A Brief Window of Opportunity: Heroin in North Fulton County

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The Heroin Problem: A National Perspective

In January 2014 Vermont Governor Peter Shumlin spent the entirety of his 2014 State of the State Address describing what he termed "a full-blown heroin crisis" in his state. In 2013 nearly twice as many Vermonters died from heroin overdoses as in 2012.

Heroin use has reached unprecedented levels across our nation, as documented by increasingly frequent stories in the popular press as well as rigorously researched articles appearing in scientific and professional publications. Media reports often tell the story of heroin abuse by focusing on those impacted most personally, typically family members and friends who have lost loved ones as a result of a heroin overdose. For example, a recent article in the New York Times[1] details the story of a young woman from New Hampshire who died from a heroin overdose last year at age 20, after graduating from high school and being expelled from the United States Marine Corps as a result of her drug abuse. An article in the Atlantic entitled "The New Heroin Epidemic"[2] details the transition from Opioid Pain Relievers (OPRs) to heroin in West Virginia. West Virginia has for the better part of the last decade had the highest drug overdose rates in the United States. Most of these overdoses were due to OPRs. The last five years however have seen heroin-overdose deaths triple, while overdose deaths from OPRs have actually declined slightly.

As is the case in West Virginia, other states around the country have been grappling with a transition away from OPRs to heroin. This trend has been most severe in New England and in the upper Midwest, where entire communities have been devastated by rapid increases in heroin addiction and overdose deaths. For instance, in his January 2014 State of the State Address Vermont Governor Peter Shumlin spent the entirety of his talk describing what he termed "a full-blown heroin crisis" in his state. In 2013 nearly twice as many Vermonters died from heroin overdoses as in 2012. The number of persons seeking treatment for opiate addiction in Vermont increased more than 770% between 2000 and 2012. The entirety of New England has experienced a surge in heroin use, with an accompanying increase in overdose deaths and drug-fueled criminal activity. State legislators around the country are crafting legislation to address what is perceived by many as a public health crisis[3].

A number of factors help explain this nationwide transition from OPRs to heroin, including a crackdown on so called "pill mills", the establishment of Prescription Drug Monitoring Programs (PDMPs), the 2014 reclassification of hydrocodone-based medications such as Vicodin, and an increased supply of heroin from Afghanistan, Mexico and Central and South America. Officials estimate that Mexico's opium production rose an estimated 50% in 2014, while the poppy fields in Afghanistan expanded by over a

third in the year prior. Global opium poppy production reached a peak not seen since the 1930s, and shows no sign of stopping due to the rapidly intensifying demand for heroin[4].

These separate but related developments have decreased the supply and availability of OPRs in the United States, increasing their price according to the economics of supply and demand. At the same time, increased cultivation of opium poppies in Mexico and points further south have resulted in a significant decrease in the price of heroin. While these factors appear to have contributed to a reduction in OPR abuse and associated overdose deaths, they have had the unintended consequence of causing an alarming rise in heroin use and associated overdoses. In West Virginia during 2012, deaths from OPRs actually decreased 5% from the previous year, while over the same period heroin overdose deaths increased by 35%. This has led to an acknowledgement by law enforcement in West Virginia that heroin is their primary drug abuse problem[5].

While morphine and related natural (opiate) and synthetic (opioid) pain reducing medicines have been available for decades, the rapid proliferation of these pain medications occurred during the 1990s and 2000s, prompted at least in part by the distribution and marketing of OxyContin, a time-released formulation of oxycodone that first appeared in 1995. OxyContin was aggressively marketed as a means of allowing those with chronic pain to live a more comfortable existence. The marketing efforts were so aggressive in fact that Purdue Pharma, maker of OxyContin, pleaded guilty in 2007 of misleading the public regarding OxyContin's risk of addiction. As a result of a United States Department of Justice lawsuit, Purdue Pharma were ordered to pay a total of $634,500,000 in fines, and three Purdue executives pleaded guilty to criminal charges[6].

OPRs have a high potential for dependence and addiction, and interviews with treatment providers who specialize in working with those addicted to opiates note that once the addiction sets in, the entire lives of addicts often become structured around obtaining more of the drug. What often starts as a legitimate prescription for an OPR following surgery, cancer treatment, or even removal of wisdom teeth becomes a daily battle to avoid the extremely unpleasant effects of withdrawal, a natural consequence which follows physiological dependence. The body requires more of the substance to achieve the same effect as the initial use, a process known as tolerance. Once the prescription runs out, the newly dependent individual is faced with the task of obtaining the drugs illicitly, either on the street or by raiding others' medicine cabinets. When these avenues are exhausted, or when the price for OPRs becomes prohibitive, heroin is often seen as an alternative. According to a recent survey cited in the New York Times[7], three-quarters of heroin addicts began by using prescription drugs which, along with a number of other factors, strongly suggest that many heroin users make the transition from being addicted to OPRs to becoming addicted to heroin. Adding to this evidence, the Atlanta-based Centers for Disease Control and Prevention (CDC) report that 45% of people who used heroin between 2011 and 2013 were addicted to prescription painkillers as well. Put another way, those addicted to OPRs are 40 times more likely to abuse or be dependent on heroin[8]. Heroin-related deaths have quadrupled since 2000, and overdoses from all drugs now take more lives than car crashes. Heroin and OPRs are now responsible for 44 deaths per day[9].

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Experts attribute the widespread availability of OPRs and increased regulation over the past five years as one reason behind the heroin problem. In 2013, Georgia instituted the Prescription Drug Monitoring Program (PDMP) to link physicians and pharmacists to ensure that neither patients nor professionals misuse controlled prescriptions through "doctor shopping" or operating illegal pill mills. In the first six months of the program (July-December, 2013), pharmacists dispensed approximately 3.8 million prescriptions for hydrocodone, oxycodone, codeine, Fentanyl, and morphine. Hydrocodone alone exceeded alprazolam (anti-anxiety/benzodiazepine) as the most prescribed controlled prescription drug (Georgia Statistical Analysis Center, Criminal Justice Coordinating Council, 2014).

> *Heroin use has increased across the U.S. among men and women, most age groups, and all income levels. As heroin use has increased, so have heroin-related overdose deaths. Between 2002 and 2013, the rate of heroin-related overdose deaths nearly quadrupled, and more than 8,200 people died in 2013."*[11]

The 2013 National Survey on Drug Use and Health (available for download at: http://www.samhsa.gov/data/population-data-nsduh) provides insight into how widespread OPR availability affects availability and access to drugs among non-patients who may not otherwise come into contact with an OPR. Although doctor shopping, straw-buyers, Internet sites, and street sales have received attention, the National Survey finds that 53% of the respondents reporting non-medical use of OPRs accessed their drugs freely through friends and relatives. Others acquired the drugs through a single physician (21%) or purchased/stole drugs from a friend/relative (15%). Drug dealers/strangers account for 4.3%, while use of more than one physician (doctor shopping) account for less than 3%. If the respondent reported access via a friend/relative, 83% stated that their source was getting the drugs from one physician while 5% said that the friend/relative obtained the drug from yet another friend/relative. Although the illicit means to access OPRs remain a policy and regulatory issue, it appears that informal transfer of ORPs from friend to friend accounts for most illegal OPR transfers. That is, the volume of legitimate prescriptions, coupled with a social/inter-personal dynamic, provides easy availability and easy access to new users who may have never been previously exposed to OPRs.

Prior to the 1980s, first-time heroin users were as likely as not to be white. That racial balance has shifted however as heroin use has expanded from primarily a "big city" drug to one that is being abused across the country. Since the early 2000s, close to nine in ten persons trying heroin for the first time are white. Of these, many are relatively wealthy and live in the suburbs. These trends are most marked in New England and in the Upper Midwest, as indicated by the grim marker of overdose deaths. In New Hampshire, overdose deaths due to opioids increased 76% from 2013 to 2014, and opioid-related ER visits in that state tripled in that same span. Opioid-related deaths increased 63% in Massachusetts between 2012 and 2014, with Maine also experiencing a surge in heroin-related deaths[10].

While New England and the Upper Midwest have experienced the most dramatic increases in heroin use and related overdose deaths, these regions are not alone. "Heroin use has increased across the U.S. among men and women, most age groups, and all income levels. Some of the greatest increases occurred in demographic groups with historically low rates of heroin use: women, the privately insured, and people with higher incomes. Not only are people using heroin, they are also abusing multiple other substances, especially cocaine and prescription opioid painkillers. As heroin use has increased, so have heroin-related overdose deaths. Between 2002 and 2013, the rate of heroin-related overdose deaths

nearly quadrupled, and more than 8,200 people died in 2013"[11]. These startling statistics provided by the CDC include the following:

- Heroin use more than doubled among young adults ages 18–25 in the past decade;
- More than 9 in 10 people who used heroin also used at least one other drug;
- 45% of people who used heroin were also addicted to prescription opioid painkillers;
- Heroin-related overdose deaths (per 100,000 people) have climbed 286% between 2002 and 2013;
- Heroin use has increased 109% among those aged 18 – 25 and 114% among non-Hispanic Whites between 2002 and 2013, as measured by incidence among 100,000 people; and
- People who are addicted to prescription opioid painkillers are 40% more likely to be addicted to heroin.

Heroin-related substance abuse treatment has seen a corresponding increase, in that the proportion of admissions to publically-funded substance abuse treatment facilities for which heroin was indicated as a primary substance of abuse reached the highest level recorded since data collection efforts began in 1992, according to the federal Treatment Episode Data Set[12]. By comparison, after steadily increasing throughout the 1990s, other opiate-related admissions remained stable during this period, and cocaine-related admissions actually decreased to their lowest level[13].

This summer in Indiana, an outbreak of 153 confirmed cases of HIV was caused by Oxymorphone (trade name Opana) addicts sharing injection needles. This outbreak resulted in the CDC issuing a health advisory alerting states and health providers to be on watch for HIV and hepatitis C clusters among IV drug users, and to take preventative measures. Austin, Indiana (population 4,200) has a higher rate of HIV infection than "any country in sub-Saharan Africa."

In addition to overdose deaths and immediate societal costs due to drug-related crime and the cost of treatment efforts, intravenous (IV) use of heroin and other opioids also brings about long term costly public health problems, specifically increases in HIV, Hepatitis C, and other chronic health conditions. This summer in Indiana, an outbreak of 153 confirmed cases of HIV was caused by Oxymorphone (trade name Opana) addicts sharing injection needles. This outbreak resulted in the CDC issuing a health advisory alerting states and health providers to be on watch for HIV and hepatitis C clusters among IV drug users, and to take preventative measures. Austin, Indiana (population 4,200) has a higher rate of HIV infection than "any country in sub-Saharan Africa," according to Dr. Tom Frieden, Director of the CDC. "They've had more people infected with HIV through injection drug use than in all of New York City last year[14]." There is a Georgia connection to this story, in that Michael Elkins of Cartersville, Georgia, was arrested in June. Officials from the DEA stated that Elkins had traveled to Indiana several times to distribute meth and Opana[15].

Georgia and Metropolitan Atlanta

Given national trends, it stands to reason that Georgia has also witnessed an increase in heroin use and related overdose deaths. A June 14, 2015 article in the Athens Banner-Herald by Lauren McDonald entitled "Heroin-related deaths increasing in Georgia" states that "The nationwide trends of heroin

overdose have begun to reach Georgia, according to the Georgia Bureau of Investigation[16]". The GBI crime lab, which tests seized drugs statewide, has seen an increase of 300% in samples of seized heroin between 2011 and 2014. GBI medical examiner Dr. Kris Sperry noted that heroin-related deaths were uncommon in Georgia prior to 2010. Since that time however, heroin deaths have been steadily increasing, although the numbers remain small compared to other regions of the country. The GBI recorded just three heroin-related deaths in 2010; there were 32 in 2013 and 59 in 2014[17].

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The Arrestee Drug Abuse Monitoring II (ADAM II) program is a federally-funded drug surveillance program that conducts urine screens and administers self-report surveys to assess drug use among a sample of arrestees within the first 48-hours of arrest. At present, the ADAM II program operates in five sites: Atlanta (two jails), Chicago, Denver, New York (Manhattan), and Sacramento. The data gathered from this program serves an early warning program about emerging drug trends, providing important guidance to the law enforcement and public health communities. ADAM II randomly tests for ten drugs: amphetamines and methamphetamines, barbiturates, benzodiazepines, cocaine, marijuana, methadone, opiates, oxycodone, PCP, and buprenorphine. Tests can confirm use of heroin, morphine, codeine, and opiate combinations like oxycodone. If the arrestee tests positive for an opiate, arrestees are asked about use of specific synthetic opiates. Although the opiate test class can include oral morphine and codeine, it is still an imperfect measure of heroin use unless confirmed with self-report interviews. In the 2013 study (available for download at https://www.whitehouse.gov/ondcp/arrestee-drug-abuse-monitoring-program), all sites experienced a marked increase in test positive rates for opiates. Atlanta, Denver and Sacramento showed the most significant increase. Among the 67% of Atlanta arrestees testing positive for any drug, 6.7% tested positive for opiates. While this is lower than Sacramento (17%), Chicago (14.2%), Denver (10.3%), and Manhattan (9.1%), the Atlanta opiate test positive rate has tripled since 2007.

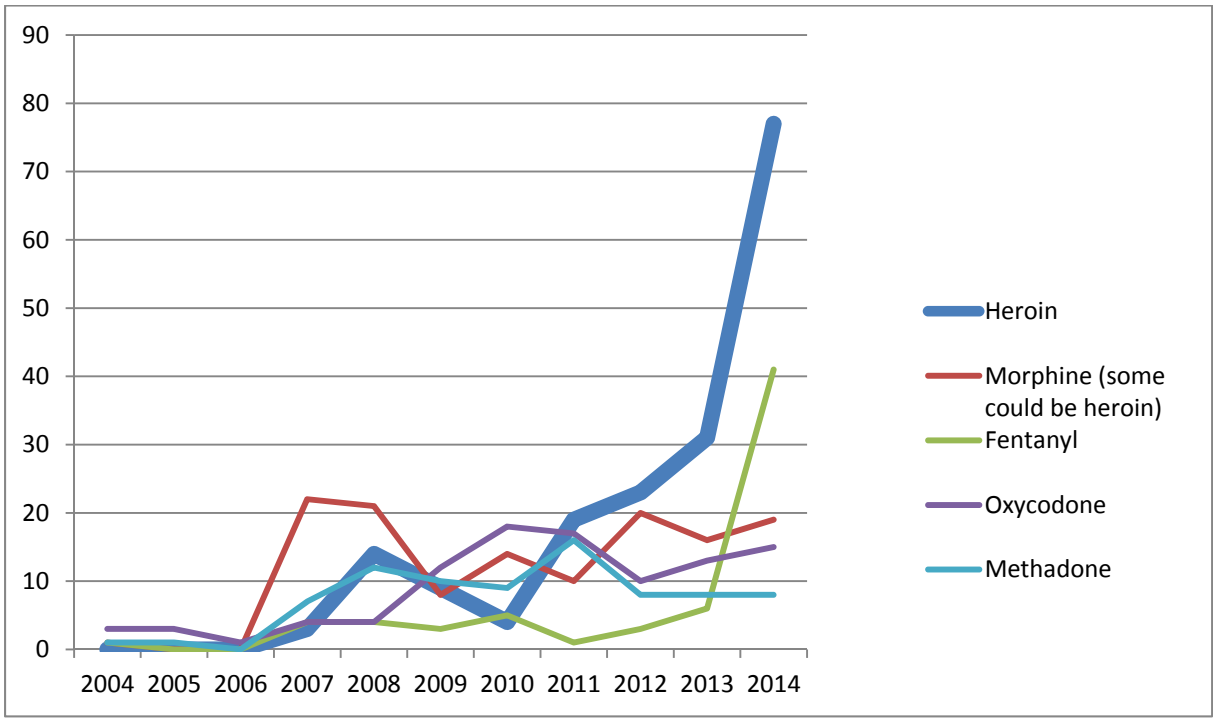
As in other parts of the nation, the above-noted increases are not restricted to large cities. Scores of youth from the north Atlanta suburbs have died from heroin overdoses in the past few years, as documented by stories in the Atlanta Journal-Constitution ("Heroin Overdoses Rattle Suburbs", May 15, 2011)[17], the Marietta Daily Journal (Family Shares Daughter's Story of Fatal Drug Addiction, February 23, 2015)[18] and a host of other publications both large and small. For instance, the Knightly News of Pace Academy ran a story entitled "Heroin Addiction on the Rise in Atlanta", which documented the death in 2011 of former Pace Academy student Zack Elliot, aged 21 at the time of his death, who travelled to "the Bluff" to score his last dose of heroin[19]. The Snellville, Georgia edition of the online publication Patch detailed on August 16, 2012 the story of a former Eagle Scout and Brookwood High School R.O.T.C. student who died of a heroin overdose earlier that month[20]. Chris Zollman, a former addict and halfway house provider in metropolitan Atlanta noted that approximately 40 of his friends have died from heroin overdoses[21]. Law enforcement activity has of course responded accordingly. Recent drug busts of heroin distributors have occurred in Cobb County, where 46 people were indicted in June 2015[22]. In north Fulton County this May, a number of dealers were found to be operating out of an apartment complex in Sandy Springs, supplying most of north Fulton County with heroin and other drugs[23].

The cover story of the May 21, 2015 issue of Creative Loafing was entitled "Metro Atlanta Heroin Growing More Dangerous[24]". The article opened with a description of a recent overdose death in the

Poncey Highland neighborhood. The overdose victim, a 34-year-old male, was found in the bathtub. In addition, officers found $215,000 in cash, 30 grams of Adderall (a stimulant used to treat ADHD) and hydrocodone, two pounds of Xanax and oxycodone, and four pounds of fentanyl. Fentanyl is a very powerful synthetic opiate that can be up to 100 times more powerful than morphine, typically administered to patients who are not responding well to other pain medications. Fentanyl is extremely powerful, so much so that doses are measured in micrograms. According to the CDC, it is estimated the fentanyl is 80 times more powerful than morphine. As such, even minute amounts of fentanyl, which is being mixed with heroin with increasing frequency, can lead to rapid death.

The Fulton County Medical Examiner's office tallied a total of 19 heroin-related deaths in 2013. That number had increased in 2014 to 77 heroin-related deaths. Twenty-three of those deaths involved fentanyl, and the 2015 numbers will likely register even higher. The rise in deaths related to heroin and fentanyl are alarming, as can be seen in Figure 1, below.

Figure 1. Opiate-related Overdose Deaths in Fulton County, 2004 – 2014



As the above graphic indicates, overdose deaths from heroin and fentanyl have risen alarmingly, with the rise in heroin-related deaths beginning in 2010 and fentanyl deaths in 2013. According to Dr. Randy Hanzlick, Fulton County's Medical Examiner, "We used to hardly ever see heroin, and the fentanyl is a relatively new thing[25]". An article in Creative Loafing entitled "Spiked Heroin Appearing in More Fulton Overdose Deaths, Medical Examiner's Office Says[26]" reports that fentanyl is "used to increase the potency of lower-grade heroin", according to Mona Bennett, executive director of the Atlanta Harm Reduction Coalition. Cutting heroin with fentanyl causes the nervous and respiratory systems to decelerate more so than heroin alone, resulting in addicts who simply stop breathing[27]. In a bizarre twist, addicts flock to dealers whose product results in overdoses, believing it to the best, most powerful available.

Hospital and First Responder/EMS Data

Adam Pomerleau, M.D., Assistant Professor of Emergency Medicine, Emory University and Assistant Medical Director of the Georgia Poison Center provided data and insight concerning the increase in heroin overdose cases at Grady Hospital since 2012. His data appear in Table 1 below.

Table 1. Heroin Overdoses, Grady Hospital ED, 2012 – 2015.

Year	Poisoning by Heroin (ICD-9 code 965.01)
2012	80
2013	96
2014	126
2015 (January – May)	76
Total	378

Dr. Pomerleau further indicated that these numbers reflect the cases in which the Emergency Department (ED) physician lists heroin poisoning specifically, which he believes is likely an underrepresentation of the total heroin-related cases seen in the Emergency Department. For instance, Dr. Pomerleau noted that some physicians might assign a diagnosis of "drug overdose" or "opiate overdose", rather than the specific diagnosis of heroin overdose. That issue notwithstanding, Dr. Pomerleau reports that there exists a clear upward trend, especially since the second half of 2014. The projected total for 2015 would be 182 heroin overdose cases, calculated assuming a constant number of cases per month of 15.2 (76 cases in the first five months of the year equals 15.2 cases per month, January through May of 2015). This would represent almost twice the number of heroin-related overdoses seen at Grady just two years ago.

John Patka, Pharm.D., BCPS, Clinical Pharmacy Specialist, Emergency Medicine Department of Pharmacy and Drug Information, Grady Health System, provided data regarding the number of naloxone (trade name: Narcan) administrations in the Grady ED between 2013 and 2015. The data appear in Table 2, below.

Table 2. Naloxone administrations, Grady Hospital ED, 2013 – 2015.

Year	Number of Naloxone Administrations
2013	440
2014	391
2015 (through 12/12/15)	371

Projected outward, the total for 2015 would be 385, slightly lower than the total for 2014. In contrast to the increasing number of heroin cases seen in the Grady ED, the downward trend of naloxone administrations could mean that first responders are administering naloxone more frequently in the field, obviating the need for naloxone administration once patients arrive at the hospital. Dr. Patka noted that less serious patients who receive naloxone prior to arriving at Grady are not usually re-dosed with naloxone after arriving at the ED. Therefore the above numbers may only represent more serious opiate exposures.

Staff at Northside Hospital - Forsyth indicated that at present there is no way to track heroin-related cases in their system, as heroin cases show up simply as opiates on their drug screens. The only possible

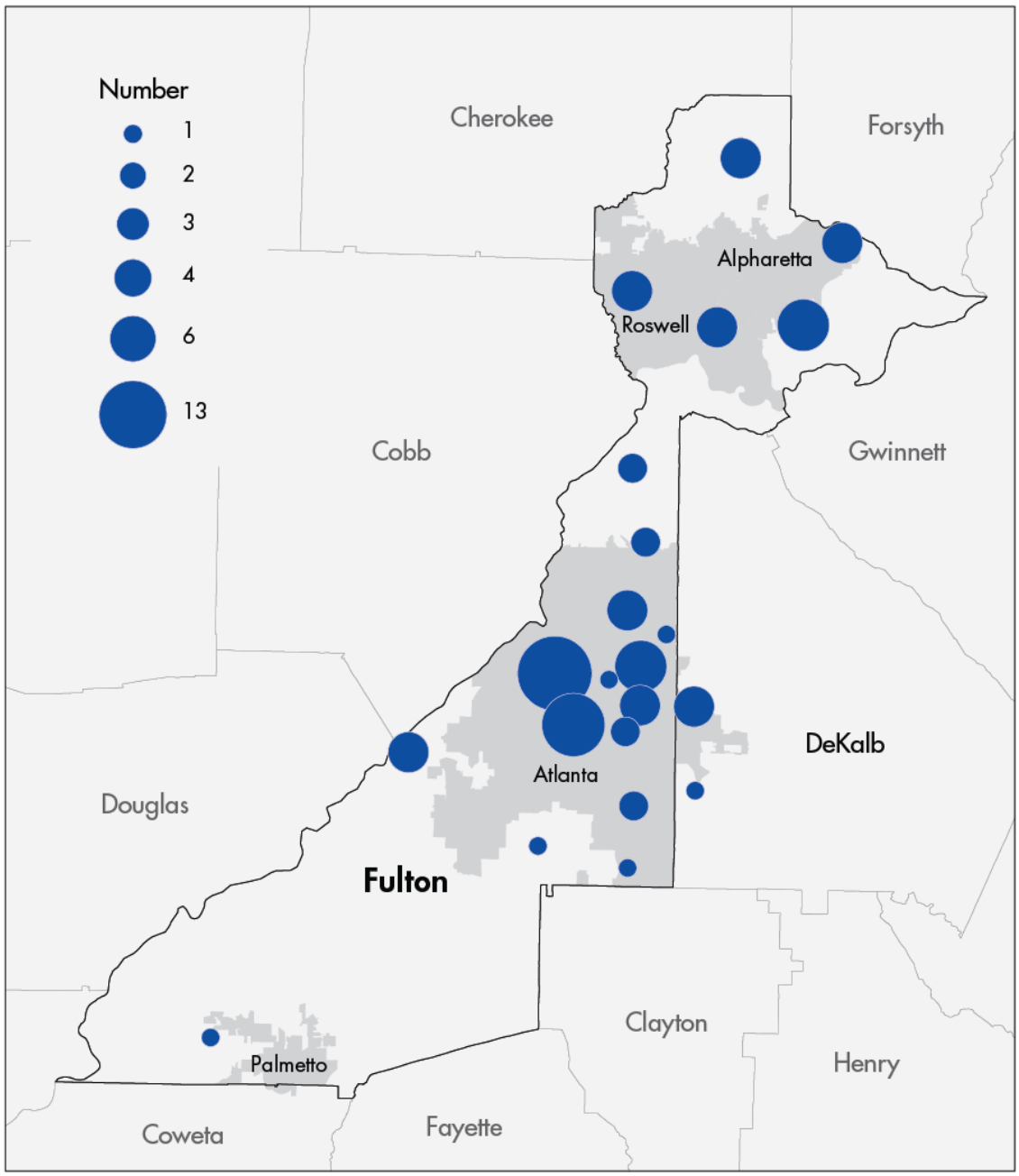
way they would know would be by statements made upon admission by friends or family members, and that information is neither routinely nor reliably recorded. This was thought to be the case at all Northside facilities, given their common Information Management Systems.

Drs. Pomerleau and Patka of Grady Hospital as well as Northside Hospital staff opine that first responders/Emergency Medical Services (EMS) would likely be the best source of data concerning naloxone administration, given that they are by definition likely to be the first to arrive on the scene and can make a determination regarding the nature of overdose. We interviewed a host of first responders/EMS actively working in North Fulton County, and while clearly these professionals carry and administer naloxone in the field, hard numbers as to the incidence, prevalence, and nature of these administrations is currently unavailable. Efforts currently underway by members of the United States Attorney's Office Heroin Task Force have found that this information is not currently being captured consistently or reliably by the Georgia Emergency Medical Services Information System (GEMSIS) in use at the Georgia Department of Public Health. Information from Melissa A. Pasquale, M.D. (Associate Medical Examiner at the Fulton County Medical Examiner Center and a member of the Heroin Task Force) notes that while reports from GEMSIS can be run to provide de-identified data regarding the number and demographic data from EMS responses to suspected drug overdoses across the state, the information provided may not allow the differentiation of suspected heroin versus other drug overdoses, due to the design of GEMSIS. For instance, while administration of naloxone may appear in the case documentation, it is not currently possible to search narrative fields for key words such as heroin. As of the date of this report, Dr. Pasquale is exploring a plan to bring representatives from the Georgia Department of Public Health onto the Heroin Task Force, with the aim being for that agency to assume leadership in generating and distributing the data on survived overdoses to interested parties on the Heroin Task Force. Dr. Pasquale is also hoping to work with the Department of Public Health to increase the functionality of GEMSIS so as to allow the system to generate accurate and reliable data on heroin overdoses, naloxone administration, whether the patient is transported to a hospital, and other key information that will assist the Task Force and relevant stakeholders in understanding the ongoing nature, extent, and responses to heroin overdoses as seen in the field by first responders.

Location of Death and Place of Residence

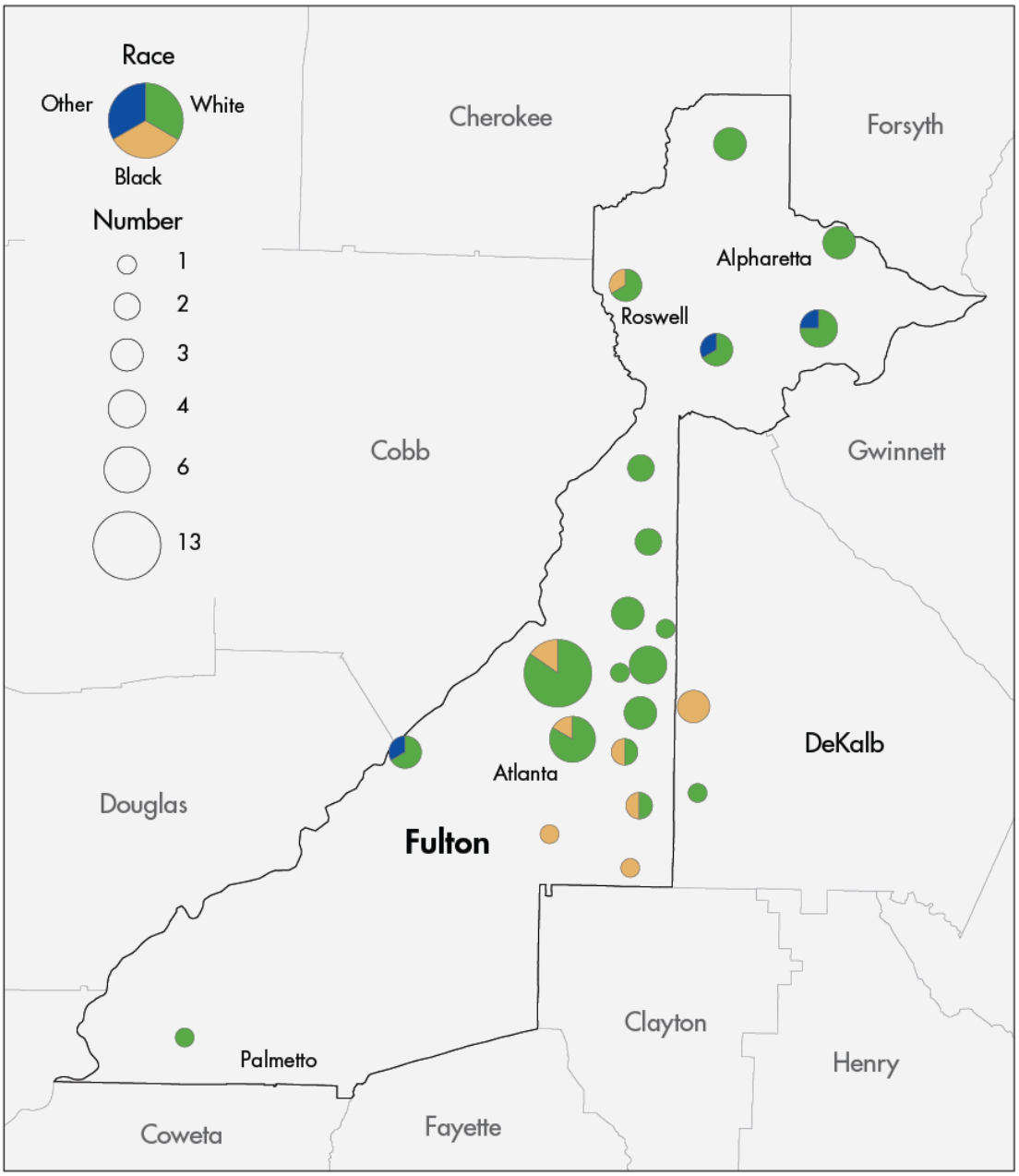
The location of death, as well as certain characteristics of the decedents such as place of residence, is also relevant to documenting the impact of heroin in north Fulton County. We received considerable assistance from the Carl Vinson Institute of Government at the University of Georgia in Athens, who produced for this report a variety of geocoded maps reflecting location data and decedent characteristics related to heroin overdoses in Fulton County. Map 1, below, provides the number of heroin-related overdoses by Zip Code, from January through October of 2015 (Maps and GIS analysis provided by the Carl Vinson Institute of Government, a Public Service and Outreach unit of the University of Georgia).

Map 1. Fulton County Heroin-Related Fatal Overdoses by Zip Code, January–October, 2015



As can be seen in the above map, the largest clusters occur in metropolitan Atlanta, specifically in the areas including and adjacent to the Bluff. Clusters are apparent however in north Fulton as well. Map 2, below, provides an additional layer of data to the map in the form of racial category, as indicated by pie chart clusters (Maps and GIS analysis provided by the Carl Vinson Institute of Government, a Public Service and Outreach unit of the University of Georgia).

Map 2. Fulton County Heroin-Related Fatal Overdoses
by Zip Code and Race, January–October, 2015



As is apparent in Map 2, whites are overwhelmingly represented among victims of heroin-related overdoses, as much within the city of Atlanta as in north Fulton. Keep in mind that these maps reflect location of death rather than from where the decedent hails. Anecdotal data from interviews as well as published accounts of heroin deaths in Georgia and elsewhere suggest that an appreciable portion of the deaths that are indicated as having occurred in and around the Bluff may very well involve persons who travelled to there from the suburbs to obtain heroin. The nature of addiction and withdrawal suggests that these decedents likely used very soon after obtaining heroin, and died soon thereafter.

In order to test this idea, we analyzed data provided by the Fulton County Medical Examiner's Office that included zip codes indicating where heroin overdose victims lived and died. The data analyzed included all heroin-related deaths in Fulton County between January 1, 2014 and October 22, 2015. Each death was coded so as to represent the locus between place of death and place of residence. Whereas place of death Zip Code was available for all 152 overdose deaths recorded during this period, that was not the case as regards place of residence. Some decedents were indicated as being homeless at time of death, some addresses were too vague to isolate their Zip Code, and others were indicated as residing outside of Georgia. Table 3, below, provides the data where place of residence Zip Code could be discerned.

Table 3. Relationship between Decedents' Place of Death and Place Residence.

Location	Number	Percent
Died in Atlanta	111	
From north Fulton	4	4%
From northern suburbs	20	18%

Location	Number	Percent
Died in north Fulton	34	
From north Fulton	24	71%
From northern suburbs	27	79%

The data concerning place of death and place of residence indicate that for the past two years the majority (73%) of heroin-related overdose deaths that occurred in Fulton County took place within Atlanta Zip Codes. Of those that died in Atlanta, 4% lived in north Fulton County, while 18%, or just under one in five, resided in the northern suburbs including north Fulton County. A total of 34 persons died of heroin overdoses in north Fulton County, with 71% of those having resided in north Fulton County and 79% having resided in the northern suburbs including north Fulton County. Taken together, these findings indicate that the majority of heroin deaths in Fulton County over the past two years have taken place within Atlanta itself, with fewer than 20% of the decedents hailing from the northern suburbs, including north Fulton. Almost one quarter (22%) of heroin-related deaths in Fulton County occur in north Fulton, with most of those decedents being from north Fulton County. This suggests that heroin users are more likely than not to die within close proximity to their place of residence, regardless of whether they lived in Atlanta or north Futon County. This also lends support to our finding that heroin availability is increasing in the suburbs, making it no longer necessary to drive into Atlanta to purchase heroin.

One manner in which place of residence did make a difference however concerns the age of overdose victims at the time of death. The average age of decedents from north Fulton County was 30 years, compared to an average age of 40 for decedents from Atlanta, This confirms our findings from other sources indicating the preponderance of young people from north Fulton who are using heroin. Two recent accounts illustrate this trend clearly. An article published in the May 14, 2015 issue of the Sarasota (FL) Herald Tribune[28] details the case of an 18-year-old Emory University undergraduate student from Georgia who, along with another college student, died of a heroin overdose while visiting

friends at a Florida college. Sarasota's chief medical examiner is quoted in the article as saying that the Sarasota area is experiencing an ongoing "epidemic or explosion" of overdose deaths from heroin and fentanyl. Closer to home a recent Forsyth Herald website story entitled "Heroin: Lethal, cheap, and in the suburbs[29]" focused on the current resurgence of heroin in north Fulton county, especially among young people. Quoting from the article, "In 2014 in Alpharetta, Roswell, Johns Creek and Sandy Springs, there were 23 overdose deaths directly caused by heroin, heroin laced with the drug fentanyl or heroin combined with other drug use. Of those deaths, males accounted for 74%, and nearly two-thirds involved those under the age of 30."

From the Bluff to the Suburbs: The Changing Heroin Marketplace

Historically, an area of Atlanta known as "the Bluff" has been the primary marketplace for heroin sales in the metropolitan Atlanta area. The Bluff is a section of the English Avenue and Vine City neighborhoods, and has been a high crime area for quite some time. A story entitled "Broadcast from the Bluff: Atlanta's open-air heroin supermarket[30]" recounts the story of WABE-FM reporter Jim Burress' experience in the Bluff. Burress first encountered the Bluff back in 2011, as a result of accidentally driving through the neighborhood while on a reporting assignment. According to the article, "drug dealers began chasing his car, elbowing each other for first crack at the new customer." Burress says entering into the Bluff "is like driving into another country…it's like night and day…it's unlike anything I've ever seen: the dire conditions, the homeless everywhere, the sense of hopelessness. It's very strange to drive one block and everything is suddenly very different." A Creative Loafing piece by Mr. Burress[31] documents his interview with a 59-year-old resident of the Bluff who buys and sells drugs there. The resident describes the Bluff in the following manner:

> "Heroin, cocaine, speedball. It's real easy to get. Every corner. Woman or a man, it doesn't matter. Everybody you see out there, that's what they doing. That's why they're in the area. You'd [to reporter] look out of place here. Most of the whites who come through, we know they're coming to buy dope. The best thing, if I ain't got no heroin to do, and I know you're on the way to get it, stop you, you'll pay me for getting it for you. Sometimes you'd give me $20. Most of the white people come through, they'll say, "I've got $50."
>
> People who come through buying [don't live in the neighborhood]. But you have a lot of people who came over and got stuck. What I mean when I say get stuck, I mean the Bluff will suck you in. You come through here and ride through, I meet my partner, say come on and say let's go get high. We start getting high. Next thing I know I'm spending everything I got. I'm pawning my car, pawning my jewelry, pawning my watches. Then next thing I know I ain't got no more money. I'm stuck in the Bluff. Ain't got no way out. So the Bluff will suck you in."

While the Bluff remains a locus for the open-air heroin market, efforts directed at changing this are currently being spearheaded by a coalition led by the acting US Attorney for Atlanta, John Horn. These efforts include hosting an Atlanta Heroin Summit, convening a heroin study group/task force, and directing a number of innovative law enforcement efforts at the Bluff in an attempt to eradicate the heroin market and improve the plight of residents of these neighborhoods.

Numerous persons interviewed noted that while the Bluff remains a reliable source of heroin in the Atlanta area, it is no longer the only local source of heroin. Specifically, enterprising dealers have set up shop in the northern suburbs, including north Fulton County. Rather than having their customers come to them, dealers have gone to where the customers live, as evidenced by recent busts of heroin distributors in Cobb County and north Fulton County. In June of 2015 a Cobb County grand jury indicted 13 gang members and associates and a number of customers, charging them with operating a large heroin and methamphetamine distribution ring through a Tattoo parlor located on Cobb Parkway[32]. In Fulton County, an apartment complex in Sandy Springs was serving as a distribution center for the northern suburbs, until it was broken up by a consortium of law enforcement agencies in May, 2015[33]. We know for instance that the children of two of the parents we interviewed used heroin that was purchased in Marietta – Chelsea Bennett and Davis Owen. These two lost their lives on the very same day, suggesting that they may have used the same dealer or at the very least, used heroin from the same batch.

Numerous persons interviewed noted that the Bluff is no longer the only local source of heroin. Specifically, enterprising dealers have set up shop in the northern suburbs, including north Fulton County. Rather than having their customers come to them, dealers have gone to where the customers live, as evidenced by recent busts of heroin distributors in Cobb County and north Fulton County.

Taking a page from pizza and sandwich shops, heroin dealers have also been known to make home deliveries. Often the dealers live and work out of extended stay motels from which they sell their wares and use as stash houses while they provide home delivery of heroin.

We attempted to further explore the issues regarding documented drug sales and possession cases by exploring arrest and disposition data. Unfortunately at present there exists no means of reliably differentiating cases involving heroin from cases involving other narcotics. Similar therefore to the above-described first responder/EMS data, it will be important to establish within law enforcement data a standard means by which heroin cases can be identified and tracked consistently over time.

State of the Problem: Interviews with Fulton County Law Enforcement

A general consensus has emerged among Police Chiefs in north Fulton County that heroin has become their most serious drug problem. South Fulton County Police Chiefs are similarly concerned about the rise in heroin use in the north suburban arc of the Metro Atlanta region, but have not uniformly seen a rise in heroin use in their respective jurisdictions. Most jurisdictions agreed that the rise in heroin use is most prevalent in Alpharetta and Johns Creek. While the most common drug of choice remains

marijuana, heroin use is on the rise. Some Police Chiefs expressed concern that the general public remains in denial about the extent of the problem that heroin poses to their communities.

According to Captain Will Merrill and Lieutenant Health Holcomb of the Alpharetta Department of Public Safety, heroin is currently their most serious drug problem, with the number of heroin-related overdoses and deaths at an all-time high. They see the issue as one requiring a multi-faceted approach, rather than one involving law enforcement alone. Ed Densmore, Chief of the Johns Creek Police Department, references the significant heroin problem in his community and states further that "nobody wants to face the issue that it is here. We're in denial, as if we've stuck our head in the sand. It's here. Whether you respond to one death or 20 deaths it's a death and it is totally preventable, if people would accept that it is here. I have been doing this for twenty-something years, and I haven't seen heroin to the extent that is present today." Gary George of the Alpharetta Police Department, indicates that "Heroin use has ramped up in the past two years. Closer to six years ago, we started seeing white females overdose, typically a boyfriend would administer it. Heroin use is a real issue, a real problem that has escalated. I attribute so much of it to the fact that north Fulton County is such an affluent community. North Fulton youth have a lot of money and there seems to be no fear of heroin; they don't realize how bad and dangerous it is."

"North Fulton youth have a lot of money and there seems to be no fear of heroin; they don't realize how bad and dangerous it is."

While use of heroin is clearly acknowledged as a major problem, there seems to be less of a consensus as to whether the north Fulton County jurisdictions are becoming major heroin distribution centers. Some Police Chiefs noted that there are heroin distribution centers in north Fulton jurisdictions, but other Police Chiefs maintained that an area commonly known as "the Bluff" in Atlanta remains the most prominent distribution center. Richard Doyle, Director of Operations for the Forsyth County Police Department stated that people "used to have to go under a bridge to get heroin. Now the dealers come out to the suburbs and rent hotel rooms. Kids don't have to go to the Bluff. Dealers are renting rooms in north Fulton, and kids can come and get it. We've made several big busts." Sergeant Trevor Primo of the City of Roswell Police Department recalled that since the 2000s, people were getting their heroin in the Bluff. Over the past three years however, "our people buy in Roswell, Sandy Springs and Alpharetta, with larger distribution centers than the Bluff. It is safer; consumers don't have to worry about getting robbed. Folks come in from East Cobb all the way up to the Forsyth County line. We are tracking people delivering heroin into distribution centers in hotels on a regular basis."

According to Captain Will Merrill and Lieutenant Health Holcomb of the Alpharetta Department of Public Safety, heroin is currently their most serious drug problem, with the amount of heroin-related overdoses and deaths at an all-time high.

When asked about factors that could explain the rise in heroin use in north Fulton County, many local law enforcement officials believe that the rise in heroin use is tied to stricter regulation of prescription drugs. Since the price of prescription drugs has risen dramatically, prescription drug abusers have moved to heroin, which is significantly cheaper than prescription opioids. Many law enforcement leaders asserted that heroin users are often initially exposed to opiates through medical procedures that require

significant pain management. Other members of the law enforcement community believe that their jurisdictions are specifically targeted because of their relative affluence relative to the rest of Metro Atlanta.

Given the increased use of heroin among the youth in north Fulton County, a number of officials were asked to comment on the degree to which heroin has infiltrated the schools. Chief Keith Meadows of the College Park Police Department only recently left his previous post in the Atlanta Police Department. Among Chief Meadows' other responsibilities in his previous position was overseeing the police force at the Atlanta Public Schools. Chief Meadows reported that they were finding heroin in a particular public High School in the northern part of the city. He noted that consistent drug busts occurred at that school, with heroin being found inside vehicles in the parking lot. According to Chief Meadows, the supplier for a lot of those kids lived in Sandy Springs. Regarding the potential spread of the problem, Chief Meadows stated that "I know the problem is migrating its way south, I anticipate heroin will be coming south, it behooves us to examine the measures that the north Fulton County are taking to combat heroin." Christopher Matthews, Assistant Superintendent for Fulton County Schools, reports that the school police and administration in his school system are not finding heroin in their schools, and further that students don't get caught possessing heroin at school. He indicates however that "the buzz on street is it is a very cheap hit." He notes that the predominant use tends to be in the northern regions of the county, the Johns Creek and Alpharetta areas in particular.

The schools do seem to take an active role in providing drug prevention as a regular part of the curriculum. Superintendent Matthews referenced Ryan Stringfield of Pathways to Life, whose sole focus is addressing drug issues in north Fulton County. Mr. Stringfield is being called in to schools to address specific prevention issues. Superintendent Matthews noted that Fulton County Schools provide drug prevention curricula beginning in the ninth grade, addressing topics including drug awareness, drug abuse prevention, and parent education programs.

The Seduction of Heroin

When compared to opioid pain relievers (OPRs), heroin is significantly less expensive, in some cases costing as little as one-tenth as much as a single OPR pill. The increased purity of today's heroin also means that it can be snorted or smoked, as intravenous administration remains an initial barrier to many. One issue in transitioning from OPRs to heroin however is that heroin is wildly unpredictable, due to wide variations in purity and the broad range of substances such as fentanyl with which it is "cut" – mixed with other substances. Another difference concerns the effects of heroin as compared to those of OPRs. While OPRs provide a sense of well-being and euphoria, the descriptions of the effects of heroin place it in an entirely different class of experience. One patient interviewed for the Atlantic article, upon trying heroin for the first time following a decade of marijuana and LSD abuse, stated that "the first time I did it, my brain and body said, this is what you've been missing your whole life." In a similar vein, Dr. Merrill Norton of

One former addict stated of heroin that "It's like warm golden sunshine flowing through your veins. It makes everything OK, and it makes everything beautiful, and it makes anything seem within your reach. Then you come down. And need more. And will do anything to get it."

the University of Georgia School of Pharmacy relates the following quote from a heroin addict:

> "It's like warm golden sunshine flowing through your veins. It makes everything OK, and it makes everything beautiful, and it makes anything seem within your reach. Then you come down. And need more. And will do anything to get it…Then at some point that is indefinable and inevitable, it turns on you. It grows fangs and claws, and it wants your soul. It lies to you and tells you that you aren't doing anything wrong. It makes you feel like you would rather die than spend another second without it. Then before you know it, your days are consumed with waking up dry heaving and so sick you want to die... Once you finally get a first hit of the day, then it's time to start really looking for something to get you by. You lie, scam, break the law, and sell your soul to get just barely enough to keep you out of bed. You take that last shot of the day, and become filled with dread and exhaustion thinking how you'll manage it tomorrow. Then you go to bed, only to wake up a few hours later because your muscles are twitching and cramping. You fight with yourself for ten minutes about whether or not to take that small hit you saved for morning, inevitably take it, and then wake up a few hours later, only to start all over again. And you'd rather die than live any other way."

The body contains natural chemicals that produce similar effects as opioid drugs, like heroin. The main effects of these substances are pain relief and pleasure. Pain alleviation is achieved through intimate connections between opioid substances and receptors in the body. This pain alleviation is not limited to physical pain. It allows for relief from unwanted emotions and a sense of detachment. Once heroin enters the brain, it is converted to morphine and binds rapidly to opioid receptors[34,34,36].

Users typically report feeling a surge of pleasurable sensation—a "rush." The intensity of the rush is a function of the amount and purity of drug taken and how rapidly the drug enters the brain and binds to the opioid receptors. With heroin, the rush is usually accompanied by a warm flushing of the skin, dry mouth, and a heavy feeling in the extremities, which may be accompanied by nausea, vomiting, and severe itching. After the initial effects, users usually experience drowsiness for several hours; mental function is clouded; heart function slows; and breathing is also severely slowed, sometimes enough to be life-threatening. Slowed breathing can also lead to coma and permanent brain damage[37,38].

The Impact of the Heroin Problem

As the above data indicates, the increasingly serious heroin problem in north Fulton County impacts the lives of individuals, families, and the community as a whole. These impacts are felt most acutely by those friends and family members who have lost loved ones to heroin overdoses and those who have seen their families devastated by heroin-related behaviors. What follows are summaries of interviews conducted with a number of individuals impacted most severely by heroin and the losses it has caused in their lives.

Rita and Chelsea Bennett's Story:
Chelsea Bennett was the Bennett's youngest child and their only daughter. At the time of her passing at age 20 in March of 2014, Chelsea was pursuing her college education, working full time, and pursuing the arts. Her parents described her as vibrant, multi-talented, and as having a heart for the lost and struggling. Since a very young age Chelsea had served the needy and forgotten, as she wanted to convey to people that they mattered, and that she cared about them. Her parents noted that Chelsea was not a

habitual drug user, and that in the year prior to her passing had tried heroin and subsequently self-referred for counseling to ensure that she didn't get caught up with drug abusing behaviors. Once she completed her counseling, she spoke of her time in counseling with her friends in hopes that if any had begun abusing drugs, that they should seek counseling and find strategies to help them.

It was Chelsea's desire to help those who were hurting or unable to help themselves that led her to reach out to a particular friend who was struggling with serious substance abuse issues. Chelsea had at one point severed her relationship with this young man because of his drug use. When his parents called Chelsea in late January 2014 to ask if she would attend an AA meeting in support of their son who had recently completed drug rehab and was getting his life together, she did so. Even as the friend's parents were asking that Chelsea go with them to support their child, they knew that he had been arrested in December, 2013 for drug possession, and arrested again in January 2014 for drug possession and distribution – arrests of which Chelsea was unaware. All she knew is that her friend seemed to be doing better and his parents were asking for her help. On March 3rd when Chelsea and her troubled friend were together with another male friend, she was injected with heroin. She was likely confident that if something went wrong, the young man whom she had supported at AA only weeks before would not let anything happen to her. Tragically, that was not the case. Chelsea had an adverse reaction to the heroin and began to overdose almost immediately. Neither of the young men did anything to either render or summon aid for Chelsea when she needed it most, instead spending the next ten hours waiting for her to awaken and attempting to destroy evidence.

One of the young men pleaded guilty in December 2014 to a single count of concealing the death of another. He was sentenced to serve five years' probation. A third man, who admitted selling the heroin to Chelsea's friend, pleaded guilty to distribution of heroin and was sentenced to serve four years in prison to be followed by one year in a rehab center. After pleading guilty, Chelsea's friend was sentenced to 20 years to serve 12 in prison with the balance on probation. His sentencing occurred the very same week that the Georgia Legislature passed what is commonly referred to as a "Good Samaritan" law, which grants immunity to drug users who call 911 when one of their friends overdoses.

Speaking of Chelsea's absence in their home, Mrs. Bennett stated that "There is a deadly silence, and I know I won't hear her voice again. Not today, not tomorrow, not until I leave this earth. I cry for the life Chelsea deserved to live, for the dreams she can't pursue, for the things I can't say or do with her. I will never recover from the loss of my daughter…I can't recover, I can't be fixed. I am forever broken."

Kate and Daniel Boccia's Story:

Kate Boccia's story with her son Daniel began in his early teens, when he started to rebel. Daniel started getting into more trouble during his eighth grade year. In retrospect, Ms. Boccia noted that Daniel showed early signs of becoming an addict. He began missing more school during high school, demonstrating evidence of drinking and drug use. He would have money that he said he'd earned mowing lawns, but his parents knew he wasn't mowing lawns and that he never did. Daniel got way off track in his senior year and was in jeopardy of not graduating. Kate went to school officials to express her concerns regarding Daniel's behavior, which she indicated were not taken seriously. Just before dropping out of school Daniel attended an alternative school, at which point his use of marijuana intensified and he was spending much of his time with unhealthy peers. It was around this same time that Daniel had his wisdom teeth removed, and was prescribed Percocet to manage the pain. Years later he told his mother that he took the 30 Percocet pills that were prescribed in just three days, and that he loved how it made him feel.

In 2010, Daniel was spending more time with some bad influences, one of whom was using heroin. This same year he left home to attend an out-of-state technical school. Daniel's pursuit of a healthy interest presented both a sense of hope and relief to Daniel's parents, as they had been constantly battling with him at home. Daniel only stayed away for about two months however. His landlord had called to say that Daniel was stealing his Oxycontin, and that he kicked Daniel out of the house. All through 2011 Daniel was abusing prescription drugs, and he would try to get off them, would experience withdrawal every few weeks, and then would relapse. Towards the end of 2011 Daniel was arrested, and was facing a mandatory minimum. All through 2012 he was very desperate, and it was during this time that he transitioned to heroin. Daniel later told his mother that he started using IV heroin in March 2012 – he just didn't care at that time, and considered himself to be a failure. He was getting "drive by drop offs" of heroin. Daniel overdosed in August, 2012; his parents came home to find him in the bathroom, passed out, with a needle in his arm. The last time Daniel used heroin was in October 2012, right before his trial. Daniel was convicted, and received a 15-year sentence. When Mrs. Boscia first saw Daniel in prison in April, 2013, she did not even recognize him due to his being sober. At the time of our interview in August, 2015 Daniel had been in prison for over two years. According to his mother, the change in Daniel occasioned by his sobriety is striking, stating that "He is now strong, bright eyed. It is really fascinating. He now has a love of family, a certain humility. Now I've gotten my son back at 24."

Dena and Brandon Castellon's Story:

Dena Castellon's son Brandon is 28 years old, single with no children. She characterized him as a caring, hard-working young man with strong family support. He is a high school graduate with a little over two years of college credits. Brandon has had addiction issues since his senior year of high school. Brandon became addicted to heroin in 2007, with periods of use interspersed with long periods of staying clean. He was able to abstain from heroin use for the most part during his two years at Berry College. He relapsed on heroin following two years of clean time. He participated in treatment, did well, and then resumed use, followed by another stint in rehab. Brandon relapsed again in 2010 and agreed to attend a long-term residential treatment program in December of 2010. He left the program in April 2011, two months before completion of the six-month program. His next relapse lasted several weeks, and got progressively worse to the point that he was abusing alcohol, bath salts, meth, and heroin.

Brandon committed his first criminal offense in May 2011, followed by another less than two weeks later. In both incidents, Brandon stole a car and cash to buy heroin. During the first incident in Fulton County he had a small knife as a weapon, while during the second incident in Cobb County he had a hammer in his pocket. He was persuaded to check into Ridgeview for detox twice during that period (before and after the May 11 incident), but initially refused to go back into treatment, saying he was not ready. His mother noted that "He was out of his head – I don't know what in the world he was thinking…he's never done anything even remotely like this before". Brandon's only previous contact with law enforcement involved an incident a few weeks before the above-described incidents in which he had gone to the family home, taken his own golf clubs and computer, and called a cab to take him to a pawn shop. After selling the items he called his mother, as the amount he received in exchange for the items was not even enough to pay for the cab fare back home. The cab driver called the police, but declined to press charges. Mrs. Castellon opined that if the cab driver had pressed charges, Brandon's descent may have been halted, and therefore he may have avoided the later charges. Brandon is currently serving a 12-year sentence in the Georgia Department of Corrections, having received the minimum mandatory sentence for armed robbery. His mother reports that he has experienced a "wake-up call" as a result of his incarceration.

Missy and Davis Owen's story:
Davis Owen was born on April 27th, 1993, and attended private preschool prior to entering kindergarten at his local public school. Moving into his teenage years, Davis demonstrated a wide range of abilities and interests, playing baseball, serving as yearbook Editor-In-Chief, and being elected to serve as the student government president in both his junior and senior years. He entered Kennesaw State University upon graduation, having received numerous scholarships. It was during the summer after Davis graduated from high school however that a number of things occurred that caused Davis to experience significant stress, resulting in a personal crisis in his life. Davis' mother described how, in an effort to get some sleep, Davis went to the family medicine cabinet where he found an old opiate prescription and ingested some of the pills. This was his entry into prescription drug abuse, which ultimately led to a deadly heroin addiction.

Mrs. Owen noted that she and her husband first became aware of how serious things had become when it became clear that Davis had pawned some family heirlooms in order to buy drugs. Davis immediately began seeing a counselor, and then a month or so later they learned that Davis had stolen money and prescription drugs from a friend's house. Mr. and Mrs. Owen convinced Davis that he needed to go to drug treatment. Following three weeks of rehab Davis was admitted to an Intensive Outpatient Program, which he began the day after being discharged from rehab. Thirty-four days following his discharge from rehab, Davis left the house to attend a meeting, and his parents never saw him alive again. He was found dead in his vehicle in a restaurant parking lot, with a needle and heroin still beside him." Missy Owen, Davis' mother, has turned her grief into a driving activism. She founded the Davis Direction Foundation, the mission of which is as follows:

> "*The mission of the Davis Direction Foundation is to serve as a role model in our community in order to become a national resource for Opiate/Heroin Addiction Awareness and Change. We will strive to remove the outdated stigma of opiate addicts and innovatively revamp the rehabilitation process to appropriately address the disease of Opiate/Heroin Addiction as one of the most severe forms of addiction. We will provide direct assistance and services to individuals, family members, or others at risk of experiencing an opioid related overdose including but not limited to providing opioid antagonists*[39]."

Chris Zollman's story:
Chris Zollman is a 25-year-old former heroin addict who has been clean for three years. At present he owns and operates a halfway house for addicts either just coming out of treatment or who are coming in right off the street. Known as a transitional sober living house, Mr. Zollman opened the facility in early 2015. Prior to opening his own halfway house Mr. Zollman worked for Lifeline Atlanta, a somewhat similar facility.

At 15 years of age Mr. Zollman became addicted to opiate painkillers following a legitimate prescription for opioid painkillers resulting from injuries he sustained in an automobile accident. Mr. Zollman described very much enjoying how the opiates made him feel, and that he wanted more. Once the prescription ran out, he began acquiring CPDs on the street. Very soon thereafter he started selling drugs himself, noting that he "got sucked into the whole lifestyle really quick". Mr. Zollman graduated from high school and began attending Georgia State University (GSU) in Atlanta, noting that the campus presented a very receptive market for drugs. He was arrested and charged with distribution, and at the time of his arrest the police seized a significant amount of money that he had in his possession.

When asked where he obtained the prescription opiates, Mr. Zollman noted that this was never much of a challenge, in that he had access to “dirty pharmacists”. Once he began using heroin, he found that he really liked it. He began by snorting heroin for about a month, after which time he began to administer the drug intravenously. He described himself as having been among “the first wave of heroin users in Atlanta…lots of people were still using [prescription opioids], as they were still available”. Mr. Zollman had told himself he would never use a needle, and that in fact he looked down on IV drug users, and upon seeing one he would think to himself, “Dude, get your life together". Mr. Zollman noted that he would get extremely sick during periods of withdrawal, noting further that while he wanted to be clean, he just could not do it on his own. By the time Mr. Zollman finally got clean in 2012, he had been to jail on numerous occasions, going through withdrawal and detoxing each time. He had also overdosed on nine occasions, being brought back each time through administration of Narcan. He had also been charged with DUI on a number of occasions. At the age of 23, and facing serious prison time, Mr. Zollman noted that he was finally sick of the same old thing – losing jobs, losing friends, getting arrested, going to jail. Referring to the toll it was taking on his life, Mr. Zollman noted that “it is a full time job getting high.” Rather than enter prison Mr. Zollman completed a 30-day drug rehab program, followed by six months in a halfway house. Mr. Zollman described rehab as very hard, in that to be successful in rehab demanded a total lifestyle change. Constant urges to get high were also difficult to deal with, with Mr. Zollman noting that “You just crave [heroin] and it is also so readily available.”

Mr. Zollman has had over 40 friends die of overdoses, with one having died of an overdose in the week prior to our interview. He stated, “People are dying because the dope is cut with fentanyl. Lots of times the heroin is mixed with Xanax as well. Lots of times people also overdose after a period of being clean, using the same dose as before and not realizing they’ve lost their tolerance.” When asked what it was like to be around other addicts in his halfway house, Mr. Zollman noted that “it is not difficult to be around addicts…it is encouraging to see people change.” He and some others began offering Heroin Anonymous about three years ago, and they now have about 200 people in attendance at every meeting. Mr. Zollman noted further, “Ultimately, it comes down to how badly [addicts] really want it.” While it pains him greatly each time he hears of a friend overdosing, Mr. Zollman noted that it is good to know that some of his friends from when he was using are still alive.

Trajectories to Heroin and the Typical Heroin Abuser

Ewell Hardman, M.Div., MAC, of the Summit Counseling Center in Johns Creek, has been treating people with addictive disorders in the Atlanta area for over 25 years. Mr. Hardman is both a Master Addiction Counselor and a Certified Clinical Supervisor. When asked about the trajectory to heroin abuse evident in those whom he treats, Mr. Hardman notes that abusers hardly ever start with heroin. Users most often began with something else, and end up with heroin. He notes that as of late 2013, the typical trajectory changed. Prior to that time, use began with marijuana mostly, some alcohol. Now the first use is more likely to involve a Controlled Prescription Drug (CPD) from the medicine cabinet at home, but being used for recreational use. Others, in particular school athletes, have reported to him that some coaches leave a bottle of opiate pain relievers (OPRs) out in the open, stating that “You can play hurt if you have two or three Lortabs in your system.” This sets youth up for the next level, as it is only the beginning. In addition to the medicine cabinet however, CPDs can easily be purchased illicitly.

Once the opioid use begins, typically with a 30-day supply, youth get very easily attached to the opioids. Many become physically dependent after three months. It is very difficult to come off these drugs, as people don't like or can't tolerate the withdrawal. Doctors are setting people up for dependency. All opioid users eventually become physically dependent if the OPRs are taken for a long enough period of time. That is different from addiction, which involves secret and/or illicit and/or increased use. According to Mr. Hardman, "you then get tolerance, and they get cravings and need to use more to get the same effect. That is followed by loss of control, theft, and secrecy – the hallmarks of full-blown addiction." If the newly opioid-addicted can't afford and/or acquire OPRs, they go to heroin, which is less costly and surprisingly widely available. Young people don't fear using the needle as they once did. When they do, they sometimes ask their friends to inject them, especially girls, who will ask boyfriends. Injection use has increased in his experience, and as borne out by national trends chronicled in the federal Treatment Episode Data Set (TEDS), in the period from 2000 – 2010[40].

North Fulton County treatment provider Ewell Hardman noted that abusers hardly ever start with heroin. Prior to late 2013, use began with marijuana mostly, some alcohol. Now the first use is more likely to involve a Controlled Prescription Drug (CPD) from the medicine cabinet at home, but being used for recreational use.

When asked about the demographics of the population he treats for heroin addiction, Mr. Hardman has had no African Americans come in for treatment for heroin addiction in years. Those who do come in for treatment are most often white males in their twenties, from middle and upper-class backgrounds. He opines that part of the problem in these homes is that parents don't understand the role of the medicine cabinet. Also, heroin use is hard to detect in the very early stages. The indicators become easily identifiable only later, when they are addicted and numbed out. The addict's value system has changed, and there is no longer any motivation to do anything other than use. The early stages are hard to detect – no odor, no fear of being detected by urine screens.

Dr. Merrill Norton, Pharm.D., NCAC II, CCS, CCDP-D, is a Clinical Associate Professor in the College of Pharmacy at the University of Georgia, with his areas of concentration including psychopharmacology and addiction pharmacy. Dr. Norton has worked with impaired pharmacists and other health care professionals for over 25 years and has also served as the president of the Georgia Addiction Counselors Association. He is a member of the Georgia Pharmacy Association and the American Pharmacy Association. Dr. Norton notes that heroin is different from a biological standpoint from other drugs of abuse in that it very rapidly crosses the blood-brain barrier and is metabolized into morphine very quickly. Heroin impacts the central nervous system (CNS) receptors, specifically the Kappa, Delta, and Mu receptors. The result is a feeling of intense euphoria that figuratively "lifts the person off the ground". The effect on the Delta receptor is calming; a sense of peace that comes along with the euphoria. The period of withdrawal is months long, and horrible. In order of effect the Mu receptor is hit first, then Kappa, then Delta – heroin users are still "jonesing" three weeks after emerging from detox. Heroin is much different than any other opiate in this respect. Morphine is only administered in the hospital or clinic - it is very seductive, it is really tough to get off heroin. Making things more difficult is the fact that the potency of heroin has also increased significantly in the past decade.

Dr. Norton notes regional differences in regards to how youth get involved with heroin. For instance, in Athens, marijuana is most often the entry drug. According to Dr. Norton, "the brain will choose the drug of choice similar to itself." For example, it is uncommon for users to transition from stimulants like cocaine to depressants like heroin. He projects that as hydrocodone gets harder to acquire (based on a recent change in its schedule classification), we will see more heroin. Dr. Norton noted that he often sees a progression in users from Hydrocodone to Oxycontin to heroin. In his treatment population, he sees a larger percentage of Caucasians, who start out as highly functional, educated people. They have been overrun with these types of cases in Georgia.

Dr. Norton states that the increased accessibility of heroin has facilitated the transition from OPRs and marijuana to heroin. If heroin is available on the street, people obviously have increased access to it. Many times they go from one to another prescription drug, as they continue to regard intravenous (IV) drug use as a big step or barrier. It is a trajectory – one which often involves their peer group. It is more than going straight from a prescription to cope with removal of wisdom teeth to heroin. The trajectory to heroin addiction is often mediated by peer groups. According to Dr. Norton, millennials run as a group, with the specific group exhibiting a significant impact on each individual's behavior. The trajectory therefore involves social learning, oftentimes more so than the individualistic nature of substance abuse. The trajectory also involves a change in the route of administration (ROA), going from snorting or smoking to IV use. If they are smoking marijuana, it is not a big stretch to then smoke heroin. Next they go to snorting heroin, quickly develop tolerance, and progress to IV use.

Youth often get into heroin beginning with marijuana, then to abusing OPRs, and finally to heroin. Dr. Norton sees marijuana as a gateway drug, and expects that marijuana will be legal for recreational use in 40 states within the next ten years. He would like the federal government to switch marijuana from being classified as a C1 to a C2, so it effects can be studied and understood more fully. Regarding a possible nexus between marijuana and heroin, marijuana affects a number of different receptors such as the CB1 and CB2 receptors that are spread throughout the body. Peace, calm, relaxation, and euphoria follow. While the mechanisms are different, this is similar to heroin. The brain will seek something similar - which is heroin. This generation does not see marijuana as a drug, as previous generations have not defined alcohol as a drug.

> *According to Dr. Merrill Norton, "the brain will choose the drug of choice similar to itself."*

As regards CPD abuse, most people initially access it through friends or family members - there is access to a legitimate prescription, but it was often for someone else. Many will start out of the medicine cabinet. The volume has increased in terms of the prescriptions going from 30 pills to 360 to 480 pills.

As have other medical experts in Georgia, Dr. Norton also notes having seen recent increases in fentanyl cases. He indicates that fentanyl has been mixed with heroin since about 2006. Fentanyl is used in surgery, and metabolizes in the bloodstream within minutes - it blocks pain and also erases the memory of pain. Some variations of it are 400 times more powerful than morphine. Once it became available as a patch, it became much more popular, despite it being initially marketed only for opioid-tolerant folks. They didn't pay attention to this, and now it is in the general public. The clandestine chemists make fentanyl in powder form, and then mix it with heroin. Fentanyl is fairly easily synthesized, using readily available resources. Generally speaking, physicians don't know how potent it really is.

Dr. Norton notes that once tolerance to heroin develops and the pleasant effects are no longer as intense, so much of heroin use can be characterized as "chasing the dragon", which refers to efforts to recapture the sensations of that first use and to simultaneously avoid the intense and severe discomfort of withdrawal. People just don't understand how powerful heroin is - it does everything all at the same time, and the peacefulness is different from anything else. Dr. Norton refers to heroin as the Cadillac of drugs, and people rarely go back once they have begun using it. When compared to being under the influence of other drugs however, being high on opiates results in a greater degree of dysfunction. For example, stimulant use can increase productivity to a point, such as with the use of meth by roofers and construction workers. Opiate abusers are either high (often nodding off) or in withdrawal, both of which are debilitating.

According to Dr. Merrill Norton, people just don't understand how powerful heroin is - it does everything all at the same time, and the peacefulness is different from anything else. He refers to heroin as the Cadillac of drugs, and people rarely go back once they have begun using it.

The field of behavioral economics has lent additional evidence to the sway that heroin holds compared to other drugs of abuse. Research by Petry and Bickel (1998)[41] in a study of drug abusers found that while heroin price increases did reduce purchases of heroin, these reductions were proportionally less than the price increases, indicating what is referred to as an "inelastic demand" for heroin. Users will substitute other drugs for heroin when necessary, but the increased availability and low cost of heroin, combined with the nature of the high and the severity of withdrawal, together suggest that heroin users are more likely than other drug abusers to remain tied to their heroin habit, irrespective of market forces.

When asked to address coming trends, Dr. Norton noted that the legalization of marijuana has increased the demand for and acceptance of marijuana, in that those who didn't use it before are now more willing to experiment with it. He however believes that it will lead to an increased demand for all drugs. This will potentially result in a poly-drug epidemic, not just heroin. Referring to Georgia, Dr. Norton noted that there is a large variety of drugs of abuse available here, as the common routes for drug distribution are such that Georgia is in the center of the distribution process. He and his colleagues in the treatment community are seeing a corresponding increase in the number of people seeking help for addictive disorders. He sees very few single drug users, in that the treatment population is more likely to consist of polysubstance abusers.

Warning Signs for Heroin and OPR Abuse

Each of the parents and treatment providers interviewed was asked about warning signs that might be helpful for parents and others who suspect that they may have a friend or family member dealing with opioid/heroin abuse. The warning signs they indicated are as follows:

- Trouble early in adolescence, beginning with rebellion in middle school, then truancy and escalating issues in high school
- Spending time with peers and/or associates who abuse drugs and/or alcohol
- Finding the following items in bedrooms and/or bathrooms:
    - large sums of money with no explanation as to how it was acquired

    - bits of aluminum foil and/or plastic cling wrap
    - black smudges on the bathroom counter where a spoon has been placed
    - little baggies
- Being prescribed opioid painkillers
- Spending significant amounts of time behind locked doors in the bathroom or bedroom
- Neglect of appearance and/or poor hygiene
- Increase in the messiness of a child's bedroom and other areas of the home
- Nodding off
- Spending a lot of time in seclusion
- Any significant change from typical routines
- Finding significant quantities of anti-diarrhea medication, as one of the first signs of withdrawal is diarrhea
- An assenting attitude, just going along with everything – conformity, rather than apathy
- Cracked lips and dry mouth
- Pulling away from family and friends, except for their community of users
- Parents often don't want to acknowledge the obvious, and want to believe anything other than that their child is an addict - the denial is so strong, and in and of itself constitutes a warning sign
- Parents, as well as the affected youth, begin avoiding others who might confront the behavior

A list of additional warning signs regarding prescription opioid abuse have been compiled by Dr. Merrill Norton, and are as follows:

- Access to opioid painkillers, either through a legitimate prescription (more likely in older persons), recreational use of legitimately prescribed opioids, or acquisition of opioids via the internet or through illicit means
- Medical and dental professionals who are not fully aware of the dangers of CPDs and signs of their misuse, especially among youth
- Prior use of alcohol, tobacco, and other drugs that can serve as a gateway to CPD abuse
- Weak bonds and commitment to school
- Peer norms that encourage CPD misuse/abuse
- Familial norms that encourage CPD misuse/abuse
- Low perceived risk of harm

As painful as it is to see their children suffering from addiction, parents procuring the drugs for their children or helping them to score is certainly not the solution. Rather, it only perpetuates the disease and puts these youth at significantly increased risk of overdose and death.

Responses to the Heroin Problem

What can communities do?

One of the parents interviewed noted that for heroin/opiate addicts, there is only one way out of their addiction, and that is complete and total abstinence. She opined that recovering addicts need to remain

out of contact with anything that is not recovery-minded or focused for at least 18 months. She also noted the need to regard and support recovery in a similar fashion as we do treatment and recovery from cancer. This will of course involve removing the stigma of drug abuse and the moral overtones that so often characterize societal views regarding addiction. To this end, one parent noted that "Public efforts need to emphasize that families don't deserve shame, but instead need support. Don't be afraid that they will be ostracized." And as painful as it is to see their children suffering from addiction, procuring the drugs for them or helping them to score is certainly not the solution. Rather, it only perpetuates the disease and puts them at significantly increased risk of overdose and death.

Both parents and treatment providers emphasized the need for our education system to play a larger role in prevention and treatment efforts. Teachers in particular need to be aware of signs of abuse and addiction, as do the members of the community. One mother stated that "The drug doesn't know right from wrong, even though the kids do. They begin to feel like failures, and develop co-occurring disorders. We are ignoring the fact that this drug, rather than the kid, is the beast." Schools are not at all well-equipped to identify and deal with this problem. One of the treatment providers, Ewell Hardman of the Summit Counseling Center, noted that schools and school systems do not have a comprehensive strategy at present to address addiction. They need to establish relationships with public and private treatment providers to identify problems and refer students for further assessment and treatment if indicated.

Mr. Hardman of the Summit Counseling Center in reference to the heroin problem noted that there also exists a certain resistance and level of denial on the part of parents. Parental resistance keeps school administrators from tackling this head-on.

Parents and treatment providers alike bemoaned the relative paucity of publically funded, long-term treatment for addictions. Such treatment is available in the private sector for those that can afford it, but public options are lacking, even in areas where the scope of addiction is well-documented. One of the parents interviewed opined that insurance companies need to make treatment more readily available and affordable to addicts, especially for youth. The current focus on criminal justice reform was welcomed, as one aspect of these efforts often involves an increasing awareness of the role played by addiction in much of criminal behavior.

One of the parents we interviewed indicated a need for community-based prevention efforts as well as safe environments where teens and young adults can gather to support each other in living healthy, sober lifestyles. Parents also supported efforts to get large corporations in the metropolitan Atlanta area to acknowledge issues of drug abuse and addiction and to support their employees who are dealing with these issues. It necessarily impacts work performance via all the stress in homes where one or more family members is an addict. It was also thought that employers can help train their employees on what to look for in kids, the signs that their child might be abusing drugs and/or alcohol.

Mr. Hardman of the Summit Counseling Center noted that there also exists a certain resistance and level of denial on the part of parents. He advocates a comprehensive, thoughtful approach to addiction that promotes the health and well-being of students and youth as paramount. Parental resistance keeps school administrators from tackling this head-on. They need support in educating and dealing with parents to support a culture of recovery, not addiction. It actually represents a clash of cultures between

the sober culture and the abusing culture. For instance, there is a media-driven glamorization of "the heroin look" – which in part represents a denial of the real danger of heroin. Youth don't have good critical thinking skills, and therefore are easily seduced into thinking that heroin is fun and that it won't kill them. This glamorization quietly supports the abusing culture.

Dr. Merrill Norton describes a pattern of heroin use among college-age youth that begins with getting involved with heroin after high school. They can often sustain hidden use over five to ten years. They get medication-assisted treatment and manipulate their use of opioids and heroin. When they don't want to use or need a break from use, they get ahold of methadone or Subutex to prevent the withdrawal symptoms. This extends their addiction over several years, and lets them live a more-or-less involved life. Sometimes they withdraw from school and use the money refunded by the school to support their habit. This is pretty shrewd; they go off to college, live in the dorm, and yet never go to classes. This is a lifestyle shift – a bizarre, distorted idea of what life is. It becomes a visible model of how to enjoy your school experience. To them, the college experience is partying for four years.

Robert Wise, member of the Heroin Study Group and community leader states that "We have a heroin epidemic in north Fulton County that many of us have turned our backs on. In north Fulton we have said 'not in my neighborhood, not in my house, not in schools.' North Fulton needs to wake up. I am challenging north Fulton to say it is our yards, neighborhoods, it is in our schools, let's face it head on. Let's face it. Let's get to work to eradicate it and straighten it out. Public awareness is extremely important."

In a related societal shift, Ewell Hardman of the Summit Counseling Center notes the nature and source of youth having fun has changed – no more movies, drive-ins, meeting with friends – now the party is to get high. The party is getting wasted, not the other things that used to be enjoyed. This represents a significant cultural shift. You get high with others, and individual youth feel less culpability on an individual basis. This change in the culture has impacted an entire generation.

Solutions to the heroin problem are hard to come by. Some families don't have money for treatment. Effective heroin treatment is by necessity residential and long-term, and may cost on average $30,000 for private treatment. Lower level treatment is $15,000 while very highly regarded programs can cost upwards of $40,000 for six weeks of residential treatment. While expensive, this initial six-week stint is not adequate and only short-term. Our entire health system is set up for acute, not chronic treatment – likewise, insurance is the same. Young people end up getting inadequate treatment. If you don't treat it well, you will need to get multiple treatment episodes – maybe four or five episodes by the time addicts are 25 years of age.

Mr. Hardman notes as well that parents often don't know how to set clear limits and boundaries with their children, especially among the more affluent families that seem to be overrepresented among the current crop of heroin abusers. Parents spend so much time providing for their children and giving them what they want, they don't know how to exercise deprivation with their children. They need to help young people be responsible for their behavior. Heroin creates characterological failure – lying, stealing, all manner of personal and characterological pathology. Often parents want a spiritual solution only, but it takes more than that (and Mr. Hardman is a former Methodist pastor). Parents enable their children's addiction, and don't realize it. They don't understand the nexus between marijuana and heroin.

Marijuana can kindle the heroin addiction to return to its previous state. Marijuana use puts you back in the abusing community. Rather than a recovery lifestyle, it puts you in an abusing lifestyle. Biologically, the phrase "kindle" refers to enabling the desire to experience a greater high. It needs to be viewed for what it is – a competition between cultures – the abusing culture and the recovery culture.

When asked what can be done to address the heroin problem, Mr. Zollman noted that he strongly supports the efforts of the Georgia Overdose Prevention Network. This group is making progress with changing laws and providing Narcan kits. Referring to Narcan availability, Chris noted that he had friends who were using intravenous heroin while still in high school, and that youth need access to Narcan even while in their teens. Chris also supports needle exchange programs, which are among a raft of strategies that typically fall under the category of harm reduction. Mr. Zollman is encouraged that the pharmacies, doctors, and insurance companies are communicating more, such as through prescription drug monitoring programs. He does not think people should be going to prison for heroin charges, and that drug rehab is a much better and more cost-effective solution. Mr. Zollman also noted that heroin does not discriminate – that getting addicted to heroin can happen to anyone, stating that "it goes from Bankhead to Buckhead." The heroin problem has actually been serious for quite some time, but it is just now getting in the news. Finally, Mr. Zollman noted the need for more public education efforts regarding the dangers of heroin and CPDs and more of a focus on rehabilitation.

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What can local governments do?

Both parents and treatment providers alike indicate that there exists a massive and pressing need to educate the public regarding heroin and opioids. Rita Bennett stated that "People don't understand that heroin has increased lethality potential, unlike other drugs such as cocaine and marijuana. Any amount can kill you, and people need to understand that it is an end-of-life medication. I don't think a lot of people get that – this is a critical message. It is very different in the body. It is critical to educate on its danger, and why it is so dangerous. The public also needs to be aware of how beautiful lives like Chelsea can be taken – not a long-term drug user – such a loved person, someone we are so proud of – young people try things, and this is not one of the things you want them to."

Other strategies noted by those interviewed as worthy of consideration included the following:

- Passing and supporting so-called "Good Samaritan Laws"
- Increasing the availability and use of Narcan, which is critical, as this drug saves lives
- Changing current publically-funded substance abuse treatment models and expanding them considerably, such as by establishing a separate treatment track for heroin abusers
- Establishing private/public partnerships and active task forces to deal with this problem in a cohesive, collaborative fashion

- Fully funding Prescription Drug Monitoring Programs (PDMPs) and fully utilizing them to make this approach maximally effective
- Dispelling the sense shared by some public officials and opinion leaders that as a society we can punish a disease away. People being released from jail and prison will still have an addiction, just like any other disease, when they are released. Treatment needs to be more readily available both inside and outside of prisons and jails.
- Working actively to eliminate the stigma associated with addiction
- Undertaking efforts to help people overcome their criminal records and get back into college and the workforce
- Local and other governmental structures working to reduce accessibility to CPDs and illicit drugs through provision of overt support for police and for their interdiction efforts
- Supporting harm reduction efforts that focus on reducing deaths to overdose. Part of this strategy would be to expand access to Narcan. Georgia is above average with laws regarding this, but there is more than can be done to make naloxone available where addicts are and providing it to youth in ways that make sense.

Expanding on the above, treatment providers feel strongly that local governments need to offer public treatment centers that can provide the intensive residential treatment necessary for recovery from heroin addiction. They need at the very least to offer 30-day residential treatment, but there also needs to be longer term treatment for those that have been using longer and have become chronic heroin abusers. This needs to be followed by longer-term residential programs for up to a year. Fulton County has public outpatient treatment, but needs primary, residential treatment. They also need leadership that supports school-based efforts to acknowledge and develop a focus on the recovery lifestyle, the value of recovery. Parents can't do it alone, and the schools need to hold this as a value. It is hard to get this done in school, and it will take a couple of years – but this is a crisis that affects so much in so many ways. As noted by Mr. Hardman, "We have kids dying. If they were dying from some infection, or in the schools themselves, we'd be going nuts. If the kids were dying on campus, there would be outrage. If by a school they mean a community of persons and not a building, the schools are dead wrong in saying they have no problem. The role of the school is to enhance the health and well-being of the community. We need a larger, more integrated understanding of the role of schools in educating children and families on making healthy and responsible living choices. I'm for encouraging the schools to focus on prevention. While they have tried this approach (e.g., the DARE Program), they have not gone beyond prevention. They don't need to provide treatment, just refer to treatment. If they can identify kids at risk or who are using, they can identify, screen and refer appropriately."

The Centers for Disease Control and Prevention (CDC) has declared the current heroin problem an epidemic, and proposes a three-tiered approach: Prevent first use of heroin, reduce addiction to heroin, and reverse overdoses from heroin.

Mr. Hardman suggests that Fulton County engage in a public campaign to focus on sobriety and recovery lifestyle and culture that are comprehensive and holistic in that efforts cover the complete continuum of care from prevention, identification, screening, referral, treatment, aftercare, and reentry. Only a

government can take on such a large role, and everybody can do their part to engage in and support these efforts. Local communities could be brought together to develop an agency that brings health and well-being and a focus on sober living, and this needs to be a priority. The escalation of heroin use has taken years. Prevention and treatment do work. Parents can't be disinterested any longer. There are a number of competent treatment program and professionals in metropolitan Atlanta. Another means of addressing this problem would be for more employers to drug screen their employees. That teaches folks that if I am going to make a living, I need to get sober. We also need to continue dealing with impaired health workers – hospitals need to test their own workers. Georgia also needs to continue to focus on reentry. The Governor has really focused on this for offenders, to his credit. This shows that we value recovery and working towards responsible living. As part of this effort we need to remove barriers (e.g., prior felony records) for people to return to work after entering recovery.

Dr. Norton suggested that one of the things that government can do would be to enact an appropriate disposal law to get rid of unused CPDs. Legally the pharmacies cannot take them back. The PDMPs have connected the dots, and the money supporting monitoring these programs will run out, and thus requires ongoing support. This allows for folks to have eyes on distribution and prescription channels.

Mr. Zollman noted that Fulton County does have a pretrial diversion program, which is good. For him, going to school helped. Make Narcan more widely available. They need to make the Amnesty law more known among law enforcement. Inform the police - especially in north Fulton. In general, communities try to sweep the heroin problem under the rug - the parents don't want anyone to know that their children are using heroin. Everyone needs to be on the same page as regards the seriousness of this problem - they need to work together as a community if there is any hope of turning things around.

An innovative response from local law enforcement is noted in an October 30, 2015 article in the New York Times, which states that "in one of the most striking shifts in this new era, some local police departments have stopped punishing many heroin users. In Gloucester, Massachusetts, those who walk into the police station and ask for help, even if they are carrying drugs or needles, are no longer arrested. Instead, they are diverted to treatment, despite questions about the police departments' unilateral authority to do so. It is an approach being replicated by three dozen other police departments around the country[42]."

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What can health providers do?

The Atlanta-based Centers for Disease Control and Prevention (CDC) has declared the current heroin problem an epidemic, and the CDC knows an epidemic when it sees one[43]. In keeping with their public health approach, the CDC has recommended that health providers:

1. Follow best practices for responsible painkiller prescribing to reduce opioid painkiller addiction, the strongest risk factor for heroin addiction
2. Use prescription drug monitoring programs (PDMPs) and ask patients about past or current drug and alcohol use prior to considering opioid treatment
3. Prescribe the lowest effective dose and only the quantity needed for each patient
4. Link patients with substance use disorders to effective substance abuse treatment services
5. Support the use of Food and Drug Administration-approved MAT options (methadone, buprenorphine, and naltrexone) in patients addicted to prescription opioid painkillers or heroin

The overarching CDC-recommended approach is threefold, representing primary, secondary, and tertiary prevention efforts, as follows[44]:

1. Prevent people from starting to abuse heroin – reduce prescription opioid painkiller abuse
    a. Fully fund PDMPs
    b. Educate youth, parents, educators, and others in youth-serving organizations
    c. Educate first responders, such as law enforcement, fire, and other emergency personnel
    d. Educate medical and dental providers regarding the potential deleterious impacts of CPDs in order to address the strongest risk factor for heroin addiction: addiction to prescription opioid painkillers
2. Reduce heroin addiction – Increase access to Medication-Assisted Treatment (MAT) via use of methadone, buprenorphine, or naltrexone delivered along with counseling and behavioral therapies
    a. Increase access to substance abuse treatment services, including Medication-Assisted Treatment (MAT), for opioid addiction
3. Reverse heroin overdoses – Expand the use of naloxone
    a. Expand access to and training for administering naloxone to reduce opioid overdose deaths
    b. Ensure that people have access to integrated prevention services, including access to sterile injection equipment from a reliable source, as allowed by local policy

Finally, the CDC recognizes that accomplishing the above will require a well-coordinated, collaborative, multi-agency approach, and they recommend that policy makers and community leaders take an active approach to assisting local jurisdictions to put these effective practices to work in communities where drug addiction is common.

Interdiction Efforts

Law enforcement and public safety leaders in Fulton County report that while effective cross-jurisdiction cooperation occurs among north Fulton County police departments, there exists a widespread consensus that law enforcement alone cannot effectively counter the rise in heroin use. The north Fulton County police and fire departments meet monthly to provide policy updates and discuss interdictions strategies and priorities as well as to maintain relationships and collaboration. Cross-county cooperation exists in the northern suburban arc of the Atlanta metro, especially with Fulton, Forsyth and Cherokee counties, but to a lesser extent in DeKalb Counties and Gwinnett Counties. Some south Fulton County police departments said that their efforts were coordinated, while others suggested that more collaboration was needed.

Captain Will Merrill of the Alpharetta Police Department indicates that his department works closely with other narcotics units throughout north Fulton and also has contacts in Cherokee County and Forsyth County. The contact with other departments is less structured and typically occurs at least once per month. The police departments from the various municipalities will tip each other off about information they have about sellers who travel through each other's respective counties, and will also share information regarding where the sellers live and where they sell. The Alpharetta narcotics unit does not have much contact with the Atlanta Police Department, focusing instead on north Fulton.

Sergeant Andrew Spears of the Sandy Springs Police Department cited their partnerships with narcotics units from Alpharetta, Roswell, Cherokee County, and Duluth on a heroin sales-related case. It was in fact due to the positive working relationships among these jurisdictions, along with cooperation from the Fulton County District Attorney's Office and the Cherokee County District Attorney's Office, that a successful investigation was conducted. Chief Keith Meadows of the College Park Police Department states that cooperating with the other police departments in south Fulton for drug interdiction strategies and other crime prevention initiatives is a necessity. Chief Meadows stressed the need for cross-jurisdictional cooperation in order to make progress, especially with repeat offenders. To facilitate these efforts Chief Meadows recently initiated regional meetings, with the inaugural meeting including representatives from 19 jurisdictions, the US Attorney's office, and the Fulton County District Attorney's office. Among other issues discussed was the topic of gang activity related to drug sales with Griffin (Spalding County) seeing a significant rise in heroin sales involving a specific gang.

While heroin interdictions strategies are in large part similar to those applied to other illicit drugs, heroin poses unique challenges to law enforcement officers for a number of reasons. There appears to be consensus that the individual police departments are not equipped to effectively investigate the rise in heroin, and some law enforcement leaders have suggested that the DEA should lead. Another challenge is that when apprehended, users are in a state of overdose and often do not survive, and thus cannot provide investigation information. Captain Will Merrill and Lieutenant Health Holcomb indicate that the investigation techniques are the same as any other drug investigation, with one conspicuous difference. Heroin investigations typically provide a "smaller window of opportunity to work with the informants. In the past we have had dealers who sell multiple types of drugs who have been individuals or groups who come from Atlanta and set up shop in our local hotels. They pose a challenge to us by moving locations frequently and on at least one occasion we received information that the dealers have paid hotel staff to help the dealer with counter surveillance."

No uniform policy on police departments exists regarding administering naloxone. No north Fulton County police departments interviewed currently administer Narcan, although some are studying the issue.

Another challenge concerns the inability to use probationers and/or parolees as informants due to prosecutorial and probation reluctance to allow their use. The key to heroin investigations, and also the biggest challenge, is identifying and recruiting sources willing to work with law enforcement in arresting the dealers. Stating further, "after having an informant we would like to work our way in to getting a direct sale to an undercover law enforcement officer. If that is not practical then we will conduct suspect pick-offs, search warrants and follow the trail as high as our sources can/will take us. We have seen this to be effective and recently some dealers have told sources they won't travel here to conduct sales." Echoing the specific challenges raised by his colleagues, Ed Densmore of the Johns Creek Police Department states that "we're not equipped to deal with it from an investigation stand point, not

equipped to identify it – there are many different types, colors to figure out, to find out where it is manufactured…it requires a lot of cross-jurisdiction cooperation."

Harm Reduction Efforts

Harm reduction refers to a set of actionable and realistic strategies and ideas directed towards reducing the negative consequences associated with drug use. From a public health perspective, these strategies often fall under the rubric of tertiary prevention strategies. When applied to the heroin problem, the three most common harm reduction strategies are the use of naloxone (trade name Narcan) to prevent acute overdose, the passage of so-called "Good Samaritan Laws", and needle exchange programs.

Naloxone (trade name: Narcan)
Naloxone is a drug that can reverse the harmful and often fatal effects of overdoses from heroin and other opioids, including fentanyl. It is administered either by being squirted into the nose or injected into the upper arm or thigh of the person experiencing an overdose. Depending on the amount and type of substances used, it may take more than one dose of naloxone, administered a few minutes apart. It is only very recently that local law enforcement routinely began carrying naloxone, as Holly Springs, a small city in Cherokee County, was the first law enforcement agency to provide Narcan kits to its officers in 2014. Atlanta Police Department (APD) officers who patrol the neighborhoods around the Bluff began carrying Narcan this year. According to an article in Creative Loafing, "APD Spokesman Sergeant Greg Lyon says officers have administered the kit five times since the program began. In each case, the overdose victim was "revived[45]."

Holly Springs, a small city in Cherokee County, was the first law enforcement agency in Georgia to provide Narcan kits to its officers in 2014. Atlanta Police Department (APD) officers who patrol the neighborhoods around the Bluff began carrying Narcan in 2015 as part of a pilot program. According to an article in Creative Loafing, "APD Spokesman Sergeant Greg Lyon says officers have administered the kit five times since the program began. In each case, the overdose victim was "revived[45]."

Increasing the availability of naloxone is not just an issue for those illicitly using OPRs and heroin. We can't forget that OPRs are used by millions to address legitimate pain. Having naloxone available in the home and with first responders has the potential to save many lives in case of an accidental overdose. Naloxone rescue kits and training are available from several distributors, including the Georgia Overdose Prevention Network[46].

Our interviews with local law enforcement find that there exists no uniform policy on police departments administering naloxone. No north Fulton County police departments interviewed currently administer Narcan, although some are studying the issue. Some units in the Atlanta Police Department do carry Narcan, as noted above and also according to a report provided through the Heroin Study Group. Perspectives of those interviewed diverge on how safe it is to administer Narcan, with concerns expressed over added cost and how the drug would be administered. While many departments indicated that they knew naloxone could be administered nasally, some of the local Fire and EMS

Departments administer naloxone via injection, which may be influencing some police chief's reluctance to have their officers supplied with naloxone.

Another issue concerns whether police or fire/EMS arrive on the scene first and therefore would be responsible for administering naloxone. The jurisdictions interviewed were split over whether the police or EMS most often arrived first on the scene. The Police and Fire Department Chiefs in Johns Creek asserted that the police often arrive first on the scene of an incident. The Johns Creek Fire Department Chief suggested that there is a benefit for the police to carry and administer naloxone, as well as for the general public to have access to it and to be able to administer it. The Roswell Police Chief and Roswell Fire Department Chief suggested that the police often do arrive first, but that the EMS arrives very shortly thereafter. Department leadership stressed the importance of establishing proper protocols to administer naloxone, and for police officers to be properly trained if they were to be supplied with it. It seems likely that if protocols to administer naloxone and to train police officers were developed, leadership in the police departments would be much more likely to support administering naloxone.

Given the seriousness of the heroin problem, a comprehensive effort encompassing a public health education and prevention-focused approach, combined with meaningful legislative and law enforcement efforts, will be required to adequately address the heroin problem in north Fulton County.

Good Samaritan Laws

Last year Georgia lawmakers passed and Governor Nathan Deal signed into law the 9-1-1 Medical Amnesty Law, a type of Good Samaritan Law. This legislation allows callers or overdose victims to avoid prosecution should they possess small amounts of drugs, provided they are seeking aid with an overdose. The bill was supported by families and friends who had lost loved ones to overdoses who advocated for the bill, echoing the support for these laws voiced by the parents and others interviewed for this report. The Creative Loafing article notes that 22 states along with Washington, D.C. have "passed similar medical amnesty laws, according to the nonpartisan National Conference of State Legislatures[47]."

Needle Exchange Programs

Needle exchange programs (NEPs) are social service programs that provide the opportunity for IV drug users to obtain hypodermic needles and associated paraphernalia (often referred to as "works") at no or reduced cost. The primary objective for NEPs is to reduce the transmission of diseases spread through the use of dirty needles, primarily HIV/AIDS and Hepatitis C. These programs typically provide a one-to-one exchange, in that users are required to surrender used syringes in exchange for an equal number of new syringes. A 2004 study by the World Health Organization (WHO) found that these types of programs "substantially and cost effectively reduce the spread of HIV among IDUs and do so without evidence of exacerbating injecting drug use at either the individual or societal level[48]". In addition, a number of professional associations, including the American Medical Association (AMA), have issued statements in support of NEPs (see http://www.ncbi.nlm.nih.gov/books/NBK232356/).

Given the seriousness of the heroin problem and the cautionary tales from New England and the upper Midwest, it seems self-evident that a comprehensive effort encompassing a public health education and prevention-focused approach, combined with meaningful legislative and law enforcement efforts, will be required to adequately address the heroin problem in north Fulton County.

Next Steps

Law enforcement officials in north Fulton offered a wide range of suggestions on how they should move forward. Civic and community organizations such as the Alpharetta Rotary Club are developing education and prevention initiatives for youth beginning in the fifth grade and extending through high school. Strategies for moving forward will have to be multi-faceted and include new criminal investigation strategies, prosecutorial policies, community partnerships with rehab centers, faith-based organizations, school-based awareness, collaboration with PTAs and the involvement of drug courts and other forms of therapeutic jurisprudence. Gary George of the Alpharetta Police Department also notes the need to educate parents, stating that "Parents don't believe the kid next door is a heroin user - they can't believe their son or daughter is using heroin." Captain Will Merrill and Lieutenant Health Holcomb of the Alpharetta Department of Public Safety echo the need to focus on parent education, noting that they are "constantly reminded by parents saying they don't know what to look for because they just don't know about heroin. They don't know what they don't know." Chief Densmore of the Johns Creek Police Department notes the necessity of a comprehensive approach that goes beyond law enforcement by stating "Don't just put it at the feet of law enforcement. We're not going to fix it. All we do is arrest and put people in jail. It will take more than law enforcement to fix this problem. It will only get worse."

Conclusions and Recommendations

A comprehensive study of the heroin problem in north Fulton county was undertaken during 2015, commissioned by the Fulton County District Attorney's Office and conducted by Applied Research Services, Incorporated. The study consisted of an exhaustive search of relevant media and professional literature, collection of relevant data regarding the nature and extent of heroin use and its impacts, meetings and contacts with key stakeholders, and two dozen interviews with parents who have lost children to heroin overdoses, treatment providers, law enforcement officials, and community leaders.

The popular press and professional publications are awash with stories and articles clearly documenting the rapid rise of heroin abuse nationally. The abuse of and subsequent addiction by many to opioid pain relievers (OPRs) has laid the groundwork for heroin addiction. Gripped by an epidemic of OPR abuse, decision makers and legislators enacted efforts such as Prescription Drug Monitoring Programs (PDMPs), legislative drug reclassifications, and closing the so-called "pill mills" in an effort to restrict access to these medications. As OPRs became more difficult to obtain their street price skyrocketed, as the economics of supply and demand would predict. Into this gap rushed heroin which in recent years has become increasingly available and much less expensive due to record opium crops in Mexico and points south. An unintended consequence of stemming the supply of OPRs has been a corresponding increase in heroin addiction and its effects, including increased demand for interdiction efforts, application of prevention and treatment resources, and most tragically, alarming increases in heroin-related overdose deaths. Two regions of the United States hit hardest by what the CDC has termed an epidemic of heroin use are New England and the upper Midwest.

Study findings document in stark detail the rapid rise of heroin use in north Fulton and surrounding northern tier counties over the past three to five years. The impacts of this rise are readily apparent in an alarming rise in overdose deaths due to heroin and fentanyl, a synthetic opioid often combined with heroin and having deadly consequences. The Fulton County Medical Examiner's Office recorded a total of four heroin deaths in 2010, as compared to 31 in 2013 and 77 in 2014. More than twice as many people died from heroin overdoses in 2014 than in 2013 across Fulton County. Trends suggest that

heroin overdoses recorded in the Grady Hospital Emergency Department in 2015 will be almost double what they experienced in 2013. The impacts are undoubtedly felt most acutely by family members and friends who have lost loved ones to heroin overdoses. Law enforcement officials, treatment providers, and community leaders see first-hand the impacts of heroin in their communities, with a number of law enforcement officials in north Fulton County now seeing heroin as their primary drug problem. The palpable sense of urgency expressed by those interviewed for this study as well as a host of community leaders in metropolitan Atlanta is indeed well founded.

Heroin is an extremely dangerous drug, in that it is highly addictive, it provides a profound sense of euphoria and peacefulness, and is of increased purity and often cut with dangerous and even deadly substances such as fentanyl. In addition, market trends have resulted in both increased availability and decreased cost, which along with the increased purity of today's heroin (obviating the need to inject the drug intravenously), have removed decades-old barriers to the use of heroin.

The silver lining in this cloud however is that the heroin problem in north Fulton, though serious, has not yet reached the scale of the heroin crises that currently exist in New England and the upper Midwest. As such, there exists a brief window of opportunity to get out ahead of the heroin problem in north Fulton by implementing a multi-faceted, comprehensive, and collaborative approach involving primary, secondary, and tertiary prevention efforts. The Heroin Study Group established as a result of the recent Heroin Summit convened by the US Attorney in Atlanta can function as an organizing and convening force, but it will not be sufficient. Effectively addressing the heroin problem in north Fulton will entail bringing together educators, health and other treatment and service providers, public officials, legislators, elected and appointed municipal leaders, community leaders from the business and faith communities, and a host of other relevant stakeholders. Legislative and other efforts by key decision makers will be required in order to provide the means by which these collaborative efforts can be leveraged to address the heroin problem in north Fulton. Such a comprehensive and collaborative effort will be necessary if metropolitan Atlanta, Georgia, and the Southeast are to have a chance at avoiding the fate of other communities in New England and the upper Midwest.

Study Methods

The present study employed a mixed-methods design involving the collection and analysis of a wide range of qualitative (e.g., interview) and quantitative (e.g., mortality numbers) data from a wide range of sources. Searches of popular media as well as of sources aimed at professional audiences were conducted throughout the study, involving the collection of well over one hundred articles and reports. The assistance of the state medical examiner as well as medical examiners for a number of metro Atlanta counties was obtained in order to better understand the role played by heroin in deaths over the past decade. Crime statistics were analyzed using the Georgia Computerized Criminal History (CCH) dataset. Data concerning arrestees was obtained from the federal Arrestee Drug Abuse Monitoring (ADAM) project. Maps and GIS analysis provided by the Carl Vinson Institute of Government, a Public Service and Outreach unit of the University of Georgia. Perhaps the central part of this work however consists of the two dozen one-on-one, in-depth interviews conducted with numerous stakeholders and community leaders in an effort to better understand their experiences regarding the heroin problem in north Fulton County. These interviews were typically conducted over the phone, although some were also conducted in person, typically in the office of the person or persons being interviewed. The following were interviewed as part of this study:

Parents:

- Rita Bennett (mother of Chelsea Bennett, who died of a heroin overdose on March 3, 2014) on August 27, 2015
- Kate Boccia (mother of Daniel, age 24, who is currently serving time in prison) on August 27, 2015
- Dena Castellon (mother of Brandon Castellon, who is currently serving time in prison) on August 24, 2015
- Missy Owen (mother of Davis Owen, who died of a heroin overdose on March 3, 2014) on September 16, 2015

Treatment Providers:

- Ewell Hardman, M.Div., MAC, of the Summit Counseling Center (Johns Creek, GA) on September 1, 2015
- Merrill Norton, Pharm.D., NCAC II, CCS, CCDP-D, of the University of Georgia and Chemical Health Associates (Athens, GA) on July 22, 2015
- Chris Zollman on September 1, 2015

Police Chiefs/ Police Department Officials:

- Rusty Grant, Chief, Roswell Police Department, on June 30, 2015
- Ed Densmore, Chief, Johns Creek Police Department on July 15, 2015
- Tommy Gardner, Chief, East Point Police Department on September 9, 2015
- Keith Meadows, Chief, College Park Police Department on September 9, 2015
- Trevor Primo, Sgt., Special Investigations, City of Roswell on June 30, 2015
- Gary George, Director of Public Safety, Alpharetta on July 13, 2015
- Matthew Rook, Chief, Chattahoochee Hills Police Department on July 22, 2015
- Sergeant Andrew Spears, Sandy Springs Police Department, Special Investigative Unit Chief (personal communication email, October 7, 2015, via Craig Chandler)

- Will Merrill, Supervisor of the Intelligence, Homeland Security, Special Investigations Units Department Alpharetta Public Safety on July 1, 2015
- Richard Doyle, Director of Operations, Forsyth County Police Department on July 20, 2015
- Jennifer Page Cash, Sheriff, Forsyth County Police Department on July 22, 2015

Fire Chiefs:

- Pat O'Neill, Deputy Chief, Johns Creek Fire Department on September 21, 2015
- Ricky Burnett, Chief, Roswell Fire Department on September 22, 2015
- Keith Sanders, Chief, Sandy Springs Fire Department on October 2, 2015

Community Leaders:

- Chris Lagerbloom, City Manager, City of Milton on June 29, 2015
- Christopher Matthews, Assistant Superintendent, Fulton County Schools on July 7, 2015
- Robert Wise, Heroin Study Group Member on June 29, 2015

About the Authors

Based in Atlanta, Applied Research Services, Inc. (ARS) is a private, small business consulting firm specializing in complex research design and analysis. Founded in 1994, ARS employs state-of-the-art analytical, survey, data and business intelligence tools to deliver decision support. With extensive experience in dissecting criminal justice agency data, we are able to convert data into empirically based decision-making devices such as risk assessment tools and simulation models. Our clients include state and local courts, secure and community corrections agencies as well as various public policy stakeholders. Additional projects can be viewed from our corporate website at www.ars-corp.com.

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