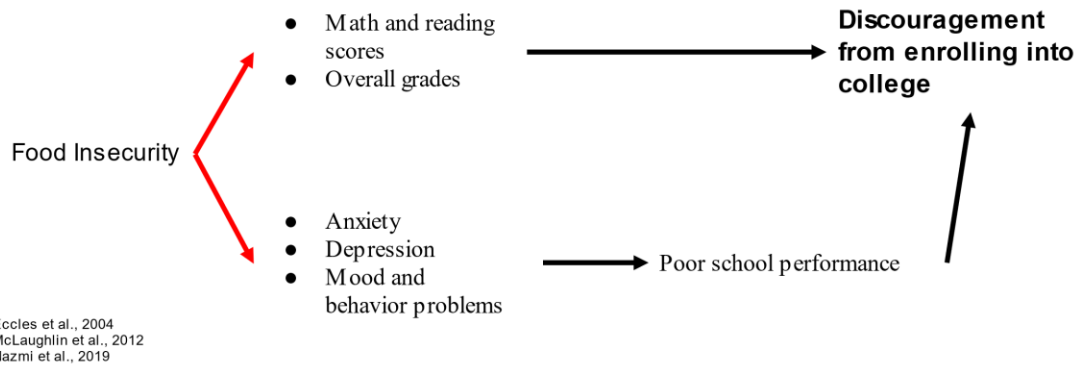
Table 16. Yearly and 5-Year estimation of Free Summer Meals Budget

Description	Units	Estimated Cost
Salaries	Program Director, Volunteer Manager, Nutritionist/Dietitian, Graduate Research Assistants	\$200,000.00 per year
Equipment	Printers, Laptops	\$3,400.00 one time
Supplies	Printer Ink/Paper, Posters, Plates, Cups, Silverware, Additional Groceries	\$250,000.00 per year
Total		\$453,400.00
Total (5 years)		\$2,267,000.00

Presentation

Nutrition Program: Free Summer Meals

Background



From a nutrition lens, Free Summer Meals can help indirectly increase college enrollment. Food insecurity doesn't directly affect whether an adolescent decides to enroll in college, but it can negatively affect students' grades and mental health, which could lead to poor performance in school and discouragement from enrolling into college.

Nutrition Program: Free Summer Meals

Background

77.0% of public school students in Cumberland County are enrolled in Free and Reduced -price lunches (NC average: 58.6%)

This meal supplementation disappears during the summer

Free Summer Meals fills the gap during the summer (June through August)



Kids Count Data Center, 2020

Food insecurity is a problem in Cumberland County, with 77% of public school students enrolled in free and reduced-price lunch program. Students enrolled in this program are able to get a free meal while at school, but this supplementation disappears during the summer. Free Summer Meals fills this gap and provides free meals to students during this time.

Nutrition Program: Free Summer Meals

Program Components

Free, nutritious meal to anyone under the age of 18
No ID or registration required!

Meals served are reimbursed by USDA



Example of a meal distribution site

No Kid Hungry, n.d.

The way free summer meals works is that anyone under the age of 18 who shows up to a meal distribution site can receive a free meal. There is no ID or registration required, so this helps increase participation and accessibility, and remove the stigma around receiving a free meal. Healthy meals served are reimbursed by the USDA, so money is brought into the local economy for every meal that is served.



Nutrition Program: Free Summer Meals

Program Evaluation

Strengths and Challenges

- Reduce food insecurity
- Large commitment of time and resources

Estimated cost

- ~\$500,000 per year
- Grants, USDA meal reimbursements

Stakeholder Engagement

- Site visitation
- Volunteer day

Outcomes

- College enrollment, mental health status
- Total meals served, demographics, participant satisfaction

Strengths of the program include reducing food insecurity which can help increase college enrollment, but we recognize that it is a very large commitment of time and resources, as the estimated costs of the program are about \$500,000 per year, but there are several grants that could help fund the program along with the USDA meal reimbursement. Stakeholder engagement activities would include a site visitation and a volunteer day, and these outcomes that we will be measuring will be used to guide the future of the program.

Appendix E: DONNA KRZASTEK'S INDIVIDUAL DELIVERABLES

Problem Statement

According to the World Health Organization, “the social determinants of health (SDoH) are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life”(WHO 2021). Education is a catalyst for building a healthy and higher quality of life (Cutler 2006). Healthy People 2020 chose education access and quality as one of the critical social determinants of health due to a growing body of evidence demonstrating how education plays a vital part in determining individuals and communities’ overall health. Data demonstrates the effect of education level and a robust educational environment on a longer life span and overall health (Olshansky 2012).

First, education provides children and adults with essential knowledge, thereby enhancing one’s overall understanding of health and impact on lifestyle choices (Healthy People 2030). Additionally, education provides invaluable social and psychological development for children, adolescents, and adults (Healthy People 2030). Graduation from college further improves overall health and well-being (Olshansky 2012). According to the U.S. Bureau of Labor Statistics, higher educational attainment correlates with a higher weekly wage. For example, weekly earnings in 2017 for those with the highest educational attainment levels were more than triple those lacking a high school diploma. And workers with at least a bachelor’s degree earned more than the \$907 median weekly earnings for all workers (Torpey 2018). Additionally, higher educated individuals are less likely to suffer from chronic conditions such as heart disease, diabetes, anxiety, and depression (Cutler 2006). Overall, college graduates are more likely to

lead healthier lives and experience greater mental health. This paper aims to focus on the Healthy People 2020 goal to increase the proportion of high school graduates who were enrolled in college the October immediately after completing high school (Healthy People 2030, n.d.) In addition to increasing overall health with this intervention, one would also expect to improve mental health outcomes.

Geographic and historical context

Cumberland County's location is in the Coastal Plain region of North Carolina. As of 2019, the total estimated population of Cumberland was reported at 332,861 (NCDOC 2020). Fort Bragg is a large military installation in North Carolina with 68% of its members living in Cumberland County (CCDPH 2019). The majority of the county population, at 27.8%, consists of the age group of 0-19 years of age. For ages 25 and older, 91% of the population obtained a high school diploma, and 25.5% acquired at least a bachelor's degree. While the high school graduation rate is higher than the state of North Carolina, the percentage of citizens with at least a bachelor's degree is lower. It is also notable that 18% of the population lives below the poverty level, and the unemployment rate is 8.4% (NCDOC 2020). The area's racial makeup consists of 51.1 % white, 39.1% Black, and 12.1% Hispanic or Latino (NCDOC 2020).

The Cumberland County Schools district is the 4th largest school district in the state and 78th in the country. Because of the school district's size compared to the state of North Carolina and other counties in the US, education is a crucial target objective to help achieve a more significant number of high school graduates enrolling in college post-graduation.

Priority Population

This intervention's focus population in Cumberland County is high school students 14 to 18 years of age. According to the U.S. Census Bureau, 24.7% of the county's population is less

than 18 years of age (NCDPH 2019). Cumberland County has over 15,000 high school students enrolled with only 34.1% of graduates taking the SAT (NCDPH 2019). The percentage of high school students with symptoms of depression or thoughts of suicide is increasing over time. The latest data from 2019 shows 36.7 % of high school students in the U.S. reported feeling sad or hopeless (CDC Mental Health Fact Sheet 2020). Per the CDC, among children living below 100% of the federal poverty level, more than 1 in 5 (22%) had a mental, behavioral, or developmental disorder (Cree 2018).

Measures of Problem Scope

Cumberland County has a low number of residents with a bachelor's degree at 25.5 % compared to 29% in the state of North Carolina. According to the State of the County Health Report in Cumberland of 2019, found suicide to be one of the leading causes of death between the ages of 22 to 39, highlighting mental health care as a need in the county (CCDPH 2020). The Mental Health Statistics reveal a higher rate of poor mental health and frequent mental distress than the state (CCDPH 2019). Additionally, in March 2020, the North Carolina Public School Board Annual Report of School Crime and Violence showed 220 crimes committed in Cumberland county school year 2018-2019 (NCBOE 2020). Interestingly, the county boasts a higher than the usual average of mental health providers at 278.5 per 100,000 people (CCDPH 2019).

Rationale/Importance

Schools play an essential role in good mental health (Kiran 2015). Obtaining a higher level of education provides improved salary, better living conditions, and positive health outcomes. Individuals with a higher education level are more likely to make better decisions for their health and seek health care when needed (Cutler 2006).

Disciplinary Critique

Cumberland County public health leaders are tasked to identify the root cause of their high school graduates' low college enrollment rates. As a public health leader, it is vital to recognize the positive effect of overall health and well-being education provides. By designing an intervention to increase enrollment and increase enrollment diversity, the community could see a decrease in suicide deaths in the county over time and an overall improvement in mental health outcomes.

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System, Stakeholder, and Transformational Analysis

Social Determinant of Health (SDoH) – Education Access and Quality

According to the World Health Organization, “the social determinants of health (SDoH) are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life” (WHO 2021). Education is a catalyst for building a healthy and higher quality of life (Cutler 2006). Healthy People 2030 chose education access and quality as one of the critical social determinants of health due to a growing body of evidence demonstrating how education plays a vital part in determining individuals and communities’ overall health. Data shows the effect of education level and a strong educational environment to longer life span and overall health (Olshansky 2012).

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People 2030 goal to increase the proportion of high school graduates who were enrolled in college the October immediately after completing high school (Healthy People 2030). In addition to increasing overall health with this intervention; one would also expect to see an improvement in mental health outcomes.

Program/Policy Transformation

Schools play an important role in good mental health (Kiran 2015). Obtaining a higher level of education provides improved salary, better living conditions, and positive health outcomes. Individuals with a higher level of education are more likely to make better decisions for their health and seek health care when needed (Cutler 2006). The programs researched focused on ways to increase the proportion of high school graduates who were enrolled in college the October immediately after completing high school.

A recent study using student enrollment and degree records reviewed more than 200,000 high school students who were participating in dual enrollment in community college courses. Results demonstrated 88% of students continued in college after high school. Success varied state by state showing disparities in completion rates related to the income status of the students (Fink 2017).

One example is the College Credit Plus Program in Ohio, a dual enrollment program that enables students in grades 7 through 12 to simultaneously earn college and high school credits by taking courses at community colleges or universities. All expenses for enrolled students who attend a public school in the state of Ohio are paid, including tuition or books. This program successfully addresses health equity by minimizing the time and cost required to obtain a college degree (Ohio Dept of Higher Education, 2020). The success of the College Credit Plus Program in Ohio is demonstrated by the positive results. In the 2019-2020 school year, 76,973 students

participated in the program. Female students comprised 58% of the class and 19.3% were considered economically disadvantaged. Of the students who graduated high school in the 2015-2016 academic year, 78% matriculated to post-secondary institutions (20.31% in 2-year colleges and 79.69% in 4-year colleges), with 93.61% of students continuing to sophomore year, 92.21% to junior year, and 84.83% to senior year. In subsequent years, approximately 75% of the program's students matriculate into college each year. The total tuition saved for the 2019-2020 school year was \$155,704,864 (Ohio Dept of Higher Education, 2020).

One of the advantages of such programs is that students can earn certificates and Associate degrees before graduating high school. Data from the Ohio program demonstrated students continue to college to achieve higher education after graduation from high school. The program offers Innovative Programs for students who are underrepresented in higher education; including students of color, those in poverty, and first-generation students by providing course pathways and work experiences in Computer Science, Digital Media, English Composition, Science, Technology, Engineering, Math (STEM) careers, Creative Arts, and Hospitality. However, a disadvantage is that students who are enrolled in a private school or are homeschooled are charged a small fee to enroll in the program. Additionally, for any failing grades, the school district may require reimbursement to compensate the state funds that were utilized on course enrollment. Lastly, states still show disparities in completion rates between lower and higher-income students (Fink, 2020). Strategies will need to be considered to continue to close the gap between students of varying incomes.

Overall, successful implementation or expansion of dual enrollment for students in Cumberland County will lead to an increase in college enrollment. A careful examination of existing programs and strategies to improve or expand these programs to increase enrollment is

needed. In particular, developing strategies to increase enrollment in lower-income families and marginalized communities is paramount to the success of the program

Stakeholder Identities, Roles, and Engagement

A stakeholder analysis matrix and a Power Interest Grid were utilized to determine the key stakeholders needed for the successful implementation of a dual enrollment program in North Carolina (Appendix E1). In order to successfully implement a dual enrollment program for high school students, many stakeholders influence the outcomes. The stakeholder matrix evaluated the impact and influence each participant will provide for the program implementation (Mind Tools n.d.). The stakeholders evaluated include high school students, parents, counselors, dual enrollment advocacy groups, governmental agencies, and state policymakers.

High school students 13 to 18 years of age and Parents. High school students identified as the priority population in Cumberland County are one of the most important stakeholders. Representatives will be chosen to participate in a focus group to better understand the barriers and obstacles encountered to success while in high school and beyond. By receiving feedback from students representing various demographics of the county population, program facilitators will gain a better understanding of how to best serve them in an equitable manner. The students will be encouraged to participate and provide feedback in the monthly meetings. Parents also play an important role in providing feedback for the program. Parents will be key to supporting the student and encourage participation. However, parents also need to evaluate if the student can take on the extra work a college course will require.

The Cumberland County School Board (CCSB). The Cumberland County School Board plays a key role in allocating funds to support a dual enrollment program. If some of the classes are offered on-site, additional staffing and guidance should be provided to support the

program. The CCSB will play an important role in requesting additional funds for the program or program expansion. The CCSB will participate in quarterly meetings with state policymakers to champion the need for dual enrollment expansion.

The Fayetteville Technical Community College. This college is already a key partner with the Cumberland County School District and supports the current High School Connections to help facilitate enrollment into the dual enrollment program currently in existence. The college boasts a strong commitment to diversity, equity, and inclusion. Their partnership will not only help foster ideas to increase college enrollment but will also help facilitate diversification of enrollment.

High School Counselor. The local high school counselor provides valuable support and guidance for students in every step of the process. Students will need encouragement and support in the application process for the program. Additionally, the counselor should be available as problems arise. It is important to consider what an appropriate caseload would be for the counselor so adequate time can be allotted for students. Also, the counselor can impart necessary feedback on program success or obstacles so that the needs of the students can be met more effectively.

State Policymakers and NC General Assembly. Currently, the NC dual enrollment program, Career and College Promise, is funded by the NC General Assembly (NCDPI n.d.). However, the funding only covers tuition and not books or supplies. Transforming the current program would involve simplifying the application process, program expansion, and funding expansion to include books and supplies. State policymakers and state legislature representatives are key stakeholders to convince of the benefits of additional funding and program expansion.

College in High School Alliance (CHSA). The College in High School Alliance (CHSA) “is a coalition of leading nation and state organizations that works towards a future in which every state, and the federal government, has a policy framework that ensures that student access, participation and success in college in high school programs accurately reflects that geographic, demographic, and economic make-up of the nation’s high school students (CHSA n.d.). The CHSA is a great resource to utilize to develop a framework for funding models to support dual enrollment programs geared to trying to close equity gaps (Zinth 2019). Working in tandem with state policymakers and representatives, a member of CHSA would actively participate in an advisory panel for program implementation centered around funding and equity concerns. Information and feedback sessions will be scheduled more frequently during the planning stages and then every 6 months once a feasible program is implemented. The CHSA would also collaborate with a focus group consisting of parents and students to address concerning access surrounding race, family income status, or other demographics.

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Appendix E1. Table

Table 17. Stakeholder Analysis Matrix

Stakeholder Name	Impact	Influence	What is important to the stakeholder?	Stakeholder Contribution	Block by Stakeholder	Engaging Stakeholder
<i>High School Student</i>	<i>High</i>	<i>Low</i>	<i>Students need an equitable program to achieve higher education with lower costs to enable earlier “life” decisions such as home purchase or having a family</i>	<i>Voice importance of program and provide feedback on goals and needs</i>	<i>Unwillingness to participate in program</i>	<i>Monthly meetings</i>
<i>College in High School Alliance (CHSA)</i>	<i>Medium</i>	<i>Medium</i>	<i>Provides ideas for a framework to encourage state policymakers to strengthen programs; student advocates</i>	<i>Communicate with stakeholders to champion program and provide support</i>		<i>Information and feedback meetings every 6 months</i>
<i>State policymakers</i>	<i>Medium</i>	<i>High</i>	<i>Increasing workforce readiness; positively impacting the economy</i>	<i>Ensure funding mechanisms to remove financial barriers to low or moderate income students</i>	<i>Not support funding or expanding the role of dual enrollment programs</i>	<i>Quarterly meetings</i>
<i>Cumberland County School Board</i>	<i>High</i>	<i>High</i>	<i>Improving student outcomes; procure additional funding for school</i>	<i>Encourage student participation/ offer support and provide staffing to support program</i>	<i>Not allocating funding appropriately or staffing to support the program</i>	<i>Quarterly meetings</i>
<i>Parents</i>	<i>High</i>	<i>Medium</i>	<i>Improving student outcomes and lessening financial burden for education</i>	<i>Encourage student participation/ offer support and guidance</i>	<i>Not participation or discouraging student from enrolling</i>	<i>Quarterly meetings</i>
<i>High School Counselor</i>	<i>High</i>	<i>High</i>	<i>Improving student outcomes and helping student to find the right program</i>	<i>Encourage student participation/ offer support and guidance/help remove financial barriers</i>	<i>Lack of time to spend with student/ lack of support staff to handle workload</i>	<i>Quarterly meetings</i>
<i>North Carolina General Assembly Representative</i>	<i>High</i>	<i>High</i>	<i>Currently provides funding for the NC Career and College Promise program/ funding expansion</i>	<i>Expanding funding will help remove financial barriers for students and will provide more equity across all student backgrounds</i>	<i>Not approving funding or funding expansion</i>	<i>Quarterly meetings</i>
<i>Fayetteville Technical Community College</i>	<i>High</i>	<i>High</i>	<i>To increase college enrollment and provide a more diverse student population</i>	<i>Partners with CCSB to continue to develop dual enrollment program and assist students in choosing appropriate career pathway</i>		<i>Quarterly meetings</i>

Engagement Plan

Education is a catalyst for building a healthy and higher quality of life (Cutler 2006). Healthy People 2020 chose education access and quality as one of the important social determinants of health due to a growing body of evidence demonstrating how education plays a key part in determining the overall health of individuals and communities (Healthy People, n.d.). Higher educated individuals are less likely to suffer from chronic conditions such as heart disease, diabetes, anxiety and depression (Cutler 2006). Data continues to demonstrate the effect of education level and a strong educational environment to longer life span and overall health (Olshansky 2012).

In Cumberland County, North Carolina, 91% of the population aged 25 and older obtained a high school diploma and 25.5% acquired at least a bachelor's degree (NCDOC 2020). While the high school graduation rate is higher than the state of North Carolina, the percentage of citizens with at least a bachelor's degree is lower. It is also notable that 18% of the population lives below the poverty level and the unemployment rate is 8.4% (NCDOC 2020). According to the State of the County Health Report in Cumberland of 2019, suicide was found to be one of leading causes of death between the ages of 22 to 39 highlighting mental health care as a need in the county (CCDPH 2020). The Mental Health Statistics reveal a higher rate of poor mental health and frequent mental distress compared to the state (CCDHP 2019).

The purpose of this Accountable Care Community is to develop a coalition of stakeholders within the community of Cumberland County with the University of North Carolina, Fayetteville Technical Community College, and other key partners to expand the current dual enrollment program in order to increase the proportion of high school graduates who are enrolled in college the October immediately after completing high school in Cumberland

County (Appendix E2). A secondary outcome for improvement is the overall mental health in Cumberland County. Specifically, a decrease in the number of suicide deaths and an increase in overall mental health.

Initial Engagement

To facilitate expansion of the dual enrollment program in North Carolina, a series of interviews and surveys with stakeholders will be conducted. These stakeholders represent the Cumberland County School Board, members of the Parent and Teacher Association, students, state policymakers, the UNC System, Fayetteville Technical Community College and a representative from the North Carolina General Assembly (Appendix E2). Data rendered will elucidate a better understanding of potential barriers, positive and negative impacts of dual enrollment expansion, and financial impact to implement the program.

Several tools are utilized to evaluate key project collaborators needed for successful and sustainable stakeholder engagement. Initially, a Focus Group will be formed between the Parent Teachers Association and Student Government Association to determine needs of the parents and students as well as possible perceived barriers to enrollment. Specifically, this Focus Group will include students and parents who represent all ethnic and economic backgrounds. “Data from North Carolina 10th graders in the 2014-2015 academic year demonstrated that students who go on to participate in the College Transfer Pathway are more likely to be female (63% compared to 50%) and white (76% to 56%), to speak English at home (93% compared to 86%), and to have a higher high school GPA (4.0 on average, compared to 3.2) showing the current program is not equitably reaching the most underserved populations”(Deal 2020). Initially, the Focus Groups will meet monthly to gather in-depth knowledge of barriers to dual enrollment and ways to facilitate a greater participation by students representing the greatest need. Once the program is

initiated, the stakeholder members from the Focus Group will participate in quarterly Dual Enrollment Advisory Committee meetings to offer feedback and valuable evaluation of the program.

An extensive Dual Enrollment Advisory Committee will be formed representing stakeholders from Cumberland County. This Advisory Committee will meet quarterly and will include Deanna Jones, Cumberland County School Board Representative, Marvin J. Lucas, NC General Assembly Representative, a member from the Parent Teacher Association, a member from the Student Government Association, a member from the CHSA, and a high school counselor. These stakeholders will provide valuable insight into the county's needs, assets, and barriers to successful enrollment and strengthening of the program.

The Give-Get Model demonstrated the contributions and benefits provided from the two major partnerships of the program (Table 18). From the Give-Get Model, we see that the universities and community colleges benefit by increased enrollment, a more diverse student population, and better equipped students for college. The stakeholder power analysis tool evaluates their power to positively impact the program versus their level of interest in being involved (Mind Tools, n.d.). From the Power Analysis (Figure 3), we see the Cumberland County School Board, the North Carolina General Assembly, and high school counselors all have tremendous ability to make a positive impact on the program and have a high level of interest. These stakeholders must be engaged often and kept informed of any pitfalls or blockage. Parents and students have less impact, but still need to be kept informed of the program.

Memorandum of Understanding

The purpose of this MOU is to establish an agreement between the Cumberland County Department of Public Health (CCDPH) and Fayetteville Technical Community College to increase the proportion of high school graduates who are enrolled in college the October immediately after completing high school in Cumberland County by strengthening the current dual enrollment program in North Carolina. A secondary outcome measure is to improve the overall mental health outcomes in Cumberland County.

Obligation of Partners

The Partners acknowledge that no contractual relationship is created between them by this Memorandum, but agree to work together in the true spirit of partnership to ensure that there is a united visible and responsible leadership of the Dual Enrollment Program Expansion and to demonstrate financial, administrative and managerial commitment to the Program by means of the following individual services.

Term

The arrangements made by the Partners by this Memorandum shall remain in place from August 1st, 2021 until August 1st, 2022.

Understanding

- a.** Each Partner will work together in a coordinated fashion of the fulfillment of the Program.
- b.** In no way does this agreement restrict the Partners from participating in similar agreements with other public or private agencies, organizations, and individuals.
- c.** To the extent possible, each Partner will participate in the development of the Program.

- d.** Any Partner may terminate its participation in the Memorandum by providing written notice to the other Partners.

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Appendix E2. Tables and Figures

Table 17. Stakeholder Analysis Matrix

Stakeholder Name	Impact	Influence	Importance	Stakeholder contribution	Stakeholder block	Stakeholder Engagement
<i>High School Student/ Student Government Association</i>	<i>High</i>	<i>Low</i>	<i>Students need an equitable program to achieve higher education with lower costs to enable earlier “life” decisions such as home purchase or having a family</i>	<i>Voice importance of program and provide feedback on goals and needs</i>	<i>Unwillingness to participate in program</i>	<i>Monthly meetings</i>
<i>College in High School Alliance (CHSA)</i>	<i>Medium</i>	<i>Medium</i>	<i>Provides ideas for a framework to encourage state policymakers to strengthen programs; student advocates</i>	<i>Communicate with stakeholders to champion program and provide support</i>		<i>Information and feedback meetings every 6 months</i>
<i>State policymakers</i>	<i>Medium</i>	<i>High</i>	<i>Increasing workforce readiness; positively impacting the economy</i>	<i>Ensure funding mechanisms to remove financial barriers to low or moderate income students</i>	<i>Not support funding or expanding the role of dual enrollment programs</i>	<i>Quarterly meetings</i>
<i>Cumberland County School Board Representative, Deanna Jones</i>	<i>High</i>	<i>High</i>	<i>Improving student outcomes; procure additional funding for school</i>	<i>Encourage student participation/ offer support and provide staffing to support program</i>	<i>Not allocating funding appropriately or staffing to support the program</i>	<i>Quarterly meetings</i>
<i>Parents/ Parent Teacher Association</i>	<i>High</i>	<i>Medium</i>	<i>Improving student outcomes and lessening financial burden for education</i>	<i>Encourage student participation/ offer support and guidance</i>	<i>Not participation or discouraging student from enrolling</i>	<i>Quarterly meetings</i>
<i>High School Counselor</i>	<i>High</i>	<i>High</i>	<i>Improving student outcomes and helping student to find the right program</i>	<i>Encourage student participation/ offer support and guidance/ help remove financial barriers</i>	<i>Lack of time to spend with student/ lack of support staff to handle workload</i>	<i>Quarterly meetings</i>
<i>North Carolina General Assembly Representative, Marvin J Lucas</i>	<i>High</i>	<i>High</i>	<i>Currently provides funding for the NC Career and College Promise program/ funding expansion</i>	<i>Expanding funding will help remove financial barriers for students and will provide more equity across all student backgrounds</i>	<i>Not approving funding or funding expansion</i>	<i>Quarterly meetings</i>
<i>University of North Carolina System Representative</i>	<i>High</i>	<i>High</i>	<i>To increase college enrollment and provide a more diverse student population</i>	<i>Partners with CCSB to continue to develop dual enrollment program/ assist students in enrollment and degree pathway</i>		<i>Quarterly meetings</i>
<i>Fayetteville Technical Community College, Dr. J. Larry Keen</i>	<i>High</i>	<i>High</i>	<i>To increase college enrollment and provide a more diverse student population</i>	<i>Partners with CCSB to continue to develop dual enrollment program and assist students in choosing appropriate career pathway</i>		<i>Quarterly meetings</i>

Figure 3. Power/Interest Grid of Stakeholders

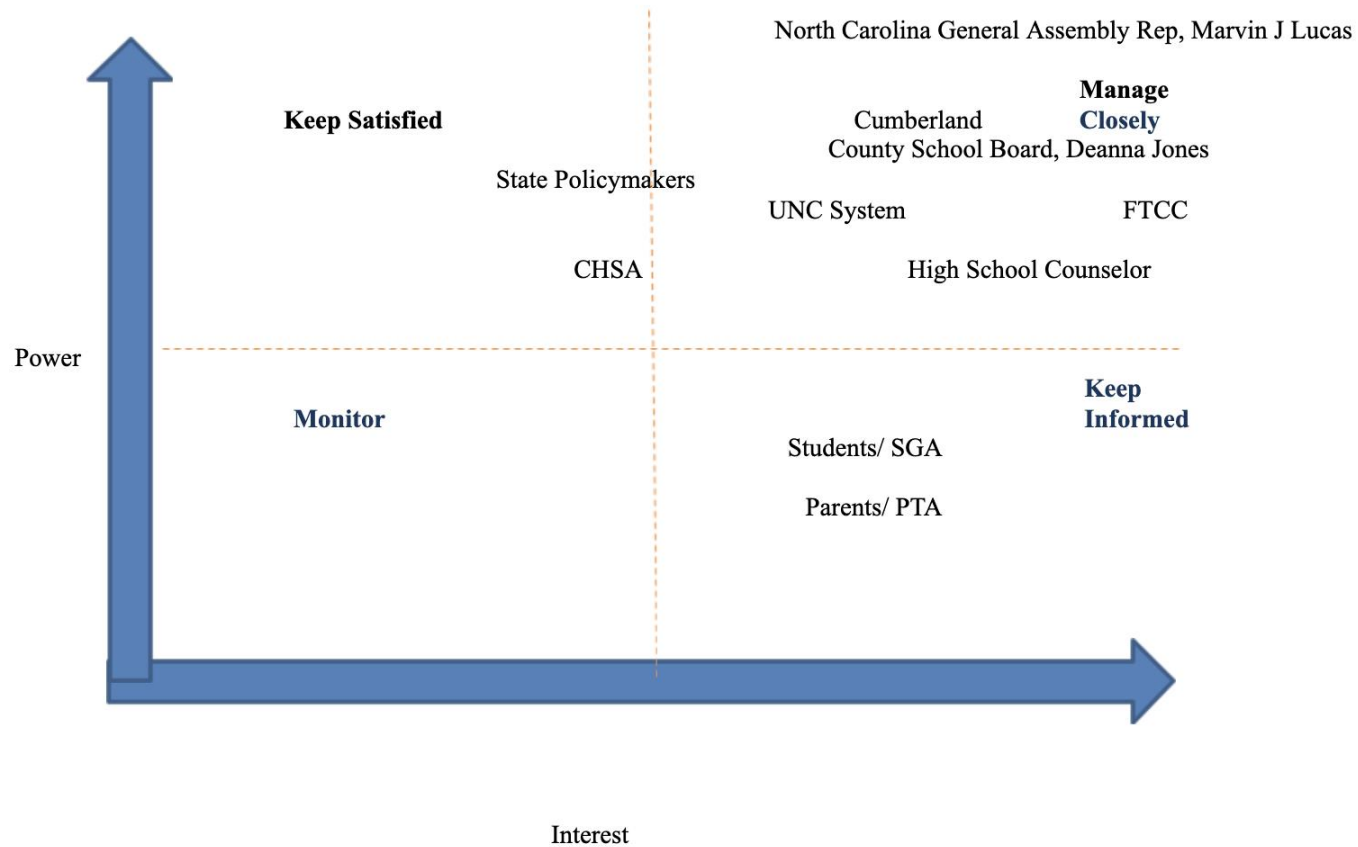


Table 18. Give-Get Grid

Participant	Contributions	Benefits
UNC System Fayetteville Technical Community College Plan	<ul style="list-style-type: none"> ● Assist students in enrollment ● Program development ● Program evaluation ● Student support ● Advice for parents 	<ul style="list-style-type: none"> ● Increased college enrollment ● Students are more prepared for further learning ● More diverse student population
Stakeholders/ Advisory Committee	<ul style="list-style-type: none"> ● Student input into program ● Student feedback on program ● Parent feedback on ease of application 	<ul style="list-style-type: none"> ● Less time required after high school to complete college ● Less tuition for entire degree ● Classes are usually smaller ● Students get exposure to potential career paths prior to high schedule graduation

Fayetteville Technical Community College

*Key Partner with Cumberland County School District and current High School Connections program

*Commitment to diversity, equity, and inclusion - help foster ways to increase diversity in current program



Good evening Dr. Keen, thank you for joining tonight's discussion of expanding the current dual enrollment program in Cumberland County. As you are aware, a goal of Healthy People 2030 is to increase the proportion of high school students enrolled in college the October following graduation. Our primary goal is to increase enrollment in Cumberland County while focusing on increasing diversification in enrollment. Because of your college's commitment to diversity, equity, and inclusion, we hope you will join our ACC to collaborate on how to best increase college enrollment of our county while reaching our most under-represented groups.

Appendix F: KELLIE MARKERT'S INDIVIDUAL DELIVERABLES

Problem Statement

Social Determinant of Health: The Centers for Disease Control and Prevention define social determinants of health as “conditions in the environment 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,” (Social determinants of health, n.d.). These determinants are broken down into five subgroups; economic stability, education access and quality, health care access and quality, neighborhood and built environment, and social and community context, (Social determinants of health, n.d.). Each determinant can have a large impact on an individual and community’s health outcome, (Social determinants of health, n.d.).

Healthy People 2030 has a list of goals and objectives for every social determinant of health. Their educational aspect focuses on providing high-quality educational opportunities for children and adolescents. A Healthy People 2030 objective is SDOH-06, Increase the proportion of high school graduates in college the October after graduating.

Research shows that levels of education have been directly correlated to significant health outcomes, (Schrag, 2014). For example, the data shows that adults with lower educational attainment are more likely to report worse health outcomes, babies of mothers who did not graduate high school are twice as likely to die before their first birthday compared to those whose mothers graduated high school, and college graduates are expected to live at least five years longer than those who did not complete high school, (Schrag, 2014). Studies also show a negative correlation between poor mental health during childhood and educational attainment,

(Brannlund, Strandh, and Nilsson, 2017). There is a strong link between educational success and adult life, which the data shows that more resources are needed to support children with mental health problems, (Brannlund, et al., 2017).

Geographic and Historical Context

Cumberland County in North Carolina is 652.32 square miles, (Cumberland County Department of Public Health, 2019). This county has roughly 335,000 residents as of July 2019, (U.S. Census Bureau QuickFacts). This county has one of the highest population density in the Eastern North Carolina region, with 489.7 persons per square mile, (Cumberland County Department of Public Health, 2019). Cumberland County is home to one of the largest U.S. Army's installations in the world, Fort Bragg, (Cumberland County Department of Public Health, 2019).

The median household income for Cumberland County, (\$44,810), is lower than the median household income for North Carolina, (\$48,256), (Cumberland County Department of Public Health, 2019). 17.6% of the residents in Cumberland County live below the federal poverty level, which is higher than the rate of residents in North Carolina, (Cumberland County Department of Public Health, 2019). The unemployment rate is 5.8% in Cumberland County, (Cumberland County, n.d.).

There are seven colleges in Cumberland County, North Carolina, (Colleges in Cumberland County, North Carolina, n.d.). The acceptance rate of the schools is 75.67%, and the average 2020 tuition is \$16, 150.00, (Colleges in Cumberland County, North Carolina, n.d.). Cumberland County has 278.5 mental health care providers per 100,000 population, which is higher than the state's rate, (Cumberland County Department of Public Health, 2019). In 2017,

there were reports of 1,173.1 mental health-related visits to the emergency departments per 100,000 population, (Cumberland County, n.d.).

Priority Population

In Cumberland County, 25.7% of children are living below the federal poverty level, (Cumberland County Department of Public Health, 2019). In 2017, records show that the juvenile delinquent rate increased to 30 per 1,000 youth, which is higher than the state rate of 19.6 per 1,000 youth, (Cumberland County Department of Public Health, 2019). Adolescents who commit crimes may be less likely to obtain educational credentials to help them better succeed in life, (Cumberland County Department of Public Health, 2019). Factors that can have a negative impact on an adolescent's decision making would be negative peer pressure, history of abuse or neglect, mental health issues, and family problems, (Cumberland County Department of Public Health, 2019). 70% of youth in the juvenile justice system have at least one mental health condition, (Mental Health by the Numbers, 2020).

Treating health problems that can impact an adolescence ability to do well in school can decrease the dropout rates, (Schrag, 2014). Dropping out of high school can make an individual earn less income, are more likely to be unemployed, generally less healthy which require more medical care, heightened criminal activity, and higher incarceration rates, (Cumberland County Department of Public Health, 2019). Recent research predicts that decreasing dropout rates could save approximately \$7.3 billion dollars of Medicaid spending annually, (Schrag, 2014).

Measures of Problem Scope

Approximately 4.5 million children in the United States have been diagnosed with depression, (Data and Statistics on Children's Mental Health, 2020). Among children living in poverty, 1 in 5 (roughly 22%), had a mental, behavioral, or developmental disorder, (Data and Statistics on

Children's Mental Health, 2020). Three in four children that have depression also have anxiety (73.8%) and almost one in two children have behavioral problems, (47.2%), (Data and Statistics on Children's Mental Health, 2020).

In North Carolina 2013-2014, about 88,000 adolescents had at least one major depressive episode, (Substance Abuse and Mental Health Services Administration, 2015). 59.3% of these individuals did not receive treatment for depression, (Substance Abuse and Mental Health Services Administration, 2015). Of all the age groups served by the public mental health system, 69.6% were unemployed, (Substance Abuse and Mental Health Services Administration, 2015).

Rationale/Importance

Mental Health is a leading cause of health-related burden for this age group, accounting for 15-30% of the disability-adjusted life-years lost during the first three decades of life, (Kieling, et al., 2011). A child having a mental health illness can affect their ability to study and learn, (Education and Recovery, n.d.).

According to Mayo Clinic, during the pandemic individuals may experience stress, anxiety, fear, sadness, and loneliness, which can make mental health disorders such as anxiety and depression much worse, (COVID-19, 2020). A large-scale analysis done by England's Mental Health of Children and Young People revealed a 50% increase in the percentage of children reporting mental health problems in 2020, (Ungar, 2021).

Disciplinary Critique

Policies need to be created that focus on providing more educational resources to high school students are needed in Cumberland County, North Carolina. Despite the understanding of the importance of mental health prevention in children and adolescents, there is an enormous gap between the needs of the community and the available resources, (Kieling et al., 2011). By

providing an education and helpful resources, individuals will learn how to work through their own problems, create and obtain goals, and lastly how to make healthy life choices. Policies can help redirect the educational resources to better assist the community needs of Cumberland County.

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Policy Analysis

Background

There are many factors that can impact an individual's health status, (Education access and quality, n.d.). Some of the factors that are known to have a large impact on an individual's health outcomes are economic stability, education access and quality, health care access and quality, neighborhood and built environment, and social and community context, (Education access and quality, n.d.). Each of these factors interact with each other as well, (Education access and quality, n.d.).

One of the Healthy People 2030 objectives is to “increase the proportion of high school graduates in college the October after graduating,” (Education access and quality, n.d.). In Cumberland County, North Carolina only 25.5% of the population have a bachelor's degree, which is less than the state average of 29%, (North Carolina Department of Commerce, May 2020).

Educational attainment can improve an individual's socioeconomic status, increase access to social support, and increase access to health insurance coverage, (Zimmerman & Woolf, 2014). Educational attainment also allows for an individual to learn problem solving, character development, and how to make healthy lifestyle choices, (Zimmerman & Woolf, 2014). In the United States in the last four decades, there is an ever-growing increase in life expectancy for higher education levels, and a decrease in life expectancy among lower education levels, (Zimmerman & Woolf, 2014).

Policy Options

Two policy options to increase college enrollment would be to 1) require all high school seniors in North Carolina's public-school system to fill out the free application for Federal

Student Aid, (FAFSA) and 2) to eliminate the standardized test scores requirements for college applications.

Each policy option was evaluated based on criteria such as; the impact on statewide college enrollments rates, the cost to North Carolina, sustainability of the policy, and the political feasibility of implementation. Each assessment criteria were ranked from one (unfavorable) to four (favorable) in a table included in Appendix J1. Given the poor health outcomes from lack of education, and the low rates of bachelor's degrees within Cumberland County, as well as North Carolina as a state, the impact criteria was double-weighted. Sustainability is an important component of increasing the rate of college enrollment, and obtaining a bachelor's degree, so this is also double-weighted. The cost to North Carolina and political feasibility was not double-weighted.

Policy 1: Requiring all high school seniors in North Carolina public-schools to complete the free FAFSA application.

The impact of this policy was ranked a four. Research shows that about 1/3 of students who did not file for FAFSA would have been eligible, (Hodara, 2017). Many low-income students do not access federal aid, which leads to not enrolling in college at all, (Hodara, 2017). These individuals are a large portion of the population that are missing out on funding that could allow them to attend college. The costs for this policy was ranked as unfavorable, at lowest score of 1. On the state level, there will be an increase in the number of students who apply and are eligible for aid, which would increase federal/state spending. At a local level, schools would need to add time in their curriculum to explain the importance of filling out an application, how to fill out an application, and answer any other questions the students or parents may have.

This policy option had a low political feasibility. This policy may be difficult to implement since it is asking for more state/federal funding to provide aid to more high school/college students. Two stakeholders that would be in support for this policy would be teachers and students. These stakeholders may not have political power, but they will be the ones who will be most impacted. Teachers have a vast knowledge of FAFSA, and the application process so they can assist their students. This policy can be life changing for students who may not believe they can afford college and are unaware of the social/financial support systems that are in place for them, (Lee, 2020). One stakeholder that would be opposed to this policy would be some federal aid employees, since this will add on a greater workload for them to process more applications in a timely manner.

Policy 2: Eliminate the standardized test score requirements on college applications for public universities/colleges in North Carolina.

Currently in 2021, more than 1,600 four-year schools are not requiring scores for undergraduate applications, including every school in the Ivy League, (Adams, 2020). Many schools have already changed to being test optional, which means students have the option to take a standardized test, but it is not a requirement, (Lee, 2020). One student says, “There are many students across the country who no longer have access to test prep, or to their school's free test date, or whose living situation has been changed and no longer have time to study for standardized tests. Those are the students that this test-optional campaign aims to help”, (Lee, 2020).

While analyzing the data in recent research, the impact on college enrollment was ranked the highest score possible for this policy. One school, Hampshire College decided to eliminate their test score requirements for applications. The percentage of students who accepted

Hampshire College's invitation to enroll at their school, increased from 18% to 26% in just one year of dropping the SAT requirements, (Lash, 2016). Within new applications since dropping the standardized test requirements, class diversity has increased from 21% to 31%, and first-generation from their families to attend college rose from 12% to 18%, (Lash, 2016).

This policy also ranked very favorable on the cost aspect of the table. Since this policy is eliminating a past requirement, there will be no additional costs to federal, state, or local levels. Students and parents will also save money by not having to pay tutoring fees, and testing fees. This policy is sustainable, many schools have already started to become test optional.

This policy ranked low in political feasibility. The College Board and ACT, Inc. stand by their testing because without it, they will be out of business. One spokesperson states "ACT scores are highly predictive of success in college, they provide colleges with a standardized measure of academic readiness that can be used to compare students from different schools, districts, and states on a level playing field, something that no other admission factor can provide," (Lee, 2020).

Some parents will be against this policy because they agree with the statements made by the board and are concerned that colleges will not be accepting students that can succeed more than others. While some parents will be in support of this policy. It will allow lower-income children that may not have the time, access, or funds to get tutoring or sit for the exams, still be able to apply to college to better their future.

A group of stakeholders that would be in support of this policy would be a non-profit organization called Student Voice. The Student Voice is calling for all colleges and universities to adopt test-optional policies for fall 2021 with a campaign called #TestOptionalNOW, (Lee, 2020).

Final Recommendation

My final recommendation would be to eliminate the standardized test score requirements on the college application for all public colleges/universities in North Carolina. This policy scored the highest on the criteria table for impact, cost, sustainability, and political feasibility. This policy has been implemented in many other states so far and has seen an increase in applications.

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Program Budget

Summary

In February 2020, it was reported that 42,120 children, which is 76% of the public-school students in the county, were eligible for free and reduced-price school meals, (2020 Summer Nutrition Program 4 NC Kids, n.d.). Healthy People 2020 defines food insecurity as “the disruption of food intake or eating patterns because of lack of money and other resources,” (Food insecurity, n.d.). Food insecurity is related to poorer performance in schools and poorer mental health status, (McLaughlin, et al., 2012). To address food insecurity, we would like to implement the Farm to Summer/Free Summer Meals. This program provides free meals to students during the summertime, to ensure they still have access to a well-balanced meal when school is not in session. The meals will be sourced from local farms. The goal of this program is to provide every child in Cumberland County with a healthy meal.

There is currently a program in place that we hope to expand upon to fully reach the community members, (2020 Summer Nutrition Program 4 NC Kids, n.d.). In 2018, almost 85% of children from economically challenged families are not accessing these summer meal programs due to lack of transportation, lack of knowledge, and lack of local schools being used as meal sites, (Summer: No Kid Hungry, 2018). Each year this program’s goal is to expand to reach more and more children. In the first year, we hope to reach 40% of children who qualify for free/reduced meals, by providing them with four meals a week. By year two, we hope to reach 60% and provide five meals a week. By the third year, we hope to reach 80% of children who qualify and provide seven meals a week. This program will last from June until August, for a total of fourteen weeks, (2020 Summer Nutrition Program 4 NC Kids, n.d.).

The meals provided to students will follow the United States Department of Agriculture, (USDA), nutrition guidelines. These meals can also encourage children to try vegetables and fruits they may not otherwise have access to. This program can also help reduce food waste among farmers, since the food will be donated to the program, (2020 Summer Nutrition Program 4 NC Kids, n.d.). This program aims to reduce any stigma as it does not require any type of registration or ID to get a free meal. If anyone under the age of 18 years shows up at a designated distribution site, they can get a free and nutritious meal.

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Budget

Grants	
USDA Farm to School Grant	\$2,500,000
President's Choice Children's Charity school grant	\$275,000
Total	\$2,775,000

			Year One		Year Two		Year Three		
Description	Unit	Unit Cost	Quantity	Amount in USD	Quantity	Amount in USD	Quantity	Amount in USD	Total
Human Resources									
Hiring Coordinator	Staff	\$ 50,000.00	FTE	\$ 50,000.00	2% increase	\$ 51,000.00	2% increase	\$ 52,020.00	\$ 153,020.00
	Health insurance		30%	\$ 15,000.00		\$ 15,300.00		\$ 15,606.00	\$ 45,906.00
Manager for Volunteers	Staff	\$ 40,000.00		\$ 40,000.00	2% increase	\$ 40,800.00	2% increase	\$ 41,616.00	\$ 122,416.00
	Health insurance		30%	\$ 12,000.00		\$ 12,240.00		\$ 12,484.80	\$ 36,724.80
Volunteers to Sort Food	Staff	In-kind	10	\$ -	20	\$0.00	20	\$0.00	\$ -
Nutritionist	Staff	\$55,000.00	FTE	\$ 55,000.00	2% increase	\$56,100.00	2% increase	\$57,222.00	\$ 168,322.00
	Health insurance		30%	\$ 16,500.00		\$16,830.00		\$17,166.60	\$ 50,496.60
Graduate Student, Nutritionist	Staff	\$45,000.00	FTE	\$ 45,000.00	2% increase	\$45,900.00	2% increase	\$46,818.00	\$ 137,718.00
	Health insurance		30%	\$13,500.00		\$13,770.00		\$14,045.40	\$ 41,315.40
Farmers	Staff	In-kind	10	\$0.00	10	\$0.00	10	\$0.00	\$ -
Volunteers to organize locations	Staff	In-kind	10	\$0.00	10	\$0.00	10	\$0.00	\$ -
									\$ -
Facilities and Equipment									
Classroom space	Unit	In-kind	10	\$0.00	10	\$0.00	10	\$0.00	\$0.00
Cafeteria space	Unit	In-kind	2	\$0.00	2	\$0.00	2	\$0.00	\$0.00
Auditorium	Unit	In-kind	1	\$0.00	1	\$0.00	1	\$0.00	\$0.00
Printer	Unit	\$200.00	2	\$400.00	-	\$0.00	-	\$0.00	\$400.00
Supplies									
Printer ink cartridges	Cartridge	\$54.00	10	\$540.00	10	\$540.00	10	\$540.00	\$1,620.00
Printing paper	Carton (8 reams)	\$46.00	2	\$96.00	2	\$96.00	2	\$96.00	\$288.00
Markers (36 ct)	Pack	\$25.00	2	\$50.00	2	\$50.00	2	\$50.00	\$150.00
Pens	Pack	\$10.00	2	\$20.00	2	\$20.00	2	\$20.00	\$60.00
	Unit	\$13.00	365	\$4,745.00	365	\$4,745.00	365	\$4,745.00	
Posters to advertise when meals will be provided									\$14,235.00
Plates (165 ct)	Pack	\$20.00	5720	\$114,400.00	10,725	\$214,500.00	20,015	\$400,300.00	\$729,200.00
Cups (360 ct)	Pack	\$15.00	2622	\$39,330.00	4,914	\$73,710.00	9,175	\$137,625.00	\$250,665.00
Plastic silverware (360 ct.)	Pack	\$15.00	2622	\$39,330.00	4,914	\$73,710.00	9,175	\$137,625.00	\$250,665.00
Napkins (260 ct)	Pack	\$10.00	3630	\$36,300.00	6,804	\$68,040.00	12,701	\$127,010.00	\$231,350.00
Additional Groceries	Pack	\$3,000.00	40	\$120,000.00	60	\$180,000.00	80	\$240,000.00	\$540,000.00
Vegetables	Pack	In-kind	1000	\$0.00	1,000	\$0.00	1,000	\$0.00	\$0.00
Meats	Pack	In-kind	1000	\$0.00	1,000	\$0.00	1,000	\$0.00	\$0.00
Dairy Products	Pack	In-kind	1000	\$0.00	1,000	\$0.00	1,000	\$0.00	\$0.00
				\$602,211.00		\$867,351.00		\$1,304,989.80	\$2,774,551.80
Total									
									\$2,774,551.80

Budget Narrative

This program is from June through August, totaling 14 weeks of meals to students. The hiring coordinator will begin work in February to ensure we have adequate staff and volunteers. Nutritionists and graduate students will begin work in April to confirm what farmers are interested in participating, what the farmers typically grow during the summer months, and to start meal planning. This time will also be used at grocery shops for things such as the printer supplies, plates, cups, napkins, and silverware.

Hiring coordinator: This individual will be in charge of hiring, conducting initial interviews, and providing 6-month follow-up performance reviews for the manager of volunteers, graduate student, and part-time nutritionist. This individual will also work with the manager of volunteers to solicit volunteers for this program. The hiring coordinator will do payroll for all paid employees, and tax reporting information. This individual will be full-time and will get a 2% salary increase each year. Health insurance will be provided for this individual, which would be about 30% of their pay.

Manager for volunteers: This individual will manage volunteers and will work with the hiring coordinator to advertise for people to volunteer for these positions, communicating with the volunteers on what needs to be done, how, and when. Another job responsibility of the manager is making sure that volunteers show up to help, and an adequate number of volunteers show up on each given day of the meal pick-ups.

Volunteers to sort food: The volunteers will be responsible for sorting out the food that will go to each student. These volunteers will work closely with the graduate student to ensure that every meal is meeting the USDA nutritional guidelines. Our goal is to have twenty volunteers.

Full-time Nutritionist: This individual will create a menu for each week, with feedback from the graduate student. This individual will be responsible for describing the breakdown of the proteins, fat, carbs, vitamins, and minerals in each meal. This individual will be full-time and will get a 2% salary increase each year. Health insurance will be provided for this individual, which would be about 30% of their pay.

Graduate student, Nutritionist: The main responsibility of the nutritionist graduate student will be to create meal plans given the food provided by the farmers that meets the USDA nutritional guidelines. The nutritionist will help create a menu for each week, and grocery shop for items such as spices, or other food items not provided by the farmers. This individual will be part-time and will get a 2% salary increase each year. Health insurance will be provided for this individual, which would be about 30% of their pay.

Farmers: Farmers will be the sole provider for this program. Farmers will be ensured that none of their food goes to waste.

Volunteers to organize locations: These volunteers will focus on where to conduct the distribution sites within Cumberland County to be accessible to the most people. These individuals will create posters and flyers to advertise for the distribution locations and times. These individuals will also be in charge of creating an easy atmosphere for individuals to get their meals. For example, sitting up tables for easy accessibility.

Classroom Space: Classroom space will be used to create posters and sort out food. This will free up some space in the cafeteria where most of the meal prepping is taking place.

Cafeteria Space: The cafeteria space is where the food will be prepped and cooked. Adequate space is very important. Right now, many schools are not open, so a school cafeteria is a great in-kind option for this program.

Auditorium: Food will be distributed from the auditorium.

Printer: Printers will be used to print communication materials. The cost of a standard printer is \$200.00.

Office supplies, such as Printer ink cartridges, printing paper, markers, pens, and posters: will be used to create flyers and posters to be used as communication methods for the distribution locations.

Plates, cups, plastic silverware, and napkins: Disposable items will be provided to each student during each meal. In year one, we plan to reach 16,848 kids, providing four meals per week which would be a total of 67,392 meals per week, for a grand total of 943, 488 meals over the fourteen weeks. In year two, we plan to reach 25,272 kids, providing five meals per week, which is 126, 360 meals per week, and a grand total of 1,769,040 meals for the full fourteen weeks. In year three, we plan to reach 33,696 kids, providing a meal each day of the week which totals to 235,872 meals, and a grand total of 3,302,208 meals for the full fourteen weeks.

Vegetables, meats, and dairy products: These items will be sourced by our farmers who are kind enough to donate their food to helping children.

Additional grocery items: These items will be purchased by the full-time nutritionist. These items include spices, seasonings, and other products that are not included by the farmers.

Appendix F1: Table

Table 19. Comparing the two policies

Policy Option	Impact on statewide college enrollment rates	The cost to North Carolina	Sustainability of the policy	Political Feasibility	Unweighted Score (out of 16 possible points)	Weighted Score (out of 24 possible points)
<i>Weight</i>	<i>X2</i>	<i>X1</i>	<i>X2</i>	<i>X1</i>	-	-
Requiring all high school seniors in North Carolina public-schools to complete the free FAFSA application.	4	1	3	2	10	17
Eliminate the standardized test score requirements on college applications for public universities/colleges in North Carolina.	4	4	3	1	12	19

Fact Sheet Script

Thank you representative and members of the committee for allowing me to speak. My name is Kellie Markert, and I'm here representing the Cumberland County Accountable Care Community. I am here today to speak in support of House Bill: 338, Statewide elimination of the standardized test requirements for undergraduate applications to all public universities and colleges in North Carolina.

Cumberland County should be in support of implementing this policy for three main reasons.

1. With the covid-19 pandemic, we are seeing a bigger shift towards schools not requiring test scores on applications. Many students across the country no longer have access to test prep, or their school's free test date, or whose living situation has been changed, and no longer have time to study. In 2021, more than one thousand six hundred schools are not requiring scores for undergraduates' applications, including all of the Ivy League schools. One college, Hampshire College, saw an increase in applications from 18% to 26% in just one year of dropping the testing requirements.
2. Mental health is a leading cause of health-related burden for adolescents. Mental health problems can affect a student's ability to study and learn. Mental Health is a big concern for this community. According to the Health Report in 2019, suicide was one of the leading causes of death between the ages of 22 to 39.
3. Educational attainment can improve an individual's socioeconomic status, increase access to social support, and increase access to health insurance coverage. Only 24% of Cumberland County's residents have obtained a bachelor's degree. Higher levels of education are associated with better health outcomes.

Thank you again for allowing me the time to speak in support of House Bill 338. Every child deserves the right to an education. Please support the Statewide elimination of the standardized test requirements for undergraduate applications to all public universities and colleges in North Carolina, house bill 338.

I am happy to answer questions but will need to wait for the chair to recognize members before answering the questions.

A group of eleven diverse students, including young men and women of various ethnicities, are sitting on a wide stone ledge outdoors. They are all smiling and looking towards the camera. The background shows a well-maintained lawn, some trees, and a building with a white fence. The students are dressed in casual attire like t-shirts, jeans, and sweaters.



Statewide Elimination of Standardized Test Requirements For College Applications

- This includes all of the schools in the Ivy League.¹
- Many students across the country no longer have access to test prep, or their school's free test date, or whose living situation has been changed, and no longer have time to study.²
- applications increase from 18% to 26% in just one year of dropping requirements.³

- Mental Health is a leading cause of health-related burden for adolescences.⁴
- Mental health can affect an adolescent's ability to study and learn.⁵
- Suicide was a leading cause of death in Cumberland County.⁶

- Improve an individual's socioeconomic status.⁷
- Increase access to social support.⁷
- Increase access to health insurance coverage.⁷
- Lead to better health outcomes.⁷

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