NCPHA EMERGING LEADERS
Program Projects

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ABOUT THE NCPHA EMERGING LEADERS PROGRAM

The NCPHA Emerging Leader's Program aims to provide emerging leaders in public health with skills and knowledge to become even more effective in their work in the complex landscape of health care. Over the course of the program year, participants have explored a range of topics to build skills such as successfully leading teams through change and the ability to communicate with a diverse group of stakeholders.

Participants worked in groups across counties and across function to address a public health topic.

TABLE OF CONTENTS

Table of Contents

Improving Maternal and Child Health through Breastfeeding Normalization and Education

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Introduction

The World Health Organization states that "[b]reastfeeding is one of the most effective ways to ensure child health and survival" (WHO, 2017). However, according to a report from the Centers for Diseases Control and Prevention (CDC), although most mothers start out breastfeeding their infants, many stop earlier than what is recommended (CDC, 2018). In light of the importance of breastfeeding for a child's health, it is important to understand why mothers stop breastfeeding early. Mozingo et.al., (2019) suggest, "the incongruity between expectations about breastfeeding and the reality of the mother's early experiences with breastfeeding her infant has been identified as a key reason that many mothers stop breastfeeding within the first two weeks postpartum".

The 2018 CDC report further found that although a majority of infants receive breastmilk, they do not continue to receive any breastmilk or exclusively breastfeed due a multitude of reasons, two of which were a lack of supportive work policies and lack of parental leave but also included cultural norms and lack of family support (Sriraman & Kellams, 2020). In 2017, the US national average showed that 46.9% of mothers were exclusively breastfeeding through the first three months, while at six months, the number was 25.6% (CDC, 2020). In North Carolina, the numbers are fairly aligned with the national average: 42.5% at six months and 23.3% at three months.

In the year 2020, mothers are still faced with breastfeeding discrimination amongst their families, peers, and communities. Whether it be for breastfeeding in public, a lack of support from employers when returning back to work or school, or not having a safe space to feed their baby or express breastmilk, many women choose to stop breastfeeding earlier than the recommended time (AAP Policy on Breastfeeding, 2020). The U.S. Surgeon General's call to action to support breastfeeding seeks to shift the narrative that breastfeeding in public is

unacceptable and promote the safe return to work for breastfeeding mothers, knowing they can be allotted time and space to express breastmilk, allowing every mother who chooses to breastfeed the opportunity and support to do so (The Surgeon General's Call to Action to Support Breastfeeding, 2020).

As a part of a leadership development program, teams were tasked to tackle a public health issue in NC. As such, the purpose of this project was to educate providers and patients on the benefits of breastfeeding and business owners on the laws that protect breastfeeding mothers as they return to work. Through our project, we aimed to improve breastfeeding normalization by educating the providers and patients within our communities, identifying large employers in our rural counties to educate on the laws to provide safe and adequate spaces for breastfeeding mothers to utilize, and initiating and supporting a community breastfeeding support.

With minimal costs, we set out to educate seven counties in Eastern North Carolina on the benefits of breastfeeding, the laws protecting breastfeeding mothers when returning to work or school, and install breastfeeding spaces in three school systems and various community businesses over the course of the program year. These seven counties include Cumberland, Harnett, Hoke, Moore, Montgomery, Richmond and Scotland County. We partnered with Improving Community Outcomes for Maternal and Child Health (ICO4MCH), which represents Cumberland, Hoke, Montgomery, Richmond and Scotland County. Harnett and Moore county provide birthing center services for their residents as well as for the residents in the counties of Montgomery and Richmond. Additionally, a breastfeeding coalition was created for community champions and members with the mission to “facilitate collaborative community work through education and advocacy that creates an environment of genuine breastfeeding support for all families” (NCBFC, 2020).

Methods

As found in the CDC report (CDC, 2020) mothers do not continue to exclusively breastfeed or provide their child with breastmilk as long as recommended due to the lack of supportive work place polices and parental leave, as well as the lack of family support and cultural norms

(Sriraman & Kellams, 2020). To address the first reason, lack of support from employers, we identified the largest employers within the seven counties to educate the employers on supportive workplace policies that protect breastfeeding mothers. We identified the employers by researching the Chamber of Commerce to demographically identify which employers employed the most women that are of childbearing age. Selected employers included the North Carolina Public School System in Hoke, Richmond and Montgomery County; McRae Industries; and Perdue Farms in Montgomery County. Prior to the education effort, we met with the respective human resource departments and school boards to discuss the laws that support and protect a woman's right to continue her breastfeeding journey and shared in particular. Section 4207 of the law amends the Fair Labor Standards Act (FLSA) of 1938 (29 U.S. Code 207), which states that

> "require an employer to provide reasonable break time for an employee to express breast milk for her nursing child for one year after the child's birth each time such employee has need to express milk. The employer is not required to compensate an employee receiving reasonable break time for any work time spent for such purpose. The employer must also provide a place, other than a bathroom, for the employee to express breast milk. If these requirements impose undue hardship, an employer that employs fewer than 50 employees is not subject to these requirements. The federal requirements shall not preempt a state law that provides greater protections to employees" (Bradford & Johnson, 2020).

The North Carolina law states that a breastfeeding mother returning to work has the right to a break during her workday to express breastmilk in a private location. To aid in the normalization of breastfeeding of these employers, we also referred to the N.C. Gen. Stat. § 14-190.9 which states that any woman can breastfeed in public or private location and will not be in violation of indecent exposure laws (Bradford & Johnson, 2020).

The employers agreed to our education initiative, as they apologetically were unaware of these laws protecting breastfeeding mothers, and quickly identified spaces that would serve as a safe space for breastfeeding mothers to express breastmilk while at work.

In addition to reaching out to large employers, we also partnered with smaller, locally owned businesses to educate them on the benefits and laws that support and protect breastfeeding mothers. This group also reacted favorably.

We partnered with our local health departments and Improving Community Outcomes for Maternal and Child Health Sandhill's Collaborative (ICO4MCH) to help fund the implementation of cozy and safe breastfeeding spaces for breastfeeding mothers that return to work. ICO4MCH is also working towards implementing breastfeeding spaces within community organizations and have allocated funding to support the implementation of breastfeeding spaces. The local health department in Cumberland and ICO4MCH have grant funding available, which will allow for materials to be bought to outfit the breastfeeding spaces. It could be argued that it would be in the employers' own interest to provide the safe spaces, for their female employees who wish to breastfeed on their own expense rather than use grant funding.

However, operating on a premise that it is more important to provide the spaces than delay this effort due to discussing who should pay, we chose to offer the employers the opportunity to receive funding for the materials needed to outfit the space. It is our hope that our efforts will help inspire other organizations to act proactively to create spaces for breastfeeding mothers. Secondly, we partnered with our local public health departments and hospitals to educated providers and their patients who were breastfeeding mothers on a wide variety of general breastfeeding topics such as breastmilk storage during natural disasters, benefits of breastmilk to both mother and baby, pumping in the workplace, navigating public breastfeeding, and partner and family support. We identified the breastfeeding mothers through the local health departments Women, Infants, and Children (WIC) program, community outreach events, providers, and breastfeeding mothers.

Finally, we collaborated with Norma Escobar, IBCLC WIC Perinatal Region 5 Director to create a community breastfeeding coalition in Cumberland County that is made up of community breastfeeding champions who advocate for breastfeeding mothers. The champions

consist of local health department stakeholders, OBGYN offices, local hospital lactation consultants, La Leche League leaders, and non-profit breastfeeding and doula support workers.

Results

As a result of our effort to make communities breastfeeding friendly, we worked to address some of the key reasons identified by the CDC as getting in the way for breastfeeding such as the lack of supportive work place policies and parental leave and the lack of family support and cultural norms. To address workplace issues, we identified and implement a total of 35 breastfeeding spaces in corporate organizations and in small business. In Hoke County we established 14 breastfeeding spaces within their public school system. Each of these spaces were identified and outfitted so that each breastfeeding mother would have a comfortable and safe space to express breastmilk in support of their continued breastfeeding journey. Most breastfeeding rooms were provided lamps, chairs, miniature refrigerators to store breastmilk, breastfeeding educational materials, sound machines and cozy décor. Some spaces were already set up with things like a comfortable seating place, lamp, television, or a fridge to store expressed milk.

In Richmond County we implemented 14 breastfeeding spaces within the public-school system and while Montgomery County, we implemented one breastfeeding space in their Early College High School; one in McRae Industries and one in Perdue Farms. The local communities had the opportunity to raffle two breastfeeding spaces during 2019's Black Breastfeeding Week. The winners included a local black owned business, the hair salon Natural Genius in Fayetteville, and an elementary school in Cumberland County. Lastly, we implemented a breastfeeding space in the Metro Dinner, located off Skibo Road in Fayetteville, North Carolina. We identified the Metro Diner when calling around to local businesses about the interest of a breastfeeding space within their establishment, which employed 11 employers who were pregnant, recently delivered, or breastfeeding mothers. The outfitting of the breastfeeding spaces varied, from e.g. a folding wall to the use of an office space. The important part was that we could provide breastfeeding storage bags, small breastmilk lunchbox coolers, privacy signage, and other breastfeeding specific supplies in all the spaces we implemented.

Additionally, we provided education to the management team and helped develop a plan on a contingent schedule for pumping. The scheduled plan was provided to the breastfeeding mothers to sign up within their shifts that allotted them time within their shifts for expressing breastmilk. We offered this type of planning to the Metro Diner due the fast-paced food industry environment. The other businesses we implemented spaces within, were able to also develop a pumping plan that fit the breastfeeding mothers' independent needs. To address cultural norms, we educated the community of providers, breastfeeding mothers, employers, and employees on the benefits of breastfeeding to help normalize breastfeeding. In total, we educated 558 individuals on a variety of general breastfeeding topics such as breastmilk storage during natural disasters, benefits of breastmilk to both mother and baby, pumping in the workplace, navigating public breastfeeding, and partner and family support. The individuals were local public health department staff, OBGYN's, local hospital staff, breastfeeding coalition members, non-profit breastfeeding and doula services, and community members.

We reached our goal to educate breastfeeding stakeholders and champions so that they in turn may educate others while advocating for the breastfeeding mothers. In addition, we were able to participate in 22 outreach events before COVID-19 pandemic closed down North Carolina. During these outreach events we shared education materials and incentives such as breastfeeding covers, boppy pillows and breastmilk storage bags with breastfeeding mothers within the community, as well as lactation support. We also had the opportunity to present the Making It Work Toolkit, an online resource for breastfeeding mothers returning to work or school, to the Personnel Administration of North Carolina (PANC). Additionally, we spoke on the importance of breastfeeding spaces for breastfeeding employees, especially in large organizations such as public school systems.

Finally, the breastfeeding coalition in Cumberland County met on a bi-monthly basis during the program year and on-going to discuss breastfeeding barriers that stakeholders and breastfeeding mothers within the community facing. During the meetings we highlighted our partnership to celebrate the great work and success and addressed any concerns that members

of the coalition had been made aware of. We also discussed how to better navigate breastfeeding services to community members.

Prior to COVID-19, we used the breastfeeding coalition to plan for community outreach events such as World Breastfeeding Week, National Breastfeeding Month and Black Breastfeeding Week. Each of these events brings together empowered breastfeeding mothers within the Cumberland County, and is open to anyone to share and celebrate their breastfeeding journeys. Although August 2020 breastfeeding events were held on virtual platforms due to the pandemic, we still managed to provide educational materials and incentives for our breastfeeding mothers that came for WIC appointments at our local health departments, as well as materials and incentives for our local hospitals.

Conclusion

Through our project, we strived normalize breastfeeding and reduce the barriers for breastfeeding mothers in support of their journeys, for both mother and baby. Breastfeeding has many benefits to both mother and baby, but due to unsupportive work policies or lack of parental leave, family support, as well as cultural norms, mothers are choosing to end their breastfeeding journey earlier than recommended. We sought out champions and stakeholders within our communities to help normalize breastfeeding and reduce the barriers by educating providers are local health departments and hospitals, OBGYN clinics, outreach events, and small and large business owners. In total, over the course of the program year, we implemented 35 breastfeeding spaces in large and small businesses within the seven counties that were subject to our project and educated 558 individuals on the benefits of breastfeeding and the laws surrounding breastfeeding in the workplace. Normalizing breastfeeding is a global initiative (UNICEF, 2018) that requires a global effort but during our research project we strived to reduce the barriers to breastfeeding mothers, in support of their journeys for both mother and baby.

We supported the breastfeeding mothers within the communities by providing breastfeeding spaces within school systems, large corporate employers, a local salon and a local restaurant. Additionally, we built a coalition of breastfeeding champions that work to educate

the community on the benefits of breastfeeding and the laws that protect breastfeeding mothers from discrimination. Our aim was to reduce the barriers by educating providers on the benefits of breastfeeding and business owners on the laws that protect breastfeeding mothers when they return to work. We believe we have improved breastfeeding normalization by educating the providers within the seven counties. We also identified large employers that employ the largest number of women of reproductive age and educated the human resource departments and school boards on the laws to provide safe and adequate spaces for breastfeeding mothers to utilize. Lastly, we initiated a breastfeeding coalition for sustainable results.

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Safe Drinking Water Awareness in Eastern North Carolina: GenX and PFAS Hazards – The Silent and Invisible Killer

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Introduction

Clean, safe drinking water is important for every individual (www.who.int). Clean water is crucial for public health, whether for drinking, cooking, bathing, or sport. The World Health Organization (WHO) states that although the majority of individuals globally have access to clean and safe water, when potentially harmful contaminants enter a stream, river, lake, ocean, or other body of water, the water quality becomes degraded, making the water toxic to people, animals, and the environment (WHO, 2019). In 2017, 5.3 billion people, 71% of the world's population, had access to safe, contaminant-free drinking water (WHO, 2019).

Water can contain many types of contaminants such as chemical, physical, biological, or radiological contaminants (WHO, 2019). The most startling contaminants are the ones that are invisible, undetectable to taste or smell and that can cause immediate, discernable health hazards. This study will discuss a chemical contaminant, GenX in the Cape Fear River Basin. GenX is a manmade polymer that belongs to the family of chemical composites which consists of many compounds such as perfluorooctanic acid (PFAS or PFOA), perfluorooctane sulfate (PFOS), and polytetrafluoro-ethylene (PTFE) (Wheeler, 2018).

GenX, often called a 'forever chemical' for its strength, endurance, and long-term stability in the environment, can travel through soil and air to drinking water and build up in an individual's blood and organs causing harm to human health (Ahearn, 2019). As healthcare costs continually rise, research has linked GenX to cause high cholesterol, kidney and testicular cancer, thyroid disease, ulcerative colitis, immunotoxicity, and many more in patients (NC State University, 2020).

GenX is on the U.S. Environmental Protection Agency's (EPA) list of unsupervised pollutants, meaning there are no current regulations on the chemical as research continues in determining it as a risk to public health (Ahearn, 2019).

Since the 1940s, the GenX group of chemicals have been used in industrial processes such as producing Teflon cookware, water-resistant apparel, paints, food packaging materials, spot-repellant carpets as well as microwave popcorn.

Today, some manufacturers have willingly eliminated their use in production processes. Other businesses, however, still utilize GenX in their daily manufacturing operations, which leads to the release of these compounds into natural surroundings and nearby water sources, resulting in the pollution of drinking water, causing serious health concerns (Ahearn, 2019).

North Carolinians have drinking water from multiple sources depending on the community, county, or region they live in. Sources include in-ground wells, municipal or county water systems, and community wells.

The county and municipal water systems comply with state guidelines for safety, which are established by the NC Division of Environmental Quality. The public water supply section of NC DEQ enforces NC General Statute 130A Article 10 for water treatment facilities and public water supplies. This department coordinates with the Environmental Management Commission (EMC) to create ordinances to implement the law (DEQ.nc.gov, 2020). In 2017, GenX was discovered in Greensboro and Wilmington, NC.

The purpose of this study was to explore existing problems with drinking water in the Cape Fear River Basin which supplies drinking water to the southeastern portion of North Carolina. The findings could encourage the public to be more involved in the safety of their drinking water. GenX may take decades to break down and cause obvious health effects in the human body. Priorities should be warning and informing the public of the dangers of GenX, ramping up research to set federal standards on consumable water quality, and enforcing stricter industrial dumping permits and guidelines.

Methods

Due to the Coronavirus pandemic, this study was modified to a qualitative approach, obtaining data through open-ended and conversational questions. Individual interviews with subject matter experts were conducted to obtain information from a broad range of experts. Although findings cannot be generalizable, it is reasonable to suggest it can expand the knowledge base

in public health and address a significant issue. The quality of water is an alarming public health matter that impacts communities, causing illness and even death (Ahearn, 2019).

Results

A study conducted by the NC State University (NCSU), found the GenX contamination of the water in NC alarming (Knappe, 2016). After findings from the study had been published in local media, Cape Fear River Basin residents and local public officials rallied a cry to action for their community. Since water treatment plants cannot remove Gen X from the drinking water in their current form, water treatment systems must be updated to make drinking water safe for consumption (ncpolicywatch.com) In addition, Gen X was released in the Cape Fear River in discharges as well as in the air, which meant that private wells and municipal water systems were affected (Knappe, 2013).

After local meetings about health concerns of Gen X, the NC Department of Environmental Quality set a provisional goal to lower Gen X concentrations (NCDEQ). In the NCSU study, conclusions included the need to educate physicians about the dangers of chemicals in drinking water. Currently, it is reasonable to assume most doctors do not discuss water quality with their patients, because people assume their water is safe. In addition, the author highlighted the importance of consumer awareness of carcinogens in products to decrease the prevalence of chemicals like PFAS and Gen X. As Aheran (2019) suggests, like with BPA movements and plastics, consumer outcry for standards of safety can drive companies to stop producing products that have environmental consequences on health.

The NCSU-study alerted the NC Policy Watch, a project of the North Carolina Justice Center,a research and advocacy organization, about the pollution in drinking water and identified the lack of guidelines from the Federal Environmental Protection Agency (EPA). This gap has limited the ability of all states to have minimum levels of emerging contaminants, such as GenX (NC Policy Watch, 2020). Despite the lack of federal regulation or guidelines, NC Department of Environmental Quality does have the ability to implement enforceable water quality standards for municipal and county water systems (www.deq.nc.gov). This local authority could have a significant effect on improving the quality of water for communities. In the Wilmington-area,

New Hanover County and Brunswick County, community-based groups such as the Cape Fear Riverkeeper and Clean Cape Fear are great examples of how community led organizations have raised awareness about the dangers in drinking water and have inspired the public to get involved in advocacy to prevent contaminants in drinking water (NC Policy Watch, 2020). Experts agree that drinking water concerns need legislative attention at the local, state and national level but this may take a long time to implement (D. Knappe, personal communication, July 24, 2020: L.Sorg, personal communication July 23, 2020).

It is reasonable to suggest most people assume that drinking water is safe and yet do not know the source of their water, how to have it tested, or what the acceptable levels of chemicals in the water are. In addition, experts in Gen X contamination have different views of how to treat water that has contaminants. Legislative action to address the water quality has been limited at the state and national level. NC Department of Environmental Quality has established minimum levels of exposure although those levels have yet to be nationally established which limits the enforcement ability to carry over to local water authorities. Experts agree that educating the public on how to know about their drinking water is the best way to see things change and make drinking water safer.

Although there is ongoing extensive research on GenX and advocate groups are fighting feverishly to enforce stiffer regulations on the release of the chemical into the environment, the process is extremely slow and cumbersome, requiring manpower, funding, and fixed standards on drinking water, which currently does not exist through the EPA for GenX .

Conclusion

The presence of GenX in drinking water is a tragedy that could have been prevented years ago in NC. Air pollution of contaminants and river discharge has affected both groundwater and municipal water supplies in the Cape Fear River basin. The purpose of this study was to explore the quality of the drinking water in Cape Fear River and how it impacts Harnett County. Based on our findings, it is clear there is a need to involve the public in this issue. One of the takeaways of this project was learning that in order to see the testing results of water systems in the county and municipal area, you need to request a copy of the water testing in your

community and specify that you would like to see the emerging contaminants. Unless you ask for this level of detail, you will not see the complete list of chemicals in your drinking water. The only way to remove harmful chemicals is to install a reverse osmosis system for the kitchen sink, drink bottled water, or purchase a Berkey Filter, both which are expensive and may not be feasible for all families to afford. This could further increase existing disparities across socio-economic levels. In the end, the public will not gain a good handle on the exposure to Gen X until consumers start demanding companies to take responsibility for the products they manufacture. As this chemical compound is found in non-stick cookware, rain repellent on camping gear and in automotive finish products, food packaging, microwave popcorn, firefighting foam, paints, cosmetics, scotch guarding of furniture and carpet, and even paints, the magnitude of the spread of GenX is hard to fathom.

The health implications and overwhelming public concern for GenX lead to a burning question: When did the manufacture of non-decomposing chemicals, producing such items as rain boots, pizza boxes, and stain-repellent carpet become more important than human life (Ahearn, 2019)?

The importance of education and awareness among the public is the main conclusion of this study. There are several non-profit organizations that are addressing education for the public. One organization is the Green Science Policy Institute, which launched the Six Classes program to reduce the use of harmful chemicals in consumer and other products. The goal of the institute is to bring together scientists and decision makers from business, government, academia, and non-profits to develop strategies to reduce the production and use of harmful chemicals (www.sixclasses.org). The Green Science Policy Institute recommends the following to limit out exposure to Gen X and PFAS:

- Choose textiles and carpeting without water- and stain-repellency.
- Avoid food in contact with greaseproof packaging, such as microwave popcorn and some fast food.
- Avoid personal care products with “perfluor-“, “polyfluor-“, and “PTFE” on the label.
- Purchase cast iron, glass, or ceramic cookware rather than Teflon.
- Only purchase waterproof gear when you really need it.

- Note that “PFOA free” products often use similar chemicals instead.
- Support companies that are committed to phasing out PFAS.

If concerned about PFAS in your drinking water, consider installing an in-home filter on your tap. Reverse osmosis systems installed at the kitchen sink are the most effective method based on research at NC State University.

It is crucial that the public become educated on public and private drinking water and what components should not be present presumable safe, drinking water. Based on our research, it seems to be difficult for individual consumer to request and receive a list of substances in their drinking water. Furthermore, if an individual does succeed to obtain this information, the information is difficult to understand due to the terminology or what kind the components are. Multiple cases of injury, illness, and death have occurred in previous years, many tied to power and money, and prevalent companies who refused to admit the water local residents were consuming was infused with a silent and invisible killer – GenX.

Access to clean water is a human right, not a commodity. We believe most consumers assume that drinking water is safe and trust the tap water from their home faucet. Residents place their trust in the local water treatment plants to remove all harmful agents. Unfortunately, GenX can cause contamination on both water and ground, making the resources toxic and carcinogenic, unable to be removed except through expensive processes such as reverse osmosis.

The GenX chemical compound and its concrete health effects remain to be studied in more detail (GenXStudy.ncsu.edu). A committed joint effort between policymakers, water quality officials, health care officials, scientists, industries, and consumers must take place in order to ensure safer drinking water.

In conclusion, there is an overwhelming lack of education and outreach about how residents in communities can be made aware of the quality of their drinking water. As we found through exploring the water quality in Cape Fear River and the impact of GenX, the public must take an active role in demanding safe drinking water. This could be accomplished by reviewing the contaminants in your drinking water by having an analysis of well water or requesting a copy of your water quality from the entity that manages your water system. The public can also challenge manufacturers to stop producing chemicals like GenX that have an adverse effect on

the environment and choose products that do not contain this chemical and other classes of this substance.

The public will need to educate themselves on this issue and take community- and political action for there to be a change. Many grassroots efforts are underway and once the public demands safe drinking water, we can see holistic change that will enable us to have safe drinking water as a basic right not privilege.

The medical community also needs to be educated about this issue and keep in mind when they have patients that live in areas such as Harnett County and others where GenX has been found in the water sources. Awareness and education will enable the medical professionals to educate the public and make them aware of the questions they should ask about the safety of their water. All these recommendations could improve the quality of life for so many North Carolinians.

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Maintaining a Harm Reduction Program During a Pandemic

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Introduction

On January 30, 2020, the World Health Organization (WHO) announced that the 2019 Novel Coronavirus (COVID-19) disease outbreak had become a public health emergency of international concern. Later, on March 11, 2020, the novel coronavirus disease was declared a pandemic by the World Health Organization. Just two days later, the United States stated a national emergency concerning the COVID-19 Outbreak (CDC, 2020).

Those with substance use disorders are particularly at risk during a pandemic such as Covid-19. Many individuals who access harm reduction programs are at increased risk of respiratory infections, and poor outcomes to COVID-19. These individuals are also at increased risk for overdose and more susceptible to develop COVID-19 infections due to difficulty in complying with stay at home orders and living in crowded conditions where the disease can spread rapidly (Tsai & Wilson, 2020).

For a vast majority of this marginalized population, there exists other factors related to social determinants of health that contribute to increased risk factors. Such issues as poorer health literacy, unstable or crowded housing arrangements, stigma, unsafe substance use sharing practices, inadequate access to harm reduction supplies and other limited personal resources all raises concerns (Khafaie et al., 2020).

Ensuring people with substance use problems can continue to receive harm reduction services may create numerous challenges but is vital in the health of those being served and community spread of the virus. Ethical considerations around harm reduction practices are especially important during a pandemic. Past disasters such as Hurricane Katrina have exemplified how people who use drugs may prioritize substance use over their own personal safety. For example, a participant may use to self-medicate pandemic anxiety and to avoid substance withdrawal above following recommendations to stay at home (Dunlap & Golub, 2011).

Historical Context of Harm Reduction

Harm reduction has been existent since the 1980s and has served as an alternative policy to "war on drugs". HIV provided a catalyst for the initiative and general adoption of the harm reduction approach. Harm reduction programs engage people at different stages of drug use to help protect themselves and their communities through safer behaviors, relationship building and connections to care. Harm reduction programs meet people where they are at in their drug use and aim to reduce the negative consequences associated with that use. The history of harm reduction in the USA has led to the development of some of the most important methods for treating persons for drug use disorders, such as methadone and buprenorphine for opiate use disorder (Des Jarlais, 2017).

Population Description of Each County

According to the North Carolina Injury and Prevention N.C. County Overdose Report in 2018, an average of 6 people a day died from medication/drug poisoning in North Carolina (all intents). That number of medication/drug deaths has increased 98%, over the last 10 years (2009-2018). The fatality data from the Vital Registry System of the State Center for Health Statistics (SCHS) reported the drug overdose burden in NC took a tremendous spike between 2015-2017. The epidemic of med/drug overdose is mostly driven by opiates, specifically prescription opioids. By 2015 Heroin and/or other synthetic narcotics were the leading substance contributing to unintentional overdose deaths.

Cabarrus County

Cabarrus County is located in North Carolina's south-central Piedmont, the county neighbors Mecklenburg, Stanly and Rowan and Union Counties. According to the 2019 United States Census Bureau, Cabarrus County has a population of 216,453. In 2018, the median household income was reported at $64,174 with 9% of people living in poverty and 10.6% of people without health insurance, under age 65 years (U.S. Census Bureau, 2019).

In 2016, Cabarrus County EMS reported 521 substance misuse related calls, 163 of those calls were confirmed heroin overdoses. EMS have the ability to use Narcan, but unfortunately the

drugs continue to increase in strength, which require larger doses of Narcan to stabilize patients. Cabarrus County's rate of unintentional medication/drug overdose was 20.7 per 100, 000 residents between 2014- 2018, exceeding the state at 16.7. The county experienced a significant amount of medical and work loss from medication and drug all intents (intentional and unintentional) fatalities in 2018. The combined cost of total work lost and medical cost in Cabarrus County was $76,624.582. These figures do not include costs associated with treatment and recovery or other impacts of this epidemic.

Cleveland County

Cleveland County has a population of 97,334 and shares its southernmost border with South Carolina. Located between Charlotte, Asheville and Greenville/Spartanburg, Cleveland County is the gateway between major metropolitan areas. Populations inhabiting areas of high poverty are immensely affected by methamphetamine, heroin, prescription opioid and cocaine use. Furthermore, the use of these substances is directly correlated with the amount of crime that occurs annually.

In Cleveland County, substance misuse puts an enormous strain on law enforcement resources. It is estimated that 80% of criminal activity and calls for service are substance misuse related. In 2018, when comparing all 100 counties in North Carolina, Cleveland County tied for the 10th highest unintentional poisoning mortality, with a rate of 22 per 100,000. Cleveland County Emergency Medical Services reported administering 150 doses of Naloxone to patients between November 2015-16 and 151 from November 2016-17. In 2017, there were 7,810,000 opioid pills prescribed in Cleveland County, enough for every resident to have 80 opioid pills each. (NC Injury and Violence Prevention Branch). By 2018, there were 6,810,290 opioid pills prescribed in Cleveland County, enough for every resident to have 69 opioid pills each. (NC Injury and Violence Prevention Branch).

Hoke County

Hoke County has a population of 55,387, is bordered by Cumberland, Moore, Robeson and Scotland counties and the town of Raeford is the only municipality which serves as the County

Seat. Hoke is adjacent to Fort Bragg, the largest army installation in the world, holding about 10% of the U.S active arm forces.

The countywide rate of unintentional medication and drug overdose deaths in Hoke was 8.3 per 100,000 people compared to 16.7 for NC (2014-2018). The countywide rate of unintentional opioid-related overdose deaths in Hoke was 6.8 per 100,000 people compared to 13.6 for NC (2014-2018). A total of 1,780,000 opioid pills were dispensed to Hoke residents in 2018 resulting in an outpatient opioid dispensing rate of 32.9 pills per resident (NC Injury and Violence Prevention Branch).

Within 2018 the NC Opioid Action Plan Data Dashboard stated that twenty-one (21) Hoke county residents visited the Emergency Room and five (5) died due to an opioid overdose. Hoke County was $53,457. The total work loss costs in Hoke County for 2018 was $12,612,949. In 2018, there was a combined estimated total lifetime cost of $12,666,406 with a cost per capita in Hoke County of $231.

Within Hoke, six deaths resulted between 2016 and 2018. The county has seen a high percentage of residents aged 0-17 and over 45 years of age dying by unintentional medication and drug overdoses. Within Hoke County more American Indians and Blacks died from unintentional medication and drug overdoses compared to the state. Consequently, due to varied reasons many county residents utilize hospital emergency rooms outside the county. This barrier makes it unclear as to the capability to approximate a reliable and accurate number of drug overdoses and/or deaths.

Historical Context of Each County's Harm Reduction Program

Cabarrus County

Cabarrus County was significantly impacted by the opioid epidemic. The Healthy Cabarrus Substance Use Coalition was launched in 2013 in response to the identification of mental health and substance use as a priority issue in the 2012 Cabarrus County Community Needs Assessment. In 2016, substance use was identified to be the #1 health priority in Cabarrus County. At the national, state, and local levels, deaths related to drug and medication

overdoses have skyrocketed. Cabarrus County has witnessed an increase in the number of unintentional medication and drug-related poisoning deaths. In 2016 Cabarrus County EMS responded to 163 opioid overdoses, in 2017 call volume for opioid overdoses increased to over 550.

In July and August 2017, the county led the state in per capita Emergency Department admissions related to prescription opioid or heroin overdoses. In January 2018, the county dropped out of the top 10 counties for overdoses in the state but rose to number four that next month. These shocking statistics brought a variety of agencies in Cabarrus County together to address the problem.

Exchange programs were legalized in North Carolina in July 2016. In June 2017, Cabarrus Health Alliance (CHA) started a syringe exchange program, which follows the philosophy of harm reduction. In 2019, CHA was one of twelve entities to receive $150,000 of state funds to advance the goals of the NC Opioid Action Plan. The funding allowed CHA to hire a Harm Reduction Program Coordinator, and Certified Peer Support Specialist, focused on the expansion of the harm reduction efforts, establishment of a satellite location for syringe exchange services and a post overdose response team (PORT).

Cleveland County

The Cleveland County Substance Abuse Prevention Coalition (SAPC) was formed in 2007 and has been funded and/or steered by many different grants over the years. Since 2014, the main funding source has been the DFC (Drug-Free Communities) Grant. The priority of the DFC Grant is to establish and strengthen collaboration among communities, public and private non-profit agencies, as well as federal, state, local, and tribal governments to support the efforts of community coalitions working to prevent and reduce substance misuse among youth. During the first couple of years, Cleveland County focused on Prescription Drug misuse and as a result established 20 permanent medicine drop box locations in the community to decrease access to opioids and prevent overdose. The coalition currently consists of approximately 75 members representing 12 different sectors of the community including law enforcement, schools,

healthcare, faith-based organizations, local government, media, youth and youth serving organizations.

In 2016, Cleveland County was identified as a county at high risk for opioid overdose and was chosen as a recipient of the Strategic Prevention Framework – Partnership for Success (SPF) Grant. As opioid use and overdose remained a focus of prevention work in Cleveland County, a need arose for other efforts to combat the opioid problem in the community. After the need for a syringe exchange program was identified, the Cleveland County Public Health Center applied for and was awarded the *Emergency Overdose: Local Mitigation to the Opioid Crisis for Local Health Departments and Districts.* The grant was designed to establish and strengthen harm reduction activities in Cleveland County by implementing approved strategies such as establishing a syringe exchange program and connecting justice involved people to get treatment and harm reduction resources. The Cleveland County Public Health Center partnered with Olive Branch Ministries, an organization experienced in implementing harm reduction strategies and a local syringe exchange program was created. Points of HOPE (Halting Overdose through Prevention and Education), aims to get participants access to treatment and other resources with a whole person approach. In addition, Olive Branch implemented harm reduction training with jail inmates, educating program participants about risks for overdose after release, and Narcan administration and availability. Inmates signed consent to be contacted by a Peer Support Specialist to do case management, connection to treatment, and syringe exchange.

Hoke County

In April 2017, a plan of action to address opioids was recognized and the Hope-N-Hoke alliance was established including individuals in recovery, local hospitals, law enforcement, mental health, schools, churches and other community organizations that meet monthly. Hope-N-Hoke's aim was developed to increase community capacity to address opioid poisoning and overdose; safer prescribing and dispensing of controlled substances; and increased access to Naloxone. The development of Hope-N-Hoke helped to survey the overall social and political landscape and establish trust within the community with IDUs and other members of the

community. Such conversation and inclusion from the target population proved beneficial in successfully establishing a needs statement for why a SEP is needed while dispelling many concerns and resistance about establishing the SEP. In December 2018, Hoke County was awarded funding to establish a local Syringe Exchange Program in partnership with a local nonprofit, Tia Hart Community Recovery Program. In November of 2019, Hoke Syringe Exchange Program (HSEP) was birthed and assisted their first participant. Further funding was awarded and now HSEP is working to establish a Post Overdose Response Team.
Commute time to more populated areas surrounding each county can be cumbersome and pose significant challenges. Due to the lack of treatment options, rural areas such as Hoke, Cabarrus and Cleveland County are more at risk. Proximity to interstates and highways allows major drug trafficking, which increases the availability of illicit substances.

Methods

The methods of this project included a review of publicly available county and state level quantitative data, and online surveys with key stakeholders in each county.

Review Quantitative Data

NC DETECT was created to address the need for early event detection in North Carolina, using a variety of data sources including data from emergency departments, pre-hospital events, poison center calls and veterinary laboratories (NC Detect). The group solely focused on data from emergency departures and filtered the data base by opioid overdoses across all three counties.

The North Carolina Opioid Dashboard was used to assess the progress of 13 key metrics from the Opioid Action Plan. State- and county-level data was discussed during quarterly group calls after updates on the dashboard to ensure alignment of each respective county goals. EMS Naloxone Administrations and community overdose reversals, unintentional opioid-related deaths, opioid overdose ED visits, were four metrics assessed during the calls prior to COVID-19 (NC Opioid Dashboard, 2020).

Review of Plans and Procedures to Conduct Services during Shutdown

The group reviewed strategies extended to include appropriate COVID-19 harm reduction advice. Education provided regarding 3 W's and more specifically the importance of proper hand and drug hygiene practices.

Cleveland County during COVID-19

As a result of COVID-19, Points of HOPE transitioned syringe exchange services to primarily mobile, with onsite exchange occurring by appointment and taking the appropriate precautions necessary to prevent the spread of COVID. In addition, all jail-based education was suspended until further notice to protect the health and safety of staff and inmates.

Cabarrus County during COVID-19

As a result of COVID-19 Cabarrus County made immediate adjustments to protect staff and participants of the Exchange Program. The Harm Reduction staff put in place nine specific precaution measures to ensure their commitment to the health and wellbeing of everyone.

Hoke County during COVID-19

In response to COVID-19, Hoke County Health Department in partnership with Tia Hart Community Recovery Agency established policies to maintain the safety of program staff and participants. Recovery and peer support services went from being in-person to virtual sessions, mobile syringe exchange services were strongly encouraged, and proper precautionary measures were enforced to ensure safety when supply distribution was taking place.

Key Informant Survey

Each group member enlisted their individual county coalitions which consist of stakeholders who work in the scope of harm reduction. The group collected a total 17 responses via Survey Monkey, an online tool, from clinicians, behavioral health practitioners, law enforcement and public health professionals. The stakeholder analysis asked specific questions which describe how each county operates, especially under the current COVID-19 climate.

Survey participants consisted of individuals within leadership from clinics, health departments, nonprofits, coalitions, and syringe exchange programs, as well as participation from peer recovery coaches, peer support specialists, a public information officer and volunteers. Participant roles and responsibilities related to supporting and implementing harm reduction strategies to address the opioid addiction crisis ranged from grassroots organizing and volunteerism to programming development, implementation, marketing, outreach, and sustainability (Table 1)

Table 1: Participant Roles and Responsibilities overview

Anti-stigma training	Coordination of care	Care coordination	Food distribution
Jail-based education	Naloxone distribution	Justice involved outreach	Peer Support
PORT training	Program sustainability	Recovery coaching	Resource development
Social media awareness	Support and Recovery Groups	Syringe access	Youth engagement

Responses related to appropriate role of harm reduction in addressing the opioid addiction crisis included: stigma reduction; community outreach/education; involvement of the justice system for the development of diversion programs; peer support specialist and recovery coach involvement with post-overdose response teams; naloxone education and distribution; syringe exchange programming; and recovery support. The establishment of rapport and trust was identified as being crucial in effectively reducing stigma, building relationships, and possessing the capacity to effectively and efficiently interact with those who are being served as well as those needed as partners. The importance of having persons with lived experiences involved

was mentioned. It was noted that harm reduction is not just an opioid issue and cannot simply focus on prevention or just treatment but that it has to be a dual approach.
Perceptions of the harm reduction work being conducted in the counties were very positive and exemplified the importance of collaborative, humility and being culturally sensitive. Comments included the importance of the harm reduction work that is being conducted and the success of being able to effectively connect those in need to effective harm reduction practices, treatment and recovery. Services are applauded for being culturally sensitive and highly responsive to addressing the specific needs of the participants while simultaneously addressing other social determinants of health. The importance of involving key stakeholders in the beginning to establish services and programming was noted as really progressing harm reduction efforts easier... Innovative work is being conducted with one program in piloting a communicable disease nurse for wound care education to participants. Possible next steps are being made that might lead to the provision of vaccinations/immunizations within the SEP.

Considerations for appropriate next steps to address the opioid addiction crisis during COVID-19 were primarily focused on adhering to CDC mandates and safety precautions while safely continuing to provide harm reduction services. The continuation of steady reliable support and education is crucial. A safe place that operates nontraditionally that provides care packages including nutritious food items, hand sanitizer, masks and hygiene items were noted. Greater outreach efforts, virtual and remote learning opportunities, continued transportation options and the availability of telehealth for justice involved persons were also mentioned.

Barriers cited include many partners' resources and time being highly devoted away from harm reduction and more to COVID-19 response and mitigation. Stigma and jaded attitudes toward addiction by community and some partners exist that is compounded by likewise stigma associated with COVID-19. The nonexistence of drug court or LEAD programming and lack of funding was also noted. Lack of insurance and partnerships with hospitals, law

enforcement, and the Department of Social Services poses issues as well as the existence of few MAT providers. Naloxone needs to be more readily available with greater harm reduction/stigma/humility training geared towards community stakeholders.

Some respondents shared that more research of the brain needs to be conducted in relation to healing and addiction. Heightened concern for raised community awareness and approaches to effective healing practices are needed. Fentanyl awareness needs to be raised with the drug user community as well as the community at large. Since the pandemic heightened drug users have not been deterred and are primarily unbothered and not worried about the ongoing crisis. Huge need for recognition that what exists is an overdose crisis and not just an opioid crisis.

Opioid Overdose Emergency Department Visits during COVID-19

It was evident across all three counties that opioid overdose emergency department visits are steadily increasing and data is continuing to show that these visits are steadily increasing as COVID-19 continues. Many components have been lost during the pandemic, such as access to treatment and support systems. At the same time, the pandemic is amplifying stress which often leads people to increase their consumption of drugs, practice riskier behavior and relapse.

Cabarrus County experienced a significant increase in opioid overdose emergency department visits. In January 2020, the county reported 3.7 opioid overdose emergency department visit rate per 100,000. The county reported its first COVID-19 case on March 12, 2020, by May 2020 the opioid overdose emergency department visits rate was 10.2 per 100,000. This showed a 175% increase between the month of January and May. The rates continued to remain high after the COVID-19 shut down.

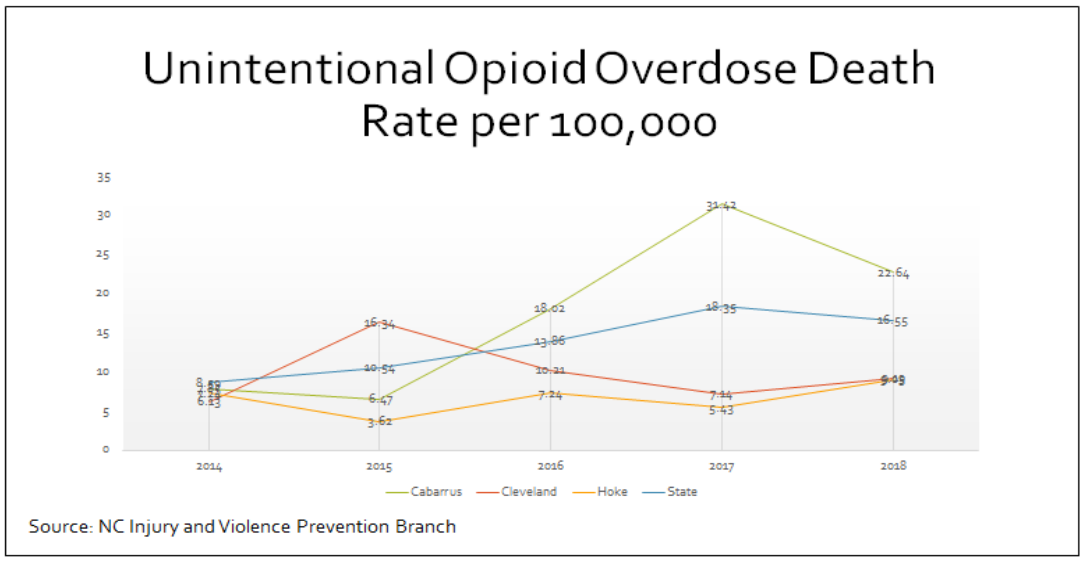
In the midst of the COVID-19 pandemic, Cleveland County has experienced a drastic increase in opioid overdose emergency department visits. In July, the county reported the 8th highest opioid overdose emergency department visit rate out of 100 counties in North Carolina. July marked the 3rd consecutive month in the top 10 after the county experienced the 5th highest

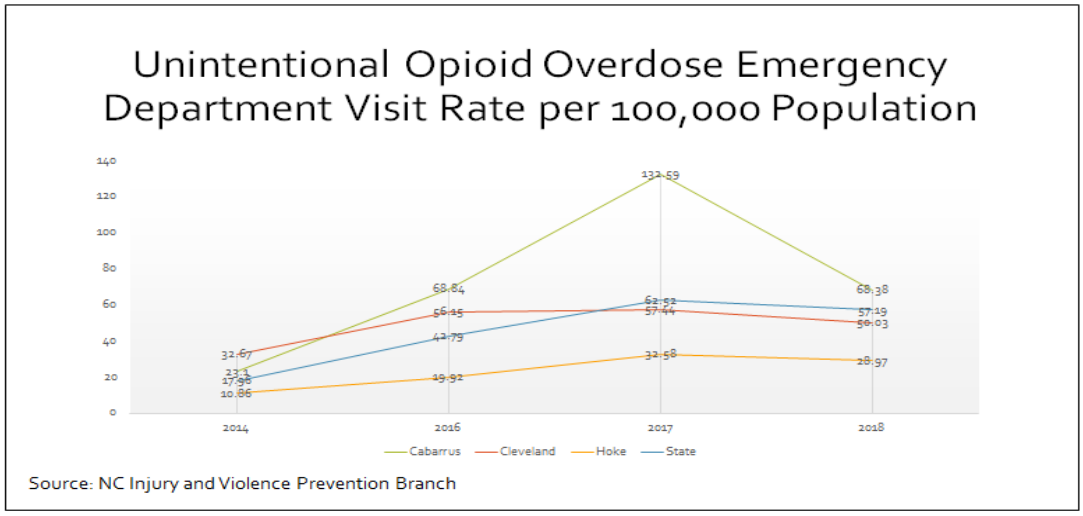
rate during May and 7th highest rate in June. In addition, the rate of EMS overdose responses has nearly doubled compared to the same time period in the previous year.

Hoke county experienced their first presumptive positive for the novel coronavirus that causes COVID-19 on March 18, 2020. As of September 23, 2020, Hoke County has had 1,144 residents test positive with a little over 2% of the population being affected. Due to understanding that Hoke residents often access surrounding county's emergency rooms it is not possible to report an accurate number for those affected by overdoses and emergency room visits. However, it is important to note that all of Hokes' surrounding counties have seen a huge influx in Overdose ED visits and deaths which are possibly linked to Hoke County residents. Nevertheless, since Hoke's first COVID-19 positive, the county has experienced an increase in opioid overdose emergency department visits.

Monthly Opioid Overdose Emergency Department Visit Rates per 100,000 During COVID-19

Month	Cabarrus	Cleveland	Hoke	State
March	5.50%	8.17%	9.05%	6.30%
April	6%	7.15%	5.43%	6.10%
May	10.20%	17.40%	10.86%	8.10%
June	7.90%	16.40%	3.62%	8.00%
July	6%	12.30%	7.24%	7.60%
August	6%	10.21%	5.43%	7.70%





Discussion

Substance Use Impacted by COVID-19

Opioid overdoses are up across the nation during the COVID-19 pandemic. Some contributing factors include stimulus payment, isolation, depression, unemployment and changes in availability of counseling and other services. Stimulus payments have provided increased cash flow for some substance users leading to increased use and easier accessibility to fund their habits.

In relation to health equity, stigma, discrimination, health messaging and accessibility are all compounding factors of increased substance use amongst the three counties as well as access to treatment. People who use drugs are commonly discriminated against and are particularly at risk of not being able to access and/or receive the same quality healthcare as others in the community. Unfortunately, during a pandemic such as COVID-19 this population is even more vulnerable. Biased perceptions and poor health literacy are causal factors and essential workers have a vital role in being advocates for those who use drugs and are seeking to access services. Due to low health literacy, many people who use drugs may not fully comprehend health messages. Therefore, it is crucial for clear health information to have messages, diagrams and plain infographics that are easy to understand. It is important for service providers to take additional time to assure that those they are serving fully understands safety measures related to public health messaging and recommendations. Efforts to reduce misunderstanding and improve knowledge is key.

There were several reasons identified that exacerbate the increase of opioid related incidents across the three counties:

1. Overdoses up across the three counties during COVID-19 pandemic
    a. Stimulus
    b. Isolation
    c. Depression (COVID-19 anxiety)
    d. Substance use counseling limited
    e. Unemployment
2. What we are hearing locally
    a. Stimulus payments made it easier for users to fund their habits
    b. Fentanyl in counterfeit pills causing many of the overdoses
    c. Increase in cigarette smoking and tobacco use
    d. Dirty 30 – Pressed pill being passed off as Oxycodone 30mg, but consisting of fentanyl
    e. More people seeking out and using sedatives, alcohol and increased IV heroin use

3. Emergency room admission rates during COVID
    a. Specific measures put in place to curve overdose rates
4. Harm Reduction Workplace Safety
    - Staff and volunteer wellness
        - Assuring access to adequate supply of PPP, decreases risk exposure (i.e. face-to-face limitations, videoconferencing, social distancing, temperature checks, and wellness questionnaire). Monitoring and open discussion to periodically "check-in" and see how folks are doing mentally and physically.
    - Informed and trusted information
        - Staying up to date on current and valid information to be as effectively informed as possible to maintain trust within the community and transparent with participants. Being aware of the number of cases, deaths and the effect the pandemic is having locally helps participants become more proactive around practicing safety precautions and also maintains trust. Practicing humility and acknowledging expressed and unvoiced concerns is especially important during this time. Participants must be assured that their basic needs will be met and that strategies to mitigate harm are being enacted.
    - 3Ws: Wear, Wait, Wash
        - Importance of wearing a mask over mouth AND nose, waiting six feet apart, avoiding close contact and washing of hands and using hand sanitizer to reduce the risk of community transmissions.

Conclusion

During a pandemic such as COVID19, it is essential to consider the needs of people who use drugs. The most accurate and up to date information to help active users plan for what to do, stay healthy and minimize the risk of novel infection is vital. Of equal importance is for a continuity of harm reduction supplies to be available. Social distancing measures, curfews, and

decrease in transportation options has resulted in difficulty for many individuals in active use to find a supply and safe way to use.

Unfortunately, many individuals who use simply cannot quit due to significant health risks related to dangerous withdrawal symptoms. For some, withdrawal could bring on increased substance use in higher amounts and less safe ways of use that could result in overdose. Many in active addiction often have preexisting conditions that might include STI's, weakened immune systems, and respiratory issues that could worsen their existing health issues if they contract COVID19.

Allocation of funds and resources

Shelter-in-place orders impact the way harm reduction programs and providers can support participants and gather folks together. Logistical challenges create the need for developed emergency and communication plans to ensure that service disruption is at minimal and essential services do not become affected due to absenteeism, illness or burnout by staff and volunteers. People who use drugs are among those facing additional risk during the COVID-19 pandemic and harm reduction supplies and services are essential. Funding investments for harm reduction supplies and services could be used to support virtual capability for training and one-on-one sessions, staffing expenses related to additional travel, outreach and capability to operate untraditional hours, sustaining and expanding supplies, increasing testing capabilities, food boxes, and personal protective equipment. Support is needed to help provide survey and assessment to understand how pandemics impact programming and what efforts are needed to help programs recover and adapt.

Public health messaging should consider marginalized people who use drugs. Messaging should be tailored to highlight risk reduction related to sharing substance use supplies. Emphasis should be made on washing and sanitizing hands, supplies and surfaces with some form of disinfectant. Messaging consideration must include populations who live in shelters and are involved in sex work.

Collaborative effort

Many collaborative partners experience staff shortages and closures due to COVID. We must advocate for the continuity of funding for harm reduction services and that those funds must be sustained throughout pandemics to prevent overdoses and increases in communicable disease transmission. This should include the affordability for harm reduction programming staff and participants to have access to adequate PPP.

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Safe Sleep: Infant Mortality and how it links to Safe Sleep in Rural Eastern North Carolina

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Introduction

Infant mortality is an important measure of a country's health (CDC,2014). However, although infant mortality in the US has decreased overall, there is an alarming difference between infant mortality rates in rural versus urbanized areas (CDC, 2014) Surrounded by waterways, this entire region is a beautiful but isolated area. As a rural area, all three counties (Martin, Tyrrell and Washington) are designated as Tier 1 counties, which are defined as some of the most economically depressed in the state (NCDOC, 2020).

In terms of Infant Mortality, rates vary in the three counties. A study showed that between the years of 2014-2016 the national average infant mortality rate was around 6.7% or 797 infants/1,000 births. (NCDHHS,2018) in NC. In 2018, there were 247 babies born in Martin County: 34 babies born in Tyrrell County, and 129 babies born in Washington County. The infant mortality for respective county (2017) was 12.1% for Martin County, 0% in Tyrrell County and 22.4% in Washington County was and compared to a state average of 7.1% (NCIOM, 2017). Many of the mothers and their infants receive care at Martin Tyrrell Washington District Health (MTWDH) or our dental clinics at some point in a year's time, which gives the employees of MTW a chance to evaluate the child's current sleep environment and educate them on safe sleep. Unfortunately, approximately 3500 infants die annually in the United States from sleep-related infant deaths (CDC, 2018). The causes to infant mortality vary. A recent report listed five leading causes such as congenital malformations, low birth weight, sudden infant death syndrome (SIDS), maternal complications and unintentional injuries (CDC, 2018).

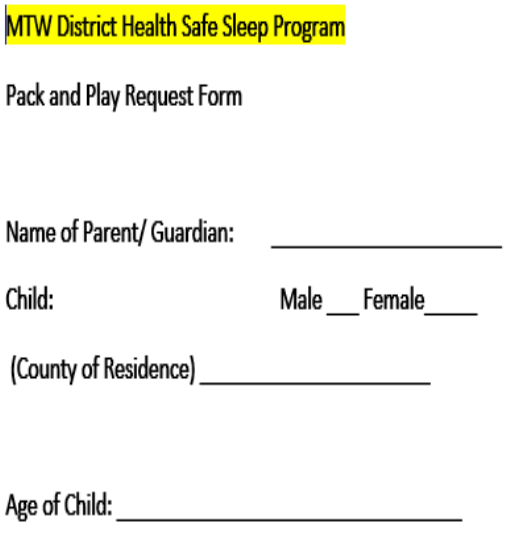
Prior to the Emerging Leaders in Public Health Program (ELIPH), MTWDH had received the Anne Wolfe Mini Grant to explore ways to educate mothers on the importance of "Safe Sleep". As the ELIPH-project team consisted of representatives from Martin, Tyrrell, Washington and Transylvania county, there was an opportunity to leverage the work of Transylvania county to this project to explore sleep related infant deaths in transylvania county.

Each health department in North Carolina has a Child Fatality Prevention Team (CFPT), which is an interdisciplinary group of community representatives who meet regularly to promote a community-wide approach to the problem of child abuse and neglect (NCDHHS.gov) . This team reviews any child death up until 21 years of age. Part of the review is to provide a recommendation to reduce sleep-related causes of death from happening. After the CFPT Team decides on a recommendation, the team must decide how the recommendations will be followed through.

Methods

To build from the existing project, the purpose for this project was to replicate initiatives in an adjoining county.

From the project intitated by MTWDH, those of us who had been involved with that has identified initiatives to educate young mothers on safe sleep and safe sleep environments in our three Tier One counties and across North Carolina. Our project team developed a questionnaire that has been used by our Maternal Health Nurses, Child Health Nurses, Providers, CC4C/ OBCM Nurses & Social Workers to determine if Expecting Mothers or Infants are eligible. Our project team created a brief form to determine the current or planned sleep environment for the infant (see figure 1). This form is simple, which is perfect for our clients as they often do not want to be drilled on their home environment. Our project team agreed that with our clients a shorter format may provide less data; however we could reach more mothers. Our project team was also able to discuss exactly how to educate a young mother on safe sleep, as we did not want to overload the mother with information. Our project team was the perfect makeup with a health educator supervisor , a registered nurse and a clinical clerical supervisor.


MTW District Health Safe Sleep Program

Pack and Play Request Form

Name of Parent/ Guardian: _____

Child: Male ___ Female____

(County of Residence) _____

Age of Child: _____

Figure 1: Eligibility Form

MTWDH received the Anne Wolfe Mini Grant for Child Health and Infant Mortality from the North Carolina Public Health Association (NCPHA), which gave us resources to purchase pack and plays. Included in the package was a Pack and Play, a sleep sack, a mattress cover, safe sleep information and reading on safe sleep education, and a children's book.

Results

Our Project Team developed an assessment form which we used for expecting mothers, beginning with mothers who were at 28 weeks gestation or greater and our current child health patients (1 year and under) . MTW continues their Safe Sleep program encompassing safe sleep education, proper placement for sleep and the distribution of pack and plays for infants and children up to one year of age. At least 30 pack and play packages have been dispersed within

the three counties with more to give out, meaning that over 30 infants are sleeping in a safe environment, rather than an unsecure sleep setting.

Conclusions

From the data and the experience with our patients (children and expecting mothers) it was quickly determined that this was an extreme need in our isolated counties. Martin, Tyrrell and Washington counties are very low-income counties which leave lots of families relying on assistance from places such as MTWDH. Although the Infant Mortality rate is extremely low in Tyrrell County we still included it in our project as we are a district health department. The first recommendation by our project team is for patients and parents to be informed of the importance of safe sleep and the effect it has on infants and children. The next recommendation by our project team is to continue to implement assessment of each child health patients current sleep environment. Finally, safe sleep needs to be address at the state level to reduce the infant mortality rate within the state. This program did take a hit due to COVID-19 and the limitations it caused. Luckily, our agency did a lot of outreach with our Pregnancy Care Managers and Social Workers to determine and access the needs of our patients involving a safe sleeping environment for their infants and children.

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