

ENHANCING COMMUNITY RESILIENCE: A HOLISTIC APPROACH TO ADDRESSING
SUBSTANCE ABUSE IN BURKE COUNTY

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A thesis submitted to the faculty at the University of North Carolina at Chapel Hill in partial fulfillment
of the requirements for the degree of Masters of Public Health in the MPH@UNC program in the Gillings
School of Global Public Health.

Chapel Hill
2024

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ABSTRACT

Alexis Caron Miller, Kimberly McNeill Tirpak, Kylee Elizabeth Warren, Jessica Yates-Crowder:
Enhancing Community Resilience: A Holistic Approach to Addressing Substance Abuse in Burke County
(Under the direction of Margaret Eaglin and W. Oscar Fleming)

Substance abuse in Burke County, NC has been a significant concern with rising overdose death rates despite targeted efforts. The proposal addresses substance abuse in Burke County with an emphasis on social and peer support in fostering community resilience and positive health outcomes. Social networks will be leveraged to provide resilience, coping mechanisms, and access to treatment and prevention resources. An analysis of substance abuse trends, demographics, and current support services was completed leading to recommendations for enhanced social and peer support systems. The proposed initiative aims for equity, accessibility, and sustainability, while recognizing the challenges of substance abuse, geographics, and privacy concerns. Evidence-based strategies along with stakeholder collaboration aim to achieve the goal of reducing substance abuse rates and improving overall community well-being in Burke County.

TABLE OF CONTENTS

COMMON PROPOSAL	1
INTRODUCTION.....	1
SDOH ANALYSIS.....	1
CONTEXTUAL ANALYSIS.....	2
RECOMMENDATIONS FOR ACTION.....	3
CONCLUSION	5
REFERENCES	7
APPENDIX A: GROUP DELIVERABLES	8
A.1 RICH PICTURE	8
A.2 GROUP PRESENTATION.....	9
A.3 ADDITIONAL TABLES AND CHARTS REFERENCED IN PROPOSAL	21
APPENDIX B: ALEXIS CARON MILLER.....	24
B.1 SOCIAL DETERMINANTS OF HEALTH ANALYSIS	24
B.2 SYSTEMS DELIVERABLE 1	29
B.2.A APPENDIX.....	34
B.3 ENGAGEMENT DELIVERABLE 2	35
B.3.A APPENDIX.....	41
APPENDIX C: KIMBERLY MCNEILL TIRPAK.....	42
C.1 SOCIAL DETERMINANTS OF HEALTH ANALYSIS	42
C.1.A APPENDIX.....	49
C.2 POLICY DELIVERABLE 1.....	50
C.3 QUALITY DELIVERABLE 2	56

APPENDIX D: KYLEE ELIZABETH WARREN	61
D.1 SOCIAL DETERMINANTS OF HEALTH ANALYSIS	61
D.1.A APPENDIX.....	67
D.2 ENGAGEMENT DELIVERABLE 1	70
D.2.A APPENDIX.....	75
D.3 POLICY DELIVERABLE 2	77
D.3.A APPENDIX.....	82
APPENDIX E: JESSICA YATES-CROWDER	84
E.1 SOCIAL DETERMINANTS OF HEALTH ANALYSIS	84
E.1.A APPENDIX.....	90
E.2 QUALITY DELIVERABLE 1	92
E.2.A APPENDIX.....	97
E.3 SYSTEMS DELIVERABLE 2	98

Common Proposal

Introduction

This proposal aims to address the intersection between the social and community context social determinant of health (SDOH) and community well-being, emphasizing substance abuse reduction and prevention within Burke County. By focusing on social and peer support in relation to substance abuse, Burke County will benefit from long-term improvements in community health. The proposal will review methods used to analyze current substance abuse trends and available social and peer support within the county and provide recommendations. The recommendations utilize existing community resources in combination with innovative strategies to promote increased, positive peer support and ultimately reduce substance abuse. With the implementation of recommendations, Burke County can make impactful changes to improve the health and well-being of their community.

SDOH Analysis and Recommendations

Social Determinants of Health (SDOH) are the conditions in the environments where people are born, live, learn, work, play, worship, and age that impact their health and overall quality of life (U.S. Department of Health and Human Services, n.d.). SDOH are grouped into 5 domains including economic stability, education access and quality, healthcare access and quality, neighborhood and built environment, and social and community context (U.S. Department of Health and Human Services, n.d.). Within the social and community context, the focus is on people's relationships, interactions, and connectedness to family, friends, co-workers, and others that affect their health and well-being (U.S. Department of Health and Human Services, n.d.).

Particularly with challenges such as substance abuse, social and peer support is an important factor in fostering community resilience and positive health outcomes. Adults are integral members of the community who are significantly affected by substance abuse in Burke County, North Carolina and yet despite targeted efforts, overdose death rates continue to rise, with 20 deaths in 2018 up to 64 in 2021 (Burke County Health Department, 2022; *Medication and Drug Overdose in Burke County*, n.d.). Research has consistently shown that individuals with strong social support tend to have increased

resilience due to coping mechanisms and feelings of connectedness among other resources and protective factors (Stevens et al., 2014). By prioritizing social and peer support and promoting community resilience, Burke County can mitigate adverse effects of substance abuse on individuals and their community.

To develop this proposal, a comprehensive data analysis of substance abuse trends were examined including prevalence, demographics, and existing policies and support services. The availability and effectiveness of social and peer support within the county was evaluated in order to identify strengths and opportunities for improvement. Recommendations to improve support for individuals with substance abuse are provided with a focus on leveraging existing resources in Burke County. With a collaborative approach involving stakeholders from various sectors in the county, sustainable solutions can be implemented to address the root causes of substance abuse.

Contextual Analysis

As of 2021, Burke County had alarming rates of opioid and drug overdose deaths, with 31.3 and 39.7 deaths per 100,000 residents, respectively (NCDHHS, 2021). Due to its intricate and interconnected nature, this wicked problem is compounded by the county's rural environment, scarcity of behavioral health services, and privacy concerns. A causal loop diagram (Appendix B.2.A) illustrates the multifaceted and layered nature of substance abuse, with factors such as shame and limited healthcare access reinforcing each other in a cyclic manner. The "success to the successful" system archetype reinforces disparities, with those lacking resources continuing to be left underserved, displaying inequity in resource allocation for substance use treatment. The goal of this analysis and recommendations is for Burke County to see reduced substance abuse, improved social and peer support within the community, and augment current interventions to improve efficacy.

Currently, Burke County's strategies to reduce substance abuse lack a social and community focus and instead focus on individual interventions and the criminal justice system (*Burke County Recovery Court Implementation*, 2018). However, initiatives such as the Certified Peer Support Specialist Program may be impactful as it employs individuals in recovery to provide support to others impacted by

substance abuse, increasing social and peer support (*North Carolina Certified Peer Support Specialist Program*, 2022). Indirectly, zoning ordinances and homeless camp clean-ups have negatively impacted those affected by substance abuse as their social networks are disrupted and limited resources are readily available (*Impact of Encampment Sweeps on People Experiencing Homelessness*, 2022).

In order to address these challenges related to substance abuse effectively, Burke County must aim to develop and implement evidence-based strategies targeting individual substance abuse issues and underlying community factors. Collaboration among internal and external stakeholders is crucial for success as stakeholder engagement has been shown to have a positive impact on efforts towards social inequities and social determinants of health (SDOH) (O'Mara-Eves et al., 2015). Taking into account motivation, power, and influence, a stakeholder analysis map (Appendix A.3) was utilized to identify eight stakeholders: a community member dealing with substance abuse, the Coalition Chair at Burke Substance Abuse Network (BSAN), Program Director at Helping Achieve Recovery through Burke Opioid Use Reduction (HARBOUR), a Public Health Education Specialist from Burke County Health Department, a Social Worker at Burke County Social Services, a Psychologist at A Caring Alternative, and a Burke County Commissioner.

Given Burke County's collaborative political environment, further integrating Peer Support Specialists into existing programs aligns with evidence-based approaches and community engagement priorities. Collaboration with other programs, such as those focused on homelessness, provides opportunities for the county to address root causes holistically. Overall, the new initiative's success, which depends on all stakeholders' active participation and collaboration, will be measured by enrollment in treatment programs, reduction in substance abuse rates and relapses, and increased community support and access to services.

Recommendations for Action

The actions recommended for addressing substance abuse in Burke County are comprehensive and strategic, focused on quality utilizing change concepts. In Burke County, a culture of innovation can be fostered through brainstorming sessions that embrace open and creative thinking. Additionally, the Six

Thinking Hats technique encourages thorough exploration of potential solutions. Valuable insights can be gained by benchmarking successful initiatives in other jurisdictions, which can be adapted to suit the unique needs of Burke County. Stakeholders' responsive and evidence-based approach can be achieved by implementing a community-based peer mentoring program, which can be tested through iterative cycles using the PDSA model. Adequate resource allocation, capacity building, and collaborative partnerships with other organizations can help ensure sustainable improvement. By prioritizing the long-term effectiveness and scalability of interventions using frameworks like the Sustainability Pyramid, positive impacts on the community's health and well-being can endure.

Proposed policies aim to enhance community resilience and social support for both adults affected by substance abuse, and those not, while considering equity and resource constraints. The Joint Use Agreement (JUA) facilitates collaboration between entities to provide shared facilities, promoting social connectedness and broadening opportunities for community engagement (Joint-use, n.d.). The Fostering Opioid Recovery through Workforce Development Grant Program addresses economic and workforce challenges associated with substance use disorders, leveraging workplace environments as sources of positive social support (SUPPORT Act, n.d.). Employee Assistance Programs (EAP) offer confidential services, promoting employee well-being (Opm.gov, n.d.). EAP's can include access to fitness facilities and organize group fitness classes, which partaking in physical activity with others has been shown to increase feelings of social support (Scarapicchia et al., 2016). These policies leverage a variety of constraints to ensure accessibility to support services and community assets to foster resilience and promote positive health behavior outcomes.

To systematically address substance abuse issues effectively through social and community efforts, the team should adopt a co-design approach facilitated by Experience-Based Co-Design (EBCD). Comprehensive data on substance abuse trends provided by the county Health Education Supervisor and Public Health Director, along with the expertise of social workers in cognitive behavioral therapy and crisis intervention, form the foundation for informed decision-making. Working closely with county commissioners ensures alignment with community needs and enables transparent monitoring of

outcomes. The coalition can establish clear goals and action steps tailored to local contexts by conducting needs assessments and gap analyses. Accountability is ensured through measurable outcome metrics, fostering trust among stakeholders. Facilitating design thinking workshops and storytelling sessions allow for inclusive ideation and prototype development, focusing on person-centered interventions. Through community outreach and education, stigma reduction efforts promote access to treatment and support services. EBCD integrates mechanisms for data collection on identified metrics, guiding iterative refinements of interventions. Transparent reporting on progress fosters stakeholder engagement and collaborative problem-solving, ultimately leading to the design and implementation of effective substance abuse programs that meet the community's diverse needs.

Effective implementation of policy changes to address substance abuse in Burke County relies heavily on the engagement of community partners. By collaborating with stakeholders with varying levels of influence, power, and interest, policies can be developed to prioritize accessibility and equity of care for all residents. The expertise and insight of local community members enhance the credibility, trust, and support for these changes, ultimately increasing their reach and accessibility. Involving diverse community members in these efforts empowers residents and fosters a sense of ownership while facilitating quicker buy-in. Additionally, input from priority stakeholders, such as those directly affected by substance abuse, provides invaluable insight into the daily impacts and consequences within the community. However, barriers to engagement, such as transportation limitations, stigma, and power imbalances, must be mitigated. To address these barriers, inclusive engagement methods, such as interviews, focus groups, and surveys, are employed to gather valuable feedback from local community members, healthcare professionals, and individuals accessing recovery services. By using these strategies, a collaborative approach is established to address substance abuse, leading to more sustainable and systemic changes that meet the needs of Burke County residents.

Conclusion

This proposal offers a multifaceted approach to address complex challenges of substance abuse within Burke County, North Carolina, by emphasizing the critical role of social and peer support in

community well-being. By leveraging existing resources and implementing innovative strategies, the aim is to foster resilience, reduce substance abuse, and enhance the community's overall health. Through comprehensive data analysis, collaboration with stakeholders, and adoption of evidence-based interventions, we can work towards sustainable solutions that address individual substance abuse issues and underlying community factors. By prioritizing social support networks, implementing targeted policies, and adopting a co-design approach facilitated by Experience-Based Co-Design (EBCD), we can create a community environment that promotes positive health outcomes for all residents. With commitment and collaboration, we can make meaningful progress in improving the health and well-being of our community, paving the way for a brighter and healthier future.

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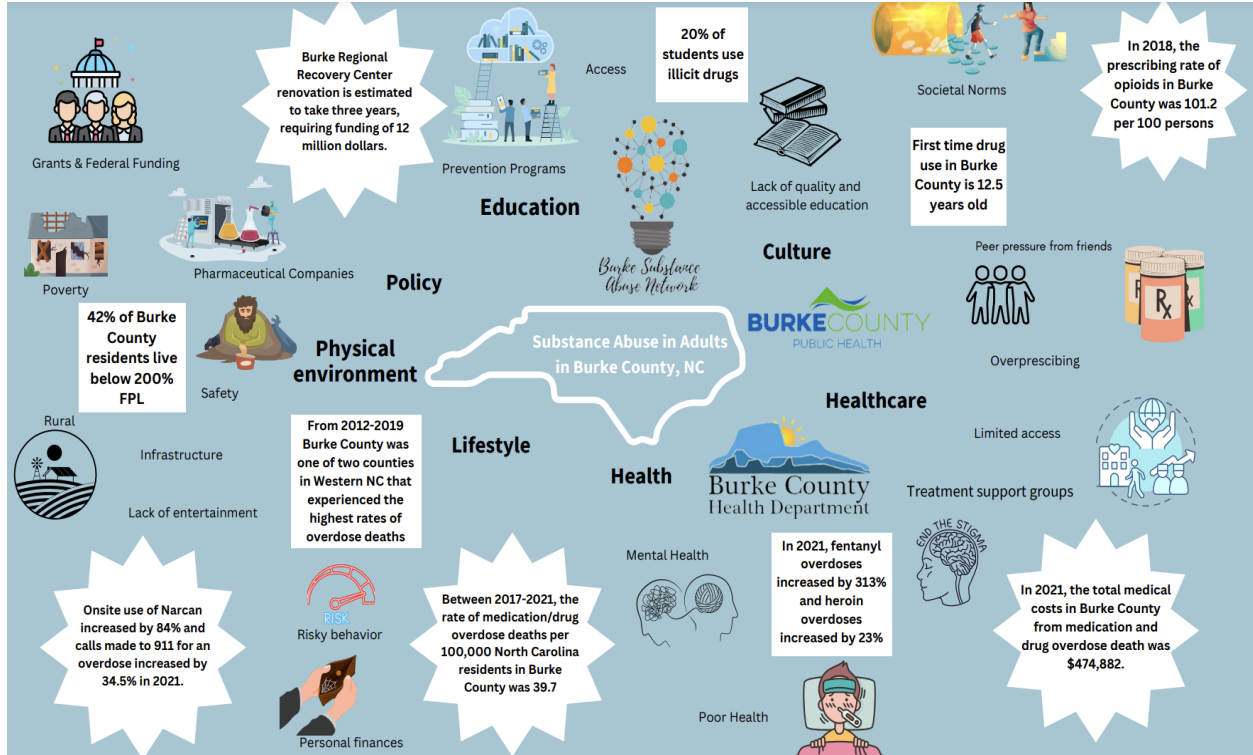
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Appendix A

Appendix A.1

Rich Picture



Appendix A.2

Group Presentation Slides



Kimberly: Today, we will present a proposal that aims to address social and peer support in relation to substance abuse within Burke County, NC.

01
02
03
04
05

INTRODUCTION

METHODS

OVERVIEW

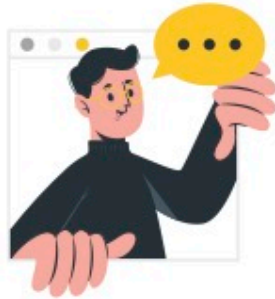
INSIGHTS AND RECOMMENDATIONS

CONCLUSION

TABLE OF CONTENTS



INTRODUCTION



SOCIAL DETERMINANTS OF HEALTH - SOCIAL AND COMMUNITY CONTEXT

- Recommendations for a county-wide implementation plan
- Address social and peer support for substance abuse within Burke County, NC

Kimberly: The social and community domain of social determinants of health looks at the relationships, interactions, and connectedness that shape an individual's well-being. Within this context, social and peer support is extremely important in fostering community resilience and positive health outcomes.

Substance abuse has impacted Burke County for numerous years and has been a top priority in the Community Health Assessment since 2016. Although substance use and substance abuse can affect people of all ages, adults 18 and over are highly susceptible to experimenting with substances and are integral members of the community. Despite targeted efforts, overdose death rates in adults in Burke County continue to rise, with 20 deaths in 2018 up to 64 in 2021. However, research shows that social and peer support along with community resilience can foster positive health outcomes due to increased coping mechanisms, feelings of connectedness, and access to resources.

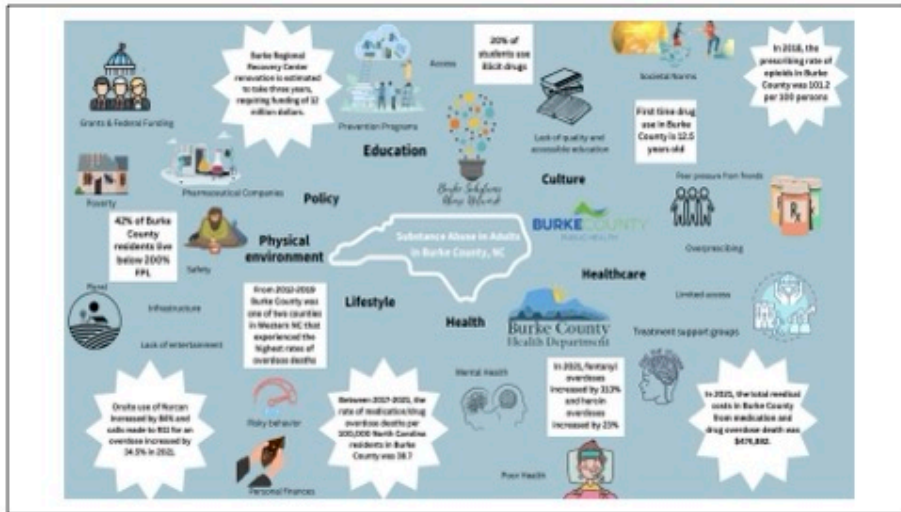
Our team has conducted an analysis of substance abuse trends within Burke County looking at prevalence rates, demographics, and current policies and support services. With this data, recommendations for improved solutions to enhance social and peer support are proposed for the county to consider for implementation.

METHODS

01	Fishbone Diagram	05	Rich Picture
02	Stakeholder Analysis Map		
03	Causal Loop Diagram		
04	Policy Goals Table and Ranking		

Kylee: To see the impact that the social and community context has on substance abuse in Burke County, North Carolina, a variety of methods were utilized focusing on systems, engagement, policy and quality. This included completing:

- Fishbone Diagram - looking at the interaction between policies, people, environment and processes, and those dealing with substance abuse
- Stakeholder Analysis - identifying individuals in the community to engage and identifying their level of interest, influence, power and involvement
- Causal Loop Diagram - showing how various systems exacerbate substance abuse. In addition to the causal loop diagram, an archetype was completed
- Policy Goals Table and Ranking - reviewing policy options to be implemented that could increase social support and community resilience and which best met goals that were in line with increasing social support and community resilience
- Rich Picture - visually depicting the relation of physical environment, policy, health, healthcare, lifestyle and culture, and substance abuse



Kylee: Here you can see the Rich Picture showing the dynamic, complex relationship between Substance Abuse in Burke County, NC with the key areas. Additionally, assets in Burke County are represented.

SDOH: SOCIAL AND COMMUNITY CONTEXT

OVERVIEW

IMPORTANCE:

- Shape the quality of life community members have
- Indicator of community resilience and positive health outcomes
- Influences health behaviors and access to healthcare
- Affects social support networks and community norms and values

BURKE COUNTY ASSETS:

- Burke Substance Abuse Network (BSAN)
- Helping Achieve Recovery through Burke Opioid Use Reduction (HARBOUR)

AREAS FOR IMPROVEMENT:

- Certified Peer Support Specialist Program (NCCPSS)

Lex:

Importance: The social and community context in Burke County has a significant impact on not only an individual's health and well-being, but also the community as a whole through people's relationships and interactions. How a community interacts with each other, their culture, social norms, and physical resources and environment shape the quality of life community members have. The amount and quality of social and peer support in a community is an important indicator of the community resilience and positive health outcomes, particularly with challenges such as substance abuse. The social and community context influences health behaviors and access to healthcare through factors such as socioeconomic statuses, social support networks, and community norms and values.

Burke County Assets: Some assets that are currently in place to support Burke County residents who suffer from substance use disorder are the Burke Substance Abuse Network and the Helping Achieve Recovery through Burke Opioid Use Reduction

Areas for Improvement: Currently, Burke County has a peer recovery program where previous community members that have struggled with substance use disorder are able

to complete a program where they then move on to become a certified peer support specialist to help fellow community members overcome substance abuse and live drug-free lives. Although this program is an asset to the community, it is new and with that, has many opportunities to become more successful and decrease relapse occurrences.

INSIGHTS AND RECOMMENDATIONS

ENGAGEMENT

- INTERVIEW COMMUNITY MEMBERS AND HEALTHCARE WORKERS
- FOCUS GROUPS FOR PEER SUPPORT GROUPS
- SURVEYS DISTRIBUTED AT RECOVERY SERVICES

SYSTEM

- CO-DESIGN TEAM
- EXPERIENCE-BASED CO-DESIGN (EBCD)

POLICY

- JOINT-USE AGREEMENT
- THE FOSTERING OPIOID RECOVERY THROUGH WORKFORCE DEVELOPMENT GRANT PROGRAM
- EMPLOYEE ASSISTANCE PROGRAMS

QUALITY

- GENERATE IDEAS: BRAINSTORMING, SIX THINKING HATS, BENCHMARKING
- TEST CHANGE: PDCA CYCLE
- SCALE AND SUSTAIN

Kylee: The proposed policies aim to enhance community resilience and social support for both adults affected by substance abuse, and not, while considering equity and resource constraints. The Joint Use Agreement (JUA) facilitates collaboration between entities to provide shared facilities, promoting social connectedness and broadening opportunities for community engagement. This can be utilized between Peer Support Specialists and libraries to hold meeting spaces for those needing social support dealing with substance abuse, as well schools can be a space utilized by Burke Substance Abuse Network to create physical activity gatherings. The Fostering Opioid Recovery through Workforce Development Grant Program addresses economic and workforce challenges associated with substance use disorders, leveraging workplace environments as sources of positive social support. As one study found that, when there is a strong connection to a group, such as a work organization, an individual is more likely to perceive social support from the others in that group. Employee Assistance Programs (EAP) offer confidential services, promoting employee well-being. Not only can an EAP provide social services, but it can include access to fitness facilities and organize group fitness classes, which partaking in a physical activity with others has been shown to increase the feeling of social support. Looking at all three policy options, the JUA policy option utilizes community assets and takes a holistic approach looking at the economic benefit to the community, mental and

physical benefit to the priority population, as well as the health behavior outcome.

Jessica: Our efforts align with broader development goals and resources of the system. We must engage with critical stakeholders, particularly the Burke County Public Health Department and their Health Education Supervisor and Public Health Director bring invaluable expertise in epidemiology, public health, and community health education. The public health department provides comprehensive data on substance abuse trends, prevalence rates, and risk factors, enabling us to make informed decisions and allocate resources effectively. Our collaboration with Burke County Social Services, particularly the Social Workers, is also instrumental alongside the Coalition Chair for the Burke Substance Abuse Network is pivotal in leading collaborative efforts by conducting thorough needs assessments and gap analyses.

-Central to our approach is accountability, transparency, and the adoption of Experience-Based Co-Design (EBCD). We define clear responsibilities, establish measurable outcome metrics, and ensure comprehensive participation among partners. Through transparent decision-making and regular progress reporting, we build trust and legitimacy, guiding iterative refinements of interventions to address evolving community needs. Additionally, community outreach and education are essential in reducing stigma and promoting access to treatment and support. We engage stakeholders through interviews, focus groups, and storytelling sessions to inform our design and implementation process.

Kimberly: For the change needed, there are three main approaches that can be used to generate ideas. Two of these, Brainstorming and Six Thinking Hats, engage stakeholders to provide ideas for potential solutions through open dialogue and encourage diverse perspectives. The final approach, benchmarking, utilizes strategies that have been successful in similar communities to inform the change idea for Burke County. Once a change idea has been selected, it is important to test the idea on a small scale and build up in order to refine and modify it for effectiveness. This testing and scaling is known as a PDSA cycle, plan-do-study-act. Once the PDSA cycle has been utilized and has shown improvement with the idea, it can be fully implemented to scale which requires resource allocation, capacity building, and collaborative partnerships. With ongoing evaluation, support through resources and funding, and partnerships, the selected change idea can be sustained.

Lex: For the most efficient community engagement, we plan to interview Burke County community members and healthcare workers, create focus groups to discuss benefits and challenges of peer support groups, and distribute surveys at recovery service centers to assess opportunities for interventions. Our priority stakeholder, which will be a Burke County resident who has first-hand experience with substance use disorder, will assist in the facilitation of all engagement methods. Having this community member involved will give assurance to other residents that these proposed changes will be created with the community in mind and be designed for the people, by the people.



Jessica: In conclusion, the proposal offers a holistic approach to addressing substance abuse in Burke County by targeting the social and community context. It aims to enhance social and peer support systems, mitigate the adverse effects of substance abuse, and promote community resilience. Through a thorough analysis of substance abuse trends and support services, actionable recommendations have been formulated to leverage existing resources and foster stakeholder collaboration. The proposed policies and interventions prioritize equity, accessibility, and sustainability, aiming to impact community well-being positively. The proposal addresses substance abuse issues effectively while considering the unique needs of Burke County residents by integrating evidence-based strategies and engaging diverse stakeholders. Success hinges on the active participation and collaboration of all stakeholders, including community members, organizations, and policymakers, fostering a culture of innovation, embracing open dialogue, and prioritizing inclusivity.



Jessica: Lastly, I would like to extend sincere gratitude to the Burke County Commissioners for their ongoing commitment to the health and welfare of the community. Their support and collaboration are essential in implementing the proposed recommendations and fostering positive change within Burke County.

Appendix A.3

Stakeholder Analysis Map

Stakeholder	Stakeholder Interest(s) in the Health Topic	Assessment of Impact	Potential Strategies for Obtaining Support and Involvement
Community member/dealing with substance abuse	Focus on accessibility and realistic change that is equitable and lacks judgment.	High interest/low influence	<p>Focus group of individuals with substance abuse for personal stories and insights.</p> <p>Create forms of communication, such as newsletters, mass emails, and brochures, to inform about programs that are accessible and affordable.</p>
Coalition Chair at Burke Substance Abuse Network	Focus on treatment and prevention services for substance abuse. Prioritize reducing gaps in care, community network and strategic planning.	High interest/high influence	<p>Serve as a leader in and help build trust in the target population and community.</p> <p>Facilitate with partners on strategic plans from prior programs and outreach.</p> <p>Collaborate with network for dissemination of education materials to the target population.</p>
Program Director at Helping Achieve Recovery through Burke Opioid Use Reduction	Focus on support to individuals with substance abuse transitioning through recovery. Prioritize access to services and education.	High interest/high influence	<p>Serve as a leader in and help build trust in the target population and community.</p> <p>Facilitate with partners on strategic plans from prior programs and outreach.</p>
Public Health	Focus on education and	High interest/moderate	Discuss strategies for

Education Specialist from Burke County Health Department	health literacy that the target population can understand. Prioritize outreach to all persons affected and there is equity in system change.	influence	outreach with partners, HARBOUR and BSAN, that focuses on the target population. Work to develop education materials with the target population in mind.
Social Worker at Burke County Social Services	Focus on the social implications and impacts that substance abuse has on not only the individual, but the community. Prioritize support and access for system change.	High interest/low influence	Assist in focus groups. Provide expertise on resources that are accessible and affordable to the target population.
Psychologist at A Caring Alternative	Focus on root causes and creating sustainable changes for long-term change.	High interest/moderate influence	Assist in focus group support. Provide professional expertise for program development and education materials.
Burke County Commissioner	Focus is on the overall health of the community. Will focus on program costs and sustainability.	Moderate interest/high influence	Raise awareness of the impact that substance abuse has on the whole community. Learn about funding opportunities to support system change.

Appendix B

Alexis Caron Miller

Appendix B.1

Social Determinants of Health Analysis

Social Determinant of Health

Social determinants of health consist of the social, economic, and environmental factors of an individual's life that influence their health outcomes, both positive and negative (World Health Organization, 2024). The determinants themselves are shaped by the distribution of resources, power, and opportunities at the community and societal levels. Social determinants of health encompass a broad range of factors beyond an individual's health behaviors and medical care. Social and community contextual factors may include discrimination and stigma, cultural norms, community resource allocation, education and literacy, and social support programs and services. The social determinants of health that contribute to substance abuse are multifaceted and interconnected. The social and community context of Burke County plays a huge role in the impact substance abuse has on the community.

In the short term, the social and community contextual factors can have immediate and impactful effects on the issue of substance abuse. Some short-term impacts include increased vulnerability in the form of economic instability and housing struggles, social discrimination and stigma, and perhaps a strain on emergency services (Braveman P., 2014). As of 2020, roughly half of Burke County's population (42%) were living below 200% federal poverty level, which is much higher than the state of North Carolina's average population living in poverty (36.8%) (Burke County Health Department, 2022). The long-term impacts of substance abuse can have lasting and profound effects. These impacts unfold over extended periods and contribute to the persistence and exacerbation of substance abuse problems. Some long-term impacts include chronic health issues, persistent economic burdens, limited social mobility, decreased productivity of the community's workforce, and multi-generational effects on the family (Braveman P., 2014). For example, in terms of life expectancy, Burke County is near the national average at 76.7 years, with cancer, heart disease, and respiratory diseases being the leading causes of death in this

county (Burke County Health Department, 2022). When assessing health outcomes, Burke County ranks in the lower-middle range out of all counties in North Carolina, between 25-50% (University of Wisconsin Population Health Institute, n.d.).

Geographic and Historical Context

Understanding the geographic context of Burke County, North Carolina, provides insights into how the local landscape and demographics may influence the issue of substance abuse. Burke County is a predominantly rural area in western North Carolina near the Blue Ridge Mountains, characterized by vast expanses of natural landscapes and smaller communities covering 514 square miles and consisting of 13 townships and municipalities (Burke County Health Department, 2022). Burke County is home to roughly 90,500 people, with the demographic breakdown of 81% White, 6.5% Black, and 6.7% Hispanic being the largest represented ethnicities (Burke County Health Department, 2022). Burke County consists of an equal gender distribution of men and women, with the median age of those living in Burke County at 44 years old. When looking at the average household income in Burke County, it sits at roughly \$48,000, lower than the North Carolina average, which is about \$57,000 (Burke Wellness Initiative, 2022). The total workforce of Burke County is roughly 38,800 individuals, with more than half working in management, business, science, arts, and service-related occupations (Burke Wellness Initiative, 2022).

When looking at housing costs in Burke County, data from 2017 shows that roughly 20% of residents were spending at least 30% of their income on housing costs. Food insecurity is also a major issue in Burke County, with 65% of students in the 2022-2023 school year being eligible for free lunch (Burke County Health Department, 2022). The high school graduation rate of students in Burke County currently sits at 88% as of 2022, a slight decrease from previous years where the rate was 91%. These health outcomes tell us “how long people live on average within a community, and how much physical and mental health people experience in a community while they are alive” (University of Wisconsin Population Health Institute, n.d.). Similarly, when looking at health factors, which are defined as indicators of the future health of our communities and represent factors we can improve to live longer and healthier lives, Burke County ranks in the higher-middle range between 50-75% (University of Wisconsin

Population Health Institute, n.d.). Understanding the demographic composition of Burke County, including age distribution, ethnic diversity, and socioeconomic status, is crucial.

Priority Population

The priority population in Burke County to address the concern of substance abuse are adults ages 18 and beyond. Currently, substance use disorder is one of the top three health priorities in Burke County (Burke County Health Department, 2022). From 2012-2019, Burke County was one of two counties in the western region of North Carolina that experienced the highest rates of overdose deaths (Burke County Health Department, 2022). As of 2018, the most prominent factors contributing to overdose deaths in Burke County were over-prescribing of opioid medications, and heroin and fentanyl overdoses (Burke Wellness Initiative, 2022).

Measures of SDOH

As cited in the priority population section, substance abuse is a very prominent concern in Burke County. According to their Community Assessment, the average first time drug use in Burke County is 12.5 years old, with approximately 20% of students admitting to using illicit drugs. Related to this data, roughly half of students in this area do not consider marijuana to be dangerous, a third do not consider alcohol consumption to be dangerous, and 40% do not consider vaping to be dangerous (Burke County Health Department, 2022). Related, approximately 23% of Burke County adults smoke tobacco, which is higher than the state average of 19% (Burke County Health Department, 2022). According to Burke County's Health report, in 2021 there were 656 overdoses, which was 18% higher than in 2020. Also in 2021, fentanyl overdoses increased by 313% and heroin overdoses increased by 23% (Burke Wellness Initiative, 2022). Addressing these alarming increases, Burke County has increased their onsite use of Narcan by 84%, which has not only saved lives but also gained traction in reducing the stigma surrounding substance use (Burke Wellness Initiative, 2022). Burke County has also created a drug-free coalition, called Burke Substance Abuse Network (BSAN) that has partnered with 32 local agencies and brought over 500 community residents together by creating a Recovery Rally to spur conversations surrounding substance abuse (Burke Wellness Initiative, 2022).

Rationale/Importance

Substance abuse in Burke County should be a public health priority due to several factors related to its geographic and demographic context. Examples of these factors include: the community's rural nature, high rates of poverty, limited access to healthcare resources, and high rates of overdose deaths in the area. These factors are interconnected and exacerbate the concern of substance abuse in the area. Understanding the prevalence of substance abuse within the specific demographic groups in Burke County is crucial for developing targeted interventions. Geographic factors such as the rural nature of the area and transportation barriers can hinder individuals from seeking timely help, making it imperative to address substance abuse as a public health concern. Substance abuse often contributes to economic instability and poverty, which can be particularly relevant in areas with limited economic opportunities. Prioritizing public health efforts can address these disparities and work towards achieving health equity for all residents of Burke County.

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Appendix B.2

Systems Deliverable 1

Systems Complexity Analysis: The System to Reduce Substance Abuse in Burke County

Description of System and Area of Concern

Substance abuse in Burke County, North Carolina is a complex and nuanced issue. As of 2021, the rate of opioid overdose deaths in this area was 31.3 per 100,000 residents (NCDHHS, 2021). Similarly, the rate of drug overdose deaths was 39.7 per 100,000 residents (NCDHHS, 2021). The system to reduce substance abuse in adults in Burke County is seen as a wicked problem in the public health context. A wicked problem is defined as, “a social or cultural problem that’s difficult or impossible to solve because of its complex and interconnected nature” (Interactive Design Foundation, 2024). One specific characteristic of a wicked problem, every wicked problem is a symptom of another, larger problem, is commonly seen in Burke County (Interactive Design Foundation, 2024). An example of this would be Burke County’s rural nature, which often goes together with increased risky behaviors due to lack of entertainment in the area, insufficient infrastructure, limited access to healthcare, and a lack of a quality and accessible education (Burke County Health Department, 2022). Rural areas often face higher rates of substance abuse because behavioral health and detox services are not as readily available or are limited in their capabilities (Rural Health Information Hub, 2022). Also, patients seeking substance use disorder treatments may be hesitant due to risk of privacy issues because of the physical nature of a smaller community (Rural Health Information Hub, 2022). Similarly, these small, rural communities rarely have adequate resources and housing for long-term recovery and detox care (Rural Health Information Hub, 2022).

Complexity of the System

Key factors that influence the social and community context of Burke County would be the poverty level of the area, with 42% of the population living below 200% FPL (Burke County Health Department, 2022). High poverty rates, high housing costs, and food insecurity are prominent social and community concerns in this area of North Carolina. These are all concerns that affect individuals,

families, and the community at large. Poverty, high costs of living, and food insecurity not only affect people physically if they are unable to feed and house themselves, but also drastically impacts people mentally. The stress of survival and needing to provide for one's family, comparison of those in a community who may have more resources, shame, discrimination, and social stigma all play a role in one's mental health, which is related to substance consumption and potential abuse. As seen in the causal loop diagram (CLD) shown below, substance abuse in Burke County is multifaceted and layered, with many overlapping factors and variables that contribute to the exacerbation of substance abuse in this area. According to the National Institute of Health (NIH), a strong indicator that an individual is at high risk of substance abuse is the age at which they begin experimenting with substances (NIH, 2023). In Burke County, the average substance user first begins at the age of 12.5 years, with 20% of students admitting to using illicit drugs (Burke County Health Department, 2022). Some examples shown in the CDL would be how shame may fuel substance abuse in Burke County, which may in turn lead to greater prevalence of poor mental health in the community, which may lead back to a greater pressure for a "release" by turning to illicit substances. Another example shown is how limited access to quality healthcare may lead to overprescribing of prescription drugs, which cycles back to high substance abuse.

One system archetype that may be at work in this rural area would be "success to the successful". Simply put, this system archetype demonstrates how a strain on resources affects a population and how one population receives resources and succeeds while another population ends up not receiving these resources and continues to be "unsuccessful" (Branz, M, 2021). In Burke County, this is seen where individuals that have access to prevention resources, education, and/or treatment for substance use disorder (SUD) are cared for over those individuals that may not have the financial, educational, or transportation resources required to seek out SUD treatment and care. The insufficient equity and allocation of SUD resources continues to prioritize those that have the means to seek this care out and continues to fail those individuals that need this care but are unable to access it.

System Leverage Points

Leverage points in a system are areas where “strategic intervention is capable of creating lasting change, creating positive ripple effects that spread far and wide” (Ehrlichman, D., 2021). Two system leverage points that can be seen from the causal loop diagram attached are in the areas of organizing principles and information flows. Variables in the CLD that would fall under organizing principles would be the overprescribing of prescription drugs and the access to quality healthcare. Variables in the CLD that would fall under information flows would be access to quality education and stigma surrounding substance abuse. For the organizing principles aspect specifically, Burke County may change the rules that govern the system and/or enhance the organization of the system. An example of doing so may involve decreasing over prescription of pharmaceutical drugs by changing the process in which an individual can acquire the necessary drugs. This may be in the form of step-therapy or a requirement of weekly check-ins with patients to prevent drug misuse. For information flows, Burke County may expand communication systems by spearheading more SUD support groups in the area, curating SUD prevention and education resources for all doctors offices, and/or by drawing attention to increasing overdose deaths in the area on the local news outlets. All aforementioned potential interventions would lead to the diminishing of many reinforcing loops shown in the CDL.

Insights, Strengths, and Weaknesses

From the CDL, there are a number of noticeable reinforcing loops that exacerbate the issue of substance abuse in Burke County. An example of a reinforcing loop in this CDL would be how a social stigma surrounding substance abuse may lead to higher prevalence of discrimination, which in turn causes greater social stigma around substance abuse. A similar example may be how the social stigma of substance abuse may cause a rise in the feeling of shame in residents of the area suffering from SUD, and that increase in shame furthers the social stigma of substance abuse. Further study and research may be needed to assess if public and private schools in the area include education surrounding substance use in their curriculum. Also education from healthcare providers to patients may be necessary regarding the patients’ diagnoses when being prescribed opioids and narcotics, as well as the average dosage and pill

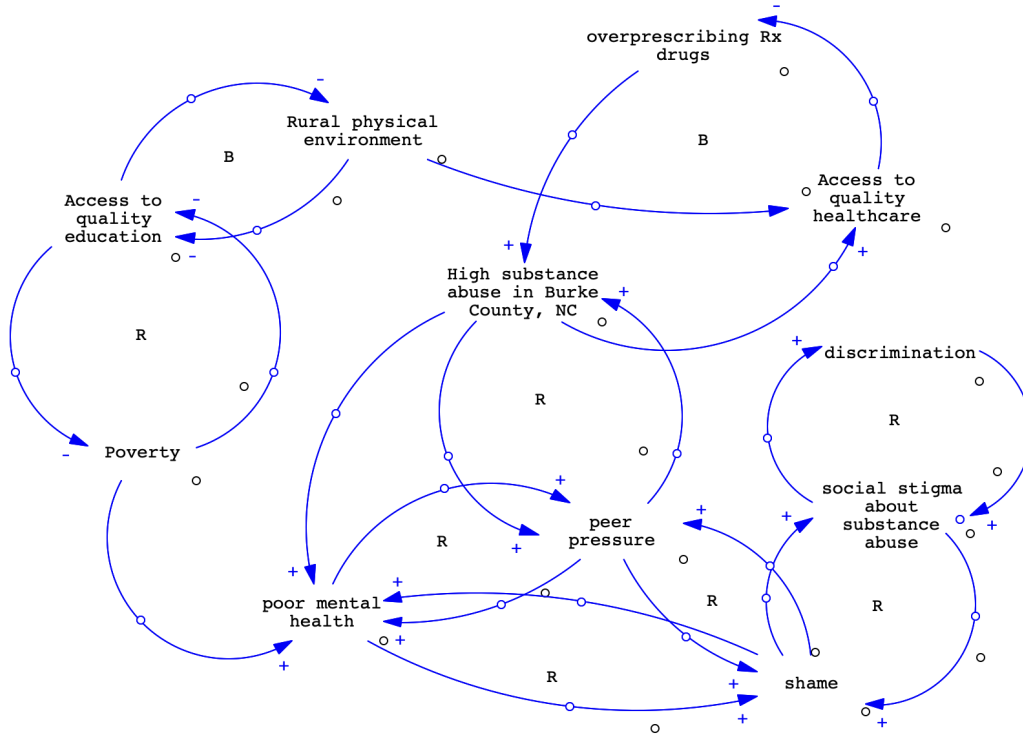
amounts. Research regarding the number of SUD support groups and number of doctors' offices that currently supply educational materials on the topic of SUD may be pertinent. The limitations of this analysis include the inability to exactly quantify the number of illicit drug users in Burke County, where these individuals are acquiring these drugs, and the level of education of these individuals. The strengths of this analysis include statistical data over numerous years to show the trends of graduation rates, overdose deaths, and population demographics of residents in the area. Also, strengths of this analysis come from numerous and detailed Community Health Assessments completed about Burke County and North Carolina as a whole.

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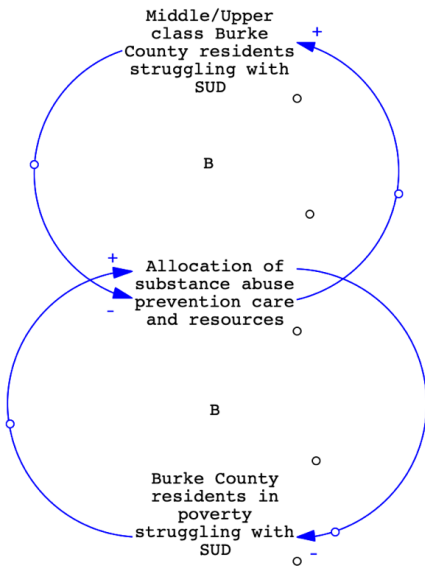
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Appendix B.2.A

Causal Loop Diagram



Systems Leverage Point



Appendix B.3

Engagement Deliverable 2

Engagement Strategy to Address Substance Abuse in Burke County

Background

Social Determinants of Health (SDOH) within the social and community context focus on the places where people are born, live, learn, work, play, and age and have a significant impact on an individual's health and well-being in addition to the community as a whole through people's relationships and interactions (U.S. Department of Health and Human Services, n.d.). Within the SDOH social and community context, social and peer support is an important factor in fostering community resilience and positive health outcomes, particularly with challenges such as substance abuse. Adults are integral members of the community who are significantly affected by substance abuse in Burke County, North Carolina and yet despite targeted efforts, overdose death rates continue to rise, with 20 deaths in 2018 up to 64 in 2021 (Burke County Health Department, 2022; *Medication and Drug Overdose in Burke County*, n.d.). Research has consistently shown that individuals with strong social support tend to have increased resilience due to coping mechanisms and feelings of connectedness among other resources and protective factors (Stevens et al., 2014). By prioritizing social and peer support and promoting community resilience, Burke County can mitigate adverse effects of substance abuse on individuals and their community.

Purpose

Engagement of community partners in the social and community context of reducing substance abuse in Burke County, NC is crucial. The types of community partners engaged, their level of commitment to the cause, and collaboration in gaining buy-in of the community at large sets the tone for how successful implementation of policy change can be. Community partners should represent all varying levels of influence, power, and interest of policies with the focus of accessibility and equity of care for all residents. Community stakeholders are important to engage for the social and community context because community stakeholders offer local expertise and insight of the community, their involvement bolsters

credibility and trust (or buy-in) of the wanted change, and these members are utilized as a way to increase reach and accessibility to the entire area affected. All of the potential outcomes lead to a greater chance of broader, long-term sustainable and systemic changes. Local expertise and insight from community partners to policymakers ensures that accurate information about Burke County's assets, needs, and challenges are voiced and lead to more effective and appropriate public health interventions.

Community partners involved in policy changes offer a visual to the rest of the community that these intended changes are vouched for and created by contemporaries, thus increasing participation, trust, and credibility of implemented interventions. Burke County residents engaged in creation of public health interventions also add an extra layer of connection and communication because these residents already have established social and community networks within Burke County and are able to reach a broader audience, such as more rural, hard to reach populations in the community. Engagement of diverse community members in social change also empowers the community and allows residents to feel a sense of ownership in the change, which may result in quicker and greater buy-in.

Priority Partner

A community stakeholder to include in the engagement process would be an individual of Burke County who is directly affected by substance abuse, whether that be struggling with substance abuse disorder (SUD) themselves or have a close loved one who suffers from SUD. This individual would be considered to have a high interest, although low influence or power in policy change. This stakeholder would also provide important insight into the daily affects and cascading consequences of substance abuse within Burke County. These insights, particularly of the social and community context, may involve: how people suffering from SUD are treated by fellow community members and healthcare workers in Burke County, relatively how many people in this community may suffer from SUD and how many are actively seeking treatment, where these individuals look for resources and where resources are accessed, and lastly, have insight on what recovery methods these individuals respond best to and rely on for help.

A community member directly impacted by SUD would be helpful in assisting with community engagement because they could aid in ensuring accessibility and realistic change that is equitable. This stakeholder may have information on current resources or lack thereof offered to residents who struggle with SUD and the successes and barriers of these programs and resources. An example of this would be the individual's ability to inform the public health team of the benefits and challenges of SUD treatment resources in the area, such as how beneficial Helping Achieve Recovery through Burke Opioid Use Reduction (HARBOUR) program actually is, despite data that may show otherwise. Also, they may provide essential information such as what may have led them (or others close to them) to addiction and how Burke County could intervene and prevent future community members from facing these challenges. Similarly, this individual may have feedback on what Burke County residents may actually need regarding SUD resources, instead of what the assumed needs are through data from public health professionals and policy makers.

Engagement Barriers and Facilitators

Three factors that may influence the participation of an individual with lived experience may include: access to reliable transportation and communication services, potential mistrust of policymakers due to stigma and discrimination of those affected by SUD, and the power dynamics of the engagement team and Burke County officials. A barrier to this stakeholder's participation would be availability and consistency of transportation if they do not have the finances or means for reliable transportation to and from engagement meetings. If this stakeholder is utilizing public transportation, this may also pose a barrier if buses run on an irregular schedule, or if there isn't a bus stop near where engagement meetings will be held. Another potential barrier to this stakeholder's participation would be their hesitation to share lived experiences and feedback due to potential historical and current local experiences of shame and discrimination surrounding those that suffer from addiction in the Burke County community. The policy and public health teams should ensure this individual trusts them [policy and public health teams] to protect the stakeholder's privacy and honor what they would be willing to share regarding their personal experiences, and what they would not be willing to disclose due to privacy concerns and mistrust. The

perception of the power dynamics amongst the public health team, Burke County public officials and policymakers, and community residents also play a role in the community member's willingness to participate in engagement. Power imbalances between public official and community stakeholders may result in community stakeholders not speaking up in engagement meetings often due to feeling marginalized, or that their voice and opinions don't matter. To prevent this, it is crucial that engagement team members of power and influence "make space at the table" for community stakeholders to participate in conversations openly and confidently.

Engagement Methods

Three engagement methods to involve a community member affected by SUD in would be: interviews from local community members and healthcare members that work in SUD treatment, focus groups at peer support meetings, and surveys distributed at recovery services. These forms of engagement would be most beneficial to utilize this stakeholder because the individual would have previous first-hand experience with these programs. Additionally, for better allocation of resources such as time and funding, it is most beneficial to focus on programs that currently exist in the Burke County community that public health and policy teams could target efforts to improve, instead of creating something new from the ground up that may not be utilized or known of by residents. For interviews, the stakeholder could consult local community members on their perceived knowledge or formal education regarding substances and substance abuse while living in Burke County. Similarly, the stakeholder could interview healthcare workers on their experiences working with SUD patients. From here, the public health and policy teams could assess and target what could be enhanced in schools regarding curriculum around substances, or enhance methods of outreach in the community on the education surrounding substances for broader viewership. This engagement would be an ongoing effort united with the local Department of Education and Department of Health and Human Services with quantitative data collection on impact collected every academic school year. A performance measure of this would be a decrease in the number of adolescents (under the age of 18) using illicit drugs.

Involving this stakeholder in the engagement of focus groups would be beneficial to gauge insight on the North Carolina's Certified Peer Support Specialist (NCCPSS) program to determine what assets and barriers this program currently has that the public health and policy teams could build upon to make the most efficient use of resources that currently exist in Burke County. This engagement method would involve current NCCPSS leadership and organizational committees, numerous support specialists currently in the program, and would meet on a bimonthly basis to assess progress and challenges. A relevant performance measure to assess success of this program would be the number of substance users that successfully complete the recovery program and then become Peer Support Specialists, without relapsing.

A Burke County resident affected by SUD would be pertinent to include in the distribution of surveys at recovery service centers, such as HARBOUR, to obtain their feedback on the program's current methods, benefits, and areas of improvement. This stakeholder could sit in on meetings of HARBOUR's board and discuss what they believed to have been beneficial from the program that was most helpful to them in their recovery process, and where HARBOUR could improve if they did not touch on certain aspects or consider other challenges individuals may face in their recovery journey. This individual would work to both inform and collaborate with HARBOUR to improve their current program methods.

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Appendix B.3.A

Engagement Table

Engagement Method	Related Facilitator(s)/Barrier(s)	Timing
<i>Example: Community conversations</i>	<i>Lack of a venue and support for engaging on the issue</i>	<i>Design; Improve</i>
Focus groups Format: group	Lack of formally-educated workforce to lead support groups	Improve, Sustain/scale
Surveys at recovery services Format: group	Lack of reliable community gathering areas and public transportation Lack of communication materials and outreach of existing services	Improve, Sustain/scale
Interviews Format: group	Lack of adequate school-based curriculum surrounding drugs and alcohol	Design, Improve

Appendix C

Kimberly McNeill Tirpak

Appendix C.1

Social Determinants of Health Analysis

Social Determinant of Health

Social determinants of health within the social and community domain have a significant impact on an individual's health and well-being in addition to the community as a whole through people's relationships and interactions while focusing on the places where people are born, live, learn, work, play, and age (U.S. Department of Health and Human Services, n.d.). In Burke County, North Carolina, the lack of social and peer support surrounding substance abuse is a priority social determinant of health as it significantly impacts individuals and the community, influencing health outcomes in the short- and long-term.

Substance abuse has significant short-term impacts on physical, mental, and social well-being due to injuries, overdose, and altered cognitive function leading to strained relationships and social isolation (Grinspoon, 2021). When individuals impacted by substance abuse are lacking social and peer support, there is an increased vulnerability to relapse as it is more difficult to resist the urge to use substances during times of stress or temptation (Atadokht et al., 2015). Social support systems can also provide information and resources on where and how to receive treatment and therefore are important to reduce substance abuse (Atadokht et al., 2015). With a lack of social and peer support, there are often feelings of isolation and loneliness exacerbating the desire to use substances as a coping mechanism and then further isolating individuals from support resulting in a negative feedback loop (Hosseinbor et al., 2014).

Long-term impacts of substance abuse can have stronger effects on one's health, well-being, and social structures. With prolonged use of substances, there is an increased risk of chronic substance abuse such that it becomes even more difficult to break the cycle of addiction resulting in long-term health issues and social consequences (Hosseinbor et al., 2014). These health issues include altered brain structure and function leading to depression, anxiety, and other mood disorders which may cause more difficulty for

individuals to create and maintain relationships (Eske, 2023). Additionally, with a lack of social and peer support, there is a higher risk of relapse even after periods of sobriety or successful treatment (Atadokht et al., 2015). With long-term substance abuse and social isolation, individuals are less likely to manage their substance use and other health issues effectively, worsening their overall well-being (Grinspoon, 2021).

Geographic and Historical Context

Burke County is located in the western part of North Carolina on the edge of the mountain and piedmont regions, with nearly half of the population living in rural areas (University of Wisconsin Population Health Institute, n.d.). Burke County had a 3.2% unemployment rate in 2021 and since 2012, 18%-19% of the population had an income below 100% federal poverty level (*Burke County (NC) Profile, 2022; Burke County, n.d.*). In 2019, 13.7% of the population in Burke County had severe housing problems (*Burke County, n.d.*). The combination of high poverty rates, lack of affordable housing, unemployment, and the feeling of hopelessness when resources are not readily available create environments of stress and instability that may increase substance use rates (Burke County Health Department, 2022).

Although there has been a shift in thinking about substance abuse in recent years, from affected individuals lacking willpower to a health problem requiring treatment, there are still negative beliefs and stigma surrounding substance use (Burke County Health Department, 2022). Multiple organizations and agencies in the county are working to bring advocacy and awareness to substance use in order to increase social and peer support and end the stigma (Burke County Health Department, 2022; *Drug-free Burke, n.d.*).

In the 2016, 2019, and 2022 Community Health Assessments, Burke County rated substance use disorder as the second most important health priority for their community (Burke County Health Department, 2022). The financial impact of substance use for the county in 2016 was \$33.7 million; \$150,000 for medical bills and the remaining due to loss of work (Burke County Health Department, 2019). This does not account for the cost of medication take-back events, children requiring foster care, free Narcan distribution, and many other secondary impacts from substance use.

Punitive drug laws and the criminalization of drug use in Burke County have contributed to inequities in social and peer support for substance abuse as they indicate that users are criminals, further contributing to stigmatization and discrimination (Sher, 2023; Volkow, 2021). The policies aimed at arresting those who supply drugs have led to increased prosecutions but have not addressed the root cause of substance abuse leading to high rates of relapse, recidivism, and re-incarceration (Sher, 2023). Furthermore, these laws have caused many individuals that use substances to avoid seeking treatment and support for fear of legal consequences and social judgement (Sher, 2023; Volkow, 2021).

In attempts to address the issue, the county secured a Department of Justice grant in 2019 to implement an Adult Drug Court program which aimed to reduce substance use disorder rates, criminal justice involvement, and recidivism (Burke County Health Department, 2022). A second grant, Helping Achieve Recovery through Burke Opioid Use Reduction (HARBOUR), supported individuals with a history of substance use disorder by providing social and peer support, enhancing their skills for independent living, and reconnecting with the community during recovery (Burke County Health Department, 2022). Additionally, Burke Substance Abuse Network (BSAN) and Drug-Free Communities work collaboratively on various initiatives to reduce substance use in the county and also increase social and peer support while reducing stigma (Burke County Health Department, 2022; *Drug-free Burke*, n.d.). These efforts include monthly meetings to address substance use as well as the development of campaigns, outreach educational initiatives, and advocacy for recovery (Burke County Health Department, 2022; *Drug-free Burke*, n.d.).

Priority Population

As of 2023, the population of Burke County was nearly 90,000 people with 60.8% of the population between the ages of 18 and 64 (Burke County Health Department, 2022). Although substance use and substance abuse can affect people of all ages, adults 18 and over are highly susceptible to experimenting with substances due to peer influence, stress, and newfound independence (Villines, 2022). Adults play a critical role in the community and workforce so it is imperative to target this age group for prevention and intervention efforts. In 2020, adults aged 20-64 made up 90.2% of the workforce in Burke County (*Burke*

County, n.d.). Adults also have greater autonomy in seeking treatment and support services, therefore, focusing on this age group allows for more targeted interventions. Although healthcare is fairly accessible in Burke County, approximately 12.1% of the population was uninsured in 2019 and may not have been able to obtain adequate care (Burke County Health Department, 2022).

Published data are limited regarding substance use and abuse in adults aged 18 and older, but in 2016 Burke County's unintentional drug overdose rate was 27.9 per 100,000 residents (Burke County Health Department, 2019). From 2018 to 2021, the number of deaths due to medication and drug overdose increased from 20 to 64 despite efforts to reduce this issue (*Medication and Drug Overdose in Burke County*, n.d.). Despite continuous efforts, the figures remain staggering with overdoses 18% higher in 2021 compared to 2020 (Burke County Health Department, 2022). However, changes are being seen to reduce overdose deaths in Burke County. For example in 2021, the onsite utilization of Narcan increased by 84% and emergency calls for overdose rose by 34.5% (Burke County Health Department, 2022).

Measures of Social Determinant of Health

During 2012 through 2019, Burke County had one of the highest drug overdose death rates in the western region of North Carolina and had the second highest drug overdose rate in North Carolina (*Burke County*, n.d.). As shown in Table 1, Burke County saw 32 drug overdose deaths per 100,000 people between the years of 2018 and 2020 compared to 24 and 23 deaths per 100,000 in NC and the United States respectively (University of Wisconsin Population Health Institute, n.d.). Of note, there is a higher percentage of drug overdose deaths in Burke County for African Americans compared to the racial distribution of the population as shown in Tables 2 and 3 (*Burke County*, n.d.). During the years 2016 to 2020, unintentional poisoning, which includes drug overdose, was the cause of 32.2% of injury deaths in North Carolina whereas for Burke County it was 30.8% (Injury and Violence Prevention Branch, 2022). Also during the years 2016 to 2020, unintentional poisoning was the cause of 10.1% of injury hospitalization in North Carolina whereas for Burke County it was 12.7% (Injury and Violence Prevention Branch, 2022).

Rationale/Importance

Social and peer support related to substance abuse is a critical public health priority in Burke County as it can improve health outcomes within the community while reducing healthcare costs and improving workforce productivity. When social and peer support are increased, individuals impacted by substance abuse have increased connections providing accessibility to resources, recovery assistance, and relapse prevention. By addressing this social determinant of health, not only are individuals positively impacted but also the community as a whole through the promotion of health equity and community well-being.

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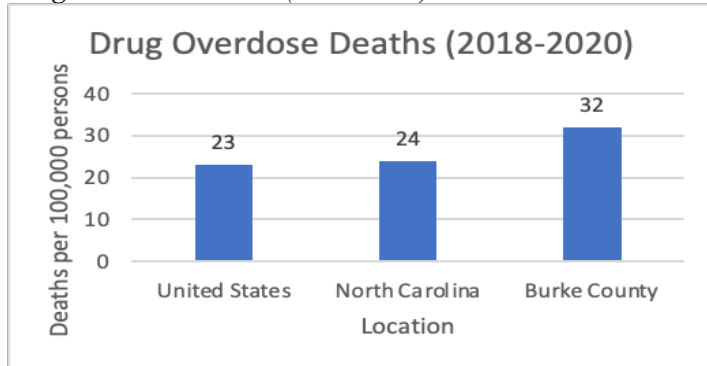
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Appendix C.1.A

Table 1

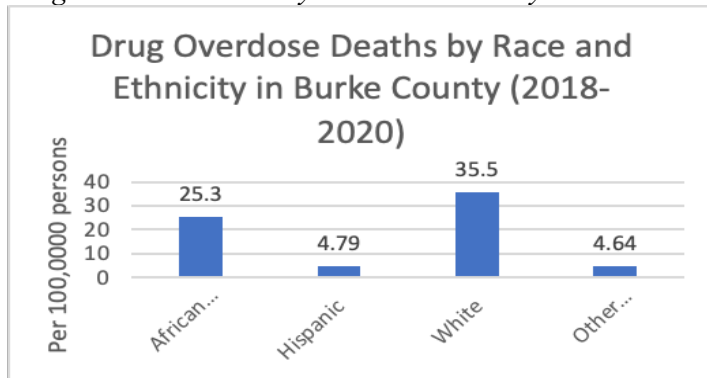
Drug Overdose Deaths (2018-2020)



Note. From *Burke, North Carolina*, by University of Wisconsin Population Health Institute, n.d. (<https://www.countyhealthrankings.org/explore-health-rankings/north-carolina/burke?year=2023>)

Table 2

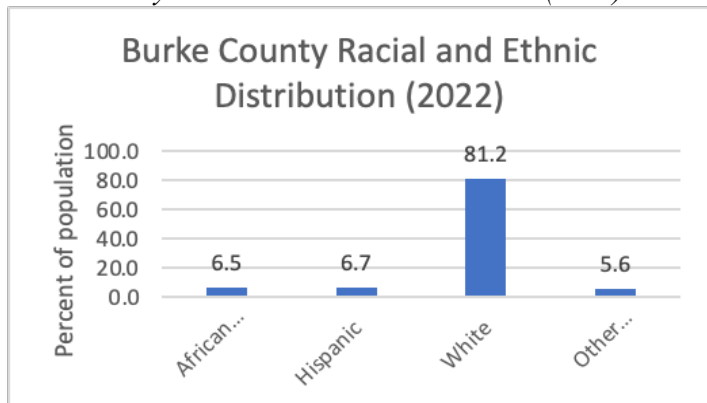
Drug Overdose Deaths by Race and Ethnicity in Burke County (2018-2020)



Note. From *Burke County*, by Healthy Communities NC, n.d. (<https://healthycommunitiesnc.org/profile/geo/burke-county>)

Table 3

Burke County Racial and Ethnic Distribution (2022)



Note. From *Burke County*, by Healthy Communities NC, n.d. (<https://healthycommunitiesnc.org/profile/geo/burke-county>)

Appendix C.2

Policy Deliverable 1

Analysis of Policy Factors that Affect Social Determinant of Health Focal Area

Background

Social Determinants of Health (SDOH) within the social and community context focus on the places where people are born, live, learn, work, play, and age and have a significant impact on an individual's health and well-being in addition to the community as a whole through people's relationships and interactions (U.S. Department of Health and Human Services, n.d.). Within the SDOH social and community context, social and peer support is an important factor in fostering community resilience and positive health outcomes, particularly with challenges such as substance abuse. Adults are integral members of the community who are significantly affected by substance abuse in Burke County, North Carolina and yet despite targeted efforts, overdose death rates continue to rise, with 20 deaths in 2018 up to 64 in 2021 (Burke County Health Department, 2022; *Medication and Drug Overdose in Burke County*, n.d.). Research has consistently shown that individuals with strong social support tend to have increased resilience due to coping mechanisms and feelings of connectedness among other resources and protective factors (Stevens et al., 2014). By prioritizing social and peer support and promoting community resilience, Burke County can mitigate adverse effects of substance abuse on individuals and their community.

Policy with Direct Impact on SDOH

North Carolina's Certified Peer Support Specialist Program (NCCPSS) is a program through North Carolina Department of Health and Human Services (NCDHHS), Division of Mental Health, Developmental Disabilities, and Substance Use Services (*North Carolina Certified Peer Support Specialist Program*, 2022). Through the program, individuals in recovery from a mental illness and/or substance use disorder become certified to provide support to others with these disorders (*North Carolina Certified Peer Support Specialist Program*, 2022). Peer Support Specialist became an established profession in 2006 when NCDHHS approved the service as billable under Medicaid (Engel-Smith, 2019).

Currently, 63 specialists are employed in Burke County (*NC CPSS Data*, n.d.). This Big P policy directly impacts substance abuse as Peer Support Specialists extend the reach of clinical treatment and play a vital role in providing social support through utilization of their lived experiences allowing them to establish trust and empathy (*North Carolina Certified Peer Support Specialist Program*, 2022).

Policy with Indirect Impact on SDOH

As of January 1, 2015, the City of Morganton in Burke County implemented zoning ordinances specifying locations for homeless shelters and what conditions must be met (*Zoning Ordinance*, n.d.). In 2022 and early 2023, the City of Morganton spent over \$130,000 to clean up homeless camps around the city and augmented efforts to prevent additional ones through increased code enforcement and trespassing charges (*City Promotes Preventative Measures in Wake of Homeless Camp Increase*, n.d.). As a result of this little p policy, individuals within homeless camps were dispersed, disrupting social and peer support networks and indirectly impacting substance abuse. The goal of implementing zoning ordinances for homeless shelters and increased enforcement was to clean up the city, improve public health and safety, and promote community well-being (*City Promotes Preventative Measures in Wake of Homeless Camp Increase*, n.d.). However, there are not enough measures in place to provide shelter nor are there resources readily available to those experiencing homelessness (Murphy, 2023). For many impacted individuals, they are now further isolated, have limited peer-based support, and are less likely to know where to obtain resources for substance abuse treatment (Murphy, 2023).

Policy Impact

Peer Support Specialists are part of a comprehensive treatment program offering unique perspectives, shared experiences, and empathetic understanding as a result of their own experiences with substance abuse (*North Carolina Certified Peer Support Specialist Program*, 2022). Benefits of Peer Support Specialists include increased social support and social functioning, improved relationships with treatment providers, and an increased sense that treatment is responsive and inclusive of their needs (*Value of Peers - 2017*, n.d.). By increasing access to social support, Peer Support Specialists, in

combination with substance abuse treatment programs, have been shown to reduce substance use and relapse rates (*Value of Peers - 2017*, n.d.).

The enforcement of zoning ordinances and removal of homeless encampments have mixed effects on social and peer support in relation to substance abuse. Communities within homeless encampments have created their own social support structures to create a sense of belonging, mitigate risks of overdose, and meet health and social needs (Boucher et al., 2022; Murphy, 2023). When encampments are removed and cleaned up, social isolation increases and peer support networks are broken as individuals are separated from peers that provided understanding (Boucher et al., 2022). With the removal of homeless encampments, there is often an increase in drug overdoses as individuals no longer have their community that would administer medication in the case of overdose (*Impact of Encampment Sweeps on People Experiencing Homelessness*, 2022). Additionally, individuals feel stigmatized from the broader community causing a disconnection with their substance use treatment team (*Impact of Encampment Sweeps on People Experiencing Homelessness*, 2022). However, if resources are readily accessible and available for those experiencing homelessness, individuals may seek out new sources of support, places to reside, and treatment for substance use (Murphy, 2023).

Policy Environment and Strategy

Burke County has a proactive political environment that prioritizes collaboration, evidence-based approaches, and community engagement as seen by their current efforts against mental health issues and substance abuse (Burke County Health Department, 2022). The current efforts are a multi-sector collaboration which include Burke Recovery and Burke Substance Abuse Network (BSAN), both of which promote social support groups as a part of treatment (Burke County Health Department, 2022).

The Board of County Commissioners are likely to view partnerships with Peer Support Specialists favorably as they align with the current political environment focusing on principles of collaboration and community engagement. Peer Support Specialists can provide support and guidance to individuals with substance abuse which can be valuable alongside the county's current efforts in substance abuse prevention and treatment.

Although homeless encampment cleanup and increased enforcement was implemented by the City of Morganton, Burke County is now more urgently tasked with providing resources to individuals experiencing homelessness (Murphy, 2023). Based on the political environment in Burke County and current efforts in other sectors, it is likely they will not simply resort to arrests but will instead look for solutions to address the root causes of homelessness and substance abuse. This will be done by collaborating with local non-profits, shelters, treatment centers, and social support services as those experiencing homelessness are required to relocate.

Based on the County Commissioners' focus on evidence-based approaches, collaboration, and engagement with stakeholders, the recommended policy strategy to address the current lack of social and peer support for substance abuse in Burke County will also align with these priorities while remembering that substance abuse is a changing and evolving issue. It will focus on integrating Peer Support Specialists into existing substance abuse treatment programs and community support networks. This integration will increase peer and social support and foster partnerships between organizations and providers. With this collaboration, the county can further expand community-based programs for individuals impacted by substance abuse and homelessness. Lastly, the recommendation will utilize existing resources, particularly with funding and support, to maximize impact and continually monitor the impact so the program can adapt as needed.

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Appendix C.3

Quality Deliverable 2

Quality Considerations to Reduce Substance Abuse in Burke County, North Carolina

Background

Social Determinants of Health (SDOH) within the social and community context focus on the places where people are born, live, learn, work, play, and age and have a significant impact on an individual's health and well-being in addition to the community as a whole through people's relationships and interactions (U.S. Department of Health and Human Services, n.d.). Within the SDOH social and community context, social and peer support is an important factor in fostering community resilience and positive health outcomes, particularly with challenges such as substance abuse. Adults are integral members of the community who are significantly affected by substance abuse in Burke County, North Carolina and yet despite targeted efforts, overdose death rates continue to rise, with 20 deaths in 2018 up to 64 in 2021 (Burke County Health Department, 2022; *Medication and Drug Overdose in Burke County*, n.d.). Research has consistently shown that individuals with strong social support tend to have increased resilience due to coping mechanisms and feelings of connectedness among other resources and protective factors (Stevens et al., 2014). By prioritizing social and peer support and promoting community resilience, Burke County can mitigate adverse effects of substance abuse on individuals and their community.

Generating Change Concepts

In order to address the current lack of social and community support surrounding substance abuse in Burke County, change is necessary. Three different approaches could be used to generate change concepts, brainstorming, six thinking hats, and benchmarking. Brainstorming is an approach used to generate potential solutions by encouraging open and creative thinking among all stakeholders and allowing stakeholders to build on each other's ideas to reach the goal (Schenck, 2022b). For this issue of reducing substance abuse in Burke County through increased social and community support, a brainstorming session would be hosted in a community facility that is accessible for all stakeholders to be

able to attend. The discussion would be facilitated such that stakeholders are encouraged to share their diverse perspectives and ideas that would be further evaluated and refined into potential solutions. During the brainstorming session, stakeholders would be split up into small groups so that each stakeholder feels more comfortable sharing their ideas and collaborate through active discussions.

Six thinking hats is another approach focusing on creativity when generating change ideas by viewing the issue from different angles (Schenck, 2022b). For our issue, stakeholders would again be gathered and engaged to generate change ideas, but in a more structured and systematic approach. Each of the six thinking hats represents a different lens to think about the issue which helps prevent narrow thinking (Schenck, 2022b). When stakeholders are given the White hat, they are focused on facts regarding social and community support surrounding substance abuse and evidence-based strategies that have been successful in similar counties. The Red hat encourages stakeholders to share their emotions which helps to emphasize the importance of addressing social and community support for substance abuse. Black hat thinking is critical so barriers, challenges, and risks are considered while Yellow hat thinking focuses on opportunities and strengths within the community that can be utilized to address substance abuse. The Green hat encourages brainstorming of innovating solutions and the Blue hat summarizes the discussion to ensure planning and action is continued after the stakeholders meet.

Benchmarking is the final approach that could be utilized to generate change ideas for this issue. This approach uses information and data about what someone else does well to improve (Schenck, 2022b). To utilize benchmarking when addressing social and community support for substance abuse, other county or town health departments that have successfully addressed substance abuse and related social determinants would be identified and researched. By analyzing their strategies and interventions, Burke County can identify specific aspects that could be adapted to address the issue.

Testing Change

By utilizing the above approaches to generate change ideas, a community-based peer mentoring program was selected to be designed and implemented in Burke County. This peer mentoring program will pair individuals in recovery from substance abuse with peers who are currently struggling in order to

provide support, guidance, and encouragement and be an additional resource for recovery. Although substance abuse organizations in Burke County do employ some peer mentors, they are currently utilized as a component of treatment whereas they could be better implemented in a community setting for increased participation and use (Kowalski, 2019).

A PDSA cycle improvement model will be applied to test the community-based peer mentoring program when implemented in Burke County. PDSA stands for plan, do, study, act (Schenck, 2022a). The PDSA approach allows for testing the change idea in cycles while collecting data so the process can be improved and reanalyzed before the change is fully scaled and implemented (Schenck, 2022a). For the peer mentoring program, the program will first be planned by establishing objectives and guidelines, recruiting and training mentors, and then forming mentor-mentee pairs. The program will be initiated and data will be collected on many variables including substance use behaviors as well as participant satisfaction. With this data collection, the program's effectiveness can be studied to identify areas that require improvement. These findings will be acted upon to make adjustments so that the program can be improved for continued success. By continually assessing results and completing multiple PDSA cycles, knowledge will continually increase until the county feels no further testing is necessary to gain additional knowledge or improvements.

Scaling and Sustaining Improvement

The PDSA cycle allowed for the change concept to be initiated and overall resulted in improvement. In order to scale the program, several factors must be considered that may influence successful implementation including human resource allocation, capacity building, data collection for monitoring and evaluation, adaptability, and collaborative partnerships (Schenck, 2022c). Sufficient resources will be necessary to support increased demand as the program scales including funding, staff, training, and infrastructure for meeting space. Additionally, partnerships and collaboration will be important such that stakeholders and partners can accommodate increased capacity with training, support, expertise, and outreach as the program expands. The community-based peer mentoring program actively engages with other organizations and agencies for development, implementation, scaling, and evaluation

so individuals impacted by substance abuse will be positively affected and overall substance abuse rates in Burke county will decrease.

In order to maintain improvements, the Director of the Burke Local Health Department should utilize a sustainability pyramid framework which involves five strategies to ensure long-term sustainability and effectiveness of the community-based peer mentoring program for addressing substance abuse in Burke County (Schenck, 2022c). Firstly, ongoing meetings and data review should occur regularly with stakeholders to review the program's progress and challenges such as substance use rates and participant feedback and discuss solutions. Leadership support from the health department, stakeholders, and other partner organizations is important for continued advocacy of the program in regards to resources and staff. Additional funding opportunities should be explored on an ongoing basis so that the program can continue to expand and be maintained. The work of the community-based peer mentoring program should be publicized to share its success and impact on substance abuse in the community and gain more awareness. Lastly, at the top of the pyramid, partnerships are imperative for sustainability through shared resources, expertise, networks, and overall effectiveness of the peer mentoring program to address substance abuse within the county. Through the implementation of these strategies, Burke County can improve and sustain the current lack of social and peer support in relation to substance abuse.

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Appendix D

Kylee Elizabeth Warren

Appendix D.1

Social Determinants of Health Analysis

Social Determinant of Health

Social Determinants of Health (SDOH) within the social and community context focus on the places where people are born, live, learn, work, play, and age and have a significant impact on an individual's health and well-being in addition to the community as a whole through people's relationships and interactions (U.S. Department of Health and Human Services, n.d.). Within the SDOH social and community context, social and peer support is an important factor in fostering community resilience and positive health outcomes. In Burke County, North Carolina there is an absence of social and peer support for adults surrounding substance abuse, which has extensive short and long-term health impacts.

There are many short-term impacts substance abuse has on adult health outcomes. Depending on the type of drug, stimulant, hallucinogen, depressant, or sedative, the health outcome could include, but is not limited to, withdrawal symptoms, emotional instability, i.e., panic attacks, anxiety, hallucinations, depression, cardiovascular problems, decreased appetite, visual and auditory distortion, nervous system disruption, and respiratory failure (U.S. Department of Health and Human Services, 2023). Additionally, there are many long-term impacts substance abuse has on adult health outcomes. Some long-term health impacts are severe structural and functional changes to the brain. This includes deficits in motor skills, addiction, psychosis, cancer, and infectious diseases are only a few of some potential long-term impacts. Alterations to various systems, such as the central nervous, digestive, respiratory, endocrine, immune, and circulatory systems are also concerns for long-term impacts, as well as death (Footprints to Recovery, 2023).

Geographic and Historical Context

Burke County, North Carolina has a rich history of being a hub for a vast variety of industrial products which drew people from other states and all over North Carolina over the decades. Currently,

Burke County is “home to a significant agricultural processing industry, and it is one of the state's largest producers of forest products, including Christmas trees, and ornamental plants” (Powell, 2006). Burke County also has the highest proportion of state government employees outside of Raleigh, which between the agricultural industry and governmental presence, makes it an appealing location for working adults (Powell, 2006).

According to the 2022 Census Reporter, the current population of Burke County comes in at 87,881, with more than half the population (61%) being between the ages of 18-64 years old. The predominant race is white (81%), with Hispanic and African American, 7% and 6% respectively, coming in second and third (Census Report, 2022).

The issue of substance abuse has been long standing in Burke County and has been addressed as a top priority in the Burke County Community Health Assessments from 2019 and 2022. A major contribution to this issue is misuse and over prescribing of opioid medication. The lack of appropriate education on prescription medication to patients is a major factor in the substance abuse fight. Adults have reported utilizing prescription drugs incorrectly, or for their unintended purpose, as a coping mechanism and stress relief (Drazdowski et al., 2022). This ties heavily into other inequities that contribute to substance abuse, such as poverty and mental health status, both of which are issues that Burke County has prioritized in tackling (Burke County Health Department, 2022). One contributing factor that has not been largely looked at is the lack of peer and social support for adults in Burke County.

The lack of social and peer support in adults has been linked to stressors that alter their behavioral choices and health outcomes (White et al., 2009). There is a perceived stigma and shame that surrounds adults in asking for help when dealing with stressors that causes them to internalize and seek solutions on their own (Birtel et al., 2017). Substance abuse is a coping mechanism used by adults to help them “feel good”, with one study reporting that 75% of respondents reported that as the main reason they use a substance (Giopram et al., 2014).

With years worth of data from community health assessments, Burke County has been able to identify and establish many assets within the community to try to reduce substance abuse within the

community. Some assets to highlight would be various community resource groups, such as: Burke Substance Abuse Network, The Burke Rally for Recovery, and Caring Alternatives. These groups largely focus on recovery from substance abuse more so than social and peer support in a preventative manner. In addition to these resource groups, there have been multiple grants the county has received to apply to research and analysis to find the gaps in addressing substance abuse, as well as diversion plans to increase public safety and order (Burke County Health Department, 2019). Largely these grants focus on preventative measures for adolescents and challenges in addressing substance misuse in this population.

Priority Population

The priority population of interest are adults, ages 18-64 years old, that are facing substance abuse and lack of appropriate social and peer support. The reason this is the population of interest is due to the fact that adults in this age range make up the majority of Burke County, 61%, and the effect that their substance abuse has on the community as a whole is substantial. According to the North Carolina Department of Health and Human Services, the economic impact of substance abuse is costing Burke County \$7,579 per capita in medical and statistical life loss from medication and drug overdose death compared to the statewide cost per capita, which is \$3,332 (Appendix A). Umberson and Montez (2010) stress the importance and impact that adults have in society sharing how their social ties and the connection to health vary over the entire life course and affect not only themselves but children, peers and intimate partners, which makes a major impression on the community collectively.

Measures of Social Determinants of Health

According to the North Carolina Department of Health and Human Services, the rate of medication/drug overdose deaths per 100,000 North Carolina residents between 2017-2021 in Burke County was 39.7 (Appendix B). Burke County's rate is higher than the statewide rate, which was 27.6, and the nationwide rate, 21.6%, as stated by the National Center for Drug Abuse Statistics (2019). In 2021, the increase in Fentanyl overdoses alone in Burke County was 313% (The Burke Wellness Initiative, 2021). In 2018, the prescribing rate of opioids in Burke County was 101.2 per 100 persons,

whereas the state rate for North Carolina was 72 per 100 persons (Appendix C). Based on the data, substance abuse in Burke County is a critical issue that requires attention.

Rationale and Importance

Adults are the workforce of Burke County and the leaders of the next generation in the community. They have an immense impact on the current and future success of the county as a whole. By creating social and peer support for adults, not only can help with tackling substance abuse rates, but it can help make a potential positive impact in homelessness, crime, incarceration rates, sexually transmitted disease transmission, mental health, unemployment, and dependency on government assistance (Daley, 2013). Social and peer support for adults not only can help with preventing substance abuse from occurring in the first place, but it can also create the foundation for a thriving, well connected and resilient community.

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Appendix D.1.A

Appendix A

One Year's Estimated Total Lifetime Costs

Medical* and Statistical Life** Loss from Medication & Drug Overdose Deaths, 2021

	Burke County	Statewide
Total Medical Costs*	\$474,882	\$24,535,913
Total Statistical Life** Loss	\$684,805,830	\$35,304,800,000
Combined Costs	\$685,280,712	\$35,325,130,000
Cost per capita	\$7,579	\$3,332

Technical Note: These estimates only include fatalities and do not include additional costs associated with non-fatal overdoses, treatment, recovery, and other costs associated with this epidemic.

*Medical costs refer to medical care associated with the fatal event, including health care and lost productivity.

**Value of statistical life refers to the estimated monetized quality of life lost and assesses underlying impacts on life lost.

Source: Deaths-NC State Center for Health Statistics, Vital Statistics, All intents, medication/drug overdose. Population-National Center for Health Statistics. 2020 Economic Impact-[CDC WISQARS Cost of Injury Reports](#), National Center for Injury Prevention and Control, CDC. Analysis by Injury Epidemiology and Surveillance Unit

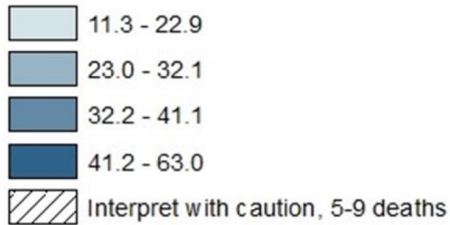


Appendix B

Rate of Medication & Drug Overdose Deaths, All Intent Per 100,000 North Carolina Residents, 2017-2021



All Intent Medication/Drug Overdose Deaths,
Rate per 100,000 NC Residents, 2017-2021



Rate of Medication/Drug Overdose Deaths per 100,000
North Carolina Residents, 2017-2021

Burke	39.7
Statewide	27.6

Technical Notes: Rates are per 100,000 NC residents; All intent medication and drug poisoning: X40-X44, X60-X64, Y10-Y14, X85
Source: Deaths-NC State Center for Health Statistics, Vital Statistics; Population-National Center for Health Statistics
 Analysis by Injury Epidemiology and Surveillance Unit



Appendix C

North Carolina Health Profile: Tobacco & Substance Use

		Burke	NC	
Tobacco & Substance Use	Adult Smoking % of adults who are current smokers	17.0%	17.0%	2017
	Youth Tobacco Use* % of high school students reporting current use of any tobacco product	West: 31.7%	28.8%	2017
	Unintentional Poisoning Deaths / Overdose Deaths Unintentional poisoning mortality rate per 100,000 population	29.9	18.5	2014-2018
	Opiate Poisoning Deaths Rate of opiate poisoning deaths per 100,000 population	23.8	11.8	2013-2017
	Opioid Prescribing Rate Rate of retail opioid prescriptions dispensed per 100 persons	101.2	72	2018

Appendix D.2

Engagement Deliverable 1

Community Partner Analysis to Reduce Substance Abuse in Burke County

Introduction

Social Determinants of Health (SDOH) within the social and community context focus on the places where people are born, live, learn, work, play, and age and have a significant impact on an individual's health and well-being in addition to the community as a whole (U.S. Department of Health and Human Services, n.d.). Among these SDOH, social and peer support is an important factor in fostering community resilience and health outcomes, particularly with challenges such as substance abuse.

Substance abuse in Burke County, North Carolina, is a priority health concern as overdose deaths continue to rise despite targeted efforts (Burke County Health Department, 2022). Given that adults are integral members of the community who are significantly affected by substance abuse, prioritizing support and resilience-building efforts is essential for comprehensive intervention and long-term community well-being. Research has consistently shown that individuals with strong social support tend to have increased resilience due to coping mechanisms and connectedness among other resources and protective factors (Stevens et al., 2014). By prioritizing social and peer support and promoting community resilience, Burke County can mitigate adverse effects of substance abuse on individuals and their community.

Community Partner Mapping and Analysis

Community partners are an integral part of having success in reducing substance abuse in adults in Burke County through the prioritization of social support and community resilience. To determine which community partners to engage in this transformation we utilized a Stakeholder Analysis Map (Appendix D.2.A). This tool allowed for assessing the interest level of each stakeholder on bolstering community resilience, their assessment of impact, and the potential strategies for obtaining their support and involvement. Through the Stakeholder Analysis Map we identified 8 stakeholders: a community

member dealing with substance abuse, the Coalition Chair at Burke Substance Abuse Network (BSAN), Program Director at Helping Achieve Recovery through Burke Opioid Use Reduction (HARBOUR), a Public Health Education Specialist from Burke County Health Department, a Social Worker at Burke County Social Services, a Psychologist at A Caring Alternative, and a Burke County Commissioner.

First and foremost, having a community member who is dealing with substance abuse on the task force is essential and a priority. To truly understand the impact that substance abuse has on an individual and how to best make systematic change that this population would be receptive to, we need to understand their story and have the insight of someone who is struggling with substance abuse. There could be challenges that arise for the community member who is dealing with substance abuse being on the task force, such as resources to attend meetings and the resilience to be vulnerable in sharing the struggles that the priority population face. However, by having a seat at the table for the priority population, we should be able to better engage with the priority population and build trust.

The Coalition Chair at BSAN and Program Director at HARBOUR are both active advocates against substance abuse in Burke County and continue to develop ways to build support and education in the community. Since 2016, BSAN and HARBOUR have diligently participated in applying to grants that would allow them to serve the priority population through not only program development but also a strategic gap/needs/asset analysis (Burke County Health Department, 2019). With their years of knowledge and dedication to prioritizing social support and community resilience against substance abuse in Burke County, they are an essential asset on the task force.

The Public Health Education Specialist from Burke County Health Department has awareness of the priority population, as well as the knowledge base and expertise on how to engage with the priority population and provide education. A large concern with community engagement is not meeting the priority population where they are at and communicating and interacting with them appropriately. A Public Health Education Specialist was involved in both the 2019 and 2022 Burke Wellness Group for the Community Health Assessments so they are well versed in how to collaborate on strengthening

community assets and creating social support (Burke County Health Department, 2019; Burke County Health Department, 2022).

A social worker at Burke County Social Services and a psychologist at A Caring Alternative provide a unique perspective to the task force. Both are trained professionals that have experience working directly with individuals who are battling substance abuse. Their involvement will heavily be providing professional expertise on substance abuse for the task force to use in their development of education materials and program implementation.

Lastly, a Burke County Commissioner will be called upon to be a part of the task force. It is important that a person with both high influence and high power that can enact change be involved. In 2019, a county commissioner was involved in the Burke Wellness Group, but not in 2022. The significance of the county commissioner's involvement can be shown by looking at the areas of success from the 2019 and 2022 Burke County Community Health Assessments "Areas of Success." In 2019, when a county commissioner was part of the Burke Wellness Group, there were more grants and funding utilized towards efforts to end substance abuse. This included grants that were aimed at creating more prevention efforts in Burke County on the misuse of prescription medications and other substances, as well as needs and assets analysis in the community.

The task force is made up of a diverse group of individuals with a variety of backgrounds and experience with building resilience in the community and creating social and peer support systems to tackle substance abuse. There needs to be careful consideration and thought regarding factors that may influence equitable representation and participation of the identified task force members. Two factors that may influence equitable representation and participation are power dynamics and programs already in place within the community. For example, the community member with substance abuse may not feel they hold as much power as the county commissioner, though they are invaluable and need to be heard and represented on the task force. Burke County has multiple substance abuse programs in place for adults that lean towards recovery more so than prevention and education, which many of the stakeholders

either work at or collaborate with. This could undermine equitable representation since they are heavily invested in their own programs.

Reflections and Conclusions

With the above proposed community partners, there are a few outstanding questions with regards to their ability to be committed to and engaged with the task force. This is particularly relevant for the community member dealing with substance abuse, as well as the county commissioner. The community member dealing with substance abuse is essential for insights into the priority population from a first person perspective. Does this individual have the resources, such as transportation to meetings and time to dedicate to the task force, as well as the emotional capacity. With regards to the county commissioner, they juggle a variety of responsibilities for the entire community, so do they have the bandwidth to attend task force meetings and help with decision making. Additionally, it would be beneficial to ask the coalition chair at BSAN and program director at HARBOUR what led them to work with this population and how can we encourage all stakeholders to be highly involved?

With any analysis, there are strengths and limitations. To highlight some strengths of the analysis, it aids in identifying key stakeholders and analyzing their level of power and influence in systemic change, as well as the strategies to utilize depending upon the support and/or obstacles that are involved in their particular engagement. The limitation of the analysis is the theory of collaboration between the stakeholders may not translate to real life, in person collaboration due to interpersonal dynamics. This is an important factor as the ability for the stakeholders to work as a collective whole is essential to the success of the systematic change.

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Appendix D.2.A

Stakeholder Analysis Map

Stakeholder	Stakeholder Interest(s) in the Health Topic	Assessment of Impact	Potential Strategies for Obtaining Support and Involvement
Community member/dealing with substance abuse	Focus on accessibility and realistic change that is equitable and lacks judgment.	High interest/low influence	<p>Focus group of individuals with substance abuse for personal stories and insights.</p> <p>Create forms of communication, such as newsletters, mass emails, and brochures, to inform about programs that are accessible and affordable.</p>
Coalition Chair at Burke Substance Abuse Network	Focus on treatment and prevention services for substance abuse. Prioritize reducing gaps in care, community network and strategic planning.	High interest/high influence	<p>Serve as a leader in and help build trust in the target population and community.</p> <p>Facilitate with partners on strategic plans from prior programs and outreach.</p> <p>Collaborate with network for dissemination of education materials to the target population.</p>
Program Director at Helping Achieve Recovery through Burke Opioid Use Reduction	Focus on support to individuals with substance abuse transitioning through recovery. Prioritize access to services and education.	High interest/high influence	<p>Serve as a leader in and help build trust in the target population and community.</p> <p>Facilitate with partners on strategic plans from prior programs and outreach.</p>
Public Health	Focus on education and	High interest/moderate	Discuss strategies for

Education Specialist from Burke County Health Department	health literacy that the target population can understand. Prioritize outreach to all persons affected and there is equity in system change.	influence	outreach with partners, HARBOUR and BSAN, that focuses on the target population. Work to develop education materials with the target population in mind.
Social Worker at Burke County Social Services	Focus on the social implications and impacts that substance abuse has on not only the individual, but the community. Prioritize support and access for system change.	High interest/low influence	Assist in focus groups. Provide expertise on resources that are accessible and affordable to the target population.
Psychologist at A Caring Alternative	Focus on root causes and creating sustainable changes for long-term change.	High interest/moderate influence	Assist in focus group support. Provide professional expertise for program development and education materials.
Burke County Commissioner	Focus is on the overall health of the community. Will focus on program costs and sustainability.	Moderate interest/high influence	Raise awareness of the impact that substance abuse has on the whole community. Learn about funding opportunities to support system change.

Appendix D.3

Policy Deliverable 2

Policy to Reduce Substance Abuse in Adults in Burke County, North Carolina

Background

Social Determinants of Health (SDOH) within the social and community context focus on the places where people are born, live, learn, work, play, and age and have a significant impact on an individual's health and well-being in addition to the community as a whole through people's relationships and interactions (U.S. Department of Health and Human Services, n.d.). Within the SDOH social and community context, social and peer support is an important factor in fostering community resilience and positive health outcomes, particularly with challenges such as substance abuse. Adults are integral members of the community who are significantly affected by substance abuse in Burke County, North Carolina and yet despite targeted efforts, overdose death rates continue to rise, with 20 deaths in 2018 up to 64 in 2021 (Burke County Health Department, 2022; *Medication and Drug Overdose in Burke County*, n.d.). Research has consistently shown that individuals with strong social support tend to have increased resilience due to coping mechanisms and feelings of connectedness among other resources and protective factors (Stevens et al., 2014). By prioritizing social and peer support and promoting community resilience, Burke County can mitigate adverse effects of substance abuse on individuals and their community.

Policy Options

The first policy solution to address substance abuse through the lens of the social and community context is the Joint-use Agreement (JUA). The JUA is the collaboration between two or more entities, for example a library and support group or organization, to share the use of facilities in order to support and increase community members' opportunities and access for meeting spaces, technology, recreation, and physical activity for children and adults (Joint-use, n.d.). This policy would require the local government to work with community organizations with facilities to support group activities and gatherings that are outside the organization's traditional use. By approving JUA's, people who are affected by substance

abuse would have safe spaces in the community to gain social and peer support, because the JUA is an opportunity for community organizations to collaborate towards creating the space to gather.

Furthermore, it offers more possibilities for those who are not experiencing substance abuse, but lack social connectedness, to get involved and start to build a social network through shared interests. One advantage of JUA's is utilizing the assets already in the community. One disadvantage of JUA's is the complexity and detailed documents required by the involved parties that share future obligations which can be intimidating to community partners (Stein et al., 2015).

The second policy solution to address substance abuse through the lens of the social and community context is the Fostering Opioid Recovery through Workforce Development grant program, which is under the Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act (SUPPORT Act, n.d.). The Fostering Opioid Recovery through Workforce Development grant program was created to aid in addressing the economic and workforce impacts associated with high rates of substance use disorders (Support Act Grants, n.d.). This policy would require the State to apply for a grant to provide the funding necessary to develop the program that would train and engage with employers to develop employment opportunities for individuals impacted by substance abuse. By providing funding toward the implementation of developing work-related approaches for those affected by substance abuse, this would create a resilient, driven community because it is giving a community a chance to not only build its workforce up, but create a strong network of support for the workers. Social support for the workers comes through in a couple different ways. The first one being that employers and businesses that take part adopt the role of developing support skills for the employers to help with retainment. The second being that a work-place environment has a built in social network which can act as a positive social support when an individual feels a sense of belonging and adds to a greater collective (Nahum-Shani et al., 2011). One study found that when there is a strong connection to a group, such as a work organization, an individual is more likely to perceive social support from the others in that group (Gillman et al., 2023). One advantage to the The Fostering Opioid Recovery through Workforce Development grant program is there are states already utilizing this program who can be collaborated

with on implementation. One disadvantage to the The Fostering Opioid Recovery through Workforce Development grant program is the time it will take to develop the program and see results.

The third policy solution to address substance abuse through the lens of the social and community context is the Employee Assistance Program (EAP). The EAP is a voluntary, confidential program that provides a variety of services, including social services, for employees who are facing issues impacting their mental and emotional well-being, which includes alcohol and substance abuse (Opm.gov, n.d.). This policy would require businesses to adopt an EAP to bolster both social support services and social support for their employees. EAP's traditionally have social support services for life stresses through therapy and counseling. Nowadays, EAP's can be built to the businesses needs and wishes. The EAP adopted by the businesses could have built-in support group meetings and calls that increase the opportunity for social connection and support. Additionally, the EAP can include access to fitness facilities and organize group fitness classes, which partaking in a physical activity with others has been shown to increase the feeling of social support (Scarapicchia et al., 2016). These offerings of social support can offset the need to turn to substances in the first place. However, the EAP will also be beneficial to people who are affected by substance abuse, as there are services that address mental and/or substance use disorders specifically, some concentrate on alcohol, prescription drugs, and other drug issues. One advantage is the potential to improve mental, financial, and physical well-being all in one. One disadvantage of EAPs is poor utilization of the program by employees.

Policy Goals Table and Ranking

Through building a policy goals table and ranking system, we are able to assess which policies best meets each goal (Appendix D.3.A). The JUA best meets goal one as it provides the opportunity to provide space for social events and gatherings. The JUA option also best meets goal two as facilities that can be utilized, such as libraries and schools, have access to the internet. The Fostering Opioid Recovery through Workforce Development Grant Program best meets goal three, as the program is aimed at lifting up those impacted by substance abuse through work opportunities. The EAP best meets goal four as its

program function is to connect individuals with access to support services. And lastly, the JUA best meets goal five as it will provide the space for organizations to promote community education on healthy living.

Policy Goal - Equity

Access to the internet, or lack thereof, is a digital inequity that has a major impact on the community. The internet is not only a place for knowledge and resources, but it allows for connection. This is why goal two is to increase access to the internet for both social connection and telehealth opportunities. This goal helps to promote connectedness for even those who may not be physically able to go to certain social gatherings to get support. As we learned during the Covid-19 pandemic, having even a strong social connection virtually builds resiliency and community. The JUA provides the best opportunity to meet this goal, as one of the entity partners identified is a library with access to computers, but the EAP and Fostering Opioid Recovery through Workforce Development Grant Program both have opportunities where internet access is likely achievable.

Policy Goal - Resources

The ability to increase access to public spaces and social events through innovative programs comes with resource requirements and constraints. To execute this goal through the JUA option, it would not only take time to execute the agreement, but also time to plan the events to tailor to the needs and wants of the community. It is also important to note that there would be financial expenses that would go towards personnel and maintenance to keep facilities open outside of normal hours (Joint use agreements, n.d.). Whereas with the EAP and Fostering Opioid Recovery through Workforce Development Grant Program, these policy options have built in social gatherings/events where personnel is already factored in and budgets are set. Additionally, these policy options would not be constrained by long timelines for execution and planning.

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Appendix D.3.A

Policy Goals Table and Ranking

	Policy 1: Employee Assistance Program (EAP)	Policy 2: Joint-use Agreement (JUA)	Policy 3: Fostering Opioid Recovery through Workforce Development Grant Program	Justification for Top Rank
Goal 1: Increase access to public spaces and social events through innovative programs.	2	1	2	JUAs provides the most opportunity to provide space for social events and gatherings and collaboration with stakeholders and community assets.
Goal 2: Increase access to the internet for both social connection and telehealth opportunities.	2	1	3	JUAs provides community access to facilities that can be utilized, such as libraries and schools, which have access to the internet.
Goal 3: Increase community awareness on substance abuse by encouraging community resilience.	2	3	1	The Fostering Opioid Recovery through Workforce Development Grant Program program is aimed at lifting up those impacted by substance abuse through work opportunities
Goal 4: Increase access to social services that promote mental and emotional well-being.	1	3	2	The function of the EAP program is to connect individuals with access to support services.

<p>Goal 5: Increase community education on healthy living that includes information on physical activity, nutrition, and social connectedness.</p>	<p>3</p>	<p>1</p>	<p>2</p>	<p>JUAs provide the space for organizations to promote community education on healthy living.</p>
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Appendix E

Jessica Yates-Crowder

Appendix E.1

Social Determinants of Health Analysis

Social Determinant of Health

The Social Determinants of Health (SDOH) influence an individual's health outcomes. Social and Community Context is a crucial SDOH and refers to the social environments in which people live, work, and interact with others. It includes social support, community engagement, and social cohesion (US Department of Health and Human Services, 2023). It is essential to understand the short- and long-term effects of social and community context on health outcomes associated with adult substance abuse in outcomes—physical, mental, and social dimensions.

In the short term, individuals experiencing substance abuse may face immediate physical health risks, including accidents, injuries, and overdose (National Institute on Drug Abuse, 2022). The lack of a supportive social and community context can exacerbate these risks, as individuals may not have access to timely help or resources (Douthit et al., 2015). Substance abuse can lead to short-term mental health issues, such as anxiety, depression, and cognitive impairment (Eske, 2020). Immediate consequences in the social domain may include strained relationships, isolation from family and friends, and stigmatization within the community. These factors collectively contribute to the decline of mental well-being during this period (Daley, 2013). The absence of a supportive social network can hinder the individual's ability to seek help or engage in positive social activities.

Prolonged substance abuse can result in chronic health conditions, such as cardiovascular problems, liver disease, and weakened immune systems (Eske, 2020). Substance abuse can weaken the immune system over time, making individuals more susceptible to infections and illnesses (NIDA, 2018). Long-term substance abuse often leads to addiction, characterized by a compulsive need for the substance despite adverse consequences (Cleveland Clinic, 2022). A comprehensive treatment program and support are necessary to break addiction cycles. Substance abuse can impair cognitive function long-term, leading

to difficulties in memory, attention, and decision-making; impairment may persist even after discontinuing substance use (Julius, 2023).

Geographic and historical context

Nestled in the foothills of the Blue Ridge Mountains in western North Carolina, Burke County was founded in 1777 and named in honor of Thomas Burke, a representative in the Continental Congress who subsequently became the third governor of North Carolina (Martin, 2016). The rural county has a total population of approximately 90,000; the town is predominantly white, 81.20% with Black and Hispanic, 6.50% and 6.70%, respectively, in second and third (Burke County Health Department, 2022). Burke County's economy today is diversified, with contributions from the various industrial sectors playing a vital role encompassing technology, furniture, medical chemicals, machine components, and textile manufacturing (Bangma, 2009). Multiple manufacturing sectors indicate a well-rounded economic environment with contributions from both traditional and modern industries.

Substance use disorder remains one of the top three priority health issues in Burke County, NC, and currently ranks second in the state as the county with the most drug overdose deaths (*Burke County*, 2020). Understanding the practices of Burke County's society and community requires comprehending systemic factors contributing to potential inequities. Disparities in access to healthcare services, influenced by insurance coverage and healthcare facility locations, can contribute to health inequities within communities ((Institute of Medicine (U.S.) Committee et al., 2003). Lack of insurance coverage and financial barriers can hinder individuals, especially in marginalized communities, from seeking and receiving necessary treatment (Riley, 2012). Many Burke County residents living below the federal poverty level are uninsured (Burke County Health Department, 2022). Inequities in the educational sector contribute to unequal access to quality education and the allocation of necessary resources for substance abuse prevention and education programs, particularly affecting communities with lower socioeconomic status by limiting their access to comprehensive prevention initiatives and educational resources (Baciu et al., 2019).

The Burke Substance Abuse Network (BSAN) establishment signifies a substantial collaborative effort among community stakeholders in Burke County, North Carolina, dedicated to assessing, gathering, and strategically planning substance abuse services to reduce substance abuse among county residents (Burke County Health Department, 2022). The approach involves proactive engagement with Burke County's unique social and community context, engaging local services and resources specifically dedicated to facilitating recovery.

Priority population

The priority population is adults, specifically individuals ages 18 and older. The Burke County Health Department (2022) graphs 81.3% of the population in the county between the ages of 18-64 (Figure A). Substance abuse issues are more prevalent in the adult population due to a combination of increased independence and exposure to various substances, as the transition to adulthood often involves greater autonomy and decision-making, making this age group more susceptible to substance misuse and addiction (Schulte & Hser, 2014). Tackling substance abuse through a collaborative approach among adults is imperative for fostering a positive ripple effect on Burke County's social and community well-being. The negative impact of drug abuse can ripple through society, causing emotional trauma, financial strain, instability, and decreased safety, impacting more than the adult individual suffering from addiction (Hairston, 2023).

Measures of Social Determinants of Health

Early onset of substance use is frequently linked to an increased risk of the probability of developing substance abuse disorders later in life (Jordan & Andersen, 2017). The average age of first-time substance use in Burke County is 12.5 years old (Burke County Health Department, 2022). Carefully observing the age at which individuals first engage in substance use functions as a crucial method for assessing potential risks within the community while analyzing drug overdose rates emerges as a vital metric to evaluate the prevalence of substance-related overdoses within the community (O'Brien et al., 2019). This approach provides valuable insights into the gravity of substance abuse and its repercussions on the residents of Burke County.

According to data presented in the *Burke County* (2020) report, between the years 2012-2010, the county had an average overdose rate of 31.3 per 100,000 residents (Figure B). This statistic underscores the gravity of the situation in this area, indicating a high incidence of overdoses. Furthermore, according to the NC Division of Public Health (2022), at the statewide level, unintentional poisoning emerged as the primary cause of injury death in 2020, accounting for a significant 96% of cases attributed to medication/drug overdoses (Figure C). This broader perspective highlights the widespread nature of this drug abuse within the Burke County community, underscoring the importance of addressing and mitigating substance-related overdoses not only locally but throughout the entire state.

Rationale/Importance

Addressing substance abuse in Burke County is a critical public health priority due to its significant impact on community well-being. Substance abuse has far-reaching consequences that affect social cohesion, safety, and economic productivity (Nevenansky, 2023). By prioritizing this issue, public health efforts can foster a healthier and more resilient community, enabling targeted interventions to reduce health disparities and promote health equity within Burke County.

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Appendix E.1.A

Figure A
Burke County Population by Age Range

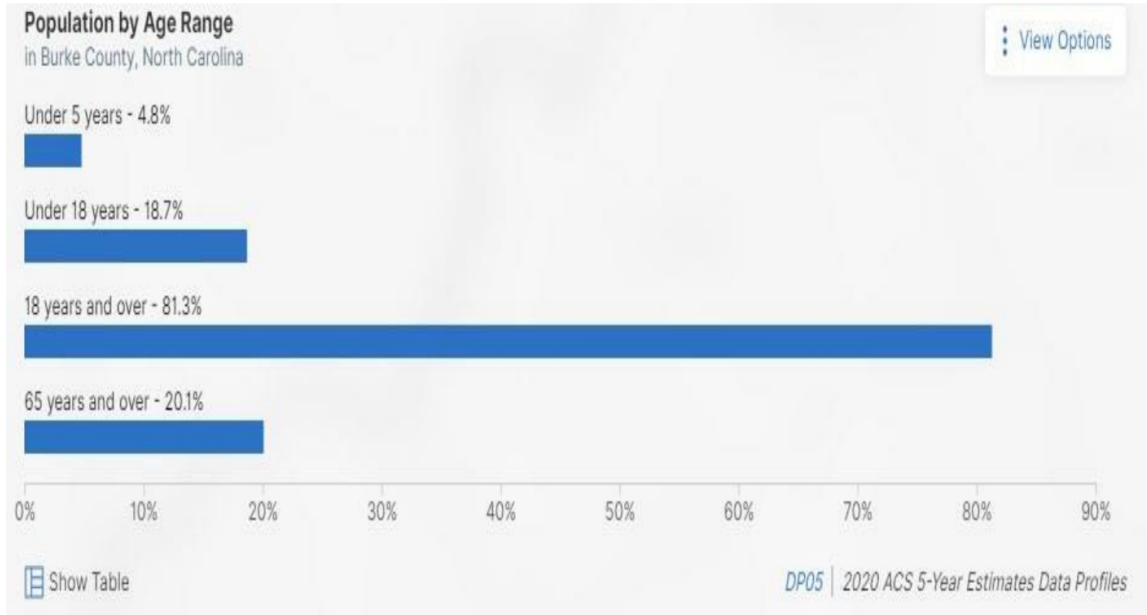
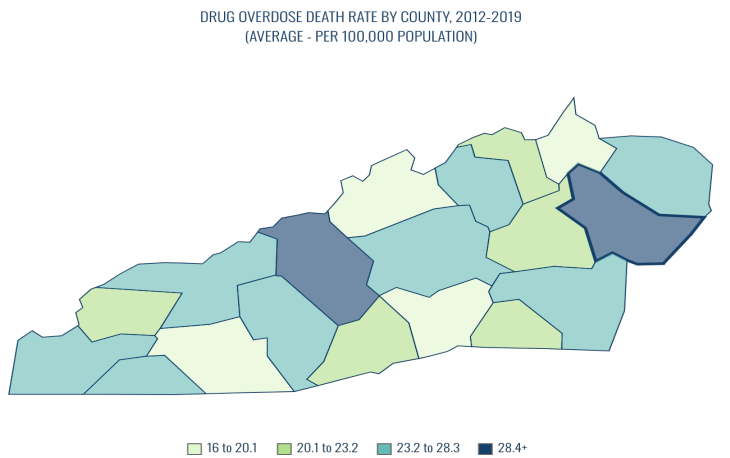


Figure B
Drug Overdose Death Rate by County



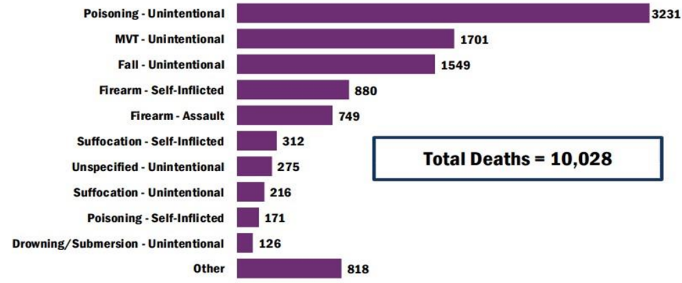
healthycommunitiesnc.org/profile/geo/burke-county

HEALTHY
Communities NC

Figure C
Leading cause of injury death

Leading cause of injury death: NC Residents, 2020

The leading cause of injury death in 2020 was unintentional poisoning.



Unintentional poisoning includes both medication/drug overdoses and non-drug poisonings (96% and 4% respectively)
MVT = Motor Vehicle Traffic
Data limited to NC Residents, 2020
For more information on these data, see the Injury Surveillance Technical Notes: <https://www.injuryfreenc.ncdhhs.gov/DataSurveillance/Technical-Notes.pdf>
Source: NC State Center for Health Statistics, Vital Statistics Deaths (2020)
Analysis by the NC-DPH Injury and Violence Prevention Branch, Injury Epidemiology and Surveillance Unit

Appendix E.2

Quality Deliverable 1

Priority Areas to Reduce Substance Abuse in Adults in Burke County, North Carolina

Background

Social Determinants of Health (SDOH) within the social and community context focus on the places where people are born, live, learn, work, play, and age and have a significant impact on an individual's health and well-being in addition to the community as a whole (U.S. Department of Health and Human Services, n.d.). Among these SDOH, social and peer support is an important factor in fostering community resilience and health outcomes, particularly with challenges such as substance abuse. Substance abuse in Burke County, North Carolina, is a priority health concern as overdose deaths continue to rise despite targeted efforts (Burke County Health Department, 2022). Given that adults are integral members of the community who are significantly affected by substance abuse, prioritizing support and resilience-building efforts is essential for comprehensive intervention and long-term community well-being. Research has consistently shown that individuals with strong social support tend to have increased resilience due to coping mechanisms and connectedness among other resources and protective factors (Stevens et al., 2014). By prioritizing social and peer support and promoting community resilience, Burke County can mitigate adverse effects of substance abuse on individuals and their community.

Problem Statement & Project Aim

The project titled "Enhancing Community Resilience: A Holistic Approach to Addressing Adult Substance Abuse in Burke County" sheds light on a critical issue. The current approach to handling substance abuse in Burke County lacks a social and community-focused strategy failing to involve various government and community agencies in the design, implementation, and evaluation of prevention programs and education for vulnerable groups (*Burke County Reaccreditation Site Visit Report, 2023*). Almost half the population (approximately 41% in 2020) living below 200% of the federal poverty level in Burke County are at high risk; additionally, 13.8% of uninsured or underinsured adults are not

receiving the healthcare they require (Burke County Health Department, 2022). Due to a deficiency in the framework, efforts to combat substance abuse are ineffective and fail to tackle the underlying causes.

The current programs mainly address substance abuse through the criminal justice system, primarily focusing on individual interventions. (*Burke County Recovery Court Implementation*, 2018). However, they do not adequately consider broader social factors contributing to the problem. As presented in Figure 1, to understand and address the root causes of substance abuse, it is crucial to examine the people, policies, processes, and environment affecting the adult residents of Burke County. Unfortunately, the fragmented approach obstructs the community's ability to develop resilience and provide adequate support for individuals struggling with addiction.

This project aims to develop and implement a multifaceted, evidence-based strategy that targets individual substance abuse issues and addresses the underlying social determinants and community factors contributing to the problems of those deemed at-risk groups. Establishing a comprehensive plan involves cultivating collaboration among dedicated stakeholders committed to implementing evidence-based interventions and encouraging active community engagement. The overarching goal of the project is to diminish the prevalence of substance abuse, elevate community well-being, and augment the efficacy of current interventions based on research and evaluation.

Internal and External Stakeholders

The success of Burke County's substance abuse initiative hinges on the collaboration and participation of both internal and external stakeholders. Internal stakeholders encompass project team members, administrative staff, community leaders, and program coordinators responsible for planning, implementing, and managing the holistic approach. To optimize efficiency and efficacy in implementing and managing the initiative, improving coordination, documentation, and communication among internal stakeholders is crucial.

External stakeholders, specifically the adult residents of Burke County directly impacted by substance abuse issues, are the primary focus of the initiative. As presented in Figure 1, as people interact with the system, these individuals influence the social and community context through substance abuse

culture normalization, fluxing support systems, and accessibility to substances. The ultimate measures of success in the program are improvements in the well-being and resilience of the community through reductions in substance abuse rates and relapses and an increase in treatment program enrollment for adult residents. Effective collaboration and coordination with external treatment providers are paramount to the success of our initiative. Enhancing our efforts in this area increases efficiency and effectiveness in program implementation and management. As shown in Figure 1, To achieve this, it is essential to evaluate policies related to treatment funding, prescription monitoring, and substance regulations. The Burke County Health Department, Burke County Social Services, external healthcare organizations and professionals, and local government and regulatory groups are also external stakeholders who provide support, expertise, and resources to the initiative. As presented in Figure 1, improving the processes of drug testing, admission to treatment facilities, and prevention programs can streamline communication and referrals, better integrate medical services, and ensure compliance with relevant standards. Overall, the initiative's success depends on all stakeholders' active participation and collaboration.

Project Measures

I. Output Measures

1. Number of participants enrolled in program
2. Completion rates of treatment programs
3. Increased community awareness of substance abuse services and locations

II. Outcome Measures

1. Reduction in substance abuse rates
2. Reduction in relapse rates
3. Increased of treatment programs enrollment

III. Process Measures

1. Average Time from Referral to Program Entry
2. Percentage of Successful Program Interventions
3. Number of Collaborative Initiatives with External Healthcare Providers

4. Frequency and Reach of Community Outreach Events

IV. Balancing measures

1. Employee Burnout and Turnover Rates
2. Client Satisfaction and Feedback

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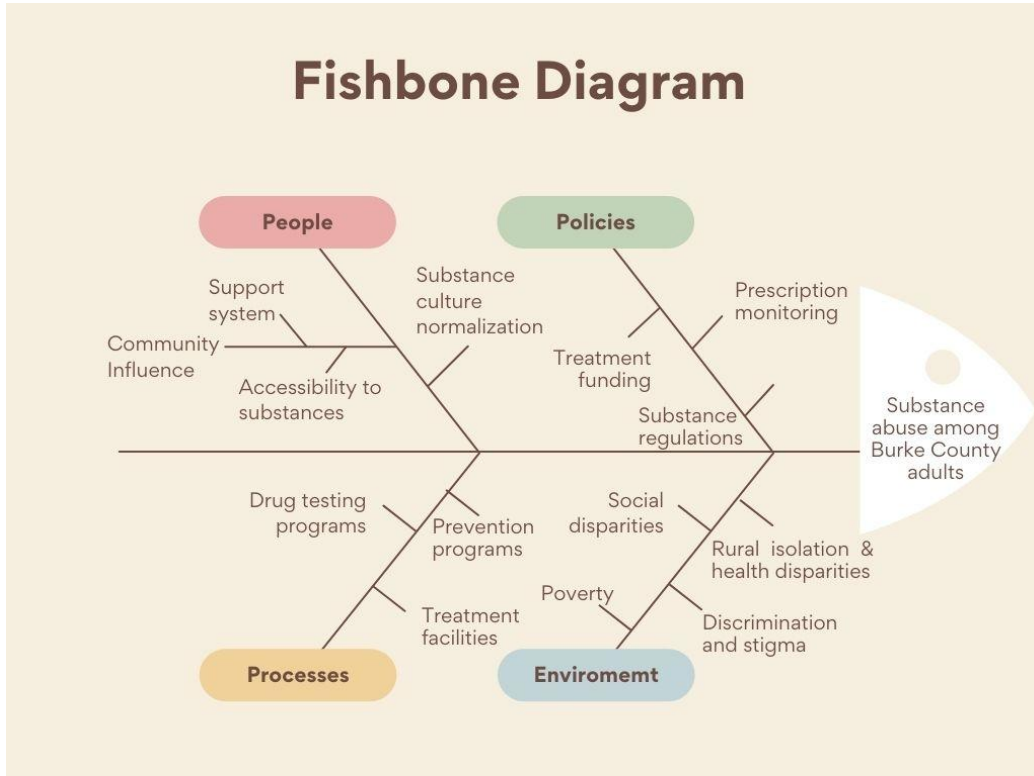
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Appendix E.2.A

Figure 1

Fishbone: Enhancing Community Resilience: A Holistic Approach to Addressing Substance Abuse in Burke County



Appendix E.3

Systems Deliverable 2

Systems: Co-design Approaches and Design Thinking

Background

Social Determinants of Health (SDOH) within the social and community context focus on the places where people are born, live, learn, work, play, and age and have a significant impact on an individual's health and well-being in addition to the community as a whole through people's relationships and interactions (U.S. Department of Health and Human Services, n.d.). Within the SDOH social and community context, social and peer support is an important factor in fostering community resilience and positive health outcomes, particularly with challenges such as substance abuse. Adults are integral members of the community who are significantly affected by substance abuse in Burke County, North Carolina and yet despite targeted efforts, overdose death rates continue to rise, with 20 deaths in 2018 up to 64 in 2021 (Burke County Health Department, 2022; *Medication and Drug Overdose in Burke County*, n.d.). Research has consistently shown that individuals with strong social support tend to have increased resilience due to coping mechanisms and feelings of connectedness among other resources and protective factors (Stevens et al., 2014). By prioritizing social and peer support and promoting community resilience, Burke County can mitigate adverse effects of substance abuse on individuals and their community.

Co-Design Scope and Objectives

To ensure that co-design solutions align with the broader community's development goals and resources, it is crucial to collaborate with the Burke County Public Health Department. The Health Education Supervisor and Public Health Director bring their expertise in epidemiology, public health, and community health education to the table, and their involvement in substance abuse interventions lends credibility to the initiative. This collaboration also sends a clear signal to the community that substance abuse is a serious public health concern that requires immediate attention and action.

Public health officials have comprehensive data on substance abuse trends, prevalence rates, and risk factors within the community (Discovering Public Health Issues with Data, 2022). By taking a data-driven approach, informed decisions regarding resource allocation and practical strategies to address substance abuse can be made. Public health departments often have access to funding, grants, and other resources supporting prevention, intervention, and treatment programs. Therefore, collaborating with the Burke County Public Health Department can provide essential opportunities to design, implement, and evaluate substance abuse initiatives that reflect the community's needs and align with broader public health goals.

Social Workers at Burke County Social Services work closely with the county commissioner to prioritize support and access to address substance abuse at individual and community levels. Their multifaceted role involves building the capacity of communities to combat substance abuse through cognitive behavioral therapy, crisis intervention, motivational interviewing, and trauma work (Role of Social Workers in Mental Health, 2020). They also facilitate support groups, train community leaders, and promote peer support networks to create a supportive environment for individuals in recovery. Ongoing evaluation and feedback are necessary to assess the interventions' effectiveness, and Social Workers work closely with the county commissioner to monitor outcomes, collect data, and adapt strategies based on trends and community needs.

The position of Coalition Chair for the Burke Substance Abuse Network carries great significance as they lead a collaborative effort to tackle substance abuse issues within the community. The Chair conducts thorough needs assessments and gap analyses to identify areas lacking substance abuse treatment and prevention services (Bright et al., 2019). They work closely with stakeholders to gather necessary data, evaluate community needs, and prioritize areas for intervention based on evidence and community feedback. Through strategic planning, the Coalition Chair sets clear goals, objectives, and action steps to address substance abuse within the social and community context. The Coalition Chair facilitates collaboration, innovation, and collective action to address substance abuse problems in the

community. They ensure that efforts are well-coordinated, evidence-based, and tailored to meet community needs and priorities (Pullen & Oser, 2014).

Accountability is pivotal in guiding co-design efforts for substance abuse disorder initiatives in social and community contexts (American Public Health Association, 2019). Defining clear responsibilities, roles, and expectations ensures comprehensive participation. Essential to this approach is the establishment of measurable outcome metrics through EBCD, aligning with the overarching goal of addressing substance abuse disorders. These metrics encompass enhancing treatment accessibility, lowering relapse rates, improving the quality of life for individuals in recovery, and boosting community involvement in prevention endeavors. Regularly reporting on these metrics fosters accountability among partners and pinpoints areas for enhancement. Adhering to these principles can lead to significant success in combating substance abuse disorders within communities. Crucially, implementing an evaluation framework to assess the impact of EBCD interventions on treatment engagement, relapse rates, and quality of life is imperative. Leveraging evaluation insights informs ongoing improvement initiatives and enhances program efficacy over time.

Transparency and accountability are vital for effective community responses to substance use disorders (American Public Health Association, 2019). Transparent decision-making processes build trust and legitimacy among stakeholders, fostering a sense of ownership over initiatives. Reporting on metrics holds partners accountable and guides iterative refinements of interventions to address evolving community needs (Mendel et al., 2019). Additionally, facilitate design thinking workshops to ideate and prototype solutions to address critical challenges identified through stakeholder engagement. Encourage participants to think creatively and collaboratively develop innovative interventions tailored to the community's needs.

Experience-based co-design (EBCD) is an approach that involves community members, caregivers, and healthcare professionals in the design process to enhance service delivery and outcomes. When applied to substance abuse programs, EBCD can lead to more effective, person-centered interventions. By engaging a diverse range of stakeholders, the design process becomes inclusive and

representative of the needs and perspectives of all parties. EBCD allows for an in-depth understanding of the local context by directly involving community members, including those with lived experiences of substance abuse, in the design process (Sprague Martinez et al., 2020).

It is essential to conduct community outreach to educate awareness about substance abuse disorders and reduce stigma to promote access to treatment and support essential workshops and communication that can help disseminate information more widely.

Through interviews, focus groups, and storytelling sessions, stakeholders share their experiences with substance abuse, treatment, and recovery. These sessions help uncover the strengths and weaknesses of current services and identify unmet needs and priorities for improvement. EBCD incorporates mechanisms for collecting relevant data on the identified metrics throughout the design and implementation process. This may involve tracking quantitative data, such as the number of individuals accessing treatment services or participating in prevention programs, and qualitative data, such as stakeholder feedback and anecdotal evidence of impact.

EBCD emphasizes the importance of regular transparent reporting on progress against established metrics to stakeholders and partners involved in the initiative. This includes sharing data on outcomes achieved, challenges encountered, and lessons learned through the co-design process. By adopting such an approach, communities can work together to design and implement effective substance abuse programs that meet the needs of all stakeholders while building trust and accountability.

Personas, User Stories, Needs and Quality Characteristics

Persona 1: Community Advocate and Connector

As a community social worker trained to approach clients with empathy and understanding, I recognize that addiction is a complex issue often intertwined with trauma, mental health challenges, and socioeconomic factors (Ewald et al., 2019). Spending time in the community and seeing evidence of the devastation of substance use disorder along with attentive listening to stories and experiences, building trust and rapport is how I ensure clients and their families feel supported on the journey to recovery.

There is not enough education surrounding substance abuse disorder yet the entire county is impacted by

the high rates of substance use disorder and understanding Burke County's culture and traditions and incorporating them into interventions is necessary to ensure they are culturally sensitive and relevant (Brennan, 2023). While access to resources are limited, I am adept at creativity for problem-solving and generating solutions. Lastly, I understand the importance of collaboration and community partnerships in tackling substance abuse issues through active engagement with local organizations, faith-based groups, and government agencies to develop comprehensive prevention, intervention, and treatment strategies (Malick, 2019). By fostering a network of support, the social worker helps strengthen the community's response to substance abuse.

Persona 2: Expert Educator and Community Engagement Specialist

Burke County Health Department's Health Educator is highly knowledgeable about substance abuse prevention, intervention, and treatment strategies. The primary duties of the Health Educator are staying up-to-date on the latest research and evidence-based practices in addiction medicine, allowing for the development of comprehensive educational programs tailored to the needs of the rural county's population (World Health Organization, 2012). From workshops and seminars to informational materials and online resources, I ensure that accurate and accessible information is available to community members. Emphasizing the importance of engaging the community to combat substance abuse, I organize community forums, town hall meetings, and focus groups to raise awareness, foster dialogue, and mobilize support for prevention initiatives. By actively involving community members in the planning and implementation process, this ensures that programs reflect the needs and values of the rural population.

Empathy Map

- i. Heard: The social worker heard the stories and experiences of the community members directly impacted by substance use disorder struggling.
- ii. Said: The social worker admitted that the complexity of substance addiction is intertwined with trauma, mental health challenges, and socioeconomic factors (Ewald et al., 2019).

- iii. Felt: The social worker felt the need to ensure interventions are relevant and culturally sensitive to Burke County residents needs (Brennan, 2023)
- iv. Did: The social worker established the need for collaboration and community partnerships in tackling substance abuse (Malick, 2019).
- v. Thought: The entire county is impacted by high substance use rates yet there is not enough preventative education available.
- vi. Saw: The social worker spent time in the community seeing evidence of the devastation of substance use disorder and need for building community rapport for successful interventions.

User Stories

- vii. As the Burke County Health Educator, I want to increase access to education about SUD and treatment so that it is easier to obtain information for services as needed.
- viii. As a Burke County community social worker, I want to increase the resources in Burke County so that the people who require care can access it.
- ix. As the Burke County Health Educator, I want to reach others in the community who are at risk or suffering with substance use disorder so I can help access available resources.

Needs Using Kano Model

- x. Delight: Need for increased preventative and substance use disorder support education programs
- xi. Performance: Need for additional local resources for substance use disorder
- xii. Basic: Need for increased access to substance use disorder treatment

Quality Characteristics

- xiii. Need for increased preventative and substance use disorder support education programs
 - 1. Stigma reduction
 - 2. Low-cost or free substance use disorder education programs
 - 3. Real-time communication with individuals suffering with SUD

- xiv. Need for additional local resources for substance use disorder
 - 1. Awareness of local resources
 - 2. Privacy and confidentiality in mental health resources
- xv. Need for increased access to substance use disorder treatment
 - 1. Ease of access to receive referral to treatment
 - 2. Short wait time between referral and actual treatment begins
 - 3. Increase in community partners to provide referrals

Design Brief: Enhancing Community Resilience: A Holistic Approach to Addressing Adult Substance Abuse in Burke County

1. Outreach

Our initiative aims to bolster community resilience by tackling adult substance abuse in Burke County comprehensively. Through enhanced access to substance use disorder treatment, resources, and widespread education initiatives, we strive to empower residents to combat the challenges posed by substance abuse.

2. Assist

Our approach involves proactive outreach efforts to expand access to educational programs tailored to individuals grappling with the repercussions of substance use disorder in Burke County. By fostering greater awareness and understanding within the community, we seek to create a supportive environment conducive to addressing and overcoming substance abuse challenges.

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