



# White Paper: State of Health in Baltimore

*Summary of Key Issues, Services, and Policies*

May 2018



*Catherine E. Pugh, Mayor, City of Baltimore*  
*Leana Wen, M.D., M.Sc., Commissioner of Health*

1001 E. Fayette Street • Baltimore, MD 21202

@Bmore\_Healthy 

@DrLeanaWen 

@BaltimoreHealth 

[health.baltimorecity.gov](http://health.baltimorecity.gov)

## Table of Contents

<i>State of Health in Baltimore</i>	<b>3</b>
Current Snapshot of Health	<b>3</b>
About the Baltimore City Health Department	<b>4</b>
Healthy Baltimore 2020	<b>4</b>
<i>Baltimore’s Public Health Priorities</i>	<b>5</b>
Priority 1: Behavioral Health	<b>5</b>
Priority 2: Violence Prevention	<b>12</b>
Priority 3: Chronic Disease Prevention	<b>15</b>
Priority 4: Public Health Infrastructure	<b>19</b>
<i>Conclusion</i>	<b>29</b>
<i>References</i>	<b>30</b>

## State of Health in Baltimore

It is impossible to discuss the health and well-being of Baltimore City's residents without applying the lens of health equity and systemic disparities. While the overall mortality rate in Baltimore City has declined over the past decade, the city still has an age-adjusted mortality rate 40 percent higher than the rest of the state<sup>1</sup> and ranks last on key health outcomes compared to other jurisdictions in Maryland.<sup>2</sup>

This reality is compounded by a series of complicated systemic social, political, economic, and environmental obstacles. With one in three children living below the Federal Poverty Level and about 30 percent of households earning less than \$25,000 per year<sup>3</sup>, income, poverty, and race have an enormous impact on health outcomes across Baltimore's neighborhoods.

The state of health is especially urgent when we consider that Baltimore houses some of the best healthcare institutions in the country. We know that healthcare alone cannot drive health: while 97 percent of healthcare costs are spent on medical care delivered in hospitals, only 10 percent of factors that determine life-expectancy take place within the four walls of a clinic.<sup>4</sup> Where we live, work, and play each day drives our health and well-being.

The mission of the Baltimore City Health Department (BCHD) is to protect health, eliminate disparities, and ensure the well-being of every resident of Baltimore through education, advocacy, and direct service delivery. We envision an equitable, just, and well Baltimore where everyone has the opportunity to be healthy and to thrive.

### *Current Snapshot of Health in the City*

- The leading causes of death in Baltimore City are heart disease, cancer, stroke, chronic lower respiratory disease, accidents (unintentional injuries), homicide, and drug- and/or alcohol-induced causes of death, such as overdose and alcoholic liver disease.<sup>5</sup>
- Life expectancy differs by up to 19 years between neighborhoods.<sup>6</sup>
- Although HIV rates in the City have declined over the past decade, Baltimore's HIV diagnosis rate is more than twice that of the state—53.7<sup>7</sup> versus 22.1<sup>8</sup> (per 100,000 population). An estimated 13,000 residents are living with HIV<sup>9</sup>; while African-Americans constitute 63 percent of the City's population,<sup>10</sup> they account for more than 82 percent of those living with HIV.<sup>11</sup>
- In Baltimore City, one in three high school students is either obese or overweight. One in four high school students drinks one or more regular sodas every day, while less than half eat one or more servings of vegetables a day.<sup>12</sup> Less than half of middle school students eat breakfast on a daily basis.<sup>13</sup>
- Baltimore City's asthma-induced emergency department visit rate is three times the state rate and the highest in Maryland.<sup>14</sup>

- 11.7 percent of babies born in the City are low birthweight,<sup>15</sup> compared to a national average of 8.2 percent.<sup>16</sup>
- 31 percent of children in Baltimore have Adverse Childhood Experience (ACEs) scores of 2 or more, meaning that they have experienced more than two incidences of events such as domestic violence, living with someone with an alcohol/drug addiction, the death of a parent, or being a victim/witness of violence.<sup>17</sup>
- 23 percent of adults living in Baltimore are smokers, compared to a state average of 15 percent.<sup>18</sup>
- In 2016, Baltimore City had the highest age-adjusted overdose mortality rate among large metropolitan counties in the US.<sup>19</sup> From January to September 2017, there were 574 drug and alcohol-related deaths in Baltimore City, a 16 percent increase over the same period in 2016.<sup>20</sup>
- About 11 percent of Baltimore City residents (aged 12 or older) are estimated to abuse and/or be dependent on illicit drugs or alcohol.<sup>21</sup>

### *About the Baltimore City Health Department*

Founded in 1793, BCHD is the oldest continuously-operating health department in the country, with about 1,000 employees and an annual budget of \$130 million. BCHD's wide-ranging responsibilities include maternal and child health, youth wellness, school health, senior services, animal control, restaurant inspections, violence prevention, emergency preparedness, STD/HIV treatment and prevention, and acute and chronic disease prevention.

Over the past three and a half years, under the leadership of Commissioner Dr. Leana Wen, BCHD has made major strides in addressing the public health challenges facing Baltimore City. Several programs have moved the needle on health outcomes and are national models for public health innovation. This white paper captures those accomplishments and provides an overview of the City's priority public health issues and BCHD's responses to them.

### *Healthy Baltimore 2020*

In August 2016, BCHD launched *Healthy Baltimore 2020*, a strategic blueprint for health in the city. Building upon BCHD's ongoing work and prior accomplishments, *Healthy Baltimore 2020* was designed during an 18-month community listening tour of convenings, town halls, public comment periods, and conversations to solicit feedback from representatives of healthcare institutions, community partners, faith-based institutions, local businesses, universities, youth groups, and others. The plan was shaped by input from the Local Health Improvement Council (LHIC), a BCHD-led advisory group consisting of members from each of Baltimore's hospitals and federally-qualified health centers as well as community-based organizations. The plan articulates a bold vision: *to cut health disparities in Baltimore City in half over the next ten years.*

This vision is particularly important as rapid shifts take place at the federal level with respect to both public health and healthcare. In this environment, it is even

more essential that local health departments lead the way in implementing and expanding programs that serve our most vulnerable residents.

*Healthy Baltimore 2020* tackles this through the lens of three core values:

- **Race, Equity and Inclusion:** It is impossible to talk about health in Baltimore without addressing the significant disparities that exist because of structural discrimination, racism, poverty, and historical practices of exclusion. As a result, every aspect of the work we do at BCHD is rooted in combating health inequity and ensuring that all residents of our city have the right to a healthy, robust life. We commit to applying this lens to our own actions as public health workers and will not shy away from difficult conversations that may arise.
- **Focus on Well-Being:** As a local health department, we do not merely treat the symptoms of poor health—we also address the barriers to overall well-being. In Baltimore, this includes applying a trauma-informed approach to all that we do, recognizing the cyclical, generational nature of trauma and its impact on both physical and mental health. We cannot provide effective services without acknowledging the role that trauma plays across the life course, and we look forward to working with our community partners to promote healing and awareness.
- **Health-in-All-Policies:** We view health as foundational to every issue—unhealthy children cannot learn in school, and unhealthy adults cannot be a productive part of the workforce. As we examine critical issues across the City—the economy, public safety, education—we believe that health should be addressed as a critical driver of each and should therefore be a key voice at the decision-making table. As a result, our work does not stop at the health department—and we work with partners from multiple sectors to realize our vision.

The plan also highlights four priority health topics, based on community feedback, evidence-based practice, and an existing track record of accomplishment. These four areas, described in further detail below, are behavioral health, violence prevention, chronic disease prevention, and public health infrastructure.

## Baltimore's Public Health Priorities

### *Priority 1: Behavioral Health*

#### ***Addressing the Opioid Epidemic***

**Background:** Our city cannot be healthy without addressing opioid addiction and overdose. More than 25,000 of our residents suffer from opioid addiction.<sup>22</sup> In 2015, 393 people died of overdose. In 2016, that number was 694—a jump of 77 percent. Based on data through September of 2017, the 2017 total will be even

higher.<sup>23</sup> Drug addiction affects our entire community and ties into nearly every issue facing our city, including crime, unemployment, and poverty.

### Accomplishments/Progress/Update

BCHD has developed a comprehensive, three-pillar strategy to combat opioid addiction and overdose, a strategy that serves as a national model of innovation:

- **Pillar 1: Prevent deaths from overdose and save lives.** In July 2015, Dr. Wen declared opioid overdose a public health emergency. The first pillar of BCHD's opioid overdose prevention campaign has been expanding access to naloxone, the lifesaving medication that reverses the effects of an opioid overdose. Key activities include:
  - BCHD, in collaboration with partner organizations, has trained more than 33,500 people—at street markets, metro stops, jails, and neighborhood meetings—to administer naloxone. We use epidemiological data to target our training to “hotspots,” taking naloxone directly to the most at-risk communities and putting it in the hands of those who need it most. Since 2015, naloxone has been used to save more than 2,000 lives: acts of neighbors saving fellow neighbors. This number does not include the many lives saved by nurses, doctors, EMS, and police officers.
  - In October 2015, Dr. Wen issued a standing order and prescribed naloxone to all of the City's 620,000 residents. Baltimore City became the first jurisdiction in Maryland to expand access to naloxone using a standing order. In June 2017, Dr. Wen issued a new standing order that allows residents to purchase naloxone without the previously required training certificate, making the medication effectively available over-the-counter. BCHD visited every pharmacy in the City to detail pharmacists, making sure that they were aware of the change.
  - Baltimore City was one of the first jurisdictions to require naloxone training as part of court-mandated time in Drug Treatment Court. We have also trained federal, state, and city legislators so that they can not only save lives, but serve as ambassadors and champions to their constituents.
  - BCHD helped the Baltimore Police Department incorporate naloxone training into their programming, and every patrol officer will carry the medication by the end of 2018. Police officers have already used naloxone to save the lives of nearly 200 of our residents.
  - BCHD maintains a map of pharmacies that regularly stock naloxone at [www.dontdie.org](http://www.dontdie.org).
- **Pillar 2: Increasing access to on-demand treatment and long-term recovery support.** Preventing overdose is only the first step in addressing addiction. To adequately treat people with substance use disorders, we must ensure that there is 24/7 access to on-demand treatment. Nationwide, only 10 percent of patients with addiction get the treatment they need.<sup>24</sup> In collaboration with Behavioral Health System Baltimore, the City's local

behavioral health authority, BCHD has already taken several actions to ensure access to treatment, including:

- In October 2015, the City launched a 24/7 Crisis, Information, and Referral phone line for anyone with addiction and/or mental health concerns; the line receives nearly 1,000 calls each week for crisis services and referral to appointments.
- In February 2017, Baltimore City launched the Law Enforcement Assisted Diversion (LEAD) program, which allows police officers to offer eligible individuals who are arrested for low-level drug offenses intensive case management instead of prosecution, helping to connect them with social services and addiction treatment.
- In fall of 2017, the City began piloting a “hub and spokes” model of treatment that builds on the work of the Baltimore Buprenorphine Initiative, increasing the availability of addiction treatment in the primary care setting and incorporating buprenorphine treatment into our clinics. As of April 2018, one hub and 10 spokes are online.
- In April 2018, BCHD joined with the City’s 11 acute-care hospitals to announce the Levels of Care for Baltimore City Hospitals Responding to the Opioid Epidemic, which will enshrine evidence-based hospital interventions and publicly recognize hospitals that implement them. A hospital can be level 3, 2, or 1—with a level 1 hospital responding to the epidemic as comprehensively as possible. The Levels of Care builds on progress already made by the City’s emergency departments, all of which will offer universal addiction screening, peer recovery specialists, and on-demand medication-assisted treatment for opioid addiction by fall 2018.
- The City has built a simple tool to track real-time capacity for treatment among a small group of community-based providers. This tool serves as a proof of concept for a more sophisticated tracking system that will operate across the public behavioral health system, which is being developed with support from the Open Society Institute—Baltimore.
- In April 2018, the City’s Stabilization Center pilot began seeing patients, and full implementation is set for spring of 2019. The stabilization center will provide a safe place for individuals who are under the influence of drugs and/or alcohol to deal with their addiction and receive short-term medical and social interventions. These include medical screening and monitoring, connections to behavioral health and social services, and buprenorphine induction to treat opioid addiction. Through emergency medical system transport, the Center will divert patients who meet specific criteria from emergency departments and provide stronger links to community-based behavioral health care. It will create a non-traditional access point for individuals with behavioral health needs who engage in high-risk substance use and related behaviors who are experiencing a crisis and/or at risk of overdose. This is the beginning of Baltimore's efforts to create a 24/7 behavioral health emergency department. Just as a patient with a physical complaint can go into an emergency

department any time of the day for treatment, a person suffering from addiction must be able to seek treatment on-demand.

- **Pillar 3: Provide education to reduce stigma and prevent addiction.** The way we talk about addiction must change. Stigma against individuals with substance use disorder and treatment—especially medication-assisted treatment for opioid use disorder, the gold standard—stands in the way of efforts to reverse the tide of addiction and overdose. BCHD has been at the forefront of changing the public perception of addiction so that those in need are not ashamed to seek treatment. BCHD led a citywide effort to educate the public and providers on the nature of addiction: that it is a disease for which treatment exists, that recovery is possible, and that we must all play a role in preventing addiction and saving lives.

Key activities include:

- Don't Die, launched in July 2015, is a public education campaign that emphasizes that addiction is a chronic disease and provides information about how individuals can access naloxone and treatment.
  - BCHD led educational programs for doctors and providers of all specialties about the judicious prescribing of opioid painkillers and the need for the co-prescribing of naloxone.
  - In October of 2016, BCHD established the Work Group on Drug Treatment Access and Neighborhood Relations, co-chaired by Don Fry, President and CEO of the Greater Baltimore Committee; Bill McCarthy, Executive Director of Catholic Charities; and Dr. Wen. The Work Group has convened public sessions featuring national and local policy experts, including Mayor Catherine E. Pugh; Kana Enomoto, then Deputy Assistant Secretary for Mental Health and Substance Use at the Substance Abuse and Mental Health Services Administration within the U.S. Department of Health and Human Services; and Dr. Wilson Compton, Deputy Director of the National Institute on Drug Abuse. The Work Group was created to expand access to evidence-based treatment while maintaining positive relationships between treatment providers and the communities they serve.
- **Fentanyl Task Force.** In 2015, we learned that 40 people died from overdoses involving fentanyl—a synthetic opioid—between January and March alone.<sup>25</sup> Fentanyl is many times stronger than heroin, and many individuals using heroin were not aware that they were using fentanyl-laced heroin. Fentanyl continues to drive a dramatic increase in the rate of overdose death: in Baltimore City, the number of people dying from fentanyl has increased nearly 35 times since 2013, and it is now responsible for the majority of all overdose-related deaths (12 fentanyl deaths in 2013 vs. 419 fentanyl-related deaths in 2016).<sup>26</sup> To address this spike, BCHD launched a citywide Fentanyl Task Force with representatives from local hospitals, the Baltimore City Police Department, the Baltimore City Fire Department, and other City agencies and community-based organizations, to discuss ways to identify and prevent fentanyl-related deaths. A key recommendation that

surfaced was implementing a real-time alert and city-wide rapid response system to identify spikes in overdoses and deploy street outreach teams to affected areas of the city. BCHD put this system in place with Baltimore City EMS in fall 2016 and in 2017, the City responded to 45 spikes by deploying outreach teams and alerting residents to each spike via email and text.

Baltimore City has one of the most ambitious overdose response and addiction treatment programs in the country. The U.S. Senate and House of Representatives, the White House, and the Surgeon General have all highlighted BCHD's innovative approach to address the opioid epidemic as a national best practice.

### Challenges and Aspirations

While we have made important strides in responding to substance use and overdose, more must be done, including:

- **Ensuring naloxone accessibility.** This means ensuring that the price of the life-saving antidote, which has more than doubled over the past few years, remains affordable. Rising prices severely limit the ability of providers and first responders to purchase naloxone, threatening access at a time when opioid overdose is a national public health emergency. BCHD has continually faced a shortage of naloxone: we lack the resources to provide the medication even to our highest-risk populations, forcing us to ration and triage. In May 2018, Dr. Wen joined with the advocacy group Public Citizen to call on the White House to reduce the price of naloxone by invoking a power granted to the federal government by existing law (28 USC Sec. 1498). Until this happens, in the midst of a crisis and in the city with the highest age-adjusted overdose fatality rate in America, more funding must be allocated for the purchase of this life-saving drug.
- **Increasing access to on-demand treatment.** We must ensure that high-quality treatment options are not only available to those suffering from opioid addiction but available on-demand. This means making mobile crisis response teams available 24/7 and increasing the number of crisis beds, including through the City's Stabilization Center. It means expanding the capacity for non-crisis outpatient medication-assisted treatment—especially in primary care settings and outside of traditional business hours. And it means doing more to meet residents where they are. For example, BCHD, Behavioral Health System Baltimore, and the Baltimore City Fire Department are launching a program to send peer recovery specialists to the scene of non-fatal overdoses to engage with consenting overdose survivors who refuse transport to a hospital; we expect to serve several thousand individuals each year.

BCHD is also exploring the incorporation of buprenorphine treatment into a mobile health clinic that will travel with our needle exchange van. BCHD is focused on engaging residents at high risk of overdose who are not accessing treatment, both by leveraging existing points of connection (e.g., in emergency departments and hospitals, jails and prisons, BCHD's HIV/STD

clinics, federally-qualified health centers, etc.) and by creating new points of connection. For all of these initiatives, one of the greatest barriers is a lack of resources: unless funding is allocated to the areas of greatest need, including Baltimore, we will continue to struggle to reverse the tide of addiction and overdose. With this barrier in mind, BCHD worked with the office of Congressman Elijah Cummings on legislation that he introduced with Senator Elizabeth Warren—the Comprehensive Addiction Resources Emergency Act—to provide states and local jurisdictions the funding they need, creating a version of the Ryan White HIV/AIDS Program for the opioid epidemic. BCHD strongly supports this legislation and continues to advocate for its passage.

- **Additional funding for upstream prevention and stigma reduction.** We know that addressing substance use is key to ensuring that our residents can achieve better physical health and can pursue employment opportunities that will contribute to overall economic development in our city. To stop the cycle of addiction, we must continue to invest in prevention services and anti-stigma education. In 2018, BCHD will launch the next phase of its Don't Die campaign, which will emphasize that addiction is a disease for which treatment exists.

### ***Addressing Trauma and Access to Mental Health Services***

**Background:** Baltimore City faces significant behavioral health challenges and disparities. Despite Baltimore City's residents making up 10 percent of Maryland's total population,<sup>27</sup> 29 percent of the state's substance abuse-related emergency department visits are from Baltimore City.<sup>28</sup> Over 60,000 residents are estimated to have a drug or alcohol addiction.<sup>29</sup>

### **Accomplishments/Progress/Update**

- **Addressing trauma in West Baltimore.** In September 2016, BCHD was awarded a 5-year, \$5 million grant by the U.S. Department of Health and Human Services for the Resiliency in Communities after Stress and Trauma (ReCAST) program. The goal of ReCAST is to reduce the impact of trauma and build resilience in Central West Baltimore communities adversely affected by the April 2015 unrest. The program empowers community organizations from West Baltimore to implement high-quality, trauma-informed services to promote connectedness and resilience in youth.
- **Promoting student resilience.** Complementing ReCAST, the Baltimore City Public School System was awarded a \$2 million grant by the U.S. Department of Education to fund school-based mental health, counseling, and behavioral programs. In partnership with City Schools, BCHD will pilot tele-health services at Booker T. Washington Middle School during the 2018-2019 school year. This will include physical and mental health services.
- **Trauma-informed care.** There is growing recognition in Baltimore City that generations of exposure to poverty, racism, violent crime, and domestic violence has resulted in extremely high levels of traumatic stress for

individuals, families, and communities. Recognizing that trauma is a major underlying factor of behavioral health issues and violence, BCHD has launched a trauma-informed care training initiative across City government, which has already reached more than 2,000 City employees, including police officers and other front-line City workers. The goal of this initiative is to educate all front-line City workers in trauma-informed approaches, including:

- Understanding trauma
  - Understanding the impact of traumatic stress on brain development
  - Integrating trauma-informed practices into work with City residents
- **Increased focus on treatment and case management.** Eight of Baltimore City's twelve hospitals participate in Screening, Brief Intervention, and Referral to Treatment (SBIRT), an evidence-based public health approach to providing early intervention and treatment services to those at risk of substance use and mental health disorders.

BCHD seeks to increase case management capability for all individuals leaving jails and prisons. These individuals are in a highly vulnerable state, and must be connected to medical treatment, psychiatric and substance use treatments, housing and employment support, and more. We know that deploying credible messengers from the community, as community health workers to reach people where they are, works. BCHD aspires to bring jobs and opportunities to vulnerable individuals and neighborhoods that otherwise have limited employment opportunities.

### Challenges and Aspirations

- **Citywide trauma strategy.** To convene and align trauma-informed care efforts with the ReCAST work and other local collaborations focused on trauma, BCHD will launch a citywide trauma strategy in 2018 to bring together community-based organizations, academics, foundations, residents, and additional stakeholders to ensure that a shared language and set of practices related to trauma are implemented. Central to this strategy will be building capacity within our institutions to be trauma-informed and helping to scale community models for responding to trauma.
- **24/7 Behavioral Health Emergency Department.** Building upon the idea of the stabilization center, this facility would be one step closer to on-demand treatment for addiction and mental health services, which are significant unmet needs in Baltimore. The center will also alleviate pressure from emergency departments and jails, which are ill-equipped to address these patients' needs.

## Priority 2: Violence Prevention

**Background:** Addressing violence and public safety are key priorities for Baltimore City. BCHD takes a three-pronged public health approach to violence prevention: violence interruption, addressing addiction and mental health needs, and upstream investment.

### Accomplishments/Progress/Update

- **Violence Reduction Initiative.** Since the beginning of November 2017, BCHD has taken an active role in Mayor Pugh's Violence Reduction Initiative to focus city services on high-crime areas. As part of the initiative, BCHD provides needle exchange services and naloxone trainings in targeted areas, and agency staff work closely to address environmental health concerns within the Initiative's zones. The Mayor also called upon BCHD's inspection team to expand resources and increase food facility inspections in five priority areas in the City and reinforced the importance of interagency collaboration. By conducting in-depth food facility inspections in high-crime areas, including nighttime inspections, inspectors help create a governmental presence in the community. Not only is the health risk to customers reduced by ensuring adherence to food safety regulations, but in the event a facility is closed, the desire of individuals to gather at that location is virtually eliminated during the period of closure. The initial five priority areas have since been expanded to seven priority areas.
- **Violence interruption.** Safe Streets takes a public health approach to violence and maintains that violence is a learned behavior that can be prevented using disease control methods, as violent events often "cluster" like an infectious disease outbreak. At various points, three of the four Safe Streets sites have gone a year or more without a fatal shooting, and the McElderry Park site recently went 545 days without a fatal shooting. Mayor Pugh is a strong advocate for Safe Streets and, in recognizing the success of the program, is expanding the program from 4 sites to 10 sites and will directly oversee the expansion out of the Mayor's Office. Safe Streets has proven successful in significantly reducing incidences of shootings and homicides, and BCHD looks forward to the program being expanded, saving more lives, and preventing the intensive trauma and costly citywide ripple effects associated with major acts of violence.
  - In the fall 2016, BCHD was awarded a \$500,000 grant by the U.S. Department of Justice to expand Safe Streets into emergency departments. Safe Streets employees will be located in ERs in order to reduce violence-related injury re-admissions by resolving conflicts immediately after an altercation occurs to prevent retaliation.
  - In 2017, Safe Streets mediated 1,242 conflicts, 89 percent of which were deemed likely or very likely to result in violence without an intervention.
  - Safe Streets held 122 community events with an estimated 12,400 community members in total attendance.

- **Addiction and mental health.** Behavioral health and substance use are key factors in violence prevention: eight out of 10 individuals in jail use illegal substances and four out of 10 have a diagnosed mental illness.<sup>30</sup> Every \$1 invested in addiction treatment saves society \$12.<sup>31</sup> BCHD's comprehensive, three-pillar strategy will combat opioid addiction and ensure that this root cause of violence is addressed.
- **Violence as a public health issue.** We know violence is a generational challenge impacted by the social determinants that shape people's lives. BCHD's approach to violence prevention starts as far "upstream" as possible. A decade ago, Baltimore City's infant health outcomes ranked as one of the worst in the country, with an infant mortality rate nearly twice the national average and with very large disparities between black and white birth outcomes. In response, B'More for Healthy Babies (BHB) was born as a city-wide public-private coalition of more than 150 nonprofits, public agencies, and foundations. The goal of the initiative is to ensure that all of Baltimore's babies are born at a healthy weight, full-term, and ready to thrive in healthy families. It is a comprehensive, evidence-based solution that builds cross-sector partnerships for strategic planning and implementation; strengthens systems and streamlines interventions to achieve maximum effectiveness; ensures community and client participation in planning; and emphasizes proactive monitoring and data-driven decision-making.

### Accomplishments/Progress/Update

- **B'More for Healthy Babies.** Since its inception in 2009, BHB has experienced extraordinary success. It has:
  - Reduced the infant mortality by an astonishing 35 percent, bringing it to its lowest point in Baltimore's history
  - Closed the disparity between black and white infant deaths by almost 60 percent
  - Decreased the teen birth rate in the City by an unprecedented 49 percent
  - Reduced sleep-related infant deaths by 50 percent

The program's success has been widely recognized; it was awarded the 2014 Family League Award, the 2015 Academy for Excellence in Local Governance County Best Practices Award, and the 2015 Spirit of Service Award from the Healthy Teen Network.

Building upon the success of BHB, BCHD seeks to take a comprehensive approach to youth health and wellness

- **Youth Health and Wellness Plan.** In November 2016, BCHD launched a comprehensive youth health and wellness plan that applies the same principles that have made BHB so successful to the full youth life course of 0-19 years old. This plan will focus on three categories of long-term outcomes:

- **Healthy Minds:** including improved social and emotional development as well as improved behavioral health
  - **Healthy Bodies:** including continuation of reduced teen births and improved physical health outcomes, including immunizations and oral health
  - **Healthy Communities:** including improved peer relationships, community connectedness, and connections with trusted adults
- **Vision for Baltimore.** As part of the Youth Health and Wellness Plan, BCHD launched Vision for Baltimore in the spring of 2016. If a child cannot see, they may struggle to learn to read, to focus in class, and may be unlikely to be motivated to come to school. To that end, BCHD, City Schools, Johns Hopkins University, non-profit provider Vision To Learn, and Warby Parker partnered on Vision for Baltimore. This innovative citywide strategy ensures that all students in Baltimore City elementary and middle schools have universal access to glasses, in an effort to improve performance, engagement, and opportunity. Through Vision for Baltimore, we have served more than 35,000 students and provided needed eye care to 5,000 youth.
  - **School Health.** BCHD provides health services in all Baltimore City Public Schools. We have helped children succeed in school by supporting mental health services in 119 schools and by providing students with access to health suite services, with nearly 300,000 annual visits in 180 schools. However, capacity is somewhat limited: Nurse Practitioners serve multiple School-Based Health Centers (SBHCs), which leads to less than optimal coverage. When the Nurse Practitioner is absent, the SBHC is not able to provide the full range of clinical services that would otherwise be available.

Many diagnostic, treatment, and preventive services cannot be provided in health suites. Tele-health is an innovative and effective way to address this gap in capacity and expand the level of care offered across schools without having to staff each with a full-time primary care provider, and BCHD will roll-out a telehealth pilot in the fall of 2018.

- **Reproductive health.** In 2015, BCHD and a broad coalition of partners in the City, including Baltimore City Public Schools, were awarded an \$8.5 million Teen Pregnancy Prevention Initiative grant from the U.S. Department of Health and Human Services to ensure that there is evidence-based, comprehensive sex education in middle schools and high schools, with the aim of reducing the teen birth rate and providing accurate, evidence-based reproductive health education. After three years, BCHD has implemented new, comprehensive, evidence-based curricula in many of our middle and high schools.

As of 2016, Baltimore City's teen birth rate is 32.6 births per 1,000 15-19 year old females. While the teen birth rate declined over the last decade, the racial disparity continues to persist. The White teen birth rate is 24.0 births per 1,000 15-19 year old females compared to 36.7 for Black females and 71.6 for Latina females in the same age range. These rates are also higher

than the national and Maryland teen birth rates. The teen births are concentrated in neighborhoods defined as vulnerable based on income and education levels. Baltimore City's teen births are also concentrated in several neighborhoods that are racially concentrated and have limited access to healthcare and less access to evidence-based teen pregnancy prevention.<sup>32</sup>

### Challenges and Aspirations

- **Investing upstream to ensure public safety.** Safe Streets, while a best-in-class model, is only one innovative way to tackle youth violence. We must also invest in the upstream interventions described above—including glasses and lead poisoning prevention programs, which address shared risk and protective factors across multiple forms of youth violence and prevention programs. Addressing violence as a public health issue is a key strategy in ensuring our city's overall safety. Rather than viewing violence solely through a criminal justice or law enforcement lens, taking a public health approach to violence acknowledges that—like many challenges facing our society—violence is cyclical and tied to systemic barriers. In order to move the needle on crime and homicide, we must deploy our resources toward public health interventions that tackle the root causes of violence.
- **Sustainability challenges tied to federal policy.** With state and federal budgets steadily decreasing, these critical programs face potential funding cuts. Several components of BHB and the Youth Health and Wellness Plan are under threat as federal priorities shift. For example, reproductive health programs and services for pregnant women are at risk, as the federal government is currently proposing cuts to several key offices, including the Office of Adolescent Health.

Additionally, the grant that BCHD was awarded in 2015 to provide evidence-based education and services through its Teen Pregnancy Prevention Initiative was prematurely terminated. During the summer of 2017, the Trump Administration abruptly cancelled the grant without warning, forcing the program to close-out two years early and threatening educational programs for thousands of Baltimore's youth. Given this landscape, implementing and expanding our initiatives will require multiple funding streams, including philanthropic, government, and billable services. In March 2018, in an effort to ensure this critical work continues, Baltimore City joined a lawsuit against the U.S. Department of Health and Human Services to challenge the decision to eliminate funding for this evidence-based intervention.

### *Priority 3: Chronic Disease Prevention*

**Background:** BCHD is committed to fighting chronic disease, one of the leading causes of death and poor health in Baltimore City. We take a multi-pronged approach to addressing chronic disease that encompasses direct services, education, and policy actions. Our chronic disease efforts include:

- **Tobacco Use Prevention and Cessation.** Smoking is the leading cause of preventable death from heart disease, stroke, and cancer. BCHD strives to make Baltimore a smoke-free city that is free of addiction to tobacco and the diseases that tobacco use causes, like heart disease, lung disease, lung cancer, and asthma. BCHD enforces local tobacco control laws and provides outreach and education including smoking cessation. Our in-class education visits bring tobacco education into each classroom in Community Schools, allowing for important conversations on the dangers of tobacco for youth at their most vulnerable ages.
- **Hypertension and Diabetes.** BCHD works with community clinics to implement screening and treatment best practices for hypertension, prediabetes, and diabetes. Enabling clinics to catch diabetes before it starts means that patients have the opportunity to make lifestyle changes like eating healthy foods, becoming physically active, and maintaining a healthy weight. BCHD also targets disparities in hypertension through work at the University of Maryland Medical Center. The program offers free screenings, cooking classes, gym memberships, and grocery store tours to African American men with high blood pressure.
- **Sugar-Sweetened Beverages.** One in three high school students is either obese or overweight. One in four high school students drinks one or more regular sodas every day, while less than half eat one or more servings of vegetables a day.<sup>33</sup> In 2018, BCHD began implementing legislation requiring all restaurants to offer milk, 100% juice, or water as the default options for beverages for children's menu items. The bill, which BCHD supported along with coalition partners, addresses the rates of consumption of sugar-sweetened beverages by Baltimore City youth and will help make the healthy choice the easy choice. In addition, legislation was previously proposed to the City Council that would require retailers to post warning labels noting the connection between sugar-sweetened beverages and health conditions such as obesity. BCHD hopes to work with City Council to ensure residents are aware of the link between such beverages and poor health. We are continuing to work with community partners on this and other efforts to reduce the scourge of childhood obesity and reduce disparities in Baltimore.
- **Food Access.** Baltimarket works to improve the health and wellness of residents by using food access and food justice as strategies to transform communities. The program is comprised of a suite of community-based food access and food justice programs that promote nutrition knowledge and skills and increase food access. Through Baltimarket, BCHD tackles systemic inequalities that ultimately affect the health and wellness of residents in Healthy Food Priority Areas (areas that lack access to healthy food options). The three programs that make up Baltimarket are:
  - **Virtual Supermarket:** The first national community-based program that uses online food ordering and accepts SNAP, BCHD's Virtual Supermarket Program is an innovative public-private partnership

between BCHD and ShopRite grocery stores. The program uses ShopRite's online grocery ordering and delivery platform to bring food to Healthy Food Priority Areas. Through early 2018, this program has served over 1,200 customers at 13 sites and has delivered over \$500,000 worth of fresh groceries, with the help of 56 Neighborhood Food Advocate volunteers. In March of 2018, BCHD expanded to its 14<sup>th</sup> Virtual Supermarket location.

- **Healthy Corner Stores:** BCHD aims to reduce chronic diseases through a multi-level, community-based effort that transforms the retail food environment in Baltimore's Healthy Food Priority Areas. It engages corner stores, grocery stores, youth, and caregivers to increase supply and demand for healthy foods. It works with 25 stores.
- **Neighborhood Food Advocates and Food Justice Forum:** Neighborhood Food Advocates are trained community members who plan, implement, evaluate, and sustain the Virtual Supermarket Program. The Food Justice Forum is an annual event that engages in dialogue about food injustice in Baltimore, discusses the role that race and place play in access to healthy foods, and promotes community solutions that are working in Baltimore. The 2018 Food Justice Forum will focus both on the potential of technology to improve access to healthy foods and the relationship between hunger and aggressive behavior.
- **Lead Prevention.** Nearly 56,000 children age 6 and under are at risk for lead poisoning in Baltimore. Lead poisoning can cause permanent brain damage; no amount of lead is safe for children. BCHD seeks to reduce lead poisoning through prevention and aggressive enforcement of lead laws. BCHD educates and strongly encourages families and providers to test children ages 1 and 2 for lead levels, performs outreach to pregnant women to evaluate potential lead hazards, and, with numerous partners including Baltimore City Housing, conducts home visits and develops strategies to reduce lead paint hazards in homes. Lead poisoning disproportionately affects Baltimore's most vulnerable children, and BCHD recognizes the paramount importance of protecting our youth.
- **Asthma.** More than a third of Baltimore City high school students have been diagnosed with asthma at some point, compared to 26.3 percent statewide and 22.8 percent nationally.<sup>34</sup> The pediatric ED visit rate for asthma in the City was 2.6 times higher than the state rate (360.2 vs 136.1 per 10,000 people).<sup>35</sup> BCHD provides evidence-based home visits for children with moderate-to-severe asthma to educate families about medical management and about preventing environmental asthma triggers, thereby reducing ED visits for children with asthma. BCHD conducts extensive education about asthma as well as provides supplies to increase asthma management, such as dust mite-proof mattress and pillow covers and green cleaning supplies. In FY 2017, 88 percent of children who completed this intervention showed a decrease in symptoms.

### Accomplishments/Progress/Update

We have made significant progress in tackling chronic disease through public health campaigns and advocating for policy changes at all levels of government:

- **Lead prevention reforms.** Childhood lead poisoning has decreased significantly and is currently at the lowest level since Maryland's lead law was implemented in 1994 and enhanced enforcement began at the City level in 2000. Since then, the number of lead poisoning cases has decreased by 92 percent.<sup>36</sup> Additionally, a BCHD-led pilot to test children's jewelry revealed extreme levels of lead in many readily available products at local stores. Based on the results of this testing, BCHD implemented regulatory action against lead in children's jewelry that prohibits the sale of such jewelry if measuring over 100ppm of lead. In October 2017, BCHD became eligible to conduct point-of-care testing, enabling BCHD to rapidly determine blood lead levels. BCHD is seeking to expand access to this newly available and critically important test.
- **Alcohol.** BCHD has advocated for a variety of policy initiatives to address the harmful effects and pervasive availability of alcohol. This includes increased enforcement funding and capacity and efforts to reduce liquor store density in neighborhoods. BCHD's advocacy has resulted in a statewide ban of powdered alcohol.
- **Tobacco regulation.** BCHD has advocated for several policy initiatives to address the harmful effects of tobacco. These include regulation of hookah establishments, a state-wide tobacco tax to be used for medical care, a ban on indoor smoking, including e-cigarettes, buffer zones around schools, and increased enforcement funding and capacity. BCHD has also implemented its strategy to reduce the sales of tobacco to youth under the age of 18. By providing store education, increasing enforcement, and engaging stakeholders, BCHD decreased the rate of non-compliance by 56 percent from 2015 to 2016.

### Challenges and Aspirations

- **Lead prevention.** Despite significant progress, our work is far from done: about 5.7 percent of tested children have positive results for lead.<sup>37</sup> In order to build on our lead prevention efforts, additional funding is necessary at the local level to increase testing and provide primary prevention services. Furthermore, the state threshold for outreach to a child who tests positive for lead is too high, and many youth are not served as a result. BCHD has advocated for decreasing the action level with the understanding that there is no safe lead exposure for children. Finally, additional efforts are needed to support lead abatement in homes, as lead paint hazards are the leading cause of childhood lead poisoning.
- **Local tobacco authority.** Preventing youth from smoking in the first place is critical to reducing tobacco use in Baltimore. 90 percent of smokers start

before the age of 18, but telling kids about the dangers of smoking is not enough when they are exposed to those same dangers at home every day.<sup>38</sup> Inspiring families to create smoke-free homes can be an effective way to limit exposure to both secondhand smoke and tobacco use for kids. Baltimore City is currently unable to enforce certain tobacco violations locally due to state preemption. We are working with our representatives in the Maryland General Assembly on legislation that would allow us to enact and enforce measures regulating the sale and distribution of tobacco products in the city.

- **Decreased funding for public health prevention.** Funding to conduct public health education about asthma, lead poisoning prevention, and tobacco comes from federal agencies like the Centers for Disease Control and Prevention. Those agencies are now facing the threat of severe funding cuts, which will cause Baltimore City to lose essential prevention dollars. We will continue to advocate for the preservation of these prevention dollars and work collectively to identify strategies for filling the funding gaps that may be caused by shifts at the federal level.

### *Priority 4: Public Health Infrastructure*

#### ***Senior Health and Wellness***

**Background:** BCHD is committed to enhancing the quality of life of our older adults. We help these residents age in place and remain connected to their communities by delaying premature institutionalization and providing protection from abuse and neglect. BCHD guarantees essential core programs for older adults that include the operation of 14 senior centers, advocacy, guardianship, in-home care services, health evaluation, transportation, training, and volunteer opportunities.

#### **Accomplishments/Progress/Updates**

BCHD has piloted several innovative approaches to improve health outcomes among older adults, including:

- **Preventing falls.** In April 2018, BCHD launched its Citywide Falls Reduction Strategy with community partners to reduce falls among older adults by 20 percent over ten years. The public health falls prevention strategy will focus on three major components: mapping where falls are occurring throughout the City using real-time hospital data; targeting fall prevention activities in hotspots—the areas of high fall rates; and educating the general public that falls are preventable and resources are available. In Baltimore City, nearly 5,000 older adults visited the emergency department (ED) or were hospitalized in 2017 due to falls.<sup>39</sup> The average cost of hospitalizations each year due to falls is \$39,000 or \$60 million annually.<sup>40</sup> Falls-related ED visits in Baltimore City are more than 20 percent higher than the statewide average and the city's rate of fall-related hospitalizations is 55 percent greater.<sup>41</sup>

- **A connected ecosystem.** To address the needs of our rapidly growing population of older adults, BCHD is committed to enhancing the “no wrong door” service delivery model. The Weinberg Foundation awarded a \$500,000 grant to a partnership between the United Way’s 211 Call Center and BCHD to expand its information and assistance service system. The goal of this project is to enhance care coordination for older adults, by allowing them to remain independent and age in their communities. This system will track services to individuals, stem duplication of efforts, support efficient referrals and follow-up, and enhance connections among partnering agencies.
- **Senior Centers as Neighborhood Hubs.** Senior centers serve as focal points or one-stop shops for older adults to access services directly from within their community. This includes access to meal services, healthcare, educational opportunities, and a variety of social and recreational activity. Despite a decrease in funding, the City’s 14 centers served over 55,000 seniors last year by focusing on strategies that expand partnerships and innovation. Waxter Wisdom uses theatrical presentations as an educational vehicle to present the historic contributions of African American men and women. Fitness classes provided at senior centers ensure that older adults have the resources to address chronic conditions that may otherwise exacerbate and rob them of their physical independence and ability to live a long and healthy life.
- **City-wide strategy.** BCHD was awarded an \$85,000 grant from the Stulman Foundation to develop a city-wide strategy to care for older adults in Baltimore, and BCHD will launch the strategy in early 2019. Like the Youth Health and Wellness Plan, this strategy will tie together efforts across the city and present a blueprint for ensuring that our most vulnerable seniors have access to the comprehensive care and community that they need.

### Challenges and Aspirations

- **Older Americans Act.** The Older Americans Act (OAA) was created to ensure that preference is given to providing services to older persons with the greatest economic and social need. Baltimore City’s seniors tend to be older, more disabled, and lower income than seniors in other Maryland jurisdictions. Seventeen percent of Baltimore City older adults live below the Federal Poverty Level versus 8 percent of Maryland’s older adults statewide.<sup>42</sup> In Baltimore City, 84 percent of older adults have a disability, compared to 69 percent for Maryland older adults statewide.<sup>43</sup> BCHD thus serves a larger population with much greater need than counterpart jurisdictions. Maryland’s OAA Title III funding formula does not adequately account for Baltimore’s seniors, and we have proposed revisions that would make it equitably responsive to our population’s needs.

## Public Health Infrastructure

**Background:** BCHD provides essential public health services, including communicable disease tracking, education and prevention, STD treatment, non-emergency medical transport, emergency preparedness and response, restaurant inspections, and animal control. Our staff, from our animal control officers, to our sanitarians, and outbreak investigators, has tackled emergencies ranging from Legionella, pneumonia, measles, and Ebola investigations to transporting patients to life-saving treatment during severe weather. These activities are core to Baltimore City's health and safety.

### Accomplishments/Progress/Update

- **HIV Prevention and Education.** In the fall of 2015, BCHD secured two grants totaling \$18 million to bring HIV prevention and treatment to underserved populations. The White House has acknowledged Baltimore's leadership in this area, and Baltimore was one of a handful of cities to join the Fast Track Cities coalition to end AIDS by 2030. Our HIV team will continue to partner with community and provider groups to provide education and treatment in one of the largest collaborations to combat HIV.

BCHD's IMPACT Campaign (the Initiative to Maximize Prevention, Access, Care, and Treatment) is a prevention and care campaign prioritizing same-gender-loving men and transgender communities of color. In addition to supporting the provision of HIV care and HIV pre-exposure prophylaxis (PrEP) through provider training and peer navigation, IMPACT includes social innovation and community outreach activities led by BCHD, with the goal of reducing social stigma and medical mistrust in LGBTQ communities of color. IMPACT's social innovation comprises three initiatives: Baltimore in Conversation, Project Presence, and Baltimore in Action.

- Baltimore in Conversation focuses on fostering more holistic sexual health for queer people of color by building empathy through storytelling.
- Project Presence uses photographic portraits narrating the stories of queer individuals of color as a medium to address social stigma. The photo exhibition has rotated through buildings and galleries across Baltimore.
- Baltimore in Action is the culminating event of the IMPACT Campaign. It convenes Baltimore's healthcare providers, members and allies of the LGBTQ community, social service providers, businesses, and community-based organizations to co-create a citywide HIV prevention and care plan. Using the triumphs, challenges, and barriers identified from Baltimore in Conversation, the plan aims to improve access to and delivery of prevention and care services with an approach that is community-driven, human-centered, and socially conscious.

BCHD has hosted the Know Your Status Ball annually for the last eight years. This event is aimed at the House and Ball community, which is made up of

gay and transgender individuals. Each year, approximately 600 individuals attend the event, with hundreds of people volunteering for HIV testing. The ball attendees are statistically at the highest risk for contracting HIV and are often stigmatized in other health settings. There is a higher HIV detection rate at the event than with typical outreach methods. Those who test positive are linked with primary care. BCHD is one of the only health departments in the country to host this type of event.

- **Increasing access to HIV/AIDS treatment.** While the Affordable Care Act (ACA) has improved access to health insurance and Medicaid, many of our residents with HIV/AIDS need additional support. BCHD provides clinical and support services for people living with HIV/AIDS and their contacts. Through these efforts, BCHD has linked over 1,400 patients to primary care, an important step in stopping the transmission of HIV. In 2015, the Maryland Department of Health recognized this program staff with two statewide awards, “Most Encounters with HIV Positive Clients” and “Most Referrals to HIV Primary Care.” BCHD provides HIV-related medical and support services to over 10,000 clients living in Baltimore City and the five surrounding counties.
- **Vaccines.** Baltimore City has one of the highest rates of student immunizations in the country, and BCHD holds regular clinics—both before school starts and throughout the year—to ensure that all students are immunized.<sup>44</sup> BCHD led partners in developing the Baltimore Statement on Childhood Vaccinations through a coalition of pediatric chiefs and chairs and the Maryland Chapter of the American Academy of Pediatrics. The statement highlighted BCHD’s unequivocal message regarding the safety and effectiveness of childhood vaccines and affirms Baltimore’s commitment to protecting its youth from preventable illness.
- **Public Health Preparedness.** BCHD is responsible for stewarding the City through any major public health emergency. BCHD trains staff and, during times of emergency, convenes and communicates with the City’s healthcare infrastructure, and organizes drills and exercises so that the city can effectively respond to a range of public health threats. In 2017, BCHD developed new preparedness plans and conducted multiple trainings to enhance the BCHD’s response capabilities.

BCHD’s preparedness work proved valuable in response to an emergency shelter need following a two-alarm high rise apartment fire on Easter in 2017. More than 170 residents were displaced and an emergency shelter was opened for five days and supported by city agencies. BCHD, including its nurses, was ready to respond and provided health and medical assistance to residents impacted by the fire. Shelter nurses helped residents obtain emergency prescription medication refills, arranged transportation to dialysis facilities, connected residents to behavioral health support, and relocated pets.

- **Acute Communicable Diseases.** BCHD responds to emerging diseases like the Zika virus; performs essential core public health activities that include investigation and surveillance of foodborne illness, animal bites/rabies, and other infectious diseases such as Legionnaire’s disease; and tracks HIV, syphilis, gonorrhea, chlamydia, and other sexually-transmitted diseases. BCHD is responsible for the surveillance of over 60 types of reportable communicable diseases and outbreaks and provides technical assistance and education to hospitals, long-term care facilities, day care providers, and other constituencies.
  - In 2017, BCHD investigated more than 550 reportable disease cases, over 35 outbreaks, and over 1,100 potential rabies exposures. Outbreaks occur in many settings, including restaurants, hospitals, schools, and daycares, and the health impact of a reportable disease is often significant. In 2017, BCHD triaged over 170 calls for Zika testing from physicians and investigated multiple cases.
  - In 2017, BCHD continued to work with city, state, and federal agencies to lead the City’s response to the Zika virus. BCHD’s Zika plan was based on a three-pronged approach: mosquito surveillance and response to standing water complaints; case investigation; and public education. In collaboration with partner agencies, BCHD responded to multiple confirmed cases of Zika in 2016 and 2017.
- **Environmental Inspection Services.** BCHD performs three core components of environmental inspections: plan review, food control, and ecology. Plan Review is the first stop for most facilities looking to obtain a license. New food service facilities or facilities under new ownership, including swimming pools and tattoo establishments, must submit plans and undergo an initial plan review inspection prior to license approval. Food Control conducts routine inspections for food service facilities and temporary food service facilities. In addition, the food control staff conducts complaint investigations for food service facilities and food-borne outbreak investigations. Over 5,000 food establishments in Baltimore City require regulatory inspections. The ecology section conducts routine inspections of tattoo establishments, swimming pools, spas, and school cafeterias. The ecology staff also conducts complaint investigations for nuisances such as mosquitoes, odors, noise, early morning trash collection, and indoor smoking in public buildings.

Environmental inspection staff protects public health by ensuring that the City’s food service establishments observe food safety laws and regulations to minimize risk of the transmission of a food-borne illness. Inspection staff works with owners and operators to demonstrate and explain proper procedures for serving food in a safe and hygienic manner. This process aims to support businesses so that they can provide the best possible service to Baltimore’s residents and also helps create a healthier city. BCHD provides online public access to inspection reports, because we believe that providing information directly to residents allows them to make the best choices possible. BCHD responds to over 1,600 environmental complaints annually.

- **Social Club Task Force.** The Social Club Task Force was established over 15 years ago as an inter-agency task force to target hot spots identified by police districts during the late evening hours. BCHD's inspectors are an integral part of this task force, as it often takes the lead on inspections. Over the last 15 years, BCHD conducted inspections on a bi-weekly or monthly basis. Under the Violence Reduction Initiative, BCHD now conducts this outreach weekly, allowing more facilities to be inspected during their regular hours of operation.
- **Animal Control and Shelter.** BCHD staff work tirelessly to protect the health not only of Baltimore's human residents but also of our animal residents. BCHD enforces city and state codes, rules, and regulations and investigates animal neglect and cruelty cases to protect Baltimore's human and animal residents. Animal abuse can be a predictor of abuse of humans; this amplifies the importance of intervening in these cases. To support this, BCHD advocated for important legislation passed in late 2015 to ban dog-fighting paraphernalia. BCHD receives an average of 23,000 complaints annually and investigates approximately 5,000 animal endangerment cases and nearly 1,200 animal bite or exposure cases every year. BCHD also works with BPD to serve warrants in cases where animals are involved. Baltimore Animal Rescue and Care Shelter (BARCS) is a 501(c)(3) non-profit organization contracted to provide sheltering and care services. BARCS provides care for over 12,000 animals every year and has increased the live release rate significantly over the past decade; in 2007, the live release rate was 50 percent, in 2017, the rate was 89 percent.
- **Clinical Services.** BCHD manages several clinics that serve the population of Baltimore City. These include a Sexually Transmitted Disease (STD) clinic, HIV and Hepatitis C clinic, Tuberculosis (TB) clinic, and dental clinic. BCHD's clinics also host a PrEP program that provides medication to prevent HIV to those at high risk of infection and HIV directly observed therapy to HIV patients who need additional support to remain adherent to HIV therapy. BCHD also has a clinical lab that supports the clinics and other BCHD programs by providing STD testing services. The TB clinic treats all patients with active TB in the city and conducts TB investigations. More than 9,000 patients receive care through BCHD communicable disease clinics each year.

Additionally, BCHD operates clinical services to provide comprehensive reproductive health services to uninsured and underinsured adults and teens. Clients receive education on reproductive health and family planning services, pregnancy tests, and a variety of contraceptive methods. In addition, they are offered testing/treatment for STDs, cervical cancer screening, breast/testicular screening exams, and health education. No one is refused service due to financial hardship, and each year over 7,000 patients are served.

- **Immunizations.** BCHD works to eliminate morbidity and mortality due to vaccine-preventable disease through targeted health education and clinical administration of vaccines for children and adolescents. This is done through

clinical services offered at two clinics and several community outreach sites. In addition, BCHD oversees targeted community outreach, operates the Baltimore Immunization Registry, and manages outreach to Hepatitis B-positive mothers to ensure Hepatitis B vaccinations for infants.

- **Field Health Services.** To provide safe and reliable medical transport for residents—many of whom are elderly or handicapped—BCHD coordinates transportation to non-emergency medically necessary medical appointments for eligible Medicaid patients. Through management of a call center that schedules these rides, BCHD provides over 16,000 medically fragile patients with approximately 120,000 rides annually.

### Challenges and Aspirations

- **Infrastructural support for Public Health.** It is said that “Public health saved your life today, you just don’t know it.” The role of public health infrastructure in protecting the health and safety of Baltimore’s residents cannot be understated: public health infrastructure prevents the spread of deadly diseases, promotes wellbeing and mental health, enhances quality of life, reduces violent crime, and empowers our most vulnerable. Despite this, public health is often an unsung hero and funding for public health infrastructure is in constant jeopardy.

Every component of public health infrastructure faces budget cuts each year and BCHD and our counterparts across the country are asked to do more with less. Without greater infrastructural investment, gains will be short-lived, evidence-based interventions will be unsustainable, and critical services will be unavailable for our most vulnerable residents.

- **Funding for emergency preparedness.** After the September 11<sup>th</sup> attacks and the 2001 anthrax attacks, the paramount importance of public health preparedness was clear. The federal government supported building local public health capacity to train staff, plan for emergencies, and respond to them. Every year, BCHD is involved in or leads responses to various emergencies, whether stemming from infectious diseases, dangerous weather, or a variety of other urgent events, and we advocate for continued funding to robustly prepare for emergencies and outbreaks, including emerging infectious diseases, natural disasters, and biological, chemical, nuclear, and radiological events. Cuts to the Prevention and Public Health Fund, and to other preparedness programs are a major threat to national security. Over the past six years, BCHD’s preparedness staffing has decreased significantly due to federal funding reductions. The decreases severely limit BCHD’s capacity to respond to any sustained emergency. A sustained increase in funding that restores BCHD’s capacity is necessary to ensure that BCHD can respond in a frontline manner to public health threats and emerging infections to protect Baltimore City residents.
- **Funding for clinic safety net.** The decrease in state and federal funding is not limited to the emergency preparedness program; it extends to many of

the safety net programs our vulnerable citizens depend on. The Affordable Care Act was intended to provide all citizens access to health insurance and healthcare. While there have been some successes, many of our very low-income, vulnerable citizens rely on our grant-funded safety net programs, such as tuberculosis control, syphilis and gonorrhea testing, and family planning clinics. Failure to support essential public health services will dramatically impact visible public health measures and the lives of all our citizens.

### ***Population Health and Health in All Policies***

**Background:** Where we live, work, and play is the major driver of health outcomes and, as the public health authority for the City, BCHD is leading the way on initiatives that address the “upstream” factors of health—the social determinants—from housing to food to transportation to education.

We view health as foundational to every issue—unhealthy children cannot learn in school, and unhealthy adults cannot be a productive part of the workforce. As we examine critical issues—the economy, public safety, education—health is an essential driver of all of them.

This is particularly significant in Maryland, where we are already leading the way on public health due to the establishment of global budgeting. Global budgeting shifts virtually all the hospital revenue from a “fee-for-service” model to a global payment model, incentivizing hospitals to work in partnership with other providers and the community to prevent unnecessary hospitalizations and readmissions. The goal of the model is to promote quality healthcare, improve patient health, and lower costs. As a result, it creates incentives for treating the whole person and focusing on the intersection of health with other policy priorities.

BCHD works closely with local healthcare providers, including hospitals and federally qualified health centers, to identify shared priorities, like behavioral health. From creating a stabilization center to tracking patients who are the highest utilizers of care, coordination with our healthcare partners is critical to ensuring that patients are receiving essential public health services. As the neutral convener, BCHD is positioned to coordinate citywide initiatives and collaborations that involve competing hospital systems and other health organizations.

### **Accomplishments/Progress/Update**

Our current initiatives include:

- **Establishment of a new clinic located at 1200 East Fayette Street.** In August, 2015, the City of Baltimore purchased a clinical building located at 1200 East Fayette Street to relocate the Eastern Health District Clinic. Renovations will begin in spring 2018 and BCHD anticipates opening the new facility by the end of 2018 or early 2019. The new clinic will provide additional clinical space that will allow us to increase services we offer. Additional services being added include medication-assisted treatment to

help patients with substance use and opioid addiction and expanded care management services. It also will allow BCHD to deliver services in a modern building, expand clinical and health/wellness activities, and increase the number of residents served. It will provide a respectful and reassuring environment for our residents and reduce stigma about receiving services. We plan to focus on the whole person and provide wellness activities, such as community support groups, yoga, and cooking classes.

- **Accountable Health Community.** In May 2017, in partnership with all of the Baltimore City hospitals and federally qualified health centers, BCHD led a successful citywide proposal to develop an Accountable Health Community (AHC). BCHD was awarded \$4.3 million in April 2017 to design and implement a model that will enable more than 40,000 patients in Baltimore City to access screening, referral, and navigation to essential community resources on an annual basis.

As Medicare and Medicaid beneficiaries make up nearly 60 percent of the total population in Baltimore, the AHC is committed to identifying and addressing the health-related social needs of Baltimore City's Medicare and Medicaid beneficiaries via clinical-community linkages that will impact total health care costs, reduce utilization, and improve health outcomes for this vulnerable population.

This project will both address Medicaid beneficiaries' health-related social needs as well as build an infrastructure to support navigation to social services. The pilot phase will launch in the summer of 2018 and full implementation will begin in the fall of 2018.

- **Local Health Improvement Council (LHIC).** The LHIC, led by BCHD, is a coalition of representatives from Baltimore City healthcare systems, community-based organizations, faith-based institutions, businesses, foundations, academic institutions, and other sectors who convene to align population health agendas and resources, establish strategic health priorities, and drive improved health outcomes at the population level. LHIC members serve as key advisors and implementation partners with respect to the design and execution of *Healthy Baltimore 2020*.
- **High Utilizer Taskforce.** In September 2015, BCHD convened over 100 hospital and healthcare leaders to discuss behavioral health priorities and coordination of case management services for high utilizers. This work has evolved into a High Utilizer Taskforce that addresses a significant issue facing hospitals and service providers: post-discharge placement for patients with multiple illnesses who are often experiencing homelessness and/or suffering from behavioral health issues. The Taskforce is finalizing a guide for hospital staff to understand discharge options and is also piloting a framework for care management with CRISP (Maryland's health information exchange), to be launched with Mercy Hospital, Health Care for the Homeless, and Weinberg Housing Resource Center.

- **Emergency department convenings.** Since 2015, BCHD has convened all of the city’s emergency departments (EDs) to plan a path forward to address opioid use disorder and overdose and to discuss best practices, ranging from buprenorphine induction to care coordination. BCHD has worked with all 12 EDs to establish a set of discharge principles for patients that include co-prescribing of naloxone for all patients at risk for opioid overdose. In addition, with the help of a behavioral health consulting firm, the Mosaic Group, eight EDs began implementing Screening, Brief Intervention and Referral to Treatment (SBIRT). Currently, eight EDs offer buprenorphine from the ED, with connections to same-day or next-day referral to ongoing, outpatient treatment.
- **Business Advisory Group.** In October 2016, BCHD launched a Business Advisory Group in order to solicit advice from the business community and support for BCHD initiatives that aim to improve health in the city. BCHD’s Business Advisory Group is comprised of nearly 30 representatives from Baltimore’s leading companies, including T. Rowe Price, UnderArmour, and Legg Mason. Since its inception, the Business Advisory Group has proved time and again to be a key partner in promoting health and well-being for all residents and employees in Baltimore.

Working with these business partners and many community-based organizations, BCHD launched a citywide wellness challenge, *The Billion Steps Challenge*, to encourage all residents and employees in Baltimore City to get active by walking. BCHD and its partners established a goal of a billion walking steps and seek to reach that goal by hosting challenge events, creating an online inventory designed to amplify other walks, runs, and wellness events, and partnering with workplace wellness programs to encourage taking their activities into the community.

In addition, the Business Advisory Group was an important partner in the development and launch of the Worksite Wellness designations. The Worksite Wellness program highlights companies in the city that provide resources and implement policies that encourage healthy lifestyles. Worksites are recognized as a “Baltimore City Well Workplace” for being leaders in promoting nutrition, physical activity, mental health, and substance abuse prevention at their worksites.

- **Health in all policies.** Health touches every issue. For example, if the City is considering implementing bike paths, or placing an incinerator into the community, the health impact should be considered in decision-making. In spring 2017, BCHD brought a public health perspective to technology and innovation through the launch of TECHHealth (Transforming Engineering for Civic Health), an initiative that deploys coders, designers, and innovators to develop solutions to public health challenges. BCHD identified a series of problems and engaged local community-based entrepreneurs to create novel solutions. One success story is Bad Batch. BCHD worked with Code in the Schools to develop a real-time alert system warning opioid users of geographic spikes in nonfatal overdoses. Reflecting BCHD’s philosophy that a

leading 21<sup>st</sup> century health department must intersect with multiple industries, TECHhealth leverages Baltimore's rich technology community to modernize public health interventions and deliver effective services on behalf of residents.

### Challenges and Aspirations

- **Unified approach to care coordination and alignment.** While BCHD has continued to convene stakeholders around care coordination, social needs integration, and several other key population health issues, the true integration of public health and healthcare is still evolving. To that end, we look to deepen partnerships with our hospital and healthcare partners—including the potential alignment of their community benefits strategies with citywide health priorities—to ensure that all residents benefit from a comprehensive approach to health.
- **Moving the needle on health outcomes.** In launching *Healthy Baltimore 2020*, BCHD is also developing a dashboard to track each of the equity objectives and targets laid out in the plan. These targets build upon ongoing epidemiology work—including our Neighborhood Health Profiles, which provide snapshots of key health outcomes in each city neighborhood—as well as input from key community stakeholders. The dashboard will go live in summer of 2018 and be publicly available and enable ongoing feedback on the progress of *Healthy Baltimore 2020*.
- **Engaging the private sector.** Building upon the success of BCHD's Business Advisory Group as well as TECHhealth, we will continue to engage private sector partners in program expansion and innovation. We believe that public health should be at the table not only as a public service but also as an engine of workforce development and business efficiency and we look forward to engaging our many partners in enabling that vision.

### Conclusion

While Baltimore City faces several public health challenges, we also have invaluable assets: one of the strongest healthcare infrastructures in the country, invested community members and partners, and a willingness—born of necessity—to test and implement new, innovative approaches to keep our citizens healthy. As the City's health authority, BCHD is fortunate to work with excellent partners and leaders in every sector—government, business, community advocacy, healthcare, faith-based, and more—all of whom share a deep commitment to ensuring the health of our citizens.

*Thank you for your partnership in ensuring that all of Baltimore's citizens are healthy and well.*

## References

- <sup>1</sup> Baltimore City Health Department. 2017 Neighborhood Health Profiles. Available at: <https://health.baltimorecity.gov/stats-and-data>. Baltimore, MD: Baltimore City Health Department; Maryland Department of Health. Maryland Vital Statistics Annual Report 2016, Table 50, Age Adjusted Death Rates for Selected Causes by Political Subdivision, 2014-2016. Baltimore, MD: Maryland Department of Health.
- <sup>2</sup> Robert Wood Johnson Foundation. County Health Rankings & Roadmaps. Available at: <http://www.countyhealthrankings.org/app/maryland/2017/rankings/baltimore-city/county/outcomes/overall/snapshot>. Princeton, NJ: Robert Wood Johnson Foundation.
- <sup>3</sup> U.S. Census Bureau. 2012-2016 American Community Survey 5-Year Estimates, Table CP03, Comparative Economic Characteristics. Suitland, MD: U.S. Census Bureau.
- <sup>4</sup> Centers for Disease Control and Prevention. Effectiveness in Disease and Injury Prevention Estimate National Spending on Prevention 1988, *Morbidity and Mortality Weekly Report*, July 24, 1992. Available at: <https://www.cdc.gov/mmwr/preview/mmwrhtml/00017286.htm>. Atlanta, GA: Centers for Disease Control and Prevention; McGinnis, J. Michael, Williams-Russo, Pamela, and Knickman, James R. The Case For More Active Policy Attention to Health Promotion. *Health Affairs*, Volume 21, No.2, March-April, 2002. Available at: <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.21.2.78>. Project HOPE.
- <sup>5</sup> Baltimore City Health Department. 2017 Neighborhood Health Profiles.
- <sup>6</sup> Robert Wood Johnson Foundation. County Health Rankings & Roadmaps.
- <sup>7</sup> Maryland Department of Health. 2016 Baltimore City HIV Annual Epidemiological Profile, data reported through June 30, 2017: Table 1 – Adult/Adolescent HIV Diagnoses during 2016, First CD4 Test Result, Percent Linked to Care, and Percent Late Diagnosis, by Jurisdiction, reported through 6/30/2017; Figure 2 – Trends in Living HIV Cases, 1985-2016, reported through 6/30/2017; Table 13 – Adult/Adolescent Living HIV Cases with and without AIDS by Sex at Birth, Race/Ethnicity, and Country of Birth, Alive on 12/31/2016, and reported through 6/30/2017. Race estimate was calculated by dividing the number for Black-only by the number for Total. Available at: <https://phpa.health.maryland.gov/OIDEOR/CHSE/Pages/statistics.aspx>. Baltimore, MD: Center for HIV Surveillance, Epidemiology and Evaluation, Maryland Department of Health.
- <sup>8</sup> Maryland Department of Health. 2016 Maryland HIV Annual Epidemiological Profile, data reported through June 30, 2017: Section III, June 30, 2017 Adult/Adolescent HIV Case rate by Jurisdiction 2016, reported through 6/30/2017. Baltimore, MD: Center for HIV Surveillance, Epidemiology and Evaluation, Maryland Department of Health.
- <sup>9</sup> Maryland Department of Health. 2016 Baltimore City HIV Annual Epidemiological Profile, data reported through June 30, 2017: Table 1 – Adult/Adolescent HIV Diagnoses during 2016, First CD4 Test Result, Percent Linked to Care, and Percent Late Diagnosis, by Jurisdiction, reported through 6/30/2017; Figure 2 – Trends in Living HIV Cases, 1985-2016, reported through 6/30/2017; Table 13 – Adult/Adolescent Living HIV Cases with and without AIDS by Sex at Birth, Race/Ethnicity, and Country of Birth, Alive on 12/31/2016, and reported through 6/30/2017. Race estimate was calculated by dividing the number for Black-only by the number for Total. Available at: <https://phpa.health.maryland.gov/OIDEOR/CHSE/Pages/statistics.aspx>. Baltimore, MD: Center for HIV Surveillance, Epidemiology and Evaluation, Maryland Department of Health.
- <sup>10</sup> U.S. Census Bureau. 2012-2016 American Community Survey 5-Year Estimates, Table DP05: ACS Demographic and Housing Estimates. Baltimore, MD, accessed 1/31/2018. Suitland, MD: U.S. Census Bureau, American FactFinder.
- <sup>11</sup> Maryland Department of Health. 2016 Baltimore City HIV Annual Epidemiological Profile, data reported through June 30, 2017: Table 1 – Adult/Adolescent HIV Diagnoses during 2016, First CD4 Test Result, Percent Linked to Care, and Percent Late Diagnosis, by Jurisdiction, reported through 6/30/2017; Figure 2 – Trends in Living HIV Cases, 1985-2016, reported through 6/30/2017; Table 13 – Adult/Adolescent Living HIV Cases with and without AIDS by Sex at Birth, Race/Ethnicity, and Country of Birth, Alive on 12/31/2016, and reported through 6/30/2017. Race estimate was calculated by dividing the number for Black-only by the number for Total. Available at: <https://phpa.health.maryland.gov/OIDEOR/CHSE/Pages/statistics.aspx>. Baltimore, MD: Center for HIV Surveillance, Epidemiology and Evaluation, Maryland Department of Health.
- <sup>12</sup> Maryland Department of Health. 2014 Youth Risk Behavior Survey Results, Maryland High School Survey, Baltimore City Summary Tables - Weighted Data. Available at: <https://phpa.health.maryland.gov/ccdpc/Reports/Pages/yrbs.aspx#baltcity>. Baltimore, MD: Maryland Department of Health.
- <sup>13</sup> Maryland Department of Health. 2014 Youth Risk Behavior Survey Results, Maryland Middle School Survey, Baltimore City, Summary Tables - Weighted Data. Available at: <https://phpa.health.maryland.gov/ccdpc/Reports/Pages/yrbs.aspx#baltcity>. Baltimore, MD: Maryland Department of Health.
- <sup>14</sup> Maryland Department of Health. Maryland State Health Improvement Process, Emergency Department Visit Rate due to Asthma, 2014, data trend, accessed 1/31/2018. Available at: <http://ship.md.networkofcare.org/ph/>. Baltimore, MD: Maryland Department of Health.
- <sup>15</sup> Maryland Department of Health. Maryland Vital Statistics 2016 Report, Table 21A: Number and Percentage of Births of Low Birth Weight by Maternal Race, Hispanic Origin, Region, and Political Subdivision, Maryland, 2016. Available at: <https://health.maryland.gov/vsa/Pages/reports.aspx>. Baltimore, MD: Vital Statistics Administration, Maryland Department of Health.
- <sup>16</sup> U.S. Centers for Disease Control and Prevention. National Vital Statistics Reports, Volume 67, Number 1, Births: Final Data for 2016, Table 23. Births, by birthweight (grams) and by age and race and Hispanic origin of mother: United States, 2016. Atlanta, GA: U.S. Centers for Disease Control and Prevention.
- <sup>17</sup> Child and Adolescent Health Measurement Initiative, 2014. Adverse Childhood Experiences among Baltimore & Maryland's Children. Baltimore, MD: Child and Adolescent Health Measurement Initiative, Data Resource Center.
- <sup>18</sup> Maryland Department of Health. Maryland Behavior Risk Factor Surveillance System, Query: Column = Tobacco: Current smoker (smoked at least 100 cigarettes in their lifetime and currently smoke), Row = Demographics: County, Years Requested: 2014, accessed 01/25/18. Available at: <https://phpa.health.maryland.gov/ccdpc/Reports/Pages/brfss.aspx>. Baltimore, MD: Maryland Department of Health.
- <sup>19</sup> Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Data represent 2016 overdose mortality rates by county for counties considered to have "large central metro" urbanization. Fatal overdose was defined as: Drug poisonings (overdose) Unintentional (X40-

- X44), Suicide (X60-X64), Homicide (X85), Undetermined (Y10-Y14) and Alcohol poisonings (overdose) (X45, X65, Y15). Accessed on 4/11/18. Available at: <http://wonder.cdc.gov/ucd-icd10.html>. Atlanta, GA: Center for Disease Control and Prevention.
- <sup>20</sup> Maryland Department of Health, Unintentional Drug- and Alcohol-Related Intoxication Deaths in Maryland, Data update through 3rd quarter 2017, Table 1. Available at: [https://bha.health.maryland.gov/OVERDOSE\\_PREVENTION/Pages/Data-and-Reports.aspx](https://bha.health.maryland.gov/OVERDOSE_PREVENTION/Pages/Data-and-Reports.aspx). Baltimore, MD: Maryland Department of Health.
- <sup>21</sup> Substance Abuse and Mental Health Services Administration. 2012-2014 National Surveys on Drug Use and Health: Substate Estimates, Percentages, Table 21: Dependence or Abuse of Illicit Drugs or Alcohol in the Past Year among Individuals Aged 12 or Older, by State and Substate Region: Percentages, Annual Averages Based on 2012, 2013, and 2014 NSDUHs. Rockville, MD: Substance Abuse and Mental Health Services Administration.
- <sup>22</sup> Abrams, M. T., Vanderwerker, L. C., Smith, J. K., & Arbelaez, J. J. (2016, February 9). Opioid use disorders in Baltimore City: Prevalence and treatment rates. Available at: <http://www.hilltopinstitute.org/publications/OpioidUseDisordersInBaltimoreCity-Feb2016.pdf>. Baltimore, MD: The Hilltop Institute, UMBC.
- <sup>23</sup> Maryland Department of Health. Unintentional Drug- and Alcohol-Related Intoxication Deaths in Maryland, data update through 3rd quarter 2017, Table 1. Available at: [https://bha.health.maryland.gov/OVERDOSE\\_PREVENTION/Pages/Data-and-Reports.aspx](https://bha.health.maryland.gov/OVERDOSE_PREVENTION/Pages/Data-and-Reports.aspx). Baltimore, MD: Maryland Department of Health.
- <sup>24</sup> Substance Abuse and Mental Health Services Administration. 2012-2014 National Surveys on Drug Use and Health: Substate Estimates, Percentages, Table 21: Dependence or Abuse of Illicit Drugs or Alcohol in the Past Year among Individuals Aged 12 or Older, by State and Substate Region: Percentages, Annual Averages Based on 2012, 2013, and 2014 NSDUHs. Rockville, MD: Substance Abuse and Mental Health Services Administration.
- <sup>25</sup> Maryland Department of Health, Behavioral Health Administration. Drug and Alcohol-Related Intoxication Deaths in Maryland Data update through 1st quarter 2015. Table 6. Available at: [https://bha.health.maryland.gov/OVERDOSE\\_PREVENTION/Documents/Quarterly%20data%202015%20merged%20file\\_v2.pdf](https://bha.health.maryland.gov/OVERDOSE_PREVENTION/Documents/Quarterly%20data%202015%20merged%20file_v2.pdf). Baltimore, MD: Maryland Department of Health.
- <sup>26</sup> Ibid.
- <sup>27</sup> U.S. Census Bureau. Population Estimates Program, Population and Housing Unit Estimates, Population estimates, July 1, 2016, (V2016). Suitland, MD: U.S. Census Bureau.
- <sup>28</sup> Maryland Hospital Association. Maryland's Behavioral Health Crisis. Available at: <http://www.mhaonline.org/docs/default-source/infographics/2016-behavioral-health-infographic---baltimore-city.pdf>. Elkridge, MD: Maryland Hospital Association.
- <sup>29</sup> Substance Abuse and Mental Health Services Administration. 2012-2014 National Surveys on Drug Use.
- <sup>30</sup> Bronson 2017, Drug use, dependence, and abuse among state prisoners and jail inmates, 07-09. Available at: [https://www.bjs.gov/content/pub/pdf/imhprpji1112\\_sum.pdf](https://www.bjs.gov/content/pub/pdf/imhprpji1112_sum.pdf). Washington, DC: Bureau of Justice Statistics.
- <sup>31</sup> National Institute on Drug Abuse. Principles of drug addiction treatment: A research-based guide. 3rd ed. Bethesda (MD): National Institute on Drug Abuse, National Institutes of Health.
- <sup>32</sup> BCHD analysis of data provided by Maryland Department of Health Vital Statistics Administration.
- <sup>33</sup> Maryland Department of Health. 2015 Youth Risk Behavior Survey Results, Maryland High School Survey, Baltimore City Summary Tables - Weighted Data. Available at: <https://phpa.health.maryland.gov/ccdc/Reports/Pages/yrebs.aspx#baltcity>. Baltimore, MD: Maryland Department of Health.
- <sup>34</sup> Centers for Disease Control and Prevention. 1991-2015 High School Youth Risk Behavior Data Survey. Available at: <http://nccd.cdc.gov/youthonline/>. Atlanta, GA: Centers for Disease Control and Prevention.
- <sup>35</sup> Asthma Control Program, 2011. Jurisdiction Profile: Asthma in Baltimore City. Available at: [https://phpa.health.maryland.gov/mch/documents/asthma\\_control/Profile\\_BaltimoreCity.pdf](https://phpa.health.maryland.gov/mch/documents/asthma_control/Profile_BaltimoreCity.pdf). Baltimore, MD: Asthma Control Program, Maryland Department of Health.
- <sup>36</sup> Maryland Department of the Environment. Annual Childhood Lead Registry Reports, Child Blood Lead Surveillance in Maryland Annual Reports, 2000, 2015: Updated 2016 (167 cases with EBL $\geq$ 10) vs. 2000 (2,198 cases with EBL $\geq$ 10). Baltimore, MD: Lead Poisoning Prevention Program, Maryland Department of the Environment.
- <sup>37</sup> Ibid. Table Two: Blood Lead Testing of Children 0-72 Months of Age by Jurisdiction in 2016.
- <sup>38</sup> Office of Adolescent Health. Adolescents and Tobacco: Trends. Available at: <https://www.hhs.gov/ash/oah/adolescent-development/substance-use/drugs/tobacco/trends/index.html>. Rockville, MD: Office of Adolescent Health, U.S. Department of Health and Human Services.
- <sup>39</sup> Chesapeake Regional Information System for our Patients (CRISP). B'FRIEND Initiative Dashboard at CRISP, 2017 ED visits for falls. Accessed 4/3/2018. Confidential Tableau dashboards developed by CRISP, using confidential Maryland Health Services Cost Revision Commission Inpatient and Outpatient Case Mix Data with CRISP EID. Columbia, MD: Chesapeake Regional Information System for our Patients.
- <sup>40</sup> Chesapeake Regional Information System for our Patients (CRISP). B'FRIEND Initiative Dashboard at CRISP, 2016-2017 hospitalizations for falls; WISQARS Cost of Injury Reports, 2010 Nonfatal Hospitalized Injuries, both sexes, ages 65-85+, United States, accessed 4/3/2018. The \$60 million statistic was generated by multiplying an average of 1,551 falls-related hospitalizations in Baltimore per year by \$39,000 average medical cost for falls-related hospitalizations. Columbia, MD: Chesapeake Regional Information System for our Patients.
- <sup>41</sup> Maryland Department of Health. 2013 Statistics on Injury-related Emergency Department Visits, Hospitalizations and Deaths; Tables 15 and 17, Injuries in Maryland. Available at: [https://phpa.health.maryland.gov/ohpetup/Documents/Maryland%202013%20Injury%20Book\\_final.pdf](https://phpa.health.maryland.gov/ohpetup/Documents/Maryland%202013%20Injury%20Book_final.pdf). Baltimore, MD: Maryland Department of Health.
- <sup>42</sup> US Census. 2012-2016 American Community Survey 5-Year Estimates, Table DP03, Selected Economic Characteristics. Suitland, MD: U.S. Census Bureau.
- <sup>43</sup> US Census, 2012-2016 American Community Survey 5-Year Estimates, Table S1810, Disability Characteristics. Suitland, MD: U.S. Census Bureau.
- <sup>44</sup> Baltimore City Health Department (BLISS Project) and Baltimore City Public Schools (Infinite Campus), October 3, 2017 unpublished immunization data; Centers for Disease Control and Prevention, 2017. 2016-17 School Year Vaccination Coverage Dashboard. Accessed 5/4/18. Available at: <https://www.cdc.gov/vaccines/imz-managers/coverage/schoolvaxview/data-reports/coverage-dashboard/2016-17.html>. Atlanta, GA: Centers for Disease Control and Prevention.