

The Proliferation of Hospital-Based Violence-Intervention Programs in North Carolina

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Hospital-based violence intervention programs provide an example of the multifaceted approach needed to address violence as a public health issue. In North Carolina, several health care systems have joined the call to create programs that address the needs of victims of violence and promote the healing process.

Introduction

The proliferation of hospital-based intervention programs (HVIP) in North Carolina represents a growing commitment to effective solutions addressing community violence across the state. Community violence includes fatal or non-fatal gunshot wounds, stabbings, and physical assaults [1]. Community violence—specifically gun violence—is not a new issue in North Carolina or nationally, as evidenced by the creation in the mid 1990s of the first HVIPs in Oakland, California (Youth ALIVE), and Project Ujima at Children's Hospital of Wisconsin in Milwaukee [2]. Gun violence has long been a public health issue, but interventions have never been championed as enthusiastically by health care systems as they have since the onset of the COVID-19 pandemic.

Violence has an immense cost, both in human lives and financially; one survey estimates the cost at “anywhere from \$173 billion to \$332 billion in criminal and medical costs, lost wages and earnings, damaged and devalued property and diminished quality of life” [3]. That means increased taxes paid, insurance premiums, and reduced property value. In 2020, North Carolina saw 2423 violent deaths; of that, 1651 were firearm related, and 43.3% of firearm deaths were due to homicide [4].

Atrium Health in Charlotte and Duke in Durham both increased their responsiveness to the needs of victims of violence. This goal starts with equitable service that addresses more than physical wounds. Across the country, hospital-based programs are creating broad-spectrum models of care that work to address noted traumas, social determinants of health, and violence [1, 2].

Historical Impact

Finding the root cause of, or contribution to, community violence requires a look at structural racism and its effects on communities of color. Like many communities within the

United States, Durham and Charlotte have a long history of racial inequities and disparities. Durham's Hayti community had thrived, with many minority-owned businesses. Under the guise of urban renewal in the 1950s and 1960s, special interest groups and leadership convinced Durham's Black businesses that having a highway running through the area could beget more business. Instead, it decimated this community, and the ripple effects are felt to this day [5, 6].

Mortality rates in Durham are higher for Black residents versus those of other races or ethnicities. Deaths due to diseases of the heart, for example, affect 183.5 per 100,000 Black residents compared to 116.3 per 100,000 White residents [7].

Durham has experienced increased gun violence in recent years. Durham Police Department data show a 48% increase in shootings in 2020 [8]. There were 971 incidents of gunfire in 2020, 793 in 2021, and 770 in 2022. In 2021, there were 44 fatal shootings, making it one of the deadliest years on record [8]. Based on unpublished Duke Trauma Registry data, Duke University Hospital (DUH) Level 1 Trauma Center treated 253 gunshot wounds in FY 2019, 289 in FY 2020, 393 in FY 2021, and 335 in FY 2022. According to the National Network of Hospital-based Violence Intervention Programs (NNHVIP), better known as the Health Alliance for Violence Intervention (HAVI), hospitals that treat over 100 patients with gunshot wounds, stab wounds, and other violence-related injuries should establish a hospital-based violence intervention program [2]. Based on these numbers, DUH trauma leadership sought to find a way for the hospital to serve the community, outside of medical interventions. At DUH, the population of gunshot-wound victims is mainly Black and male. These demographics are associated with decreased access to immediate support services, such as housing support, safety planning, and mental health services, all crucial to the healing of a crime victim. To better address

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a community's health care needs, a focus on socioeconomic factors that affect that community is warranted [7].

Charlotte is also no stranger to structural racism. Since the 1970s, the city has been uniquely divided into two parts known as the "crescent" and the "wedge". Historically, wealthier, often White residents are concentrated in the wedge-shaped slice of south Charlotte, while an arc of lower-income communities stretches to the north, east, and west [9]. A clear segregated dynamic can be seen on maps showing the vast disparities in quality of life, like average household income, food availability, and crime rates, to name a few [9]. Increased violence numbers can be noted in the crescent; more than half (50.9%) of homicides from 2015 to 2020 took place in only five ZIP codes, all of which are in the crescent area of Charlotte [10]. These correlations illustrate the impact of social drivers of health, which are increasingly recognized as contributing to more than 40% of a person's overall health [3].

Like Durham, Charlotte has experienced an uptick in violence in the city and surrounding area. According to the Charlotte Mecklenburg Police Department, a record 3039 gun-related assaults were recorded in 2019; the next year, gun-related assaults rose to 4405 [10]. There has also been a reported increase in youth violence in Charlotte. Black and Brown people are disproportionately affected by such violence in Charlotte, with young people aged 14–24 identified as one of the most vulnerable populations [10]. Atrium Health's Trauma Registry data reveal that the health system treated 770 patients for gunshot wounds in 2020, 703 in 2021, and 324 in Q1 and Q2 of 2022 (unpublished data). The City of Charlotte identified the community's needs and determined that focusing on youth violence would be an optimal approach. With the support of the City of Charlotte, Atrium Health adopted a holistic approach to combating youth violence among violently injured patients who come into Atrium's Level 1 Trauma Center.

DUH Violence Recovery Program

In response to the growing number of gunshot wounds, the Violence Recovery Program (VRP) was established at Duke University Hospital. Duke VRP is an HVIP based on HAVI modeling and best practices. A multidisciplinary team supports the victims of interpersonal violence (gun violence) and their families upon arrival at Duke University Hospital Emergency Department. From that point on, in an effort to be person-centered and respectful to lived experience, staff refer to people impacted by violence as “patients” and not “victims” or “survivors.” The VRP staff engage the patients and their families upon entry into DUH, whether via the emergency room or inpatient admission, to begin rapport-building so that staff can continue to engage the patient with intensive case management after discharge for a period of 9 to 12 months. During this time, Duke VRP staff collaborate with the patient to identify their goals, to aid in compre-

hensive recovery, and to address the social determinants of health. VRP staff also work with supportive parties (including family/caregiver) in the patient’s household to provide wraparound services to ensure the safety and success of the patient’s recovery. The VRP program connects the patient with mental health and community-based social services, as well as other necessary services to reduce the risk of reinjury, retaliation, and criminal justice involvement.

Since launching on September 19, 2022, Duke VRP has engaged with 76 patients. To enroll in the program the patient must be between ages 15 and 40, be a resident of Durham, and be a victim of a gunshot wound due to community violence (mass shootings, drive-by, interpersonal violence). It should be noted that patients who are suffering notable mental/cognitive impairments that include but are not limited to traumatic brain injury and psychiatric disorders that prevent the client from being fully engaged in the intensive case management process may not be admitted to

the program; however, a loved one who is caring for them can receive assistance.

Atrium Health HVIP

Starting in January 2022, Atrium Health's HVIP began serving individuals between ages 15 and 24 who have presented to any Atrium Health facility after having been exposed to physical violence, such as gunshot wounds, stab wounds, blunt assaults with or without objects, and assault with corrosive substances (burns). To create wraparound services that combat all factors of interpersonal violence in the communities served, Atrium's HVIP assesses the risk factors for violent re-injury and retaliation for trauma patients injured by violence. Up to 41% of patients treated for violent injury are estimated to be re-injured within five years [2]. Because of the increased risk of recidivism, the HVIP is designed to treat program participants for 6–12 months. After a violent injury occurs, symptoms of post-traumatic stress disorder (PTSD) and anxiety rise incredibly [2]. HVIPs like Atrium Health's identify and address barriers to establishing a safe and violence-free environment for patients when they leave the hospital. One of Atrium's main goals with program participants is to link patients to community-based support programs to help address social determinants of health. A comprehensive conversation with patients helps determine any needs that can be addressed, such as safety, employment, education, housing, legal support, drug and alcohol use, and mental health.

Since the inception of services, Atrium Health's HVIP has seen 112 patients and enrolled 78. Of those patients seen, 15 overall needs have been identified, with food insecurity, housing instability, transportation, and interpersonal safety being most common. Ninety-one percent of all patients seen have been male, and the primary mechanism of injury has been firearms (71%) (unpublished data). It has been critical for the program to connect with the patient as soon as possible and engage with all friends and family involved.

Conclusion

As the first two HVIPs to launch in North Carolina, Atrium Health and Duke University Hospital support the growth and collaboration of emerging programs throughout the state. Hospital-based violence intervention programs have proven to be effective, evidence-informed, and, most of all, a cata-

lyst in reducing re-injury and retaliation, thus, improving the health of their communities [2]. NCMJ

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