Addressing Philadelphia's Heroin Epidemic: Findings and Recommendations

Pursuant to Resolution No. 160052:

Authorizing the holding of public hearings pursuant to City Council's declaration of 2016 as "The Year to Combat The Heroin Abuse Epidemic in Philadelphia" to explore the serious effects that heroin abuse is having on our communities and to develop a strategy with the Department of Behavioral Health and Intellectual disAbility Services to effectively address the heroin epidemic as an urgent local health priority.

Issued by Council's Public Health and Human Services Committee

November 17, 2016

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Councilwoman Cindy Bass, Chair

Councilwoman Maria Quiñones-Sánchez, Vice Chair

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City of Philadelphia

Council of the City of Philadelphia
Office of the Chief Clerk
Room 402, City Hall
Philadelphia

(Resolution No. 160052)

RESOLUTION

Authorizing the holding of public hearings pursuant to City Council's declaration of 2016 as "The Year to Combat The Heroin Abuse Epidemic in Philadelphia" to explore the serious Effects that heroin abuse is having on our communities and to develop a strategy with the Department of Behavioral Health and Intellectual disAbility Services to effectively address the heroin Epidemic as an urgent local health priority.

WHEREAS, Heroin is an opioid drug that is synthesized from morphine, and is a highly addictive drug; and

WHEREAS, Heroin abuse is associated with serious health conditions, such as hepatitis, HIV, and fatal overdose. Chronic abusers of heroin may develop collapsed veins, infections of the heart lining and valves, gastrointestinal cramping, and liver or kidney diseases; and

WHEREAS, In addition to the effects of the drug itself, street heroin often contains toxic contaminants or additives that can clog blood vessels which may cause permanent damage to vital organs, such as the lungs, liver, kidneys, or brain; and

WHEREAS, Heroin overdoses frequently involve a suppression of breathing, which limits the oxygen that reaches the brain. This can lead to psychological and neurological damage; and

WHEREAS, The death rate from heroin overdoses in the United States has nearly tripled from 2010 to 2013; and

WHEREAS, Heroin is a primary drug threat in the Philadelphia area. According to the City's Department of Behavioral Health and Intellectual disAbility Services, almost 35% of the people who died from drugs in Philadelphia had heroin in their system; and

City of Philadelphia

RESOLUTION NO. 160052 continued

WHEREAS, Heroin abused in Philadelphia average 77% pure (a more potent form of the drug), which is the highest in the United States; and

WHEREAS, Heroin abuse affects youth, adults, parents, mentors, and all community members. All members of the community can play a part in helping the next generation make choices that support better physical, mental, behavioral, and emotional health; now, therefore, be it

RESOLVED, BY THE COUNCIL OF THE CITY OF PHILADELPHIA, That it hereby authorizes the holding of Public Hearings pursuant to City Council's declaration of 2016 as "The Year to Combat The Heroin Abuse Epidemic in Philadelphia" to explore the serious effects that heroin abuse is having on our communities and to develop a strategy with the Department of Behavioral Health and Intellectual disAbility Services to effectively address the heroin epidemic as an urgent local health priority.

City of Philadelphia

CERTIFICATION: This is a true and correct copy of the original Resolution, Adopted by the Council of the City of Philadelphia on the twenty-first of January, 2016.

Darrell L. Clarke
PRESIDENT OF THE COUNCIL

Michael A. Decker
CHIEF CLERK OF THE COUNCIL

Introduced by: Councilmembers Oh, Squilla and Quiñones Sánchez

Sponsored by: Councilmembers Oh, Squilla, Quiñones Sánchez, Bass, Greenlee, Green, Council President Clarke, Councilmembers Gym, Henon, Domb and Blackwell

Addressing Philadelphia's Heroin Epidemic: Findings and Recommendations

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I. Introduction

Philadelphia is experiencing epidemic-level numbers of overdose fatalities due to heroin abuse. The overall number of drug-related deaths in Philadelphia rose 57% between 2009 and 2015, with a 68% increase in heroin-positive toxicology results.[i] A 10% increase in drug overdose deaths between 2014 and 2015 led to 720 such incidents in Philadelphia in 2015—more than twice the number of deaths in the city attributed to homicide.[ii] Heroin was found in 56.15% of drug overdose decedents in Philadelphia in 2015. Philadelphia led the state with 45.93 drug-related deaths per 100,000 people in 2015, a rate which was triple the national average.

The statistics in Philadelphia are not unlike those found in the region, the state, and the nation. Almost 2 million Americans abused or depended on prescription opioids, which are often a first step towards heroin addiction, in 2014.[iii] Nationally, only 11% of patients with substance use disorders get the treatment they need.[iv] Out of the 47,055 drug overdose deaths in the United States in 2014, 10,574 were related to heroin.[v] Pennsylvania had 3,383 drug overdose deaths in 2015 (up from 2,742 in 2014, a 23.4% increase) and had the 8th highest rate of drug overdose deaths in the country.[vi] Heroin and opioid overdoses are now the leading cause of accidental death in the state.

In light of the worsening trends of heroin abuse in Philadelphia, on September 17, 2015 Councilman David Oh introduced Resolution 150716, which was passed by City Council, entitled, "Declaring 2016 as the 'Year to Combat The Heroin Abuse Epidemic' in Philadelphia to acknowledge the serious effects heroin abuse is having in our communities and recognize the epidemic as an urgent local health priority." On January 21, 2016 Councilman Oh introduced and Council approved Resolution 160052, "Authorizing the holding of public hearings pursuant to City Council's declaration of 2016 as 'The Year to Combat The Heroin Abuse Epidemic in Philadelphia' to explore the serious effects that heroin abuse is having on our communities and to develop a strategy with the Department of Behavioral Health and Intellectual disAbility Services to effectively address the heroin Epidemic as an urgent local health priority."

The city, region, and state's top officials, experts, and community leaders testified in the first hearing before the City Council Public Health and Human Services Committee, chaired by Councilwoman Cindy Bass, on May 20, 2016. Before this hearing, Councilman Oh held seven community meetings in diverse sections of the City: Northeast Philadelphia, Manayunk, the River Wards, North Philadelphia, West Philadelphia, and South Philadelphia.

II. Purpose of Report

The purpose of this report is to present feedback from the community and experts in the field regarding heroin and opioid abuse in the City of Philadelphia. The report also includes policy recommendations as presented by witnesses at the community meetings and the Public Health and Human Services Committee hearing. This report is intended to serve as a summary of findings as well as a guiding document moving forward. Data from additional sources will supplement the testimony of the witnesses and community members.

III. Key Topics

Reforming Insurance Practices to Ensure Quality and Timely Treatment

One of the community's primary concerns regarded the provision of treatment via insurance. A mother spoke of the challenges she faced in enrolling her daughter in a treatment program, bouncing between public and private insurance depending on which county she was in and which insurance the treatment provider required of her. Others discussed how patients run out of insurance on the current schedule for public insurance over the weekend, leaving them to keep abusing drugs during that time or else they will have been sober for too long to qualify for detoxification treatment.

Dr. Gerald Stahler of Temple University underscored the need for insurance to cover treatment, citing a parity issue: "People go through enormous sums of money to support their kids getting the treatment that they need, and that is different than if they had other chronic illnesses like diabetes or if they had to be hospitalized for cancer."[vii] In written testimony, Dr. Mady Chalk of the Treatment Research Institute and The Chalk Group explained that the Mental Health Parity and Addiction Equity Act (MHPAEA), or Parity Law, requires that treatment and services offered to treat substance use disorders cannot face more limitations or requirements than those to access medical or surgical treatment. The Affordable Care Act and the Parity Law are causing positive changes that have yet to be fully realized in models of service delivery and payment. However, she pointed out that several barriers to adequate treatment remain.

The most important practice to address, according to Dr. Chalk, is known as a "fail first" requirement. Insurance coverage can require people to "fail first at less intensive and often less expensive treatments and programs" before being able to access and receive coverage for "more intensive programs, including residential programs." Other practices require patients to receive substandard medication treatment and then relapse (for example, resuming heroin abuse) before they can access more appropriate medications and dosage levels.[viii] It must be ensured that such a practice is nowhere to be found in Philadelphia.

The Pennsylvania Medicaid expansion enacted by Governor Tom Wolf added 500,000 Pennsylvanians to the Medicaid rolls. Medicaid in Pennsylvania now pays for whatever level of treatment is needed, whether it is residential rehabilitation or intensive inpatient and outpatient recovery supports. Dr. Mady Chalk cautioned, however, that Medicaid quality of care must improve, citing research showing that "Medicaid beneficiaries are prescribed painkillers at twice the rate of non-Medicaid patients and are at 3-6 times the risk of prescription painkillers overdose."[ix]

Expanding Treatment Capacity through Coordinated Networks and Medication-Assisted Treatment

Members of the community and witnesses in the May 20 hearing all agreed that the treatment capacity of the city must increase. As Vince Lattanzio of NBC10 put it, "The biggest problem is that there's just not enough treatment and not enough quality treatment for people."[x]

Philadelphia Department of Behavioral Health and Intellectual disAbility Services Commissioner Arthur Evans testified that his department's Office of Addiction Services estimates that between 122,000 and 155,000 people in Philadelphia need treatment. They provided care for more than 27,000 people in 2014. Currently, Philadelphia has "more than 57 providers offering services through more than 117

facilities across multiple service types, from outpatient to hospital-based services."[xi] Philadelphia credentials each provider in the network using criteria in addition to state licensing. Each provider is annually rated by the City, credentialed based on their rating, and then contracted using an extensive pay-for-performance system.[xii]

However, treatment must have greater capacity and accessibility. For example, Pennsylvania Secretary of Drug and Alcohol Programs Gary Tennis testified that access to treatment for Latino Americans in Pennsylvania "is about one-quarter of what it is for the general population."[xiii] One way that accessibility to quality treatment has been consistently impaired is through identification requirements at treatment facilities. Many patients lack the necessary identification documentation to be admitted into treatment centers, while others' identification documents have expired. This was a consistent point brought up at the community meetings, as people emphasized the need to make sure that when an individual is ready to go to rehab, they aren't turned away. One community member suggested exploring implementation of a "grace period' for expired identification documents, allowing patients to access treatment while obtaining new documentation.

Expanding Philadelphia's treatment capacity involves many factors. One is the development of the "warm handoff" approach. This program, which the state is currently working to implement, will place individuals directly into treatment following an overdose. This is needed because, as Dr. Mady Chalk wrote, "Nationally, only about one-quarter of patients receiving detoxification services are admitted to and begin treatment following detoxification."[xiv] Philadelphia can assist these efforts by enhancing networks and connections between first responders and medical facilities and outpatient treatment centers. The sooner individuals who have just overdosed can meet with addiction counselors, recovery specialists, and medical experts; the more likely they will be to stay in treatment.

Secretary Gary Tennis said, "Once we save the life, it's critical that we get them to treatment." He gave an example of the Reading Medical Center's emergency department, which is sending two out of three overdose survivors directly to treatment because of their "warm handoff" approach, which is a tremendous rate compared to centers that do not have a similar protocol in place.[xv] District Attorney Seth Williams added, "We may need to take an even more aggressive step to put people in treatment if those people are serious and pose a serious and possibly deadly…danger to themselves."[xvi] Finally, SEPTA Transit Police Chief Thomas Nestel, III said, "We talk about naloxone [discussed later in this report], a wonderful thing that saves lives, and you know what we're finding? It's saving the same lives over and over. We're not getting treatment for those people. We're saving their life and not channeling them to the opportunity to save it forever."[xvii] Deputy Fire Commissioner Jeremiah Laster agreed, saying that ideally each person who is administered naloxone receive an SBIRT assessment, which includes "a screening, a brief intervention, [and a] referral to treatment assessment."[xviii]

A second means to increase the City's treatment capacity is to diversify options for treatment, including expanded access to medication-assisted treatment (MAT). Dr. David Metzger of the University of Pennsylvania and the Treatment Research Institute stated, "It's clear that access to quality treatment for opioid addiction needs to be greatly expanded, and in order to maximize the public health impact of treatment, a range of options is required. No single approach can address the needs of all the opiate-dependent people."[xix] Both Dr. Metzger and Philadelphia Health Commissioner Thomas Farley recommended that treatment practices be expanded to include more primary care physicians. Dr. Metzger said that there is "considerable consensus" that treatment for opioid addiction needs to be expanded "through the integration and coordination with the primary medical care system."[xx] He added

that the Affordable Care Act has made it an expectation that opioid addiction is a medical problem and needs to be treated within the infrastructure of our healthcare system.

Several experts recommended that access to MAT be expanded in tandem with an expansion of treatment availability. Three drugs are currently approved by the United States Food and Drug Administration for use in MAT: buprenorphine, methadone, and naltrexone. Health Commissioner Thomas Farley advocated for increased use of buprenorphine by primary care physicians, stating that it is "a medication that prevents withdrawal symptoms and has a very low overdose potential."[xxi] Access to methadone treatment (which is different and much safer and controlled than using methadone for pain relief) is a current priority for the City. DBHIDS Commissioner Arthur Evans testified, "We have supported the expansion of medication-assisted treatment with methadone through the siting of an outpatient methadone program on State Road in 2015…We're also increasing capacity in other parts of the City."[xxii] DBHIDS also contracts Northeast Treatment Centers to provide methadone maintenance treatment to incarcerated patients at the Department of Prisons, according to Terrell Bagby, Interim Director of RISE and Reintegration Services for the Department of Prisons.[xxiii] Naltrexone is a longer-lasting and more effective medication than buprenorphine and methadone, but it is currently much more cost-prohibitive and less accessible than the other two drugs.

Expansion of MAT must account for the fact that community response to new treatment facilities in Philadelphia has been mixed. While some see long-term benefits of methadone treatment, others see it as less effective and even harmful in neighborhoods that have methadone treatment clinics. One community member in North Philadelphia described methadone as "government dope," adding that it is "a government drug that addicts are still slaves to. It's good for detox, but not for a lifetime," referring to the tendency of those in methadone treatment to rely on it indefinitely. Joseph DeFelice, a community spokesperson in Northeast Philadelphia, submitted written testimony about resistance surrounding a new methadone clinic in Mayfair. Mayfair had a long and grueling battle with the City's Zoning Board around the opening of a clinic that was put in motion without public input. Mr. DeFelice explained that community hesitation was not due to a lack of empathy for those living with substance use disorders but rather the concerns for the residential neighborhood they believed would be disrupted with the introduction of another facility. "Methadone clinics are a different animal entirely [than other treatment facilities] and serve more as a maintenance program. When discussing opioid addiction, we cannot just focus on the needs of the addicted; we must also focus on the people whom their addiction touches, not just their family and friends but also the communities in which they live."[xxiv]

Concerns surrounding MAT may be addressed by education and awareness. Fred Brason of Project Lazarus said that the first time he mentioned methadone to his rural North Carolina community, "It was nasty. It was horrible. But now we have over 450 people getting daily treatment within our methadone and buprenorphine clinic, because we educated and we brought awareness."[xxv]

As Dr. Mady Chalk pointed out, these means of increasing Philadelphia's treatment capacity will be most successful when implemented synergistically as part of a holistic approach to treatment. With the "large majority of treatment programs" currently operating without coordination with others, "reimbursement that incentivizes network development, care coordination, and easy transitions among and between levels of care and settings is needed to strengthen the capacity of the treatment system to address the opioid epidemic."[xxvi] Such "horizontal networks that are comprised of multiple levels of care"[xxvii] can be incentivized at the local level.

In July 2016 it was announced that Pennsylvania would leverage $15 million in state funds and $5 million in federal funds to open 20 Centers of Excellence across the state by October 2016. Each Center of Excellence will be a "central, efficient hub around which treatment revolves" for Medicaid patients, featuring "navigators to assist people with opioid-related substance use disorders though the medical system, and ensure they receive behavioral and physical health care, as well as any evidence-based medication-assisted treatment needed."[xxviii] These centers will not have new physical locations; they will be housed by existing providers. In addition to behavioral and physical health care and MAT, "wrap-around services" such as transitional and follow-up care, patient and family support, and referral to community and social support services will be provided.[xxix] Of the 20 Centers of Excellence, 6 are in the Philadelphia region. Bucks County, Montgomery County, and Delaware County will each open 1 center, and Philadelphia will host 3. Thomas Jefferson Narcotic Addiction Treatment/Maternal Addiction Treatment, Wedge Medical Center Inc., and Temple University were each selected to open Centers of Excellence in Philadelphia.

Increasing Effective Distribution of Naloxone

Naloxone, also referred to as Narcan, is a life-saving antidote that can reverse a heroin or opioid overdose by blocking its effect on the brain and restoring breathing within two to eight minutes after an overdose. It can be administered through injection or nasal spray. Last October, the Physician General of Pennsylvania issued a statewide standing order for naloxone, which means that all residents can access this medication. Administering naloxone has saved thousands of lives across the country, with over 1,200 of those saves occurring in Pennsylvania since November 2014.[xxx]

More than 300 municipal police departments, the Pennsylvania State Police, and hundreds of individual officers reversed more than 600 opioid overdoses statewide in the past year. Naloxone kits began to be distributed to Philadelphia police officers in the East and Northeast Districts in January of 2015. As of the May 20 hearing, 813 kits were being carried by officers. The officers with kits were situated within the East and Northeast divisions because of the high concentration of drug-related incidents in these neighborhoods. Since the implementation of the program, 129 lives have been saved by administration of naloxone; 112 of these saves occurred in the East Division and 17 were in the Northeast Division.[xxxi] Meanwhile, all 183 Fire Department vehicles (medic units, engines, and ladder companies) are equipped with naloxone.[xxxii]

Coordination is needed to determine how to gather and spend resources to obtain and distribute naloxone to those who can use it effectively. Demand for naloxone is causing an increase in price. The FDA reported that one manufacturer raised its price from the previous year by 50% and another by 60% in 2014. Prices fluctuate in Philadelphia. For example, one Rite Aid on Frankford Avenue charged $187 for a package of naloxone spray, another Rite Aid charged $55 for a package of two nasal sprays, and a CVS charged $159 for a package of two nasal sprays. The Delaware County police department, which equips all of its officers with naloxone, paid $22 per 2 mg dose in 2014. They now pay $37 per 4 mg dose from a new supplier, Adapt Pharma, after their previous supplier (Amphastar) started charging $50 for a 2 mg dose.[xxxiii]

Max Tuttleman, a Trustee of the Tuttleman Foundation, provided written testimony to the Committee in which he stated that the Tuttleman Foundation was willing to fill gaps in anticipated funding for naloxone distribution that are related to the delayed start date of the Comprehensive Addiction and Recovery Act from the United States Congress. Additional private funding from sources like the

Tuttleman Foundation will be needed to provide naloxone to first responders and community members who are most likely to use it.

There is strong community consensus around the need for additional naloxone. Each community meeting included multiple calls for expanded distribution and training sessions for those with the overdose kits. The recommendation for expanded access to naloxone was also one of the most common, if not the most common, recommendations at the May 20 hearing.

Dr. Valerie Arkoosh, a Commissioner in Montgomery County, said, "Naloxone is the best means of preventing opioid-related overdose deaths… in order to receive treatment, you have to be alive. We will continue to save a life until any individual is ready to accept treatment."[xxxiv] Naloxone is the start to the process of a warm handoff; without naloxone available to reverse overdoses, patients cannot recover and seek treatment.

Naloxone is not, however, a method of prevention; while it prevents overdose deaths, it does not have long-term effects on addiction. One mother shared her story of being a parent to a 22-year old daughter who has struggled with addiction since age 16. Her daughter was declared dead from an overdose, and it took two doses of naloxone to bring her back to life. The mother said, "Her brain doesn't let her make choices like we would… Because what normal person after overdosing and then taking two doses of Narcan and 15 minutes of CPR to bring her back would want to continue that?"[xxxv]

Addressing Harmful Prescription Practices and Exploring Alternatives

One of the largest concerns when facing an epidemic of this scope is the prevention of initial prescription drug exposure that may lead to illicit and non-medical drug abuse. 80 to 90% of people who become addicted to heroin start on prescription painkillers.[xxxvi]While heroin continues to serve as a primary issue on the streets, it has become clear that there's a problem in the doctor's offices in the City as well.

Secretary Tennis was one of many experts who testified at the May 20 hearing to call attention to over-prescription. DEA Philadelphia Field Division Special Agent in Charge Gary Tuggle said that this current drug epidemic "dwarfs" the post-Vietnam War heroin epidemic and the crack cocaine epidemic because "it's got a feeder system to it that the other two epidemics didn't have, and that's the misuse and abuse of prescription opioids."[xxxvii]

While the United States makes up less than 5% of the world's population,[xxxviii] it is responsible for the consumption of 80% of the world's opioids.[xxxix] Andrew Ricciardi, who spoke at a community meeting in Northeast Philadelphia, was an athlete in college before an injury led to him to receive prescription painkillers. He became addicted to them, dropped out of school, and lost his home. Miriam Courtney, another resident of Northeast Philadelphia, lost her grandson to an overdose after he got hooked on opioids following a back injury from a hit and run accident. Ms. Courtney recognized that her grandson was beginning to experience addiction, and she even went to his doctor to ask him not to prescribe any more painkillers. Stories like this are all too common.

Dr. Ted Christopher, Doctor of Emergency Medicine at Thomas Jefferson University Hospital and Vice President of the Pennsylvania Medical Society, submitted written testimony explaining the difficulties which physicians have had to work around in the past. "The reality is that prescribing education and training was lacking. Physicians in Pennsylvania, including Philadelphia, had no access to a prescription

drug monitoring system. And patients had few, if any, options to dispose of medications that they no longer needed. That's changing."

In order to stop the influx of prescriptions for opioids, the Pennsylvania Medical Society has now asked all practicing physicians to follow specific steps and guidelines when prescribing opioids.[xl] Secretary Tennis affirmed these guidelines and advocated for further communication between all hospitals in the City and the Medical Society.[xli] Commissioner Arthur Evans said that DBHIDS is collaborating with Drexel University "on a federal grant to educate doctors in terms of their prescribing practices" in addition to educating the public about opioid prescriptions.[xlii]

Thomas Farley, the Health Commissioner, encouraged physicians to "prescribe opioid painkillers less often, in lower doses, and for shorter durations."[xliii] A recent law in Massachusetts works towards those goals, limiting initial prescriptions for all opioid drugs to seven-day supplies rather than thirty-day scripts.[xliv]

Pennsylvania's Prescription Drug Monitoring Program launched August 25, 2016. With this program, law enforcement have a centralized hub of information about people who have abused prescriptions. Physicians have the ability to monitor a patient's drug usage and see if they have recently received an opioid prescription from another physician.[xlv] The database program will not only keep people from abusing the system and getting their hands on strong prescription painkillers, but it will also give physicians a chance to recognize addictive behavior in a patient—perhaps even before the patient detects it themselves. [xlvi]

Take-back programs have been instrumental in the reduction of opioids becoming available across county lines. According to Becky Berkebile, Director of Drug Control Programs in the Pennsylvania Office of the Attorney General, these drug drop boxes collected and helped to destroy over 67,000 pounds of prescription drugs from February to May 2016 alone.[xlvii] The Philadelphia District Attorney's office has implemented a take-back program that allows the public to drop their prescription drugs in a secure drop box at various police districts across the City.[xlviii] At the time of the hearing, 13 police districts were equipped with safe disposal boxes, but all are planned to eventually have them on site.

Some community members asked why medical marijuana is not offered as a direct prescription alternative to opioids, as medical marijuana is touted as a non-lethal option to treat pain. A 2014 study published in the Journal of the American Medical Association showed that states with medical marijuana laws averaged a 24.8% lower annual opioid overdose mortality rate between 1999 and 2010 than states without medical marijuana laws. The study concluded, "Medical cannabis laws are associated with significantly lower state-level opioid overdose mortality rates. Further investigation is required to determine how medical cannabis laws may interact with policies aimed at preventing opioid analgesic overdose."[xlix]

In April 2016, Governor Tom Wolf signed into law Act 16 ("the Medical Marijuana Act"). This legislation allows the use of medical marijuana under specified conditions. These conditions include cancer, HIV/AIDS, and multiple sclerosis. Medical marijuana is not allowed to treat or manage pain unless it is determined that severe chronic and intractable pain cannot be treated by opioid medications. On May 25, 2016 Philadelphia City Council passed Resolution 160543, "Requesting that the Governor and the Pennsylvania State Legislature Amend the Medical Marijuana Act to Allow Doctors to Prescribe Medical Marijuana as a Direct Alternative to Opioid Painkillers." The resolution argues, "Doctors in Pennsylvania

should have the ability to consult with their patients and make decisions to prescribe medical marijuana due to concerns about the safety of opioid medications."

Changing Negative Public Perception

Properly addressing the heroin and opioid crisis in the City includes consideration of social aspects along with medical ones. As District Attorney Williams and many others said during the May 20 hearing, addiction is a public health problem, must be publically perceived as one, and has to be treated through a holistic approach.[l]

The largest social issue regarding heroin and opioid struggles is the stigma attached to addiction. "Everybody is affected and nobody is talking about it, because of shame," said Kathleen Brown, a parent representative at the Northeast High School community meeting. Ms. Brown was one of many to talk about the shame associated with addiction; both community members and experts agreed that reducing stigma should be a top priority in the fight against illicit and non-medical drug abuse. Jillian Bird, a nurse coordinator at Thomas Jefferson University Hospital who works with pregnant women with opioid addictions, spoke at the West Philadelphia community meeting on the ease with which people get stuck in an 'addict' identity. "We need to humanize these people more, and it starts with vocabulary about the issue."

While changing the stigma around addiction will take extensive effort and time, one method of to shifting the social dynamic is to more publically discuss addictive behavior. Dr. Brian Work of the University of Pennsylvania and Prevention Point Philadelphia said, "I really appreciate it and it thrills me when governmental officials take this kind of an interest and hold town meetings and hold hearings, because make no mistake, that is public health in and of itself, and that's very important."[li] Simply bringing matters of addiction and treatment to the public eye makes a significant difference in the perception of addiction, reduces the associated stigma, and increases the likelihood that those with substance use disorders will feel comfortable seeking help.

Considering Supportive Housing Models

Recovery from an addiction does not end the moment a person leaves a treatment facility. Often, those in treatment are sent back into the same environment that led them to substance abuse. Supportive housing can be an important aspect of recovery for those exiting treatment facilities, particularly those who experience some degree of homelessness.

In New York City, the Department of Homeless Services found that a large percentage of the City's chronically homeless population were individuals with untreated and active substance abuse issues.[lii] In Philadelphia, a 2010 report published by the City's Homeless Death Review Team (HDRT) found that substance abuse was the leading cause of death among the City's homeless population, playing a role in 44% of reported deaths.[liii] A frequently repeated argument from both community members and the experts who testified at the May 20 hearing was the importance of strong recovery housing options.

Some agencies in Philadelphia have already been working on a comprehensive housing model that focuses on getting people into homes first, rather than setting up prerequisites for applicants. Pathways to Housing PA is a non-profit organization that works to reintegrate previously homeless individuals suffering from substance abuse into communities. Matt Tice, the Clinical Director at Pathways to Housing PA, discussed the importance of the 'Housing First' model. "Housing First means giving

someone an apartment with no pre-conditions, but then immediately upon acceptance into the program, a multidisciplinary team with social workers, a nurse, a psychiatrist, a medical doctor, certified peer specialists, and other case managers spring into action to help keep the person stable in their home."[liv] This model calls to mind the proposed approaches for MAT and the Centers of Excellence that are being piloted in Pennsylvania. Since implementing this model, Pathways to Housing PA has had an astounding 85% overall retention rate. Looking at just the population of those with a history of heroin or opioid addiction, the retention rate actually increases to 89%.[lv]

Deneene Brockington, the Government and Community Relations Director for Resources for Human Development (RHD), spoke about the work that has been done by its Camden (NJ) Supportive Housing Program. In this housing-first approach, 82% of individuals in the program remained in their homes. Of the participants who left the program, 82% graduated or moved on with the proper resources to support themselves. The program has seen zero overdose-related deaths.[lvi] The success of both the Camden Supportive Housing Program and the efforts of Pathways to Housing PA in Philadelphia provide a tested model for the expansion of housing first initiatives.

Creating a Drug Overdose Prevention Task Force in Philadelphia

Philadelphia is not alone in its struggles with rising rates of drug abuse and overdose deaths. Elsewhere in the region, Delaware County experienced a 41% increase in drug overdose deaths between 2014 and 2015.[lvii] Montgomery County experienced a 72% increase in deaths due to opioids between 2009 and 2014, with over 50% attributed to heroin (the county did, however, see a 16% decrease in overdose deaths between 2014 and 2015).[lviii] Philadelphia, Delaware, Bucks, and Montgomery Counties each had drug overdose death rates above the national average in 2015.[lix]

To address the alarming rise in heroin and opioid drug overdose death rates, each of Philadelphia's surrounding counties now has a task force or advisory body to inform counties' responses to the epidemic. Each task force is multidisciplinary in its membership and scope, and each includes between 8 and 24 members.

The Montgomery County Overdose Task Force, for example, "brings a spectrum of both field expertise and direct experience that includes law enforcement, public safety, public health, drug treatment service providers, as well as the medical community."[lx] It was founded in late 2014 by Commissioner Josh Shapiro and issued an implementation plan in 2015 with short-term and long-term recommendations which have been approved by the Commissioners and enacted by the County. Results have included installation of drug disposal boxes, increased preventive education and public outreach efforts, and distribution of naloxone for county police.

Since implementing its Heroin Task Force, Delaware County has installed drug disposal boxes, hosted drug take-back days, implemented a program educating homeowners to lock medication cabinets during open houses, and became the first county to implement a nasal naloxone program for law enforcement.[lxi]

Chester County is the only county in the region to currently have a drug overdose death rate below the national average. Chester County had 72 overdose deaths in 2015, 66 of which involved heroin and/or opioids.[lxii] This overall total was steady with the total number of overdose deaths in 2014. The county had a drug overdose rate of 12.21 deaths per 100,000 people in 2015—nearly one quarter of Philadelphia's rate, the lowest in the region, and the 13th lowest of reporting counties in the state.

Chester County has had an Overdose Prevention Task Force, which includes "senior management from our Department of Drug and Alcohol Services, the Health Department, the District Attorney's Office, as well as community stakeholders," for over 20 years.[lxiii] Members of the Chester County task force have been instrumental in spreading public awareness and prevention education to students and families.

While Bucks County does not have one unified task force, the County has a unified approach to prevention. Separate efforts with this unified approach have focused on the lower area, the central area, and the upper area of Bucks County. The Bucks County Overdose Prevention/Education committee (BCOPE) is a joint effort with the Council of Southeast Pennsylvania, and this partnership provides many of the connections between Bucks County residents, treatment resources, and recovery support.

At the state level, coalitions are also starting to form. Becky Berkebile talked about how the Office of the Attorney General is working more closely with the Department of Drug and Alcohol Programs in addition to treatment professionals across Pennsylvania. She also mentioned that the office has created regional "working groups" of "treatment professionals, law enforcement, and hospital emergency departments." These groups can share resources and data, including efforts to track the number of non-fatal overdoses in a given region.[lxiv]

Other urban areas also have models of coordination. Philadelphia-Camden High Intensity Drug Trafficking Area Director Jeremiah Daley cited the RxStat Project in New York City, which has "been very successful in helping identify across disciplines and sectors where problems are." He described a lack of coordination, capacity, and data sharing in the Philadelphia region and criticized the way that information is in metaphorical silos. When information is shared, "oftentimes it's historical information, a year or two old. Well, we can't afford to be students of history any longer. We have to be agents of change, proactive in our approach to this problem."[lxv]

Dr. Brian Work and Dr. Gerry Stahler are both board members of Prevention Point Philadelphia, the City's syringe exchange program. At the hearing on May 20, both testified in support of a multi-disciplinary task force or a similar body in Philadelphia to counter the current uncoordinated nature of relief efforts. [lxvi] [lxvii] Several community members also mentioned the importance of coordinating efforts with surrounding counties who have already begun the process of addressing the heroin and opioid addiction crisis.

If a task force or commission is established in Philadelphia, the Department of Behavioral Health and Intellectual disAbility Services' leadership has strong endorsement to coordinate the City's response across agencies and in communities. During his testimony, Secretary Gary Tennis said, "Dr. Evans is nationally known and recognized, and [DBHIDS Deputy Commissioner] Roland Lamb is passionate about this issue and with enlightened approaches toward the issue…The more juice you can give them to work across all of the agencies with the authority or backing of the Mayor and the City Council, I think the more that's going to get done."[lxviii] Dr. Evans testified about the effectiveness of the federal government's Office of National Drug Control Policy "because there was a recognition that policy needed to be coordinated across housing and health and human services and law enforcement." He continued, "That model hasn't really been replicated as much at the state and local levels, but I think there is some merit in doing that."[lxix]

A task force or commission would be able to work with surrounding counties to build a coordinated response to the epidemic and implement regional policies to respond to the wider geographical nature of the movement of drugs. Bucks County Commissioner Diane Ellis-Marseglia testified, "We know that a

significant number of our residents are coming to Philadelphia to purchase and use heroin. That means we know that it is our residents that are…contributing to impaired driving on your roads, contributing to crime in your neighborhoods and, unfortunately…they are contributing to the strain on your emergency services, your emergency room, and your Coroner's Office. As Bucks County, we do not want to contribute to your burden."[lxx] Delaware County Commissioner John McBlain testified, "We welcome any efforts to strengthen and coordinate efforts to stop the use of heroin and abuse of prescription drugs amongst our counties. We look forward to gaining more insight from any strategies developed…through your office of City Council and through the Administration."[lxxi] Montgomery County Commissioner Valerie Arkoosh agreed, saying, "We absolutely need to work together."[lxxii] Elected officials from surrounding counties are eager and willing to collaborate with Philadelphia, and creating a Philadelphia drug overdose prevention task force or commission would allow for more effective regional dialogue and solutions.

Furthering Public Awareness and Prevention Efforts

Though thousands of lives are affected by heroin and opioid addiction in the City of Philadelphia, education is still a fundamental priority among community members and experts.

A primary concern is preventive measures. Karyn Lynch, Chief of Student Support Services for the School District of Philadelphia, stressed the importance of early access to health education on addiction. It is imperative that students are exposed to health classes that discuss the impacts of heroin and opioid abuse and equip students to resist experimentation with heroin and opioids.[lxxiii]

Chester County organized an Overdose Prevention Symposium that worked to increase public awareness of heroin addiction and opioid over-prescription. The symposium was aimed towards both students and working professionals in an effort to increase public knowledge and reduce over-prescription practices.[lxxiv]

The Board of Bucks County Commissioners purchased a dramatic public service announcement that played at every movie theater in the county for several months. The PSA described the growing issue of opioid over-prescription and conveyed the importance of awareness of the epidemic to parents and children.[lxxv] The commissioners also organized several public hearings that provided the public with knowledge on addiction and signs of addiction while allowing community members to express their interactions with the heroin and opioid epidemic.[lxxvi]

According to Chief Inspector Daniel MacDonald of the Philadelphia Police Department's Narcotics Bureau, the police department has been involved in the Drug Abuse Resistance Education program, more commonly referred to as DARE, and the Heroin Education and Dangerous Substance Understanding Program, or HEADS-UP. DARE is a nation-wide program that goes into classrooms and reaches out to students, focusing on improving decision-making skills and keeping children away from illicit substances.[lxxvii] HEADS-UP is a more local program that was created by the Police Department in partnership with community members. The program gives presentations to children in an effort to educate them on addiction and prevent them from abusing drugs. Inspector MacDonald described the program as "chilling", adding, "It is not pleasant to see, but it does put them on the right path."[lxxviii]

Gary Tuggle of the DEA spoke about his agency's new 360 Initiative, which incorporates law enforcement, regulation, and community to form "non-traditional partnerships" to address the issue. The Special Agent in Charge said, "We're not just partnering with the gun carriers and the badge carriers

anymore. We're partnering with communities to build coalitions to go after this problem at a totally different level."[lxxix] These partnerships capitalize on the opportunities created by investigations to help affected individuals receive treatment. After having been successfully piloted in Pittsburgh, the 360 Initiative will soon be introduced in Philadelphia. The DEA has also partnered with the Partnership for Drug-Free Kids to train social service providers and educators to speak about addiction with youth.

Education on addiction is not and should not be limited to middle and high schools in the City. As Jeremiah Daley pointed out in his testimony, all areas of education—including medical schools and pharmacy schools—need to be on board with education and preventive efforts.[lxxx]

Preventive education also exists in Philadelphia prisons. The OPTIONS program (Opportunity for Prevention and Treatment Interventions for Offenders Needing Support) served "3,132 court-stipulated individuals and 1,452 pretrial individuals who voluntarily sought treatment" between January 2015 and April 2016.[lxxxi] The program educates inmates about drugs and alcohol in a group setting, borrowing from the Hazelden model of "cognitive behavioral therapy and is evidence-based." Terrell Bagby said that the program is "designed to educate and support abstinence and recovery, as well as to teach and reinforce the coping skills that allow for positive community reintegration."[lxxxii] OPTIONS also provides "social work service managers" for individual counseling throughout the program and helps incarcerated patients prepare for "treatment upon release, at which time returning citizens are enrolled for benefits by the treatment provider."[lxxxiii]

Rethinking Law Enforcement

A panel of law enforcement officials testified at the hearing to present the scope of their efforts. Jeremiah Daley testified, "We are a regional source of drugs to the Delaware Valley region and beyond, as far south as Maryland, as far west as Pittsburgh and West Virginia, as far north as lower New York state…All that said, our most critical issues are right here in the heart of Philadelphia." He went on to say that the most trafficking incidents, overdoses, and affiliated episodes take place in Eastern North Philadelphia and Lower Northeast Philadelphia.[lxxxiv]

Chief Inspector MacDonald said that as of the hearing, over 2,000 people had been arrested by the Philadelphia Police Department for selling drugs in the 2016 calendar year. The Narcotics Bureau had confiscated over $40 million worth of drugs. Of those, $14.6 million worth was heroin, and heroin constituted 37% of all Philadelphia drug seizures. Jeremiah Daley said that in the previous year the Philadelphia-Camden High Intensity Drug Trafficking Area's partner agencies seized a total of over 220 pounds of heroin "in just their investigations, and that's a fraction of the law enforcement work overall."[lxxxv]

District Attorney Seth Williams mentioned the passage of a Good Samaritan Law that protects someone who calls 911 to save a person from an overdose from being prosecuted for simple drug possession.[lxxxvi] Meanwhile, Gary Tuggle said that the DEA's Operation Trojan Horse trains state and local law enforcement to investigate fatal overdose scenes as crime scenes and not just scenes of medical emergencies, allowing agents to more effectively track down drug dealers and also receive funding for intelligence resources so that local departments can conduct their own investigations.[lxxxvii]

Of note was the acknowledgement that enforcement will not be the sole means to preventing a rise in drug abuse. Admitting that the problem is too large to "arrest our way out of," Chief Inspector MacDonald said, "We need to focus on prevention, intervention, and drug enforcement together."[lxxxviii]

District Attorney Seth Williams echoed the exact same sentiments, emphasizing "that we have to address it as a public health problem, and that we have to have a holistic approach."[lxxxix] Becky Berkebile, the Director of Drug Control Programs for the Pennsylvania Office of the Attorney General , asked, "We have heard it said a million times that we cannot arrest our way out of the problem, but what does that really mean? We can't tell law enforcement to stop arresting people, but we can give law enforcement more tools to do their jobs. Public safety and public health are interconnected."[xc] The Office of the Attorney General is developing cards with resource listings which agents can carry and distribute towards this end. There was also consensus agreement of the need for expanded access to naloxone, as discussed elsewhere in this report.

IV. Recommendations

1. Implement a City of Philadelphia Drug Overdose Prevention Task Force or Commission as Quickly as Possible

Philadelphia is already behind its surrounding counties by not having a central task force or commission, and this hinders the City's ability to put forth a coordinated approach to stemming the heroin and opioid epidemic as opposed to departments operating in silos with individual programs per usual. Treatment providers, experts, and community members must stay informed about the City's plans for addressing these issues; likewise, City officials and agency directors must have a solid pulse on treatment efforts as they craft policy. Creating a central task force or commission dedicated to addressing drug overdose prevention will allow each of these crucial stakeholders to be at the same table together while strategizing about how to best allocate resources and efforts towards treatment and prevention.

Such an advisory body would be able to provide information and expert opinion to the Mayor, City Council, and heads of City agencies in a similar fashion to what is being done in surrounding counties. This commission would also be able to work with the surrounding counties to build a coordinated response to the epidemic and implement regional policies to respond to the regional nature of the movement of drugs. Further, this central body would be able to coordinate efforts for and provide resources to community coalitions across the City which could be created to address neighborhood-level concerns and issues related to drug abuse. Efforts to engage communities with preventive education would be enhanced by a commission.

2. Meet with Officials in Surrounding Counties to Determine Means of Removing Barriers to Accessing Treatment Services Across County Lines

This committee recommends that Philadelphia health officials meet with officials in the surrounding counties to determine means of removing any barriers that may exist in accessing treatment services across county lines. In addition to streamlining regional treatment insurance availability, the Public Health and Human Services Committee should review the City's practices related to providing treatment to patients covered by Medicaid to determine whether further action can be taken to integrate and coordinate treatment with primary care systems and whether reallocations of funding can eliminate waiting lists for treatment.

3. Expand Naloxone Distribution to First Responders in a Cost-Effective Manner, Explore Possibility of Naloxone Follow-Up Program

This committee recommends that Philadelphia health officials meet with officials in the police and fire departments to discuss expanded distribution of naloxone. Further, the Public Health and Human Services Committee should hold hearings on obtaining Naloxone at minimal cost and distributing it most effectively.[xci] Additionally, the Public Health and Human Services Committee should determine whether to pilot a follow-up program for individuals saved by naloxone administration.

4. Eliminate "Fail First" Programs from Philadelphia

Substance use disorders should be treated as effectively as possible at any available opportunity. Accordingly, we strongly recommend that "fail first" insurance requirements be made illegal in Philadelphia and surrounding counties. Substandard treatment that incentivizes failure before availability of quality treatment should not be tolerated.

5. Enhance the "Warm Handoff" Approach in Philadelphia

As the leading county in the state for overdose fatalities, Philadelphia must position itself to be the leader in the practice of the "warm handoff" approach which the state of Pennsylvania is currently working to implement. Directly referring patients to treatment after they receive detoxification services will involve deeper partnerships and more deliberate coordination between first responders, medical facilities, and outpatient treatment centers. The Health Department and DBHIDS can work alongside the Philadelphia Police Department and the Philadelphia Fire Department to establish protocols for referral after detoxification, and the Health Department and DBHIDS can reach out to the City's medical facilities and outpatient treatment centers to establish a network of referrals. As Philadelphia works to expand its treatment capacity, it must ensure that its existing treatment resources are being used as efficiently as possible. DBHIDS should consider implementing models of reimbursement to treatment providers that incentivize the creation of networks for referral from detoxification to holistic and intensive care.

6. Establish New Policies for Law Enforcement that Create Distinctions between Treatment Referrals and Criminal Prosecution.

Law enforcement officials were clear that arresting and incarcerating individuals cannot be the only response to heroin use, but policies are less clear about how police officers and other law enforcement officials are to instead respond to individual cases of drug abuse. Enforcement of drug laws in Philadelphia is not uniform, and existing policies do not address the root causes of drug-related crime. New policies must be introduced which assist law enforcement personnel in discerning when to refer individuals immediately to treatment versus arresting individuals committing criminal offenses. These policies should be enacted at the same time as protocols for the "warm handoff" approach are also being implemented so that officers are educated and equipped to respond to individuals in a way that upholds the law but also encourages individuals to seek treatment when applicable. A treatment-first approach, which determines whether an individual with a substance use disorder presents a danger to society or a danger solely to their own health and responds appropriately, is recommended.

7. Educate Practitioners and the Public about the Prescription Drug Monitoring Program

Philadelphia should be at the forefront of implementation of the Pennsylvania Prescription Drug Monitoring Program. The Health Department should perform outreach to medical practitioners to instruct them about how to use the database and to make sure that as many physicians use it as possible. Furthermore, these practitioners should be connected to the network of local agents involved in the warm handoff approach. Fred Brason offered his perspective from North Carolina, which introduced a Prescription Drug Monitoring Program in 2007. He cautioned that this must be done so that patients are not simply denied prescription drugs and left to their own devices without having received care for their substance use disorders and thus more susceptible to heroin addiction.

Members of the public should also be informed about the prescription drug monitoring program, and the City should perform outreach to communities to let them know about the upcoming changes. Raising awareness will assist family members and friends in monitoring obtainment of prescription drugs by loved ones who may be susceptible to opioid abuse.

8. Establish Neighborhood-Based Coalitions to Combat the Heroin and Opioid Epidemic at the Local Level

It is often said that Philadelphia is a city of neighborhoods, and this may play to its advantage when it comes to community-based prevention strategies. Fred Wells Brason of Project Lazarus, an organization in North Carolina which has gained national influence in helping communities combat rises in heroin and opioid-related fatalities, said that while Philadelphia is too large for a centralized task force or commission to work on its own, the neighborhoods of the city can allow for smaller localized bodies to mobilize across the city to help accomplish the centralized body's goals. "We take this neighborhood by neighborhood by neighborhood, and then we look at what's missing, what's not being done, how we're doing it." Adopting a similar approach in Brason's home, Wilkes County, North Carolina (which "was the third worst county in the United States for prescription medication overdoses" in 2007) has led to a 69% drop in overdoses in 2011 and a 50% drop in overdoses over the last 5 years. [xcii]

The City should establish neighborhood-based coalitions to combat the heroin and opioid epidemic at the local level in coordination with the activities of a centralized task force and commission which is also recommended by this report. Doing so will mobilize leaders who are familiar with the problems in their own neighborhoods to take action. This will also allow for best practices in preventing overdoses and drug abuse to spread across neighborhoods throughout the City, making for a more informed prevention effort. Finally, operating at the local level will allow for a more intricate and grassroots network of community members and service providers than would be possible with a centralized body alone.

At the community meetings about the heroin and opioid crisis which were hosted by Councilman David Oh's office, staff gathered information from individuals who were interested in helping launch neighborhood-based drug prevention task forces if and when they should be implemented. From this core of committed individuals, the City may be able to move forward to enhance its outreach and prevention efforts to curb heroin and opioid abuse in ways that its governmental agencies cannot.

9. Expand Treatment Capacity and Accessibility through an Emphasis on Medication-Assisted Treatment Expansion and Procurement of Identification

Councilwoman Maria Quiñones-Sánchez described helping patients obtain identification as a "low-hanging fruit" in terms of means to address the heroin and opioid crisis through treatment.[xciii] In putting care for the individual before all other concerns, Philadelphia should consider implementing a "grace period" in which patients can receive treatment without identification or with expired identification. At the same time, Philadelphia should work with service providers to implement a streamlined process to procure identification for patients who either lack it or have expired documentation. Delivery of identification should be guaranteed within the time allowed in the grace period so that there are no interruptions in a patient's treatment.

The capacity of treatment in Philadelphia must also increase, and this must be addressed through a multi-faceted approach with an emphasis on expansion of medication-assisted treatment. Outreach to physicians should encourage increased integration of MAT practices into primary care, including the prescription of buprenorphine by physicians. More physical treatment locations are also needed, including supportive housing and other residential treatment options. Efforts to introduce more treatment locations must begin with further community outreach and education to dispel myths about MAT facilities and to properly address the valid concerns of local residents.

10. Use Public Outreach and Education to Fight Stigma and Promote Prevention

Counties such as Bucks County and Camden County have found success in using public outreach campaigns to spread messages of awareness and prevention regarding substance abuse. DBHIDS and the Department of Health should partner with community agencies to target neighborhoods with higher frequencies of overdoses with a public outreach campaign (outdoor advertisements, social media outreach, public safety announcements, etc.). Messaging should emphasize hope and encouragement to seek treatment and should also promote healthy lifestyle alternatives to drug abuse. Building public awareness of heroin and opioid addiction will encourage those currently suffering from substance use disorders to seek treatment and will discourage others from experimenting with drugs.

References

[i] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Arthur Evans, 69.

[ii] United States, Drug Enforcement Agency, Philadelphia Field Division. (2016). Analysis of drug-related overdose deaths in Pennsylvania, 2015. Philadelphia, PA. 6.

[iii] Prescription Opioid Overdose Data. (2016, June 21). Retrieved from https://www.cdc.gov/drugoverdose/data/overdose.html

[iv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Valerie Arkoosh, 173.

[v] Nolan, D., & Amico, C. (2016, February 23). FRONTLINE. Retrieved July 27, 2016, from http://www.pbs.org/wgbh/frontline/article/how-bad-is-the-opioid-epidemic/

[vi] United States, Drug Enforcement Agency, Philadelphia Field Division. (2016). Analysis of drug-related overdose deaths in Pennsylvania, 2015. Philadelphia, PA. 1.

[vii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Gerald Stahler, 224.

[viii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Written Testimony of Mady Chalk, 9.

[ix] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Written Testimony of Mady Chalk, 3.

[x] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Vince Lattanzio, 18.

[xi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Arthur Evans, 68.

[xii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Arthur Evans, 76.

[xiii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Gary Tennis, 61.

[xiv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Written Testimony of Mady Chalk, 6.

[xv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Gary Tennis, 46.

[xvi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Seth Williams, 97.

[xvii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Thomas Nestel, III, 107.

[xviii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Jeremiah Laster, 242.

[xix] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of David Metzger, 131.

[xx] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of David Metzger, 131-132.

[xxi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Thomas Farley, 75.

[xxii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Thomas Farley, 71.

[xxiii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Terrell Bagby, 256.

[xxiv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Written Testimony of Joseph DeFelice, 3.

[xxv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Fred Brason, 136.

[xxvi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Written Testimony of Mady Chalk, 10.
[xxvii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Written Testimony of Mady Chalk, 6.
[xxviii] Wolf Administration Addressing Addiction Treatment Differently, Department of Human Services to Fund Opioid Treatment Option. (2016, July 14). Retrieved from http://www.media.pa.gov/Pages/DHS_details.aspx?newsid=213
[xxix] What Is a Center of Excellence? Retrieved from http://www.dhs.pa.gov/cs/groups/webcontent/documents/document/c_223396.pdf
[xxx] Tennis, G. (2016, August 7). Gary Tennis | 'Warm handoff' gets addicts from the ER directly into treatment. Retrieved August 12, 2016, from http://www.tribdem.com/news/editorials/columns/gary-tennis-warm-handoff-gets-addicts-from-the-er-directly/article_39c30719-7a94-59c4-8689-517082fced32.html
[xxxi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Daniel MacDonald, 89.
[xxxii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Jeremiah Laster, 243.
[xxxiii] Laker, B., & Farr, S. (2016, February 12). What's an antidote to death worth? Retrieved from http://articles.philly.com/2016-02-12/news/70572063_1_naloxone-narcan-opioid-overdose
[xxxiv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Valerie Arkoosh, 170.
[xxxv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Melissa Cannon, 89.
[xxxvi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Becky Berkebile, 112.
[xxxvii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Gary Tuggle, 99.
[xxxviii] United States Census Bureau, July 14th, 2015
[xxxix] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Gary Tennis, 43.
[xl] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Written Testimony of Ted Christopher, 3.
[xli] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Gary Tennis, 43.
[xlii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Arthur Evans, 72.
[xliii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Tom Farley, 75
[xliv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Seth Williams, 96
[xlv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Seth Williams, 94
[xlvi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of John Lepley, 309
[xlvii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Becky Berkebile, 112.
[xlviii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Seth Williams, 94.
[xlix] Bachhuber, M. A., Saloner, B., Cunningham, C. O., & Barry, C. L. (2014, August 25). Medical Cannabis Laws and Opioid Analgesic Overdose Mortality in the United States, 1999-2010. *JAMA Internal Medicine*, 174(10), 1668-1673. doi:10.1001/jamainternmed.2014.4005

[l] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Seth Williams, 93.
[li] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Brian Work, 152.
[lii] The National Center on Addiction and Substance Abuse at Columbia University (CASAColumbia), Corporation for Supportive Housing. Unlocking the Door: An Evaluation of Supportive Housing for Active Substance Users in New York City, 18
[liii] Hoffman, R., Maguire, M., Cancellier, R., & Cherington, M. (2012). City of Philadelphia Homeless Death Review, 2009-2010 (Rep.). Philadelphia, PA: Philadelphia Homeless Death Review Team, 12.
[liv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Matt Tice, 264
[lv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Matt Tice, 265
[lvi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Deneene Brockington, 274
[lvii] DEA United States, Drug Enforcement Agency, Philadelphia Field Division. (2016). Analysis of drug-related overdose deaths in Pennsylvania, 2015. Philadelphia, PA. 6.
[lviii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Valerie Arkoosh, 164.
[lix] United States, Drug Enforcement Agency, Philadelphia Field Division. (2016). Analysis of drug-related overdose deaths in Pennsylvania, 2015. Philadelphia, PA. 29.
[lx] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Valerie Arkoosh, 165.
[lxi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of John McBlain, 205.
[lxii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Michelle Kichline, 182.
[lxiii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Michelle Kichline, 184.
[lxiv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Becky Berkebile, 114.
[lxv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Jeremiah Daley, 120.
[lxvi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Gerry Stahler, 145.
[lxvii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Brian Work, 157.
[lxviii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Gary Tennis, 50.
[lxix] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Arthur Evans, 80.
[lxx] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Diane Ellis-Marseglia, 191.
[lxxi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016.Testimony of John McBlain, 211.
[lxxii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016.Testimony of Valerie Arkoosh, 162.
[lxxiii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Karyn Lynch, 293.
[lxxiv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Michelle Kichline, 187.

[lxxv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Diane Ellis-Marseglia, 192.
[lxxvi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Diane Ellis-Marseglia, 193.
[lxxvii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Daniel MacDonald, 85.
[lxxviii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Daniel MacDonald, 86.
[lxxix] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Gary Tuggle, 101.
[lxxx] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Jeremiah Daley, 120.
[lxxxi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Terrell Bagby, 259.
[lxxxii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Terrell Bagby, 257.
[lxxxiii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Terrell Bagby, 260.
[lxxxiv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Jeremiah Daley, 118.
[lxxxv] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Jeremiah Daley, 121.
[lxxxvi] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Seth Williams, 94.
[lxxxvii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Gary Tuggle, 103.
[lxxxviii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Daniel MacDonald, 89.
[lxxxix] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Seth Williams, 93.
[xc] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Becky Berkebile, 111.
[xci] Councilman David Oh introduced Resolution No. 160655, “Authorizing the Public Health and Human Services Committee to hold hearings on obtaining life-saving Naloxone at minimal cost and distributing it most effectively,” on June 9, 2016. It was approved by Philadelphia City Council.
[xcii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Fred Brason, 137.
[xciii] Hearing before the Philadelphia City Council Public Health and Human Services Committee. May 20, 2016. Testimony of Maria Quiñones-Sánchez, 137.