Advancing Health Equity in Cardiovascular Disease Prevention Efforts in Local Communities

Introduction

The National Association of County and City Health Officials (NACCHO) supports community-level efforts to address chronic conditions that critically impact the community's health and well-being. Every year, more than 1.5 million people in the U.S. suffer from heart attacks and stroke and over 877,500 deaths occur from cardiovascular disease.[1] Racial and ethnic minority groups are disproportionately affected by cardiovascular disease and poor health outcomes due to health inequities and disparities.[2] Additionally, the COVID-19 pandemic has contributed to a decline in people seeking medical care for heart attacks and stroke by 23% and 20%, respectively.[3] Hypertension, or high blood pressure, is a preventable risk factor for heart disease and stroke; however, nearly half of U.S. adults have hypertension and only about one in four has it under control (<130/80 mmHg). More concerning is that progress in hypertension control has stalled, and racial and geographic disparities persist. Heart disease and stroke is a public health priority where the health disparities to treat and control preventable risk factors, such as hypertension, can be influenced at multiple levels, from individual patient level to the local community environment. There is a need for not only expanding evidence-based practices that are effective, feasible, sustainable, and transferable across diverse populations in the U.S., but also addressing the health inequities and disparities that contribute to the disparate outcomes of cardiovascular disease.

Over the past two years, NACCHO has collaborated with local health departments and community partner organizations across the U.S. to leverage existing evidence-based strategies to reduce risk factors for heart disease and stroke while advancing health equity. NACCHO's CDC-funded chronic disease portfolio identified four different communities, including two local health departments and two community-based organizations with experience in cross-collaboration with their local health department. These communities implemented strategies and interventions that aimed to strengthen partnerships, expand self-measured blood pressure programs, expand community health worker programs dedicated to identifying social determinants of health, and connecting community members to appropriate medical and social services.

The following four stories highlight how various sites have implemented evidence-based strategies, the successes, and the challenges in strengthening cardiovascular disease programs, while addressing health inequities and disparities.

Communities Featured:

- Franklin County Public Health & the American Heart Association - Columbus, OH
- Ross County Health District – Chillicothe, OH
- Unlimited Potential – Phoenix, AZ
- UI Health Mile Square Health Center – Chicago, IL

[1] Virani SS, Alonso A, Benjamin EJ, Bittencourt MS, Callaway CW, Carson AP, et al.Heart disease and stroke statistics—2020 update: a report from the American Heart Associationexternal icon. Circulation. 2020;141(9):e139–e596.

[2] U.S. Department of Health and Human Services. The Surgeon General's Call to Action to Control Hypertension. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General; 2020.

[3] Lange SJ, Ritchey MD, Goodman AB, et al. Potential Indirect Effects of the COVID-19 Pandemic on Use of Emergency Departments for Acute Life-Threatening Conditions — United States, January–May 2020. MMWR Morb Mortal Wkly Rep 2020;69:795–800. DOI: http://dx.doi.org/10.15585/mmwr.mm6925e2external icon.

Franklin County Public Health & American Heart Association – Columbus, OH

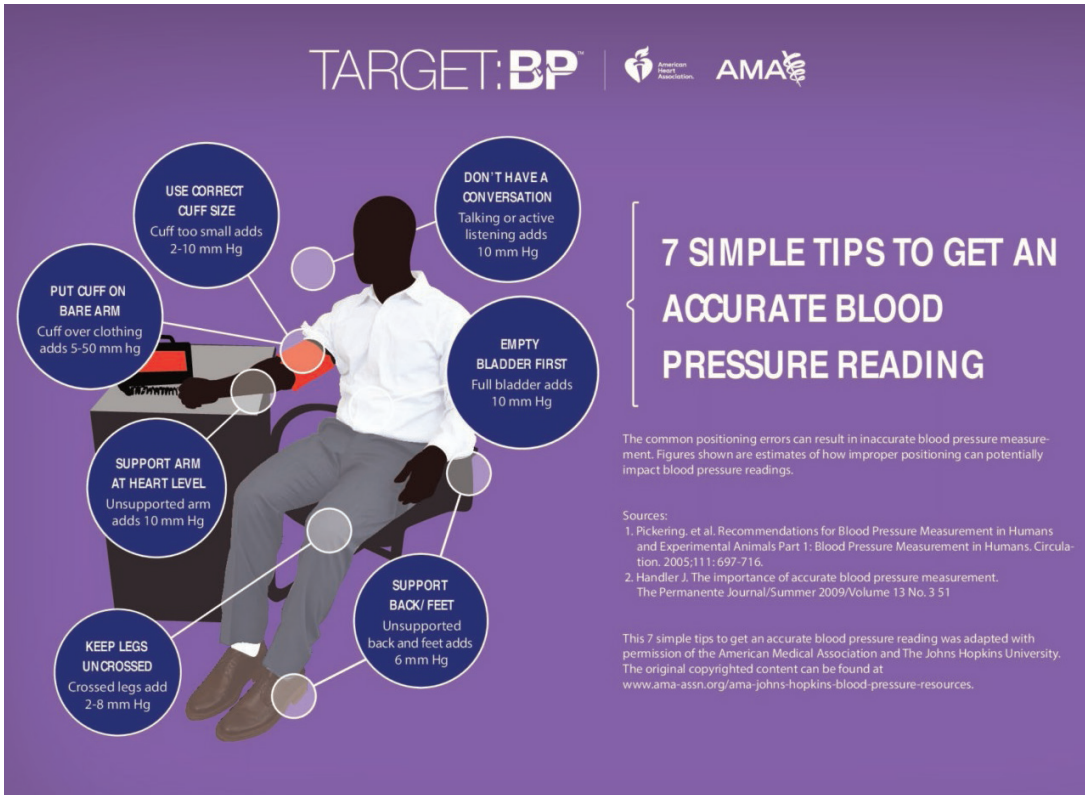
Synopsis

In spring of 2020, the Franklin County Board of Health passed a resolution declaring racism a public health crisis and subsequently outlined a series of action steps that led to the primary organizational goal of adopting equity as the foundation for its daily work. Franklin County Public Health's (FCPH) goal is equity at the core and foundation for the work being done each and every day, with a vision of leading the communities served toward achieving optimal health for all. Through programs and services provided by FCPH, the organization is striving to improve health through disease prevention, promotion of healthy lifestyle interventions, and defending the public against a variety of health threats through policy change, program implementation, community education, and partnering with other organizations throughout the community. It is also important that all activities and services provided are done with integrity, accountability, quality, and respect for all.

This project presented an opportunity to address health inequities by providing resources focused on improving blood pressure self-management education for select Federally Qualified Health Centers (FQHCs) in Franklin County, while equipping Community Health Workers (CHWs) through training with tools needed to advance their knowledge to improve health outcomes for the individuals they serve.

Challenge

In Franklin County, where cardiovascular disease continues to remain a leading cause of death, the prevalence of high blood pressure is 36.2% among adults 18 years and older in a population of over 1.3 million people.[1,2] According to a report released by the American Heart Association (AHA) in 2020, the percentage of adults in the U.S. with controlled high blood pressure continues to decline. Contributing factors to this decline include less effective treatment, lack of awareness and education around the importance of blood pressure control, and lack of access and adherence to medication.[3] Hypertension control rates are also significantly higher among non-Hispanic white adults than non-Hispanic



Black adults.[4] In 2018, the National Center for Health Statistics reported that Ohio ranked 10th in highest death rate from heart disease in the United States. Failure to control high blood pressure in Franklin County residents may continue to result in a growing number of heart attacks and stroke in a population already greatly impacted.[5]

The program was designed to drive blood pressure self-management education skills through targeted efforts, in collaboration with FQHCs to connect patients with the greatest need to tools and resources to improve self-management and understanding of the importance of hypertension control. Additionally, by providing training for CHWs, these trusted individuals can increase awareness of hypertension control, as well as empower and equip patients with critical knowledge of treatment plan adherence, all while offering community support and lifestyle change resources. The demand for resources for FQHCs and CHWs is great, and through strengthening support and training for these partners who are providing care for populations disproportionately impacted, we begin to address the burden of blood pressure and other chronic risk factors in Black and Hispanic/Latino people, as compared with white people in Central Ohio.

Solution

This program aimed to address the declining blood pressure control rates in Franklin County through enrolling four FQHCs in a self-management education cohort comprised of members of the American Heart Association (AHA) led Franklin County Hypertension Network. Through participation in the four-month cohort, the organizations received support and resources for staff related to taking proper blood pressure measurement, as well as resources for patients to improve education on healthy lifestyle interventions. All participating members of this project are also members of the hypertension network to ensure lessons learned and best practices captured and shared with the larger collective group. This initiative led by the AHA utilized resources and information from the American Heart Association and the AHA/American Medical Association's Target: BP™ initiative. Each participating FQHC subsequently identified individual patients diagnosed with hypertension to partner with throughout the cohort to engage with lifestyle intervention messaging, resources, and to provide individual support. The FQHC cohort representatives met virtually as a group monthly from November through May to review resources, discuss what was working, barriers to implementation and recruitment, and ideas for improvement. Additionally, the program ensured that each patient had access to a blood pressure monitor for ongoing tracking of blood pressure at home, along with education and information on how to accurately measure blood pressure at home.

The program also aimed to provide education and resources to a local CHW training program to maximize the reach of critical knowledge through the ability of the CHWs to connect with diverse individuals throughout the Franklin County community. Included in this effort was an opportunity for training for two local CHW certification programs designed to improve education on the importance of blood pressure control, with a focus on lifestyle interventions and controllable risk factors. Each CHW received training on proper blood pressure measurement, as well as a blood pressure monitor upon completion of the training. Materials and information were provided to each CHW outlining resources and support available to them upon completion of their training program.

Results

Results from the program were captured via feedback forms from the cohort members that included reporting of individual patient success. Of the participating cohort organizations, one organization began individual patient intervention previously, one had conducted similar efforts in the past, and two had not undertaken such an initiative. The consensus from all cohort members was the immeasurable value of having the ability to offer support for lifestyle interventions for individuals experiencing chronic conditions such as hypertension. This effort helped to establish a consistent mechanism for a supportive lifestyle intervention model at each participating cohort organization, and we are excited that all four organizations plan to continue the effort upon completion of this project.

Key highlights of success include the following:

- One patient was interested in improving her health so she could have more children. She used the hypertension group to focus on physical activity for both herself and her family, and noted how helpful the camaraderie and education she received from the group was in helping work toward her personal goals.
- One Spanish-speaking patient, unable to read and only able to speak Spanish, was eating a diet high in sodium and rarely incorporating fruits and vegetables. Through participation in the hypertension effort, the cohort was able to educate him on the DASH diet and he is working to add more fruits and vegetables to his diet.

- This program was successful at retaining participation and engagement through a focus on improving diet and examples of heart healthy cooking. The program partnered with patients to try new foods with a focus on alternatives to salt, as well as decreasing sodium consumption. Patients were accepting of substitutions/alternatives and are working on incorporating skills at home.
- This program created an opportunity to establish a relationship with patients. This has been critical to setting meaningful goals and understanding what is important to the individual. (Example – a patient wanting to reach a weight loss goal for an upcoming family event). Trust and understanding are critical for long-term success and behavioral change.

Each health center engaged with 10-20 individuals from February to May, with ongoing enrollment of patients into the program. One success identified by each of the cohort members was first establishing the program and then operationalizing a method of referral of patients by providers to the program for sustainability and growth of the initiative. The long-term outcome is the ongoing effort, and subsequent benefit, of partnering with patients diagnosed with hypertension.

Lessons Learned

This initiative successfully established partnering with patients' programs at participating organizations, and helped develop keys for success moving forward. One factor for success was a commitment of the cohort members to this initiative and a desire to improve patient blood pressure control rates. This story is an example of a program that should be replicated. An unintended success was the benefit of the support the cohort members provided to each other. During the monthly cohort sessions, the idea sharing and problem-solving the group provided to one another was an invaluable component. There is a great deal of work placed on the FQHCs and they were able to provide ongoing support to one another.

Another takeaway from this program was the time required to establish the framework necessary to begin. There was time needed both internally and externally to inform providers and patients of the program that slowed the initial enrollment progress and patient sessions. Moving forward additional time should be allocated to putting the required structure in place prior to beginning work with patients. Time constraints due to the COVID-19 surge in early 2022 also impacted the timeline for the project.

The CHW component was critical to the overall strategy for success, and while the CHW training was able to take place, additional time will allow for further and more impactful collaboration and engagement of this effort.

Lastly, a key lesson learned is that partnering with patients may look different based upon the individual health center and their patient population. Due to a variety of barriers and determinants, some saw greater success with group patient sessions, while others had to focus on incorporating education and interventions into existing appointments. In some cases, transportation and other barriers prohibited patients from being able to participate in self-management education support sessions.

One recommendation to help mitigate barriers for future programs is to have all educational materials and content organized in modules provided in advance of the program. Having access and training on interventions prior may provide better opportunity to respond immediately to the individual needs of the patient who may not be able to participate in an ongoing program.

Participating health centers also cited better program participation and retention when the initial referral of the patient came from the provider versus another method of recruiting the patient to participate.

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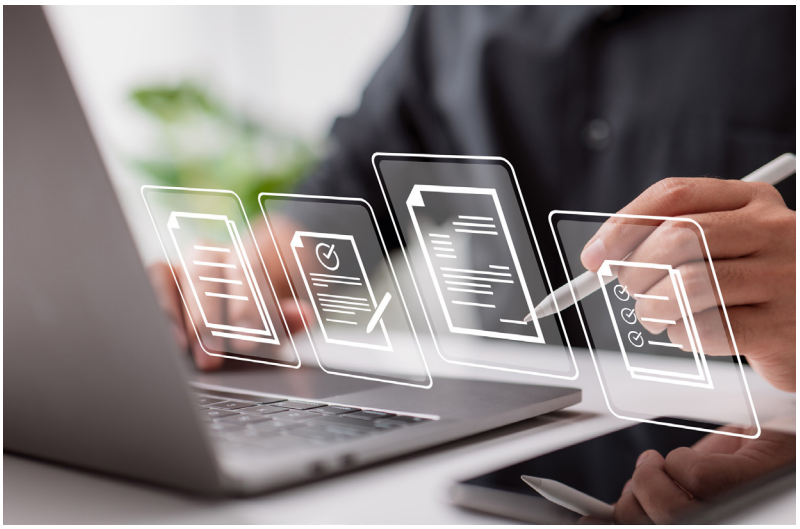

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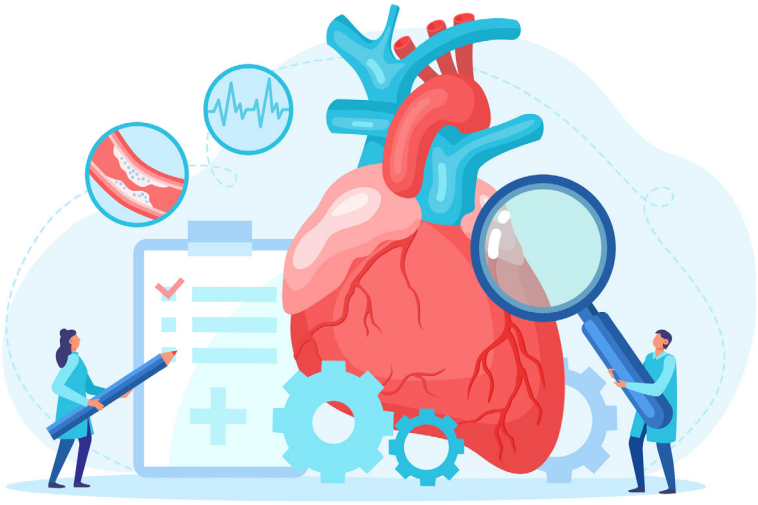
Ross County Health District – Chillicothe, OH

Synopsis

Since 1979, the Ross County Health District (RCHD) has been serving Ross County through a variety of health district programs and services. In November 2020, the RCHD became a nationally accredited health district demonstrating the agency's conformity to the standards and measures of the Public Health Accreditation Board (PHAB) which focus on an application of the CDC's *10 Essential Public Health Services*. RCHD is proud to serve its community in many ways by ensuring it is committed to delivering the foundational public health services for the following: communicable disease control, chronic disease prevention, injury prevention, environmental public health services, maternal/child/and family health, as well as access and linkage to clinical care. RCHD also values opportunities to expand its foundational public health services through grant funds and projects to help support community-specific programs and services. Through delivery of extensive public health services, RCHD aims to address health inequities, gaps, and barriers within its community to help lead to better health outcomes of the community we serve. In partnership with NACCHO, RCHD is committed to expanding its efforts to positively impact cardiovascular health risk factors through providing evidence-based practices to eliminate barriers to heart healthy behaviors.



Challenge

Located within the Appalachian Region, Ross County has several health disparities including heart disease and poverty. Heart disease is the leading cause of death in Ohio and Ross County.[1,2] The CDC's *Stats of the State's Heart Disease Mortality Report* confirmed that Ohio's 2020 age-adjusted mortality rate was 196.9 per 100,000, or 30,547 deaths, with the 11th highest mortality rate.[3] The Ohio Department of Health reports that the burden of heart disease is experienced at higher rates for residents with lower incomes.[4] The *2019 Ross Community Health Assessment* indicated that the heart disease death rate was 206 deaths per 100,000 people. The same report determined from the *Adult Public Survey* that 26.2% of adults had high cholesterol, and 39.6% reported high blood pressure (BP).[1]

The Appalachian Regional Commission (ARC) noted the Region's heart disease mortality rate of 204 per 100,000 is 17% higher than the national rate of 175 per 100,000. In addition, rural Appalachian counties have a heart disease mortality rate that is 27% higher than urban counties. The ARC explained the more rural an area, the more impoverished it is likely to be.[5] County Health Ranking's 2021 data identified 58.7% of Ross County as rural. ARC found economically-distressed communities' heart disease mortality rate is 29% higher than non-distressed communities.

ARC defines a distressed community as one where, "the median family income is no greater than 67% of the U.S. average and the poverty rate is 150% of the U.S. average or greater." ARC has determined five communities within Ross County that meet this designation.

This North Central Appalachian Region has a household poverty rate of 18.2%.[6] The *2021 State of Poverty in Ohio Report* concluded that Ohio's poverty rate is 15.2%, where 10,803 individuals are living in poverty.[7] *Healthy People 2030* supports the linkage amongst poverty, socioeconomic status, and health outcomes, finding that poverty increases the risk for disease and premature death.[8]

By implementing the team-based care approach and integrating community health workers (CHWs), RCHD will address the impact that poverty has on rural patients. Providing a comprehensive care team will address clinical health concerns and social determinants of health that are hindering positive health outcomes. The CDC confirms the evidence of effectiveness for integrating CHWs in clinical care teams to improve cardiovascular health, and health disparities often associated with populations who are underserved and experience barriers to care.

Solution

RCHD partnered with the Chillicothe Farmers Market, Hopewell Health Centers (HHC), and Ross County's Ohio State University Extension Office's SNAP-Ed Program to implement a heart healthy pilot initiative that incorporated the evidence-based strategies of team-based care, CHWs, nutrition education, and self-measured BP monitoring. Providers from HHC completed referrals of patients who met the criteria of being high-risk for heart disease (showing high BP, a sedentary lifestyle, and poor nutrition) to the program. HHC, like RCHD, serves the entire county thus, any HHC client residing within Ross County and meeting the criteria listed above was eligible to enter the program. However, this initial program captured participants that all live in Chillicothe.

Referred participants were connected with a CHW through RCHD's Pathways HUB. The Pathways HUB program utilizes CHWs to connect patients and providers with the goal of improving all aspects of health by addressing social determinants of health like access to healthy food choices, transportation, and barriers to care. Within this program, CHWs assist their clients in identifying health needs and risks, as well as addressing these risks through targeted pathways. This pilot program served as a capacity building process to develop and strengthen the client base and provider relationships for the Pathways HUB program within the health district.

Upon entering the pilot program, participants were provided with materials to help them successfully improve their heart health outcomes. These items included cooking preparation materials, an electronic physical activity and heart monitor, a digital blood pressure monitor, and a $50 farmers market voucher. Each participant was taught how to accurately use the blood pressure monitor and was required to report their BP levels throughout the course of the program. Likewise, participants were asked to wear their activity monitors and record their daily steps. In addition to receiving CHW communication and home visits, participants completed five virtual nutrition education videos. These videos specifically comprises the SNAP-Ed program to adhere to a heart healthy diet. The program concluded with participants attending two final in-person activities. The first activity was a cooking demonstration facilitated by the SNAP-Ed program educator. Lastly, participants met at the Chillicothe Farmers Market and conducted a tour of the market, and were provided with heart healthy recipes and produce and food storage information. During the market, participants were able to use their provided vouchers to purchase healthy food items.

Results

Overall, the program served the purpose of expanding RCHD's Pathways HUB program and increasing the health monitoring and nutrition knowledge of participants. Through RCHD's Pathways HUB program, the health district is dedicated to addressing the underlying factors that foster poor health outcomes.

Through this pilot program, RCHD was able to increase awareness of the Pathways HUB and showcase its ability to connect individuals to resources throughout the community to address health needs and risk factors.

Aside from the knowledge obtained from the participants, the largest positive impact this program achieved was the growth of community partnerships. From this program, we have been able to strengthen these relationships to the extent that the participants and the associated partner agencies are wanting to expand the initiative into a continued nutrition education series with the local SNAP-Ed program.

Although BP rates were not improved in this short pilot period, participants were more aware of their BP, and more likely to monitor their BP on their own by having access to a personal BP monitoring system and knowledge on how to operate the machine correctly. Additionally, participants were provided nutrition education and will have the capacity to select healthier food choices to meet their health needs.

Additionally, daily steps taken were monitored for each participant using an activity tracker. The entire daily total steps for half of the participants averaged between 5,000 and 7,000 steps. In 2019 the National Institute of Health reported on a Harvard Medical School study that followed the daily activities of older women for a four-year period. The average age of individuals within this study was 72. Of the participants who walked at least 4,400 steps a day, they were 41% less likely of dying within that four-year monitoring period than the females who only walked 2,700 steps a day. Using these findings as a frame of reference, half of the participants in the RCHD pilot program were meeting the 4,400 steps a day standard. It should be noted that all the participants in our program were female and 65 years of age and older.

Lessons Learned

As with any program, this initiative allowed RCHD insight to barriers for access to care and good health within the community RCHD serves. Additionally, it allowed the health district to identify issues within the initial program design that can be addressed to improve the Pathways HUB effectiveness in the future. The major flaws of this pilot program were the limited time frame of the program, accurate data collection, and staffing capacity. With this being a six-month program, RCHD was limited on the amount of time to recruit participants and implement the program. For this reason, data was only obtained from late March to early May, and was implemented with five participants.

This transitions into data limitations, in that significant health improvements may not be achievable in this limited timeframe. Also, the small number of participants within the program is not representative of the population, nor will there be complete confidence in the data due to the self-reporting nature of the data collection methodology. Furthermore, the Pathways HUB program is in its infancy at RCHD. Upon initially receiving this funding opportunity, RCHD had one full-time CHW to oversee this pilot program. However, towards the final weeks of the program, this position was left unfilled, leading to another RCHD staff member fulfilling these responsibilities. This turnover led to a capacity issue that is likely to be a contributing factor to this program not producing substantial quantitative findings. With that said, once a fully-staffed Pathways HUB program is achieved, and an extended timeframe is allowed, the methods implemented within this pilot program can be replicated and are backed by data-driven strategies indicating a favorable likelihood for improved heart health outcomes.

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8 Healthy People 2030: Economic Stability. Office of Disease Prevention and Health Promotion. U.S. Department of Health and Human Services. https://health.gov/healthypeople/objectives-and-data/browse-objectives/economic-stability.

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Unlimited Potential - Phoenix, AZ

Synopsis

Since 1985, Unlimited Potential (UP) has addressed the needs of underserved populations in Maricopa County, Arizona. UP's mission is to ignite unity, pride, and dignity through education and advocacy. We provide equitable opportunities grounded in acceptance and respect, promoting strong individuals, families, and communities.

UP believes:

- All people have the right to have their basic human needs met.
- All people have the right to a quality education.
- Languages and cultures should be celebrated.
- All people should be treated with dignity, respect, and integrity.
- Given the opportunity, people can acquire the skills necessary to overcome economic and social barriers, and become proactive in changing their lives and community.
- People have the capacity and social responsibility to create communities that promote the healthy development of future generations.
- Through perseverance we can achieve social justice.

UP has four priority areas:

- Adult Education
- Environmental Justice
- Disease Control and Prevention
- Healthy Living

Challenge

Cardiovascular disease (CVD) is the leading cause of death in Arizona. Racial and ethnic minorities, including Hispanics, have higher rates of CVD mortality. Among males, Hispanic men have the highest mortality rate for congestive heart failure and stroke, whereas African American men have the highest mortality rate for coronary heart disease. Additionally, one in three Hispanics have high blood pressure, and 24% are more likely to have uncontrolled high blood pressure.[1]

Race and ethnicity play a major role in the development of prediabetes, and diabetes increases the risk of cardiovascular disease. The Arizona Department of Health Services reports one in ten people in Arizona has diabetes, with the Hispanic population having a disproportionate share of diabetes, obesity, and other factors.[2] Studies indicate U.S. adults overall have a 40% chance of developing type 2 diabetes, but if you are Hispanic your chance is more than 50%, and you are likely to develop it at a younger age.[3]

Social determinants of health, including safe neighborhoods, income, and education, have a major impact on health equity of communities. Communities in south Phoenix face a higher crime rate[4], lower income per capita[5], and lower high school graduation rate[6]. Life expectancy for residents of south Phoenix is 68 years versus 78 for the state of Arizona due to factors such as poor access to preventive healthcare, nutritious foods, and safe areas for physical activity.[7]

Solution

Unlimited Potential utilizes a Community Health Worker (CHW) model to implement evidence-based strategies and to address health inequities. In this model, CHWs are members of the Phoenix community and have similar social, cultural, and economic characteristics as the service population. CHWs provide culturally appropriate services and fulfill roles like an educator, outreach worker, mentor, advocate, and translator. The CHWs at UP are skilled and passionate about helping families address a myriad of challenges whenever possible. The interaction may begin with a blood pressure check, and evolve into a referral to a medical provider, enrollment in SNAP, helping with Arizona's Medicaid agency, enrolling in an UP workshop, scheduling pick up of free, organic produce, or a combination of opportunities. Clients that are referred to partner FQHCs continue to receive follow-up interactions with CHWs from Unlimited Potential. Each touchstone allows CHWs to reinforce messaging, connect individuals to community-based services, and empower community members.

In addition, UP utilizes the *Know Your Risk of Diabetes and Heart Disease Program*, which is focused on reducing the prevalence of type 2 diabetes and heart disease among a largely Hispanic clientele, and to ameliorate the effects of the disease among those who suffer from it. UP hosts weekly health fairs and disease management initiatives, such as Million Hearts® workshops. UP's approach incorporates self-evaluation, providing access to nutritious foods, counseling, support groups, promotion of healthy lifestyles, and helping clients identify their medical home. UP helps people understand the connection between how a nutritious diet, salt intake, physical activity, tobacco/alcohol use, environment, stress, and other factors impact their heart health.

Results

During this grant period, UP conducted 220 hours of health education for community members and 59 hours for CHWs. The education/training for the CHWs was focused on developing core competencies and disease control and prevention. In the past year, UP has trained 60 CHWs. As part of their training and certification processes, CHWs had to share the information with at least 15 people in their community. By the end of the grant term, the 60 CHWs educated 958 community members about disease control and prevention regarding hypertension, diabetes, cancer, Alzheimer's, COVID-19, importance of vaccination, and many other health topics.

Of the 958 clients served by this program, 87% self-reported as Hispanic, 26% reported to have a diagnosis of a chronic condition, 20% reported a diagnosis of diabetes, and 18% reported a diagnosis of hypertension. However, 48% of the clients were newly identified as having a blood pressure of 130/90 or above. These individuals were referred to a medical provider for follow up and additional services.

Participants self-identify and often initially engage with CHWs via one of UP's weekly health fairs. They are curious and eager to learn, particularly in a place where they are comfortable and open to receiving support and information from one of their peers. One of the clients changed his lifestyle to adopt the information received during the educational interaction and by doing so was able to control his blood pressure. Now, under medical supervision, he is controlling his blood pressure only with diet and physical activity.

Lessons Learned

The high mortality and morbidity caused by the COVID-19 pandemic only shows the need for comprehensive and radical behavioral changes. Educating and informing the community about health risks and disease control provides the opportunities to the individual, family, and community for better health and a better future.

Today, Unlimited Potential is recognized as a training site for CHWs. It continues to empower individuals by bringing evidence-based health education, and connecting individuals to social and health services in the community. CHWs' training is not only about health education and practice, but also about creating a support system for the community. Clients feel connected to the CHW, and vice versa.

It is important to take every moment as an opportunity to educate and share information, even when an individual is not ready to act in their personal life at that time. Education empowers a person to execute an informed health decision. It takes time to understand a concept, and much longer to adopt a change. UP is giving the opportunity to individuals to learn and act once they are ready. It is here to support them.

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6 Statistical Atlas. Educational Attainment in South Mountain, Phoenix, Arizona. https://statisticalatlas.com/neighborhood/Arizona/Phoenix/South-Mountain/Educational-Attainment.

7 Vitalyst Health Foundation. Short Distances to Large Health Gaps. http://vitalysthealth.org/short-distances-to-large-health-gaps/.

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UI Health Mile Square Health Center at the University of Illinois – Chicago, IL

Synopsis

UI Health Mile Square Health Center (Mile Square) is a community-based primary care clinic that has provided quality health care services to vulnerable Chicagoland residents for more than 50 years and is one of the oldest Federally Qualified Health Centers (FQHC) in the nation. UI Health Mile Square is part of the University of Illinois Hospital & Health Sciences System (UI Health), which is the health care system of the University of Illinois Chicago. As such, Mile Square is the only public sector academic FQHC in Chicago and one of only a few in the nation. Mile Square provides an array of medical and social services. In addition, as part of UI Health, Mile Square provides its patients with access to an academic health care system and a vast array of advanced and specialty services—resources that Mile Square leverages to reduce health disparities. As a provider of primary care to individuals regardless of their ability to pay, Mile Square is committed to helping patients prevent, detect, and treat cardiovascular disease.

Challenge

Heart disease is one of the country's leading causes of death and disability. High blood pressure is one of the greatest risk factors for heart disease, in addition to other modifiable risk factors like high cholesterol, cigarette smoking, diabetes, poor nutrition, lack of physical activity, and being overweight or obese. In the areas Mile Square serves—the Near South/South and West/Northwest sides of Chicago primarily—risk factors are disproportionately high.

The rate of hypertension is very elevated in Near South/South, with 36.27% of adults reporting they have been told they have hypertension, compared to only 32.3% in the state or country. Age-adjusted mortality from heart disease is worse than both the state and the country in two regions, West/Northwest and Near South/South, reflecting the disproportionate heart disease mortality rate in Black populations. This is particularly severe in Near South/South, where the rate is 244.28 deaths per 100,000 – more than 40 excess deaths per 100,000 compared to the state average of 202.3 or national average of 198.1 per 100,000. [1,2]

Solution

The goal of the Mi-Controlled Initiative is to engage patients, alongside providers and community health workers, to implement evidence-based practices. The initiative's strategy is to implement a patient self-measured blood pressure monitoring program to increase the number of adult patients with controlled hypertension. In 2019, Mile Square had achieved blood pressure control among 65.71% of its patient population with a hypertension diagnosis.

As a result of COVID-19, and the impact on in-clinic visits to monitoring patients with chronic conditions such as hypertension, most recent data demonstrated that only 55% of hypertensive patients at Mile Square achieved blood pressure control. Mile Square has responded by pivoting to telehealth visits, in addition to in-person visits. This specific project helped support providers in completing telehealth visits, as the remote blood pressure monitoring allows them to have data to act on when completing telehealth visits.

Mile Square includes 13 distinct practice sites within Chicago that are strategically located in community areas with the highest need. This initiative will continue to be rolled out across all Mile Square clinics in Chicago, as well as applicable school-based health centers. By utilizing evidence-based practices, Mile Square was able to increase access to home blood pressure cuffs, and improve blood pressure control in patients and communities. In addition, Mile Square has implemented social determinants of health (SDoH) screening for all patients that enroll in the self-monitoring blood pressure program. Patients are assessed for SDoH needs such as transportation, access to nutritious foods, and safe housing. Upon screening, patients are connected to local services using the NowPow database.

Results

To date, the self-monitored blood pressure program has given out 109 blood pressure cuffs and 45 participants have completed the program. Participants were also given educational materials on proper blood pressure measurement, nutrition, and physical activity. On average, participants who have completed the program and returned their loaner blood pressure monitors have lowered their blood pressure by 16.4 systolic and 10.6 diastolic points. Results of this program were only limited by the number of participants that were able to be recruited.

Lessons Learned

The biggest challenge thus far has been obtaining blood pressure monitors, as they are currently on backorder. A solution has been to order a small number of monitors rather than bulk orders, as well as ordering from different vendors. In addition, it has been difficult to connect the blood pressure monitors to the clinic's EMR system. The Bluetooth capability requires several applications to be downloaded to a smartphone which is time consuming, and the technology requirement means that even those eligible might not be able to participate. Lastly, patient navigators are essential to running self-measured blood pressure programs. As Mile Square is working towards expanding the program to all clinic sites, additional patient navigators will be critical for the success of the program.

1 Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. BRFSS Prevalence & Trends Data [online]. 2019. URL: https://www.cdc.gov/brfss/brfssprevalence/.
2 Centers for Disease Control and Prevention, CDC WONDER. Underlying Cause of Death, 1999-2020 Request. Deaths occurring through 2020. URL: https://wonder.cdc.gov/controller/datarequest/D76.

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