Columbia University School of International and Public Affairs

Combating the Opioid Epidemic through Effective Messaging and Prevention Education Strategies

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Abstract

The national opioid abuse crisis in New York City claims an increasing number of lives each year. Since the Office of the Special Narcotics Prosecutor (SNP) noted a dangerous spike of opioids in the city in 2009, the situation has only become more urgent with the proliferation of synthetic opioids. The City has taken several steps to address the problem, including creating and expanding services for people suffering from addiction, policing the black market for drugs and educating medical professionals on appropriate prescribing practices. While there are national structures and regulations in place contributing to the cycle of addiction and abuse, reforming the city's approaches to drug education to be more inclusive and integrated may help give the next generation the tools they need to make informed choices.

SNP tackles the opioid epidemic not only by reducing the illegal supply of narcotics through the prosecution of high-level traffickers but also through innovative approaches to reduce the demand for drugs. Building on prior work done in collaboration with SNP and the District Attorneys' Offices for both Staten Island and the Bronx, this Columbia Capstone Team will evaluate preventive strategies that can be employed in NYC's grade 6–12 education to build awareness of the opioid epidemic.

We examined the potential benefit and feasibility of implementing holistic curriculum supplements addressing opioids in grade 6–12 curriculum, looking at existing educational resources, their usefulness and the political environment in NYC. The analysis also draws on secondary research of successful drug education curriculums, mental health literature and public health campaigns. Primary qualitative and quantitative research includes findings from a multi-stakeholder design workshop, interviews with major stakeholders, experts, and public officials, and focus groups conducted in NYC's public schools.

The final report includes comprehensive research, several critical findings and a path forward. Major themes include: addressing mental health needs in the community, broad-based curriculum integration, scenario-based teaching, efforts beyond school and parental involvement, and the development of messaging.

Our Team

Preety Aujla is a graduate student currently pursuing a Masters in Public Administration (MPA) with a concentration in social policy. Preety became passionate about criminal justice reform after serving a year with AmeriCorps in an alternative-to-incarceration program for youth in Baltimore. Prior to graduate school, Preety supported public defenders in NYC as an arraignment court administrator and as an investigator. Most recently she worked with rape crisis advocates and corrections staff to increase correctional facilities' level of compliance with the Prison Rape Elimination Act policies that support incarcerated survivors of sexual assault.

Minwen Feng is a first-year MPA student concentrating in international financial and economic policy and specializing in advanced economic and policy analysis. She previously interned at the International Finance Corporation and worked on the policy analysis on the global medtech industry. Her previous analytical work involves various financial advisory services and strategic planning regarding the healthcare industry for governments, international pharmaceutical companies and large-scale insurance companies.

Lawrence McDonald is an MPA student at the School of International and Public Affairs, specializing in urban and social policy and communications. Prior to attending Columbia, he was a digital specialist on the Hillary Clinton 2016 Presidential Campaign and a strategist at the Soze Agency where he designed social impact campaigns.

Milena d'Ornano is a Masters in International Affairs (MIA) student at the School of International and Public Affairs, focusing on urban and social policy, and specializing in technology, media and communication. As co-president of the One For The World chapter at Columbia University, she promotes efficiency in the world of philanthropy through innovation and impact analysis. She previously worked at the Osborne Association in New York, and currently as a current content strategist at the Columbia Justice Lab, she is now developing creative digital content to advance criminal justice reform.

Adeline Thompson is an MPA in Development Practice at Columbia SIPA, focusing on sustainable development and business design. Prior to SIPA, she worked for Ashoka on the Venture & Fellowship team, finding and funding social entrepreneurs in the European region, and at Patagonia and Nike on their brand marketing and CSR teams, creating storytelling campaigns outlining the brands' sustainability and impact work around the world.

Sloan Woods is an MPA student concentrating in urban and social policy and management. Previously she worked on the Global Public Health team at Johnson & Johnson and at the marketing communications firm Edelman for a number of brands and across the consumer, corporate and health sectors.

Our Clients

BRIDGET G. BRENNAN

Special Narcotics Prosecutor for the City Of New York

Bridget G. Brennan has been New York City's Special Narcotics Prosecutor since 1998. Appointed by the city's five elected District Attorneys, Ms. Brennan is the first woman to hold that position. The Office of the Special Narcotics Prosecutor (SNP) is dedicated to the investigation and prosecution of felony narcotics offenses in the city's five boroughs and is the only agency of its kind in the nation.

Widely recognized for its legal and technological expertise, SNP prosecutes national and international drug trafficking and money laundering organizations, as well as local violent drug gangs. Over the past decade, the Office has increasing focused on conducting complex investigations into the criminal distribution of heroin, fentanyl, fentanyl analogs and addictive prescription drugs.

Under Ms. Brennan's direction, the Office has developed innovative strategies to target emerging problems. Ms. Brennan established units focusing on heroin, prescription drugs, digital forensics, narcotics gangs, money laundering and related financial crimes. The Office was also a pioneer in offering treatment to qualified addicted defendants.

Ms. Brennan became a New York County Assistant District Attorney in 1983 and was appointed to SNP in 1992. Before her legal career, she was a news reporter in Wisconsin. She attended the University of Wisconsin, where she earned a BA in Journalism and her law degree.

DARCEL D. CLARK

Bronx County District Attorney

Darcel D. Clark became the 13th District Attorney for Bronx County on January 1, 2016. She is the first woman in that position and the first African-American woman to be a District Attorney in New York State.

Prior to her election, District Attorney Clark served as an Associate Justice for the New York State Supreme Court Appellate Division, First Department; a New York State Supreme Court Justice in Bronx County; and a Criminal Court Judge in the Bronx and New York Counties. She spent more than 16 years on the bench.

A lifelong Bronxite, District Attorney Clark was raised in New York City Housing Authority's (NYCHA) Soundview Houses. She attended public schools, graduating from Harry S. Truman High School. She received her Bachelor's Degree in Political Science from Boston College, where she was the first recipient of the University's Martin Luther King, Jr., Memorial Scholarship, and earned her law degree at the Howard University School of Law in Washington, D.C.

District Attorney Clark returned home in 1986 to begin her legal career at the Bronx District Attorney's Office, where she prosecuted many cases, including drug felonies, violent crimes and homicides. District Attorney Clark served as a Supervising ADA in the Narcotics Bureau and the Deputy Chief of the Criminal Court Bureau. In 1999, she left the Office for her first judicial post.

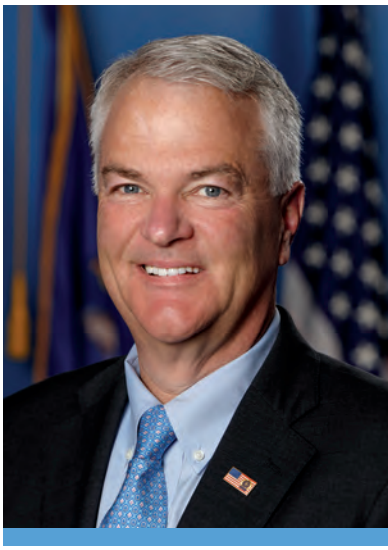
District Attorney Clark is a Vice President of the National District Attorneys Association and a Board member of the District Attorneys Association of the State of New York. She is also a member of Prosecutors Against Gun Violence. District Attorney Clark serves on the Boston College Board of Trustees and has served in leadership positions in the National Association of Women Judges and the Black Bar Association of Bronx County. She is a former Adjunct Professor at Monroe College School of Criminal Justice.

She is married to Eaton "Ray" Davis, a veteran New York City Police Department (NYPD) Detective.

Throughout her career in public service, District Attorney Clark has endeavored to earn the trust of the people of the Bronx. Her mission as the Bronx District Attorney is "Pursuing Justice with Integrity."

MICHAEL E. MCMAHON

Richmond County District Attorney



Michael E. McMahon was inaugurated as the District Attorney of Richmond County on January 1, 2016. He serves as the chief law enforcement officer on Staten Island.

Recognizing the significant challenges facing Staten Island as an epicenter in the heroin and prescription drug crisis, McMahon has made this issue a central focus for the Richmond County District Attorney's Office (RCDA). McMahon has led multiple significant takedowns and created New York City's first Overdose Response Initiative.

Under this initiative, RCDA works with the NYPD to investigate overdose deaths as criminal investigations. In addition, McMahon has been spearheading efforts with the Heroin Overdose Prevention & Education (HOPE) program to expand treatment options and develop and facilitate innovative early diversion opportunities for those suffering from addiction who find themselves in the criminal justice system.

Prior to being elected District Attorney in 2015, McMahon was a practicing trial attorney for 30 years, legal counsel to Assemblyman Eric Vitaliano and Assemblywoman Elizabeth Connolly, and legislative counsel to City Council Member Jerome X. O'Donovan. He served as the City Council Member representing Staten Island's North Shore for eight years before being elected to Congress in 2008. After leaving Congress, he returned to law as a Partner in the international law firm Herrick Feinstein.

McMahon was born and raised in Staten Island and is a graduate of New York University and New York Law School. He and his wife, Judge Judith McMahon, reside in Randall Manor, in the home where they raised their children, Joseph and Julia.

Acknowledgments

The Columbia SIPA Capstone Team would like to extend our gratitude to the mentors, interviewees, teachers, participants, and advisors who made our research possible.

Our advisor, **Janet Tobias**, for guiding our research as well as providing context, feedback and resources throughout the duration of this Capstone.

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Dr. Jen Furst for speaking with our class and presenting us with new vocabulary and research for our project.

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Joseph Heritage, Adam Royalty, and the Columbia University Design Studio for their time, collaboration, and space that provided us with the opportunity to conceive, design, and test our recommendations.

Crystal Marsonia for taking the time to answer our questions about the interaction between mental health and substance use, and providing us with her insight as Assistant Director at Kings County Hospital Center in Brooklyn.

Soren Shade for providing us with insights on his experience growing up in a community affected by opioid abuse in West Virginia, and encouraging us to look beyond drug prevention, and understand the socio-economic issues tied to substance use.

Dr. Gary Belkin, the Executive Deputy Commissioner of Mental Hygiene at the NYC Department of Health and Mental Hygiene, for speaking with us about the department's work as well as the importance of mental health efforts within substance use reduction efforts.

Susan Herman, Director of the Office of ThriveNYC and former Deputy Commissioner of Collaborative Policing for the New York City Police Department (NYPD), for her time and expertise that helped contextualize our research.

Glossary

Addiction: The state of being physically and/or psychologically unable to discontinue performing a habit or behavior, regardless of ongoing adverse consequences.

Adverse Childhood Experiences: The term used to describe all types of abuse, neglect, and other potentially traumatic experiences that occur to people under the age of 18.

Analgesic: Drug that provides pain relief.

Behavioral Therapy: A therapeutic modality during which an individual works with a therapist or counselor to help him or her identify and change potentially self-destructive or unhealthy actions.

Benzodiazepine: Class of prescription medications typically used to treat anxiety. Can become a drug of addiction, and is increasingly seen in accidental overdoses, often in combination with alcohol and/or opioids.

Boomerang Effect: A social psychology situation in which a person who is presented with a persuasive message and then adopts the opposite stance as a result.

Buprenorphine: Partial opioid receptor agonist that produces weak morphine-link symptoms. Used in medication-assisted addiction treatment to allow patients to stop using opioids without experiencing withdrawal.

Clinical Practice: A term referring to the agreed-upon and customary means of delivering health care by doctors, nurses and other health professionals.

Comorbidity: A medical and/or mental health diagnosis that occurs in the setting of another.

Detoxification (Detox): A process by which a substance user stops using intoxicating substances to allow his or her body the time to fully clear itself of that substance.

Evolutionary Biology: The subfield of biology that studies the evolutionary processes that produced the diversity of life on Earth, starting from a single common ancestor. These processes include natural selection, common descent, and speciation.

Fentanyl: Synthetic opioid 50–100 times as potent as morphine. Medical-grade fentanyl is produced by the pharmaceutical industry, while illicit fentanyl is manufactured by black market drug producers. The illicit form is commonly found as an additive in heroin preparations that greatly increases the risk of accidental overdose.

Harm Reduction: Evolving but widely accepted treatment modality for substance use disorder that seeks to reduce the health, social, and socioeconomic risks associated with drug use (whether legal or illegal) without necessarily reducing drug consumption.

Heroin: Strong, rapidly acting opioid receptor agonist that acts on the brain to cause powerful feelings of euphoria. Derived from morphine, it can be snorted, injected, or smoked.

Methadone: Synthetic opioid receptor agonist similar to heroin used to decrease withdrawal symptoms for those with substance use disorder who had stopped using opioids. Administered orally and can be used in medication-assisted treatment.

Mental Illness: A wide range of behavioral and/or physical symptoms, either reported and/or observed, impairing an individual's ability to perform the activities of daily living. Often referred to as Mental Health Disorder.

Naloxone (Narcan): Opioid receptor antagonist that binds and blocks receptor activity. Has been effectively used as an antidote for suspected opioid overdoses, rapidly reversing the respiratory depression that causes death.

Naltrexone (Vivitrol): Synthetic opioid receptor antagonist used in medication-assisted treatment and administered in pill or injectable form. Vivitrol is a branded preparation of naltrexone that is dosed as a once-monthly injectable.

Nonmedical Drug Use: Drug use either without a prescription or with a prescription in a manner other than prescribed.

Opioid: Class of drug that binds to specific receptors in the brain, blocking pain signals.

Opioid Dependency: The state of feeling unable to discontinue the use of opioid drugs.

Opioid Overdose: An acute condition due to excessive use of opioids that may cause death. Can be reversed by the opioid receptor antagonist naloxone; with or without reversal, death can occur.

Overprescription: The unjustifiably excessive provision of a prescription drug by a provider.

OxyContin: The brand name of oxycodone, an opioid medication used for treatment of moderate to severe pain.

Recovery: A process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential. Abstinence is widely considered the safest approach for those with substance use disorders.

Self-Medication: The consistent use of prescription, non-prescription or mind-altering substance by an individual to address the symptoms of what is likely an undiagnosed (or undertreated) mental illness.

Stigma: Disapproval or negative perceptions of certain behaviors or health conditions.

Substance Use Disorder: The overuse, or dependence on, a substance that leads to adverse physical, mental, or social consequences for the user.

Executive Summary

The national opioid abuse crisis in New York City claims an increasing number of lives each year. Since the Office of the Special Narcotics Prosecutor (SNP) noted a dangerous spike of opioids in the city in 2009, the situation has only become more urgent with the proliferation of synthetic opioids. The City has taken several steps to address the problem, including creating services for people with substance use disorder, policing the black market for drugs and educating medical professionals on appropriate prescribing practices. While there are national structures and regulations in place contributing to the cycle of addiction and abuse, reforming the city's approaches to drug education to be more inclusive and integrated may help give the next generation the tools they need to make informed choices.

SNP tackles the opioid epidemic not only by reducing the illegal supply of narcotics through the prosecution of high-level traffickers to but also through innovative approaches to reduce the demand for drugs. Building on prior work done in collaboration with SNP and the Richmond County District Attorney's Office and the Bronx County District Attorney's Office, this Columbia Capstone Team will evaluate preventive strategies that can be employed in NYC's grade 6–12 education to build awareness of the opioid epidemic.

We examined the potential benefit and feasibility of implementing holistic curriculum supplements addressing opioids in grade 6–12 curriculum, looking at existing educational resources, their usefulness and the political environment in NYC. The analysis also draws on secondary research of successful drug education curriculums, mental health literature, and public health campaigns, as well as primary qualitative and quantitative research, including findings from a multi-stakeholder design workshop the Capstone Team hosted, interviews with major stakeholders, experts, public officials, and focus groups conducted in NYC's public schools.

This report's comprehensive research has resulted in several critical themes that can help inform how holistic drug education should be approached. These findings are interconnected and mutually reinforcing. They have been derived from across our research and conversations with experts and stakeholders.

- Addressing mental health in tandem with drug education and prevention is critically important.
- Drug education should be integrated into core subjects outside of health class.
- Skills development, negotiation and coping mechanisms need to be prioritized through scenario-based teaching.
- Resources, education, and support have to reach kids outside the school as well as from within.
- What is said about opioids is critically important, but so is who is saying it and how they say it.
- Drug education should not be a conversation for just teachers and students, parents need to be involved and informed.

This report also includes a recommendation section that suggests how SNP and both DAs' offices can move forward to turn these findings into action. Our recommendation is that the SNP develop a website that curates existing curriculum so that resources are easily accessible to teachers, students and families. We have additionally provided a timeline that outlines how long we anticipate the development taking and what we believe success would look like. The recommendation section ends with a suggested "entry point" at the NYC Department of Education where the program could be piloted once developed.

Introduction

Misuse of and addiction to opioids—including prescription pain relievers, heroin and synthetic opioids like fentanyl—has become a national public health crisis across the United States.[1] Almost 400,000 people died from an overdose involving a prescription or illicit opioid in the United States from 1999–2017.[2] The number of overdose deaths involving opioids has risen sixfold between 1999 and 2017, and death from opioid overdose accounted for over half of the 700,000 drug overdoses in America in 2017.[3] In addition to the damage this crisis is doing to individuals, families and communities, the Centers for Disease Control and Prevention (CDC) estimates the economic burden of prescription opioid misuse alone in the United States is $78.5 billion a year.[4]

The epidemic primarily developed because of misinformation spread by the pharmaceutical industry starting in the late 1990s.[5] They assured the medical community, regulators and patients that opioids were not an addictive form of pain relief.[6] This led to a spike in opioid prescription and use before it became clear that medications containing opioids were highly addictive.[7] Broad availability and misuse of opioids was already established by the time patients, doctors and government came to understand the dangers of the drugs.[8] As the epidemic matured, heroin use became a more common substitute for prescription opioids, and recently, synthetic opioids, primarily fentanyl, have become the most common drugs involved in overdose deaths, surpassing prescription opioids and heroin.[9] In 2016, 90% of fatal opioid overdoses involved heroin or fentanyl, while 18% involved prescription painkillers.[10]

New York City has not been immune to this national epidemic, with opioid misuse increasing across the city. In 2017, more New Yorkers died from opioid overdoses than from car accidents and homicides combined.[11] More than 4 in 5 (82%) of overdose deaths in the city involved opioids.[12] Despite significant efforts by city officials, NGOs, educators, health officials and communities to support prevention education, proper prescribing and use, overdose prevention, and addiction support services throughout the New York City, there are still significant gaps in our efforts to end opioid misuse and overdose, with the rate of unintentional

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1 "Opioid Overdose Crisis," *National Institute on Drug Abuse*, January 2019.

2 "Understanding the Epidemic," *Centers for Disease Control and Prevention,* Page last updated: December 19, 2018 Prevention.

3 "Understanding the Epidemic," *Centers for Disease Control and Prevention.*

4 "Opioid Overdose Crisis," January 2019.

5 "Opioid Overdose Crisis," January 2019.

6 "Opioid Overdose Crisis," January 2019.

7 "Opioid Overdose Crisis," January 2019.

8 Drew Blackman and Edward Levine, "HealingNYC: Preventing Overdoses, Saving Lives" *The City of New York, Office of the Mayor.*

9 "Fentanyl and Other Synthetic Opioids Drug Overdose Deaths" *National Institute on Drug Abuse,* May 2018.

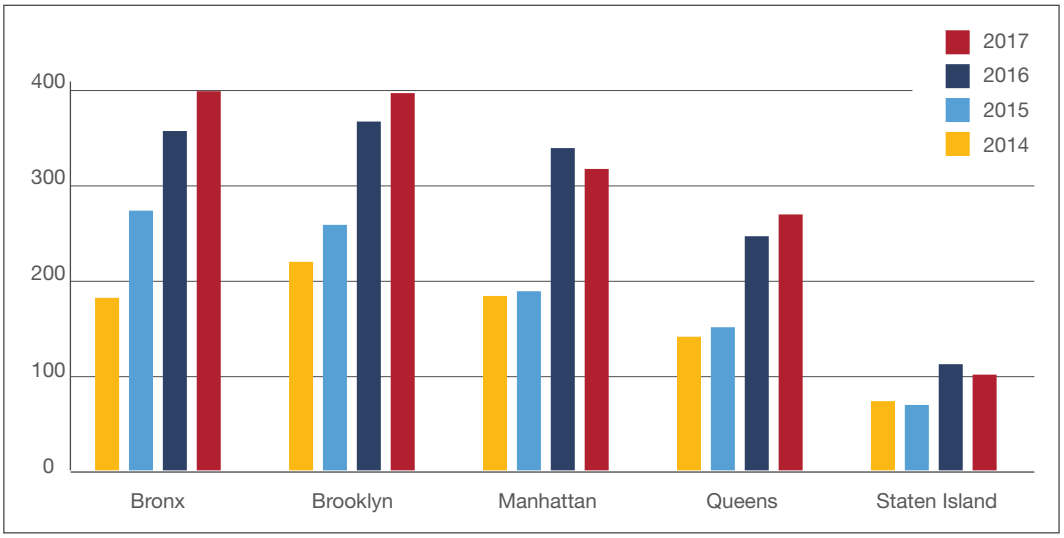
10 Blackman and Levine, "HealingNYC: Preventing Overdoses, Saving Lives."

11 Blackman and Levine, "HealingNYC: Preventing Overdoses, Saving Lives."

12 "Epi Data Brief," *New York City Department of Health and Mental Hygiene,* September 2018, No. 104.

drug overdose increasing for the seventh consecutive year in 2017.[13] This increase has been seen consistently across all five boroughs of New York City as is demonstrated in the graph below.

Number of Unintentional Overdose Deaths in New York City (by boroughs)



Data:[14]

Although the greatest proportion of the population of NYC experiencing accidental drug overdose is within the age range of 45–54,[15] adolescence is a particularly high risk period, as the majority of adults who have been diagnosed with a substance use disorder started use in adolescence.[16]

This report builds on the findings and recommendations of two previous collaborations between Columbia University's School of International and Public Affairs (SIPA), SNP, the Richmond County District Attorney's Office and the Bronx County District Attorney's Office. This work culminated in reports entitled *Staten Island Needs Assessment: Opioid Addiction Prevention and Treatment Systems of Care* and *Bronx Opioid Epidemic Needs Assessment*. These previous collaborations have made several recommendations for the city to reduce the number of opioid overdoses. Two recommendations have been selected as areas of focus for this report: 1) Educational strategies and public awareness campaigns that have proven effective and could be adapted to deter those at most risk in New York City, and 2) Identification of areas for consensus building between city agencies and independent actors against the opioid epidemic.

[13] "Epi Data Brief," 2018.

[14] "Epi Data Brief," 2018

[15] "Epi Data Brief," 2018

[16] Blackman and Levine, "HealingNYC: Preventing Overdoses, Saving Lives."

Methodology

The methodology employed to conduct the research phase consisted of a variety of qualitative and quantitative methods, including interviews, focus groups, literature reviews, and design sessions.

Review successful **education curricula** and **public health campaigns**

Conduct **focus groups** and **interviews** in NYC's public schools

Organize a **design session** with experts in the field of education

Incorporate theories in **behavioral psychology** and **effective messaging** to craft comprehensive strategy

Literature Review: We conducted a thorough investigation of existing literature on the topic of public health, mental health, and addiction education. By grounding our research in academic studies, we were able to shape our project to serve a specific set of stakeholders in this complex issue.

Landscape Analysis: We took stock of what opioid prevention programs and curriculum already exist, drawing deeply from all of our clients' existing knowledge and more extensive list of curricula and resources, and adding more of our own. We looked at frameworks, lesson plans, documentaries, podcasts, city mandates, government legislation, and more to get a comprehensive picture of the state of opioid education in the City of New York.

Focus Groups: We conducted focus groups at two high schools in two different boroughs, and with different age groups, to gain a firsthand sense of the way health and drug education is delivered to students in NYC. This was a great opportunity to get unfiltered opinions and emotions from students, and was also a way for us to meet and interact with teachers on a more informal basis.

Interviews: We spoke one-on-one with teachers, practitioners, media professionals, professors, former public school students, and former substance users to get a better sense of just how to go about tackling such a diverse and nuanced issue.

Design Session: We held a collaborative, solutions-oriented design session that included policymakers, academics, teachers, and parents to better understand the pain points and potential pathways into this issue. In design thinking rhetoric, this served as a "user insights" session, taking the pulse of one group of stakeholders in a generative, solutions-oriented way to start to narrow down the best possible ways to serve them.

Public Health Campaigns

A review of existing public health campaigns and academic literature on health communications has demonstrated best practices on drug prevention and anti-stigma messaging that can be applied to opioid use. Mass media campaigns have been used in the United States to influence public health behavior since the promotion of smallpox inoculation in the 1700s.[17] Understandably, campaigns have greatly evolved in their approach and effectiveness, as our understanding of human behavior improved and possible mediums for campaigning advanced.[18] Analysis of the effectiveness of anti-tobacco, anti-drug and AIDS/HIV awareness campaigns offer insight into what elements of campaign design can have a positive or negative impact on behavior change in public health. It is important to note that findings from other campaigns may not be directly transferable to the education of grade school children on opioids, given the unique nature of the drug, the population, and the medium. That said, evaluation of past and existing public health campaigns demonstrates broad trends in successful and unsuccessful drug education and prevention messaging.

Anti-drug campaigns like Drug Abuse Resistance Education (DARE),[19] Just Say No,[20] and Above the Influence[21] were designed to dissuade drug use, but have reportedly had mixed results since implementation. The federal government spent nearly $1 billion on Just Say No between 1998 and 2004 to discourage drug use.[22] However, a 2008 study conducted by the National Institute of Health found the campaign "had no favorable effects on youths' behavior" and may have actually prompted some to experiment with drugs, an unintended "boomerang" effect.[23]

The DARE program in place from 1983 to 2009 is largely accepted as a failed campaign in drug prevention.[24] Its failure was attributed to exaggeration of the negative impacts of certain drugs, like marijuana.[25] Campaigns that exaggerate their claims often foster distrust in their target audience and lead to a dismissal of the intended message. Studies have also shown that exaggerated and incomplete portraits of drug use can even increase a child's interest in experimenting with drugs.[26] Campaigns that solely focus on school-age children and ignore their parents can also be less effective because children are less likely to report anti-drug

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[17] Seth M. Noar, "A 10-Year Retrospective of Research in Health Mass Media Campaigns: Where Do We Go From here?" 2007.

[18] Ibid, Noar.

[19] The DARE Campaign: https://dare.org/

[20] "Just Say No" was an advertising campaign, part of the U.S. "War on Drugs," prevalent during the 1980s and early 1990s, to discourage children from engaging in illegal recreational drug use by offering various ways of saying no.

[21] The Above the Influence Campaign: https://abovetheinfluence.com/

[22] Matthew Perrone, "Fact check: 'Just Say No' anti-drug campaigns have shown little success in past" *The Chicago Tribune,* October 27, 2017.

[23] Ibid, Perrone.

[24] Amy Nordrum, "The New D.A.R.E. program—This One Works" *Scientific American,* September 10, 2014.

[25] German Lopez, "Why anti-drug campaigns like DARE fail" Vox, September 1, 2014.

[26] Carson B. Wagner and S. Shyam Sundar, "The Curiosity-Arousing Function of Anti-Drug Ads" *The Open Communication Journal,* 2008, 2, 43–59.

attitudes if their parents use or admit to having used drugs.[27] Factors like frequent references to drugs in anti-drug campaigns or parental use of drugs can actually normalize drugs and have the opposite effect than intended if they are not associated with skill-based training on how to refuse drugs and/or cope with stress or mental health.[28] Campaigns like "Be Under Your Own Influence," "Communities that Care" and the Office of National Drug Control Policy's "Above the Influence" have been more successful in discouraging drug use.[29] These successes are attributed to their message framing, which, "disputes the idea that drug use makes someone an independent risk-taker."[30] Rather than demonize drug use with fear-based reasoning, these campaigns appeal to adolescents' desire for independence and self-control, as well as teach coping mechanisms that enable students to make more informed choices.[31]

We can also derive insight from anti-tobacco and HIV/AIDS awareness campaigns. The Centers for Disease Control (CDC)'s Tips® campaign was the first-ever federally funded campaign aimed at reducing smoking and has been heralded as an enormous success, driving 1.6 million smokers to try to quit and helping more than 100,000 to succeed, according to a study published in *The Lancet*.[32] Studies have attributed the campaign's success to its use of real smokers rather than actors and its honest and emotional depiction of the horrific consequences of tobacco use by those who have suffered from them first-hand.[33] Similarly, the Truth Campaign, a campaign designed to educate youth on the consequences of tobacco use and the industry's manipulative marketing practices, has reported enormous success.[34] The campaign states, "We're not here to criticize your choices, or tell you not to smoke. We're here to arm everyone—smokers and non-smokers—with the tools to make change."[35] Aside from the importance of individual campaign design, part of the anti-tobacco movement's success is attributable to the larger context that accompanied the messaging, according to the Brookings Institute.[36] The anti-tobacco movement's media campaign had the benefit of being: 1) accompanied by regulation of Big Tobacco, 2) relayed by a trusted source, The Office of the U.S. Surgeon General, and 3) adopted by civil society groups like the Heart Association and American Nonsmokers' Rights Foundation.[37]

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27 International Communication Association, "Parents talking about their own drug use to children could be detrimental." *ScienceDaily*, 22 February 2013.

28 German Lopez, "Why anti-drug campaigns like DARE fail" Vox, September 1, 2014.

29 Ibid, Lopez.

30 Ibid, Lopez.

31 Matthew Perrone, "Fact check: 'Just Say No' anti-drug campaigns have shown little success in past" *The Chicago Tribune,* October 27, 2017.

32 "Tips From Former Smokers ®: About the Campaign" *Campaign for Disease and Prevention,* February 6, 2019.

33 Statement of Susan M. Liss: Executive Director, Campaign for Tobacco-Free Kids, "CDC's Anti-Smoking Ad Campaign Spurred Over 100,000 Smokers to Quit; Media Campaigns Must be Expanded Nationally and in the States," September 9, 2013.

34 "The Truth Campaign" https://www.thetruth.com/about-truth

35 "The Truth Campaign" https://www.thetruth.com/about-truth

36 Alina Polyakova and Geysha Gonzalez, "Why the U.S. anti-smoking campaign is a great model for fighting disinformation," *Brookings Institute,* August 7, 2018.

37 Alina Polyakova and Geysha Gonzalez, "Why the U.S. anti-smoking campaign is a great model for fighting disinformation," *Brookings Institute,* August 7, 2018.

The effectiveness of HIV/AIDS campaigns in impacting behavior may be the best model for opioid prevention, as AIDS/HIV campaigns are largely centered on education, reduction of stigma, getting help, and safe sex (which can be likened to appropriate use).

Historically, AIDS/HIV prevention campaigns had comprised a mixture of fear-based and anti-HIV messaging.[38] Starting in 2000, however, a new wave of more positive campaigns were released and have proven to be more effective than fear-based campaigns without ethical concerns.[39] Campaigns crafted by the CDC such as "Act Against AIDS," "Let's Stop HIV Together" and "#DoingIt" have been part of a widespread effort to reduce stigma for AIDS/HIV, and in doing so encourage more couples to talk about sexual health and get tested.[40] These sex-positive campaigns, which support the target population and empower them to seek help, have been successful in increasing awareness about the risks of HIV, the importance of safe sex and the reduction of stigma associated with the disease.[41]

From these broader, applicable findings, we can see that successful campaigns tend to: 1) provide true, unexaggerated knowledge of potential consequences from a trusted source, 2) empower the target population to draw their own conclusion using informed, independent thought, 3) do not shame or stigmatize drug use, addiction, or their consequences, 4) include dramatic or evocative but not exaggerated imagery of consequences, 5) are accompanied by regulation, and 6) build community awareness and encourage communication between families, communities and civil society.

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38 "Fear-Based Public Health Campaigns for HIV/AIDS Prevention: Efficacy and Ethics," *Infectious Disease Advisor,* August 20, 2018.

39 "Fear-Based Public Health Campaigns for HIV/AIDS Prevention: Efficacy and Ethics," *Infectious Disease Advisor,* August 20, 2018.

40 "Factsheet: Act Against AIDS, Refocusing Attention on the HIV Crisis in the United States," *Centers for Disease Control and Prevention,* May, 2014.

41 "Fear-Based Public Health Campaigns for HIV/AIDS Prevention: Efficacy and Ethics," *Infectious Disease Advisor,* August 20, 2018.

Education Campaigns

The prevalence of drugs, such as the opioid heroin and synthetic opioids like fentanyl, pose a threat for emerging adulthood,[42] a period in which problematic substance use is most likely to occur.[43] The number of teen overdose deaths began increasing significantly in 2015,[44] and the number of opioid deaths among teenagers has nearly tripled in the past two decades.[45] School connectedness has proven to be highly effective in curtailing youth misbehaviors.[46] Health education in schools can mitigate risk factors as well as boost positive factors by educating students about the dangers of drug abuse and the prevention strategies.

In order to research and aggregate the factors that lead to successful educational strategies, we investigated national and regional teen-targeted drug education campaigns. Our review found that most educational campaigns provided various resources for different stakeholders, including parents, educators, children, and the scientific community. Successful campaigns focused on improving educational materials for school-based activities, introducing interactive learning scenarios, building systematic evaluation frameworks, and developing social skills.

The practical use of scientific knowledge: "brain and addiction"; "mental health and addiction"; "preseciption drugs and addiction"

Family and community engagements: The Martinsburg Initiative – Berkeley County, W. Va. Schools and Martinsburg Police Dept.

Digital technologies and resources: Discovery Education—PBS

An adaptable evaluation framework: Smart Moves, Smart Choices provides detailed "pre-test" and "post-test" templates

Education on social skills development: decision-making skills; effective communication skills

[42] Jeffrey Jensen Arnett, "Emerging Adulthood—A Theory of Development From the Late Teens Through the Twenties," *American Psychologist,* May, 2000.

[43] Substance Abuse and Mental Health Services Administration Office of Applied Studies, "Results from the 2005 National Survey on Drug Use and Health: National Findings," September, 2006.

[44] "Teen Drug Use Is Down—But Teen Overdoses Are Up," National Institutes of Health, May 7, 2018.

[45] Robert Glatter, MD, "Opioid Deaths In Teens and Children Almost Tripled In the Past 20 Years," *Forbes,* December 30, 2018.

[46] "Adolescent and School Health—School Connectedness," *Centers for Disease Control and Prevention.*

Program	Leaders
Heads Up	Scholastic Inc.; National Institute on Drug Abuse (NIDA)
Operation Prevention	The Drug Enforcement Administration (DEA); Discovery Education
Smart Moves Smart Choices	The National Association of School Nurses (NASN)
Project Alert	The RAND Corporation
Too Good for Drugs	Mendez Foundation
Overcoming Obstacles	An independent nonprofit education publisher
Life Skills Training	National Health Promotion Associates
Generation Rx	Cardinal Health Foundation
KidsHealth	Nemours
Project Success	Student Assistance Services (SAS)
Rx for Understanding	National Education Association (NEA)
Healthy Futures	National Education Association (NEA)
Prescription Drug Safety	EVERFI
Maryland Prevention Toolkit	Maryland State Department of Education
Opioid Abuse Toolkit—Resources for New Jersey Communities	Rutgers Ernest Mario School of Pharmacy

The practical use of scientific knowledge is the cornerstone for an effective education program. The combination of the science-based effects of drugs and scenario-based teaching and learning are introduced in all educational campaigns. The most common content included in the current education campaigns includes brain and addiction (such as in Heads Up by Scholastic[47]), mental health and addiction (such as in Too Good for Drugs[48]), and prescription drugs and addiction (such as in EVERFI[49]). The National Institute on Drug Abuse for Teens provides a significant amount of quality information on drug facts and hence can be used as a reputable resource for building a better curriculum.

Family and community engagements are important to advance educational campaigns. Substance Abuse and Mental Health Services Administration (SAMHSA) suggests that building the school and community-based prevention efforts to include students, families, and communities through drug awareness and education is crucial.[50] Studies have shown that teens who received consistent drug education from their parents are approximately 50% less likely to use drugs than those who do not.[51] The Opioid Abuse Toolkit Resources for New Jersey Communities, by Rutgers Ernest Mario School of Pharmacy, introduces community outreach initiatives.[52] The Martinsburg Initiative is a police-school-community partnership established to combat the opioid crisis in the State of West Virginia. According to the project director for the Martinsburg Initiative, the initiative is based on the research on Adverse Childhood Experiences[53] and aims to impact children's lives through in-school and out-of-school mentoring programs.[54]

The interaction between students and educators in combating the opioid crisis can be facilitated with **digital technologies and resources**. Documentaries connect students to the real world through impactful true stories on drug overdose. The PBS documentary *Understanding the Opioid Epidemic* explores and reveals the cause and impact of drug overdoses.[55] In Operation Prevention, launched by Discovery Education and the Drug Enforcement Administration, students are provided with virtual field trips and offered "Video Challenges" to create an original "Public Service Announcement" to reach their peers and confront the opioid crisis.[56]

An adaptable evaluation framework must be established to ensure sustainability. A systematic means to evaluate education campaigns' performance is necessary to measure their effectiveness and help educators improve strategies. For example, Smart Moves, Smart

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47 "Teens and Decision Making: What Brain Science Reveals," *Scholastic and the National Institute on Drug Abuse.*

48 "Substance Abuse Prevention," *Too Good for Drugs.*

49 "Prescription Drug Abuse Prevention—Powering Population-Level Prevention," *EVERFI.*

50 "Opioid Overdose Prevention TOOLKIT Safety Advice for Patients & Family Members," *Substance Abuse and Mental Health Services Administration.*

51 "Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health," *Substance Abuse and Mental Health Services Administration,* September 2015.

52 "Opioid Abuse Toolkit: Resources for New Jersey Communities – 2019," *Rutgers Ernest Mario School of Pharmacy.*

53 Vincent Felitti, "How Childhood Trauma Can Make You A Sick Adult," October 9, 2015.

54 "The Martinsburg Initiative works to make positive impact," *The Journal,* January 3, 2019.

55 "Understanding the Opioid Epidemic." PBS, Public Broadcasting Service.

56 "Operation Prevention." Operation Prevention.

Choices provides detailed "pre-test" and "post-test" templates to measure students' baseline knowledge and performance after learning.[57] The evaluation templates encourage educators to assess students before and after lessons to ensure retention and comprehension of the material.

Education on social skills development complements drug education. Students should be equipped to evaluate social and peer influences, as well as internal and external pressures. For instance, the K–12 prevention education program, Too Good for Drugs, which aims to reduce the risks of alcohol, tobacco and other drug use, includes training activities on a wide range of topics related to decision-making skills and effective communication skills.[58]

[57] "Smart Moves, Smart Choices: Learn About Teen Prescription (Rx) Drug Abuse and Watch Dr. Drew Videos."

[58] "Too Good Programs." Mendez Foundation.

New York State

New York State is one of the nation's leaders in school-based education, but faces significant barriers to successful implementation. Though a standardized curriculum for health class in New York public schools exists,[59] as well as a newly-added supplemental curriculum on opioids and heroin education,[60] there is still a relatively low level of buy-in in schools, due mainly to the fact that: 1) teachers have to adapt the plans to work for them and 2) there is no real statewide measurement or evaluation method to enforce or regulate the teaching of such curricula. The supplemental curriculum, added after New York passed Senate Bill S7910 in 2014,[61] mandated the inclusion of opioid and heroin education in school systems throughout the state, but has not been widely adopted.

There are several efforts ongoing in New York City to reverse the surge in opioid overdoses across all five boroughs. HealingNYC was launched in March of 2017 by the Office of the Mayor of New York City. In announcing HealingNYC, Mayor Bill De Blasio and First Lady Chirlane McCray outlined the city's initial investment of $38 million annually to reduce the deaths resulting from opioid overdose in the city through a variety of strategies.[62] The initiative was expanded in March of 2018, to include an additional $22 million annual investment.[63]

HealingNYC, "a new, comprehensive and multifaceted response to opioids,"[64] builds off of the work of the ThriveNYC program, a comprehensive investment in mental health in New York City that includes a focus on stigma reduction. HealingNYC strategies to prevent opioid overdose deaths include crisis response services, peer intervention, connecting New Yorkers with treatment, opioid education, implementing health clinics in schools, educating clinicians on best practices for prescribing, producing public health campaigns, and supply reduction efforts by law enforcement.

The program prioritizes the distribution of the overdose reversal drug naloxone (Narcan) and training on how to administer it. This effort was the basis of the public health campaign, "Save a Life, Carry Naloxone."[65] However, some major steps have not yet been taken to this end. For instance, naloxone is still not mandated to be available in public schools as it is in other states like Maryland. Clearly, there is immense focus on the topic in New York at the state and city level, but there are challenges to seeing these efforts through at the school and community level.

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[59] The University of the State of New York. "A Guidance Document For Achieving the New York State Standards In Health Education." *The State Education Department.* November 2005

[60] Health Education Standards Modernization Supplemental Guidance Document: Instructional Resource Packet For Heroin & Opioids." *New York State Education Department.*

[61] State of New York, Senate-Assembly. *Senate Bill S7910.* June 2014.

[62] "HealingNYC: Preventing Overdoses, Saving Lives," *The City of New York Office of the Mayor.*

[63] "HealingNYC: Mayor and First Lady Announce $22 Million Expansion of City's Plan to Combat Opioid Epidemic," *The Official Website of the City of New York.* March 19, 2018.

[64] "HealingNYC: Preventing Overdoses, Saving Lives," *The City of New York Office of the Mayor.*

[65] "HealingNYC: Mayor and First Lady Announce $22 Million Expansion of City's Plan to Combat Opioid Epidemic," *The Official Website of the City of New York.* March 19, 2018.

Mental Health

Teenagers are particularly vulnerable

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PEOPLE

Develop lifetime mental health & substance abuse disorders by the age of 24

Solution:
Education on Coping Mechanisms & Substance Misuse

High school students are particularly vulnerable to developing mental health issues, which are often tied to adverse coping mechanisms such as substance use.[66] Teenagers can face high levels of loneliness and stress, which can cause anxiety and depression, and lead to other adverse physiological effects.[67] Three out of four people with mental health and substance use disorders develop these conditions by the age of 24.[68]

Mental health, however, is treatable. There are many ways in which people can seek help. They can find support from friends and family, mental health professionals, support groups and networks, medicine, physical activity, and more. However, a major obstacle to accessing these resources is the stigma around mental health issues.[69] Today, people continue to experience a sense of shame in admitting that they struggle with mental health issues. As a result, many fail to seek information about appropriate treatment methods and instead choose to become isolated, which exacerbates depression and anxiety. While the stigma around mental health is slowly dissipating, it remains strong.[70] A key part of the problem is the lack of education.

People are scared and ashamed of mental illnesses because they do not understand them. Families do not know how to help affected loved ones. Therefore, the solution is to learn what mental health is and simultaneously reduce the stigma. Students need to learn how to understand and cope with mental health issues at a young age. Schools need to prepare children and teenagers for adult life, and that requires providing them with skills to face obstacles, to make hard decisions and to feel in control of their lives. Learning to be healthy is not an easy task but it should be prioritized at school.

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66 Interview with Crystal Marsonia, Assistant Director at Kings County Hospital Center, November, 2018.

67 Sarah Khan and Rafeeq Alam Khan, "Chronic Stress Leads to Anxiety and Depression," *SciMed Central,* January 27, 2017.

68 The City of New York. "Thrive NYC: A Roadmap for Mental Health for All," 2018.

69 The City of New York, Ibid.

70 Interview with Crystal Marsonia, Assistant Director at Kings County Hospital Center, November, 2018.

Interviews completed in 2018 showed that Columbia University students expressed difficulty speaking about challenging situations.[71] Many students felt comfortable giving advice to others, but were uncomfortable finding themselves in a vulnerable situation.[72] Furthermore, data indicate that millennials are shunning more traditional sources of community, such as religious institutions, to grapple with personal challenges. Instead, millennials are finding community elsewhere, particularly through interests shared with others.[73] Schools should help build those connections by encouraging students to pursue their extra-curricular interests, and develop goal-setting and life skills. In fact, according to Kennan McClung, a teacher at the Success Academy High School of the Liberal Arts in New York City, it is important to encourage young people to consider their interests and set goals. This can be done through simple questions such as "What are your dreams?" and "What makes you happy?" In order to help young people become happier, healthier and prepared for adult life, students need a space that cultivates the common interest of wellness, fosters community and promotes self-care as soon as elementary school.[74]

While stigma around mental health is still prevalent, the recognition of the opioid epidemic has opened up discussions on mental health.[75] Mental health and drug prevention education would benefit from being taught hand-in-hand. American teenagers struggle increasingly with mental health issues. Between 2007 and 2015, teen suicide doubled among girls and increased by 30 percent among boys.[76] A 2018 systematic review and meta-analysis of Mental Health First

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71 Interviews completed by Milena d'Ornano and members of a team completing a Mental Health project for a course called "Creating a Social Enterprise" with Sarah Holloway.

72 Ibid, d'Ornano.

73 Casper ter Kuile and Angie Thurston, "How We Gather." 2015.

74 Rhonda Williams, "The Importance of Self-Care," ASCA School Counselor. January 1, 2011.

75 Mattie Quinn, "New School Year, New Mental Health Lessons: 2 States Now Require It," *Governing,* September 6, 2018.

76 Mattie Quinn, "Teen Suicide Rates Are Rising," Governing, March, 2018.

Aid training tested the impact of education on knowledge, stigma, and improving behavior.[77] The purpose of the training was to improve mental health literacy, decrease stigma, and provide students with practical skills and support to cope with mental health problems. The study showed that education could help people improve coping mechanisms, and reduce adverse coping behaviors such as substance use. This research shaped the mental health curriculum that was incorporated into Health Education by the New York State Education Department in 2018.[78] However, incorporating mental health education in New York state schools has been a long process and has not necessarily made it into every health classroom.

[77] Amy J. Morgan et al. "Systematic review and meta-analysis of Mental Health First Aid training: Effects on knowledge, stigma, and helping behaviour," *PloS One,* vol. 13, May 31, 2018.

[78] "Mental Health Education Literacy in Schools: Linking to a Continuum of Well-Being," *New York State Department of Education,* July, 2018.

Drug Education Across Classes

Drug education can be integrated into schools' curriculum through scenario-based teaching. In fact, in the student focus group that we conducted at a public high school in Flatbush, Brooklyn, students reported learning about the effects of drug consumption on the brain in their Forensics and Biology classes and finding it useful.

This scenario-based strategy has the potential to help students understand how drugs affect their brain, but also to understand how certain institutions have failed the American people. Hence, one of the core benefits of scenario-based teaching is that it provides teachers with an opportunity to teach their subject matter while teaching students how to improve their decision-making skills, avoid dangerous behavior and possibly even protect and educate the people around them. This method allows teachers to provide students with real-world understanding of complex issues. Programs showed that short-term outcomes of the class-based scenario training were effective in the development of students' self-efficacy to resist the temptations of substance use.[79] It can provide an opportunity:

- To practice and reinforce new skills without fear of failure or criticism,
- To generate solutions to conflict situations in a safe environment,
- To consider a range of responses to particular situations,
- To experiment with roles and personalities in a non-threatening environment, and
- To experience the feelings that may accompany decisions.[80]

The curriculum should include the most common scenarios under which students are likely to use drugs irresponsibly. To deal with heavy academic pressure, students abuse so-called "Study Drugs," which are prescription stimulants like Adderall and Ritalin.[81] [82] The study shows that, today, social media can influence teens through pro-drug content and messages.[83] A large number of teens look up to popular celebrities and their peers, some of whom convey drug consumption as "cool." Role models and peer pressure have a powerful influence over teens and can encourage them to try drugs.[84] Therefore, providing students with safe spaces is important to allow them to discuss peer pressure and offer them advice.

The process of legislating and implementing mental health and drug prevention education is slow. The State of Virginia passed a law mandating mental health education, but the Virginia Department of Education is still in the process of improving the curriculum standards.[85] They are working with the National Alliance on Mental Illness and it will take at least three more years to upgrade the curriculum standards.[86]

Schools in New York State already incorporate drug education in health class, and sometimes in other subjects. Therefore, our team decided to consult with educators, policy makers and legislators in order to

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[79] Gülnaz Karatay and Nazan Gürarslan Baş, "Effects of Role-Playing Scenarios on the Self-efficacy of Students in Resisting Against Substance Addiction: A Pilot Study," *Inquiry : The Journal of Health Care Organization, Provision, and Financing, vol. 54,* 2017.

[80] "School-based education for drug abuse prevention," *Global Youth Network, United Nations Office on Drugs and Crime,* 2004.

[81] "In Their Own Words: 'Study Drugs'," *The New York Times Archives.*

[82] Simon Essig Aberg, "'Study Drug' Abuse by College Students: What You Need to Know," *National Center for Health Research.*

[83] "Social media can influence teens with pro-drug messages," *National Institute of Drug Abuse*, July 1, 2014.

[84] Brittany Tackett, "How teens are exposed to drugs and alcohol," Project Know, *An American Addiction Centers Resource.*

[85] Laura Perrot, "New law mandates mental health education in Virginia schools," *WDBJ7*, September 21, 2018.

[86] Christine Vestal, "States Begin Requiring Mental Health Education In Schools," *National Alliance on Mental Illness,* June 23, 2018.

design a medium, accessible statewide, to provide teachers with support, training, and quality resources to improve drug prevention education in schools.

Our focus groups found that students are learning about harmful effects of drugs not only in their Health class, but also in their Forensics and Biology classes. Professor Katherine Roberts from Columbia University emphasized that problem solving skills are essential to drug education. These skills can be developed in the core content areas by creating contexts that simulate real-life topics regarding drug education (e.g., the bad effects of drug use and drug dose calculation) in mathematical application problems. Meanwhile, students can also learn more about how to cope with pressures and help others from community activities introduced in social studies classes. Susan Herman from ThriveNYC agrees that having drug education incorporated in classes other than just health class is a necessary entry point for students to gain a full appreciation of the importance and scope of the issue. In our design workshop, different stakeholders agreed that teacher collaboration across disciplines can facilitate the delivery of drug education.

In the design workshop, one education practitioner proposed that **Creative Writing** can be used as a tool for students to express their opinions about mental health and drug use. In fact, drug education can be applied into Science classes, History classes, Economic classes, etc.

Drug education should be thoroughly grounded in learning about the nature of science. A NIDA-funded study found that the inclusion of drug-related modules in science classrooms improves students' test scores.[87] [88] Students study the biology of addiction and learn how drugs affect brains in **Biology and Chemistry classes**.[89] Students explore how science generates evidence and hence better understand the human body and diseases. The National Institutes of Health (NIH) developed "Evolution and Medicine" to inform public health problems with the theory of evolutionary biology.[90] The High School Curriculum Supplement includes five inquiry-based lessons which task students with designing scientific investigations, carrying out mock investigation, and devise scientific explanations with evidence.[91] In **Forensics classes**, students can join in the Inquiry Lab and act as forensic investigators. The lab utilizes presumptive forensic testing procedures and laboratory chemicals that produce screening results similar to controlled substances. Students are asked to identify if it contains any unusual substances in Forensics classes.[92]

Drug education should be introduced in **History classes.** History can offer students invaluable insight into the nature of disease, the structure of medical institutions, and the moral dilemmas

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[87] "Learning the Science of Drugs Helps Teens Master Biology, Chemistry," *National Institute on Drug Abuse,* July 1, 2004.

[88] Rochelle D. Schwartz-Bloom and Myra J. Halpin, "Integrating pharmacology topics in high school biology and chemistry classes improves performance," *Journal of Research in Science Teaching,* October 30, 2003.

[89] "Your Brain At-a-Glance," *Scholastic*.

[90] Paul M. Beardsley et al. "Evolution and Medicine: An Inquiry-Based High School Curriculum Supplement," *Evolution: Education and Outreach*, October 8, 2011.

[91] "Evolution and Medicine," *National Institute of Health.*

[92] Shawn Hasan, Deborah Bromfield-Lee, Maria T. Oliver-Hoyo, and Jose A. Cintron-Maldonado, "Using Laboratory Chemicals To Imitate Illicit Drugs in a Forensic Chemistry Activity," *Journal of Chemical Education,* June 2008.

of clinical practice.[93] Knowing the history of drug epidemics and prohibition, including the War on Drugs[94] and the Opium War,[95] will equip students with knowledge about the international efforts to address the crisis. The roles of the U.S. Food and Drug Administration, the Federation of State Medical Boards, and the federal government in the opioid crisis provide students with a better understanding of the moral concerns, and shortcomings of institutions meant to protect people from harm as well. By drawing on historical experience, students can also learn more about the link between racial discrimination and substance use and be educated to say no to drugs. In fact, "The Real History of Illegal Drugs," a series of catchy, well-produced videos, has been viewed millions of times on social media channels and is recommended to be used as educational material.[96]

Given the huge economic cost of drug abuse and the profitability of illegal drugs, it is highly feasible to add drug-related knowledge in **Economics classes**. Case studies can be designed based on the behaviors of pharmaceutical companies, which started to market opioid pills (e.g., OxyContin) back in the 1990s and are accused of chasing profits regardless of the human cost.[97] Students could also learn about the role of the pharmaceutical industry (e.g., Purdue Pharma), as discussed in Chris McGreal's book *American Overdose: The Opioid Tragedy in Three Acts*, and should be led to discuss the liabilities of companies and customers for the opioid crisis.

Presentation:

Jen Furst, Nurse at Rikers

In her presentation, **Jen Furst** highlighted the importance of adopting a trauma-informed lens when providing mental health services and education. She explained that social determinants are the conditions in which we are "born, grow, live, work, and age"[98] and that "ninety percent of the determinants of our health derive from our lifetime social and physical environment—not from the provision of healthcare."[99] In the **Adverse Childhood Experiences (ACE)** study, which was conducted in 1998 and included over 17,000 participants, two-thirds of people reported one ACE. One in five people reported three or more ACEs.

The study found that people with four and over ACEs were 400–1200% more likely to have substance use disorders, depression, and to be suicidal. In other words, there is a relationship between ACEs and negative health outcomes. As ACEs increase, the likelihood of negative outcomes, including illicit drug use, alcoholism and alcohol abuse, increase. Those negative

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[93] David Jones, Jacalyn Duffin, Jeremy Greene and John Harley, "Making the case for history in medical education," *Oxford University Press's Academic Insights for the Thinking World,* January 9, 2015.

[94] "Drug Enforcement in the United States: History, Policy, and Trends," *Congressional Research Service,* October 2, 2014.

[95] Austin Ramzy, "How Britain went to war with China over opium," *The New York Times,* July 3, 2018.

[96] "The Real History of Drugs Educates Millions," *Drug Policy Alliance,* August 23, 2015.

[97] Scott E. Hadland, Ariadne Rivera-Aguirre, Brandon D. L. Marshall, et al. "Association of Pharmaceutical Industry Marketing of Opioid Products With Mortality From Opioid-Related Overdoses," *JAMA Network Open,* January 18, 2019.

[98] World Health Organization, 2010.

[99] LI Sederer, "The Social Determinants of Mental Health," *NCBI, Psychiatric Services,* February, 2016.

outcomes range from poor academic achievement and unintended/adolescent pregnancies to liver disease and financial stress. To prevent ACEs and support children's development, schools must cultivate stable, safe environments but programs outside of school are also important to help address children and families' needs, strengthen parenting skills, and improve the quality of children's home environment. Those strategies include:

- Parenting training programs
- Teen pregnancy prevention programs and parent support programs for teenagers
- Partner violence prevention
- High quality child care programs
- Home visits to pregnant women and families with newborns
- Income support for lower income families
- Mental illness and substance use treatment

Interviews:

Dr. Katherine Roberts

Professor Katherine Roberts is an Adjunct Associate Professor at Teachers College, Columbia University and has conducted extensive research in health education and worked on a number of drug prevention programs, including with the White House. She received a B.S. in Community Health Education from Ithaca College, an M.P.H. in Sociomedical Sciences—Health Promotion/Disease Prevention from Columbia University, and an M.S. and Ed.D. in Health Education from Teachers College, CU.

Professor Roberts currently works with community organizations and NYS public schools in Westchester, NY on implementing opioid prevention curriculum. Prior to working on opioid prevention she worked with the U.S. Department of Justice on drug prevention campaigns. She emphasized the need for incorporating life skills into drug prevention curriculum and thinking outside the box when creating activities as most students learn from more "hands-on" models. One example of an activity she used from a successful drug prevention curriculum included a school beautification project where students worked together to pick up trash and clean up areas around their school. Professor Roberts was able to use research that shows picking up trash increases community connectedness and makes residents feel safer. A healthy community with visibly clean areas makes people safer and reduces violence and potential drug use.

In her messaging around opioid prevention, Professor Roberts explained that successful campaigns and curriculum are able to paint a larger picture that includes links between mental health and drug use and addiction to prescription drugs like Adderall, which are more commonly used among middle and high school aged students. In her work with NYS public schools, Professor Roberts conducts surveys and observational sessions to evaluate current opioid prevention curriculum. Her advice for our team was to emphasize the need to draw the opioid issue larger, incorporate life skills so that the curriculum can be transferable and

easily accessible for teachers, and to include students and parents by providing different entry points like short video scenarios and student-created public service campaigns.

Susan Herman

Susan Herman was named Senior Advisor to the Mayor and Director of the Office of ThriveNYC. She manages ThriveNYC and oversees the integration of programs across various City agencies. ThriveNYC was created by First Lady Chirlane McCray to make a more comprehensive, transformative change to the way mental health services are delivered across the city. Prior to her current role, Susan Herman served as Deputy Commissioner of Collaborative Policing at the NYPD. As a strong advocate for mental health and wellness in her previous positions with the NYPD, Ms. Herman also emphasized the need for a connection and message around mental health and drug prevention, including in opioid prevention curriculum. ThriveNYC implements programs with schools and after-care programs and understands how important it is to provide students of all ages with access to education and resources around mental health and substance use.

Ms. Herman emphasized two key points for our project around opioid prevention curriculum in NYC public schools. First, to send a clear message that mental health must be included in opioid prevention curriculum. Second, she encouraged our team to gather, rather than create, existing curriculum and lessons learned from other drug prevention campaigns. She also encouraged our team to formulate a plan of how to get from the initial task to our goal of having opioid prevention curriculum implemented in all NYC public schools, as this a longer-term project. From her previous experience working with a diverse group of stakeholders, Mrs. Herman explained the importance of creating a product or end goal of curriculum that engages students, as well as, teachers and parents. To this end, she advised that opioid abuse prevention curriculum be integrated across disciplines. She also advised that there should be interactive material for students to engage in and to have a method of evaluation to make sure the curriculum is effective.

Dr. Gary Belkin

Dr. Gary Belkin is the Executive Deputy Commissioner at New York City Department of Health and Mental Hygiene (DOHMH). Prior to this position, he was the Medical Director for Behavioral Health at NYC Health + Hospitals Corporation of the City of New York. He was an Associate Professor in the Department of Psychiatry at New York University School of Medicine and founding Director of the NYU program, which was developed to advance innovative implementation and policy approaches to scale and improve population mental health strategies.

At DOHMH, Dr. Belkin oversees strategic policy direction of ThriveNYC. In his experience, the most successful mechanisms to support mental health focus on coping skills and emotional self-care, with a particular investment in high-need areas.

ThriveNYC started with the aim of scaling, and several programs including “Kognito” and other suicide prevention initiatives have since been adopted by the DOE. ThriveNYC’s School Mental

Health Clinics and Consulting programs now cover all DOE campuses and educate staff and families on proven awareness and prevention approaches for youth.[100]

He emphasized the need to customize programs and assess the unique leadership and skills required at each school. ThriveNYC has school-based health structure and uses a standard assessment tool to identify gaps. In his experience, ThriveNYC acted as a consultant for options within the school.

Dr. Belkin acknowledged that bureaucracy is a significant challenge for his work and for ThriveNYC. He praised the proposed design process for our Capstone and expressed his belief that such a process should become normalized. The sentiment that bureaucracy slowed progress was a frustration shared by several other interviewees.

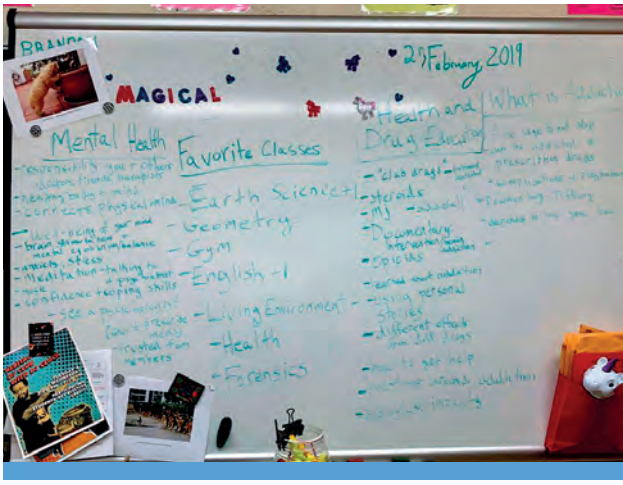
[100] Drew Blackman and Edward Levine, "HealingNYC: Preventing Overdoses, Saving Lives," The City of New York, *Office of the Mayor*.

Focus Groups

Our team conducted two focus groups with high school students, one at a public high school in East Harlem, Manhattan, and one at a public high school in Flatbush, Brooklyn. We conducted the focus groups in health classes and were able to ask students questions about their feelings on the content of general education, health, mental health, and drug prevention education. After conducting the two focus groups, we noticed a disparity in the drug education curriculum and breadth of understanding by the students.

Capstone students Preety Aujla, Addie Thompson, Lawrence McDonald, and Milena d'Ornano onsite in Flatbush to conduct a focus group.

While students at each school were keen to learn more, students at the school in East Harlem seemed to have already been exposed to a more comprehensive drug education program than those at the school in Flatbush, because their health teacher had created her own health class curriculum, going above and beyond the resources provided by DOE. We did visit the school in East Harlem after the school in Flatbush, so it is possible that students were just at different points in their curriculum cycle. We also found that smaller class sizes fostered better discussion and greater engagement.



Thoughts and opinion shared by high school students at a focus group.

Our findings from both focus groups inform our guidelines around teaching strategies and recommendations for successfully implementing opioid prevention curriculum throughout NYC public schools. Not only should opioid prevention curriculum employ varied teaching methods, such as short videos and interactive scenarios, but it should also ideally be taught in classes with a smaller student-to-teacher ratio and include versatile content around drug use and prevention in order to be taught across different subject classes and not just in health class.

Focus Group Findings

High School in Flatbush

Question 1: Tell us about your education. Do you like your school? Do you dislike it? Why or why not? What's your favorite class or class period? Why?

- A significant number of students reported disliking school and preferred to stay at home, eating better food and relaxing.
- Gym and Health class were the two most popular classes. Students reportedly found that Health class was "helpful" and relevant to their lives.
- Chemistry, Science, and Math were also very popular classes. In particular, Math was popular with two students and science with one. One student appreciated physics class.
- English class and Forensics/Biology were liked by two students. One student liked English class because they liked creative writing and thinking. Another student found English class "calming."
- History and Economics were liked by one student each. One student liked History because "it is interesting to learn what happened in the past and how it happened, to be able to look back on their mistakes and understand the world better." Another student liked Economics because it is "helpful."

Class	Number of Students
Gym	4
Forensic/Biology	2
Health	4
Music	1
English	2
Science	1
Chemistry, Science and Math	3
Math	2
History	1
Economics	1

Question 2: Do you remember your drug education in school? Did they show you a PowerPoint? Did they show you a video or photos? Did you discuss the different types of drug groups? What do you remember from it?

Health Class:

- Students reported remembering **sex education**, and learning about the diseases you can contract from unprotected sex (i.e., using protection/condoms/abstinence, accidental pregnancy, HIV, STDs, and AIDS). They found this useful.
- Students recalled a movie about **Jackie Robinson**, which they watched in Health Class. Students disagreed on the main themes of the movie. While some students thought it was related to health, others did not. Some thought it was about racism and others believed it was about mental health.
- They remember watching a **short film on cyberbullying**, which included a suicide attempt. The majority of the class found it interesting but reported not feeling bad once it was over and did not learn much from the film because they already knew that incidents like this could happen.
- They reported being **comfortable** talking about their experiences in groups during health class, even when the teacher is listening because he is "cool."
- One group reported that their favorite topic so far is **sex safety** but they have not addressed drugs yet. Another group had studied **meth and cocaine**. And another studied **coping and living environment**.
- One group reported having **lectures**, **video screenings**, and **group breakouts** and prefer when Health class includes a mix of the three because all of those are useful.

Other classes:

- In **Forensics class**, they studied drugs and learned that it could be hard to stop taking them.
- In **Biology class**, they studied the risk of taking drugs during pregnancy and learned that the baby may need to continue taking drugs after birth to survive.

Question 3: What is mental health? Write down a definition. Why is mental health important? Are there people in your life who talk or have talked about mental health? Who was it? What did you learn? Can you give an example of what mental health is?

[We did not have time to address this question.]

Question 4: What is addiction? What does it mean to be addicted or dependent? What do you know about addiction or dependency to prescription drugs or something you get over the counter?

Addiction:

- When you cannot stop doing something/ urge to keep doing it (i.e., video games, phones, crack, social media, prescription drugs, sleeping pills).
- Dependency is when you need illegal substances for your body to function a certain way (i.e., crack, percs).
- Drugs are extremely addictive, can cause mental issues and violent behavior, can motivate your brain to crave more, can cause diseases like cancer, AIDS, and mental toxins. An addiction is a brain disease that can cause passive or abnormal behavior (i.e., codeine, Xanax, morphine).

Dependency on prescription drugs:

- Some help you with pain, you can get depression, also oppression.
- You can get Advil, Motrin, NyQuil.

High School in East Harlem

Question 1: What is your favorite class?

- Earth Science, Geometry, Gym, English, Living Environment, Health, Forensics

Question 2: What is mental health and what do you know about mental health?

- It is the responsibility of you and others including doctors, friends, and therapists
- Healthy body and mind
- Connects physical and mental
- Well-being of your mind
- Brain stimulation and mental equilibrium/balance
- Anxiety, stress
- Meditation, talking to a psychiatrist
- Music
- Confidence and coping skills
- See a psychologist who cannot prescribe medications
- Trusted family members

Question 3: What have you learned on health and drugs in class and in your own life?

- "Club drugs," tobacco and alcohol
- Steroids
- Marijuana and Adderall
- Watched a documentary called *Intervention* on heroin addiction
- Opioids
- Learned about addiction using personal stories
- Different effects from different drugs
- How to get help
- Questions around addiction
- Biological impacts

Question 4: What is addiction?

- The urge to not stop
- Can be addicted to prescription drugs
- Complications with pregnancy
- Documentary—Tiffany
- Depends on how you feel

Design Session

Design session participants came from backgrounds of academia, policy, and practice.

Another cornerstone of our project was hosting a community design session with a variety of stakeholders. The session was designed to be a collaborative, co-created, and solutions-oriented session around challenges and opportunities to reimagine the way opioid prevention education is delivered in public schools in NYC for ages K–12. We had full participation from our Capstone Team as well as guests representing academia, policy, and practice around this topic.

Attendees

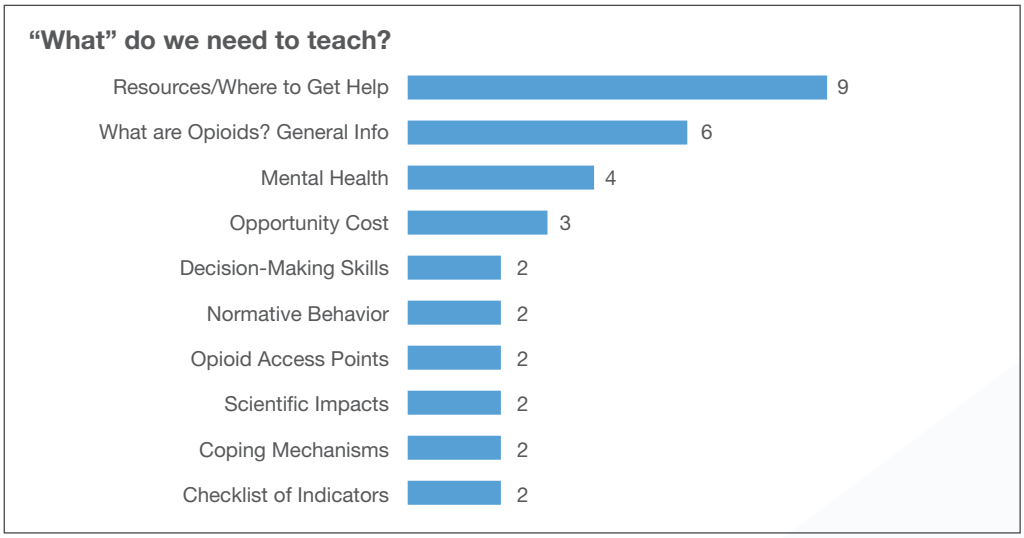
- **Joseph Heritage,** Design Lead at Columbia Design Studio and Session Facilitator
- **Helen Scalise,** Senior Manager from Continuous Improvement at DOE
- **Dr. Katherine Roberts,** Ed.D. and M.S. in Health Education and Associate Professor at Teachers College
- **Kennan McClung,** Teacher, the Success Academy High School of the Liberal Arts in New York City
- Columbia SIPA Capstone Team (**Minwen, Sloan, Preety, Lawrence, Milena,** and **Addie**)

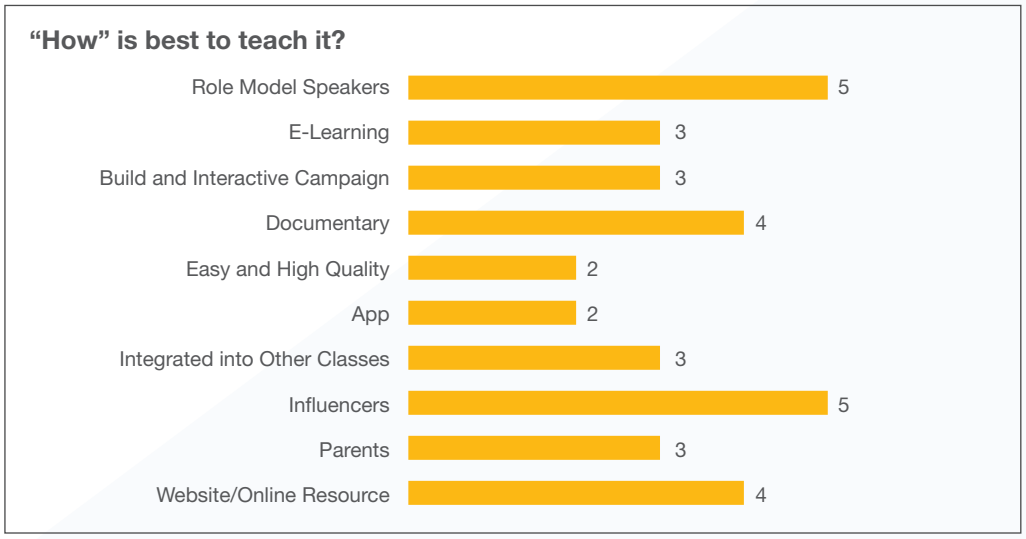
Design Cycle

With the help of our resident Columbia Design Lead, we led participants through a series of exercises that helped generate a variety of ideas, without specific constraints, around a prompt (all exercise descriptions and implementation can be found in Appendix 1). The two-hour group session generated over 100 insights and ideas that helped our Capstone Team reframe the way we viewed the problem, and launched us into our final phase of recommendations with increased clarity and purpose.

Session Results

Table 1: Design Solution Session Results





**NOTE: ideas have not been identified as belonging to certain participants to protect anonymity and maintain the privacy of the session.*

We broke down our topic area into "what" and "how." What content was essential to teach around this topic and how would teachers best teach it? We gave no constraints to drive creativity. While there were dozens of different topics, we saw themes start to formulate around a few keys areas (Table 1).

"What"

For the "what" component, needing to know the basics of opioids (including impacts, where they come from, why they were dangerous, etc.) came up as a learning area. Another theme was the idea of resources, or how/where to get help. What was interesting was that while there were no real constraints in the session in terms of intervention focus on a certain sub-group, participants mentioned multiple times how important it was to equip teachers for effective delivery of the content, especially regarding science-based knowledge, indicators of addiction, and the ability to speak to parents about this issue.

A memorable idea that emerged during this exercise was the idea of reframing drug abuse for students. Instead of focusing on the negative, asking them "what do you want to do with your life?" and "what are your hopes and dreams?" helped to highlight the positive and all the reasons why drugs are not right for them to achieve their goals.

"How"

When we explored "how" to deliver this material, the ideas also fell into thematic areas. Suggested delivery points included an app, a website, influencers, and class visits by recovering substance users as role models. The group also spoke of interactive techniques like e-learning programs and co-created campaigns, where students got to design their own media intervention and had to research the topic thoroughly. The idea of student-led skits also came up as a way for the students to take on a teaching role.

Throughout this discussion, the group stressed the importance of support for teachers, not only topically (the "what") but also in terms of the ease of use of the tool or intervention. The group wanted teachers to feel utmost support in every interaction they had around this topic, which has furthered our focus as a Capstone Team on teacher support.

A full list of responses can be found in Appendix 1.

Alongside tools or interventions, several **teaching strategies** were suggested as potentially successful methods for delivering such sensitive, complex content.

1) *Varied messaging tactics:* Given the range of ages and grades learning about this material, it is important that teachers are equipped to disseminate age-appropriate messaging that does not induce stigma but instead appeals to emotion. Messaging is critical to students being informed and empowered to make positive, healthy decisions.
2) *Interactive lesson plans:* Far and away, respondents favored interaction as a key component to success in instilling knowledge in students, especially at a young age. The group spoke of in-class skits, e-learning, co-created campaigns and more as ways to achieve a collaborative learning experience around opioids.

3) *Processing the material:* As was acknowledged in our design session, this is a difficult topic on many levels. Therefore, the ability of teachers to build in time to process and digest the material with students is paramount. How did the content make them feel? What did it remind them of? Is there anyone in their life who struggles with addiction?

Questionnaire

We also provided a questionnaire for one invitee who was not able to make the session in-person but still wanted to participate. As a teacher, this respondent utilizes a pre-set drug education curriculum (that incorporates opioids) called Health Smart, a curriculum developed by PBS (specifically WITF, a local TV channel serving Pennsylvania). It equips teachers with ready-made lectures, discussions, handouts, videos and PowerPoint presentations and seemed to be favorable for the teacher who used the source. When asked what could be added or what would enhance the program, this respondent felt the possible inclusion of guest speakers would enliven content delivered to students, supporting the ideas generated from our design session.

Summary of Report Findings

Some **key themes** that emerged from our research include:

- **Mental health:** Addiction is highly correlated with other mental health issues, and often needs to be medically addressed in tandem. Teaching should be no different. Opioid education needs to be integrated with mental health education in schools as a fundamental starting point moving forward. This is where entities like ThriveNYC and HealingNYC can be important partners.
- **Broad-based curriculum integration:** Opioid prevention education needs to be broader than health class. As we've seen, health sometimes is not taught until junior year, and it is often not taken seriously as a topic due to the sensitivity of the material. There are several other opportunities for curricular integration, like Biology, Forensics, Gym class, English, and more (one suggestion was having the students do a simple cost-benefit analysis using the financial and social cost of opioids). This model was reemphasized across literature, interviews, and discussion with experts in education and practitioners in the field.
- **Scenario-based teaching:** Real world skills were constantly raised as an important teaching goal throughout our session. This includes decision-making skills, normative behavior, leadership, and negotiation tactics. By using drug education as a platform from which students can gain an immense amount of life and coping skills, teachers create a win-win situation. This idea of reinforcing skills and tools like decision-making, self-determination, and cost-benefit analysis also ties into the previously discussed ideas of curriculum integration and mental health.
- **Beyond school:** As we know, many of the factors leading to opioid use are systematic and structural, including socio-economic status, race, and environment. This is not something the education system alone can tackle. We see education as an entry point, but not THE entry point. Whatever process, mandate or tool that is developed needs to necessarily take into account these structural factors in order to be a resource outside the classroom as well.
- **Messaging matters:** The way that opioids, addiction and treatment are discussed inside and outside the classroom can have a dramatic and lasting impact on students. Fear-based tactics, stigmatizing language and exaggeration of the impact of drug use have proven ineffective in reducing drug use and can even have an adverse effect on behavior and foster distrust in all anti-drug rhetoric. Sharing facts about and true stories of drug use with students, from a trusted source, and providing them with good decision-making skills is a more successful way to influence behavior.

- **Parental Involvement:** In efforts to create healthier communities and educate more individuals on opioid use and prevention it is imperative for parents to be involved in their child's opioid prevention education. To this end, our project established DOE contacts in Continuous Development and Community Schools. The Community School model uses a holistic approach that understands the importance of parents being involved in their child's education and development. Community Schools already work closely with their students' parents and are more porous than traditional NYC public schools, making them a strategic partner in rolling out SNP and Columbia's Capstone around opioid prevention strategies.

Capstone students present their findings and recommendations to the Special Narcotics Prosecutor Bridget G. Brennan and the Richmond County District Attorney's Office and the Bronx County District Attorney's Office.

Recommendations

In an effort to successfully implement an opioid prevention strategy across all NYC public schools, our team proposes a timeline that includes developing an online resource page with recommendations of opioid prevention curriculum that uses best practices and entry points, or "tabs," for teachers, students, and parents. Even with a simple design, an online resource page that aggregates information, curriculum, and strategies in one location for students, teachers, and parents to use that is relevant and credible will make a significant difference in efforts to integrate opioid prevention in all NYC public schools. Based on our findings from the external design session, Community Schools are an important NYC Department of Education entry point to rolling out this proposed online resource page.

Further, we recommend that relevant stakeholders participate in a Columbia University Design Studio Session to discuss their needs. It is critical to convene diverse stakeholders, and in particular, those who will be using the software. In our experience, the Design Studio presented a strong added value in discussing challenges to implementing successful drug and opioid education in an informal setting. This played a key role in introducing participating parties and providing a safe environment to examine needs.

Roadmap:

Who should take over the project?

- **Future Capstone Teams:** The Columbia University's School of International and Public Affairs (SIPA) Capstone Project is a consulting project with an external client outside of SIPA. A team of about six graduate students works with a faculty advisor for one semester to provide clients with innovative analysis and practical recommendations.

  Until now, the Office of the Special Narcotics Prosecutor and the District Attorneys for Staten Island and the Bronx collaborated with Columbia University's School of International and Public Affairs (SIPA) on three Capstone projects. This project is a natural extension of the previous findings and recommendations by past Capstone Teams that educational strategies and public awareness campaigns should be employed to combat the opioid crisis in NYC. In the same way, several recommendations on how to approach holistic drug education are made in this project based on our comprehensive research and conversations with different stakeholders. Recommendations such as "Integrating mental health education with opioid education" and "Creating an online resource page" are feasible directions for future Capstone Teams.

  By looking at previous SIPA Capstone projects, we can see the possibility to leverage future projects to translate our recommendations into actions. Many projects focus on tech solutions to challenges in public education such as "United States K–12 Public Schools: Development of a Case for A Unified Accountability and Measurement System." [101] SIPA has also collaborated with the New York City Department of Education before on multiple Capstone projects including "Technology-Enabled Instructional

[101] "United States K–12 Public Schools: Development of a Case for a Unified Accountability and Measurement System," *Columbia | SIPA Capstone Workshops*

Models"[102] and "Advancing Education for Sustainable Development: Designing a Pilot Program for the Park Slope Education Complex, NYC Department of Education."[103] Moreover, this Capstone project has opened the possibility for further collaborations with Teachers College and our current faculty advisor, Janet Tobias.

- **External Consultants:** Our team is also in favor of seeking advice from consulting firms with expertise in education. Private firms such as Accenture provide digital innovations in education to help schools engage students more in learning.[104] Education Elements also helps schools create new instructional model designs that re-imagine the use of time, space, and resources to increase student engagement and achievement.[105] ProjectEd specializes in design and strategy and offers strategic support in executing a particular vision for a new website or tool.[106] ProjectEd worked with The Center for Research on Education Outcomes at Stanford University (CREDO) to build a model for disseminating research results and reaching diverse audiences. In the CREDO project, ProjectED help translate between two clusters of professionals: the technical-minded folks who create the research on the one hand, and the practical-minded folks who can use the research on the other, to allow them speck the same language.[107]

What organization should host the content?

We have suggested three possible hosts for the content. These hosts could potentially play the role of literally hosting the site as well as maintaining and updating it. These hosts included:

- **The New York City Department of Education or the New York City Department of Health and Mental Hygiene (DOHMH):** In our conversations with these city agencies, they have been largely receptive to cooperation and collaboration on efforts to end the opioid epidemic. Many cities agencies are already working interdepartmentally on drug and alcohol abuse, mental health and progressive educational reform. It is our impression that these city agencies are not opposed to working together; rather, they are short on resources, including time and funding. They are also somewhat tied down by bureaucracy. Once a pilot is developed, either of these agencies may be willing to act as a host of the content. They would also be a well-respected and trusted entity to house the content.

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[102] "Technology-enabled Instructional Models," *Columbia | SIPA Capstone Workshops*

[103] "Advancing Education for Sustainable Development: Designing a Pilot Program for the PARK SLOPE Education Complex, NYC Department of Education," *Columbia | SIPA Capstone Workshops*

[104] "Innovating the Student Experience," *Accenture*

[105] Brittany Griffin, "How to Pick the Right Instructional Model for Your Classroom," *Education Elements,* Aug 17, 2018

[106] "Who We Work WIth," *ProjectEd.*

[107] "Case study—CREDO Democratizes Data for a New Generation of Educators," *ProjectEd.*

- **HealingNYC:** Dr. Gary Belkin expressed that ThriveNYC is actively looking for synergies with other ongoing efforts in the city. HealingNYC, the opioid specific effort housed under ThriveNYC, may serve a good partner and starting point. ThriveNYC has made an effort to stretch their resources by partnering with existing efforts in other city agencies. For example, the ThriveNYC program has several ongoing collaborations with the DOE that promote mental health and wellness in the NYC school system.
- **Teacher's College, Columbia University or the School of International and Public Affairs, Columbia University:** Teacher's College, and Dr. Roberts in particular, have been fantastic partners to us throughout this project. In the next stage of the project, where curriculums must be evaluated, it may be beneficial to work closely with Teacher's College or the School of International and Public Affairs. Academic institutions like these can serve as great third-party validation of a resource like the one recommended in this report.

What should it look like?

***Drug Prevention Education* Website Design Guide:**

The Human Rights Educators USA (HRE USA) website (https://hreusa.org/) and iCivics (https://www.icivics.org/) are great examples of online resources for educators. We recommend using them as models to design the *Drug Prevention Education* website and we outline how to do so in this section.

The *Drug Prevention Education* website should include four main pages in its navigation:

1. **About Us:** This page should explain the mission of the site (i.e., to provide educators with quality materials to teach drug prevention, to help students learn how to live a healthier life, to decrease rates of drug abuse and addiction, to address the opioid epidemic), and should introduce the professionals responsible for curating the materials in the library described below.

   The About Us section should also outline the criteria used to select drug prevention materials. Some examples, based on some of the HRE USA Library and iCivics criteria, are:

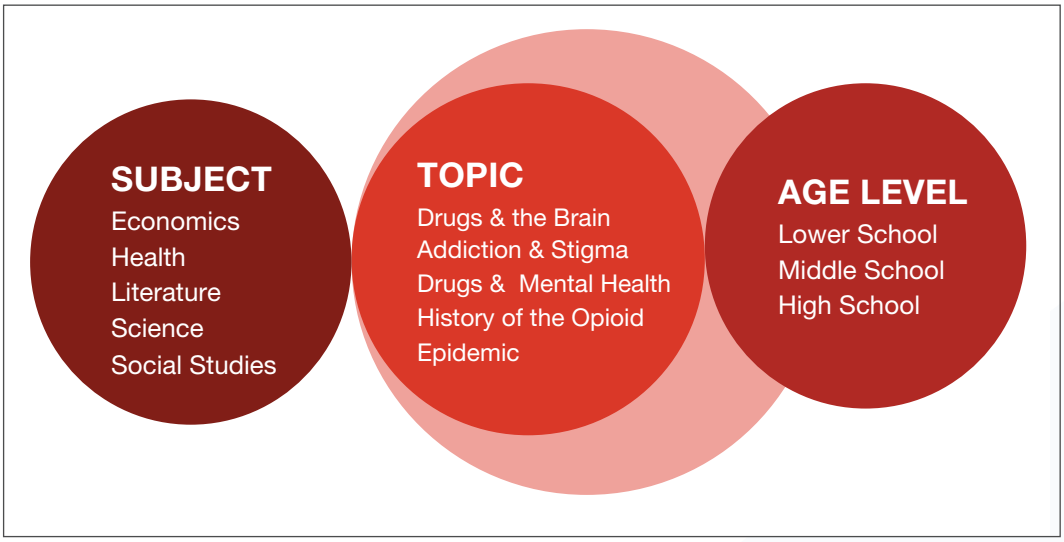
   - Overall effectiveness, applicability, and quality
   - Allows a variety of approaches, subject areas, and age levels
   - Easy to access
   - Derived from a transparent source

2. **Drug Prevention Education Library:** This page should contain a curated collection of materials, including curriculum, lesson plans and manuals, as well as articles, books, and audio-visual content. The library should also offer an integration guide so that educators can learn how to incorporate those materials into a variety of courses. The library's structure is detailed in the section below.

3. **Get Involved:** This page should provide a variety of ways to help accomplish the mission (i.e., volunteer, donate, take action, become a member, become a Drug Prevention Friendly School). Ways to get involved will vary depending on the initiatives launched in parallel to the site.
4. **Submit Materials:** This page should allow individuals and organizations to submit resources to the *Drug Prevention Education Library*. The materials should then be reviewed and curated accordingly.

Drug Prevention Education **Library Structure**

The library should include search filters to help educators find appropriate materials and browse by topic, subject, and age level. Those can be organized as follows:



Please note that the subject and topic lists above are not exhaustive. The *National Institute on Drug Abuse* lists a number of related topics that may also be included in search filters: Addiction Science, Adolescent Brain, Comorbidity, College-Age & Young Adults, Criminal Justice, Drugged Driving, Drug Testing, Genetics, Global Health, Hepatitis (Viral), HIV/AIDS, Military, Opioid Overdose Reversal with Naloxone, Pain, Prevention, Recovery, Substance Use and SUDs in LGBT Populations, Treatment, Trends and Statistics, and Women and Drugs.

Furthermore, the Age Level section can be broken down further to specify ages. And the library can include an additional section that will filter by type of educator and include a special section for parents.

What technical skills will be needed?

The online resource tool will require three key areas of expertise: **website design, education experience,** and **project management**.

At least one person should be responsible for constructing the website. During the early trial stages of the online resource tool, website building and hosting companies, such as Squarespace and Wix, can provide basic website building templates to quickly experiment with design and user experience. These websites offer subscription plans ranging from roughly $11 to $40 per month. While pre-built website templates lack the creative autonomy that hiring a software developer offers, this option is much cheaper. Alternatively, a website programmer can be hired as a consultant to work alongside the rest of the team to build a functional, user friendly website. The website programmer should have experience building websites and writing code. This person can be a student or a professional, and will be responsible for changing user design, adding materials, regular maintenance, and other changes to the website as needed. According to Glassdoor, the average salary for a web programmer is $62,370 per year.

Education expertise is necessary to research, analyze, and consolidate educational materials for stakeholders. This team will perform research on best practices in education for targeted age groups and bring experience from past work. Building from the research from this Capstone, this team will develop curriculum and work with the website design team to include curriculum on the website. Future Capstone Teams or external consultants are ideal candidates for teams with education expertise. We recommend that these candidates have experience working in schools as teachers or administration and/or researching mental health or drug education in schools. It is important to note that the education team can build a pilot website if the team has simple design or website building experience. In this case, a specialized developer will not be required.

A project manager should be on the team to monitor progress and ensure that the team meets deadlines. This person will oversee the project and help liaise with various parties to remove barriers, schedule check-ins, and keep open communication among stakeholders. The project manager will communicate directly with the party who is hosting the online resource, the education team, and the web design team. We recommend that candidates for this position are the Capstone advisor or a member of the party who hosts the resource.

Timeline:

- **Step One:** Create an online resource page with a simple design that includes tabs for teachers, students, and parents with varied opioid prevention curriculum and strategies that employ best practices and different entry points/types of curriculum, such as short videos, interactive scenarios, and student-created public service campaigns around opioid prevention. This can be completed by a future Capstone Team if they have programming and website creation experience or may require hiring an outside programmer. Additionally, the continuation of this project may be possible at other institutions including Teachers College, Columbia or the Pratt Institute. Maintain contact

with DOE and send regular updates on project status via an outreach team member or by creating an informal working group that includes contacts from Continuous Development and Community Schools. Also maintain contact with ThriveNYC and HealingNYC, as a potential future partner, and send project updates. This phase could take anywhere from four months (semester Capstone) to a full year depending on the method used to create the online resource page.

- **Step Two:** Rollout the opioid prevention strategies online resource page in Community Schools across the city through DOE contacts. As interviewees mentioned, public schools welcome savvy tools that make health education and effective drug prevention education easier for both students and teachers. Maintain contact with ThriveNYC and HealingNYC and propose a pilot with their offices to share the online resource page on their established websites as well.
- **Step Three:** Have a third Capstone Team in this series or an external consultant evaluate and modify the online resource page based off the pilot program in Community Schools. Hold focus groups, interviews, and conduct surveys for teachers, students, and parents to determine criteria for success and performance in each category.
- **Step Four:** Modify the online resource page based off successes in the Community Schools pilot program before proposing its use to an executive team within DOE to scale up and be used across all public schools the city.

Appendix 1: Design Session

Design Session
Opioid Prevention Education in K–12 Public Schools

Date: 4/16/19 **Time:** 5–7 p.m. (dinner provided)

Attendees:

Joseph Heritage, Design Lead at Columbia Design Studio and Session Facilitator

Helen Scalise, Senior Manager from Continuous Improvement at DOE

Professor Katherine Roberts, Ed.D. and M.S. in Health Education and Associate Professor at Teachers College

Kennan McClung, Teacher, the Success Academy High School of the Liberal Arts in New York City

Sloan Woods, Columbia SIPA MPA

Milena d'Ornano, Columbia SIPA MIA

Lawrence McDonald, Columbia SIPA MPA

Preety Aujla, Columbia SIPA MPA

Minwen Feng, Columbia SIPA MPA

Addie Thompson, Columbia SIPA MPA

Session Summary:

The session was designed to be a collaborative, co-created, and solutions-oriented session around challenges and opportunities to reimagining the way opioid prevention education is delivered in public schools in NYC for ages K–12. We had full participation from our Capstone Team as well as guests representing academia, policy and practice around this topic.

Session Agenda:

Welcome to the session:	Capstone Team
Welcome to the Design Studio:	Joe Heritage
Introductions:	What is your background/where are you coming in from today, and what drives you to work on this issue? Why are you passionate about solving this problem?
Design Cycle Module:	Sorting Cards (Generate): Focus on WHAT (content) and HOW (medium) to equip teachers to teach around this topic? And/or what are the key pieces of information students need to know around this crisis? What is most important that we teach them?
	Directions: Please rank these at your desk, then come up and place your top four on the whiteboard.
	Discussion: Please go around in a circle and share. What are the group's immediate feedback and/or reactions?
	Results: Generated a number of ideas, see appendix below for record of all proposed ideas.
Design Cycle Module:	Reframing concepts by asking "How Might We?" flips ideas into questions for guided discussion.
	Example: How might we make this solution so enjoyable/easy/"sticky" that every teacher has it on their phones (or every student)?
Design Cycle Module:	General Discussion on Constraints (Reframe): Ideas are all well and good, but how many of these might be implemented?
	Questions included: • Which ones are even feasible, given the current structures? • What ARE the current structures and how can be creative within these constraints? What are the potential setbacks/obstacles of various ideas, and what are creative ways to work within/around/alongside them? • What does success look like?
Conclusion:	Thank everyone for their time and for creating a safe space and being vulnerable. Please continue to chat informally as we start to wrap!

Prompt: WHAT do we need to teach and HOW do we want to teach it? (And to whom?)

"WHAT" (Shared on Board)	"HOW" (Shared on Board)
Where can I get help if I'm struggling with something?	Hearing a personal story
What are opioids/what's their effect?	Interactive game/e-learning
	Helping with a campaign or project about substance abuse
Stop incarcerating people for something they aren't responsible for	Watching a movie/documentary—personal story
Safe vs. dangerous drug use to youth	Fixes something that educators see as a problem
Mental health—what is it?	Easy to use for educators
	Age-appropriate
Mental health	Multiple languages
Resources	
Decision-making skills	Teacher/student app
Normative behavior	In-class segment/unit (health class and beyond)
	Have former substance users come in and talk
What are opioids?	Use of influencers
What are the main ways kids are accessing them?	Social marketing techniques
Rates of addiction amongst peers/age group	Students create their own prevention messages
How do you overdose?	Short video clips
	Scenarios
Basic info on opioids/what they are	Hold pharma companies accountable
Why are they dangerous?	Hold doctors accountable
Importance of community/finding support	Media education—PSA or larger campaign
Coping mechanisms	Celebrities

"WHAT" (Shared on Board)	"HOW" (Shared on Board)
Know it's a bad decision to use illegal drugs	Mandated curriculum
There are ways to deal with pressure	Website/online resource
Know how to seek help and support	Video
Scientific impacts of drugs on the body	People in recovery sharing stories
Coping mechanisms	
Mental health	Website w/ curated curriculum
Asking for help	Teaching in English class (or science or other)
Identifying warning signs (in you or someone else)	Partnership w/ mental health org working on school curriculum
Impact on academic outcomes	New York state mandate and form org to make curriculum
Checklist of indicators for family members	
Checklist of symptoms of addiction (self)	Influencer/athlete class visits
Services available to families	Peer speaker—former addict
	Teachers meet-up/support (share best practices)
Exploration and discovery of passions, hopes, dreams—what do you want to do in your life?	Website
Why do people turn to opioids?	
Family-related risk factors and how to identify in school (for teachers)	Opportunity to pursue passions in school—extra-curricular? Capstone project?
Opportunity cost of opioid abuse—financially and otherwise	Creative writing/dramatic outlet
	Weekly talks w/ survivors and w/ successful role models
What is an opioid?	Training and support for parent interactions (for teachers)
How easy is it to get addicted?	
How is it the same or different from other addictions?	True connections with students
Cost of getting addicted	High quality educational material
	Partner with teachers from different classes
	Partner with parents

BACKUP (Not Shared on Board)	BACKUP (Not Shared on Board)
What are opioids and where do they come from? Mental health / how can I address it? Know the effects of prescription drugs Point out bad behavior Know how to help people that suffer from drug abuse How can you get access to them? How to approach someone in love (not fear or anger) Vulnerability of adolescent brain Alternatives to opioids/conventional drugs Negative externalities associated w/ opioid abuse (eg burden to family) What is New York doing to solve this? How can you detox?	Students can investigate substance abuse—what do the cons look like in their lives/perspectives? Parents and trusted adults Education in schools Orientation unit Partner with communities With a good evaluation framework to see how students perform With good documentaries With long-term solutions Continuous improvement A website with simple videos Info in student journals Before TV shows or at a concert Compelling visual materials—student handbook—1-page overview Duolingo for drug abuse?—5 min a day question/quiz Ready-made for educators Teachers equipped with knowledge Interactive curriculum Museum exhibit Social media campaign App

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