

NDEWS *National Drug Early Warning System*

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National Drug Early Warning System (NDEWS) Annual Project Report 2015

August 2015

NDEWS Coordinating Center

National Drug Early Warning System (NDEWS) Annual Project Report Overview

The National Drug Early Warning System (NDEWS) was launched in 2014 with the support of the National Institute on Drug Abuse (NIDA). The Center for Substance Abuse Research (CESAR) at the University of Maryland manages the NDEWS Coordinating Center and has recruited a team of nationally recognized experts to collaborate on building NDEWS. During Year 1, the NDEWS Scientific Advisory Board (SAG) was convened; the NDEWS infrastructure was developed; the NDEWS Network and website were launched; and 12 Sentinel Community Sites (SCS) were established, each with an expert Sentinel Community Epidemiologist (SCE). This Annual Project Report contains 6 sections and an appendix:

- 1) Project Overview (p. 1);
- 2) The People of NDEWS (p. 3);
- 3) Detecting and Monitoring (p. 4);
- 4) Following Up (p. 24);
- 5) Information Exchange and Dissemination (p. 25);
- 6) Next Steps (p. 27); and
- 7) Appendix (contains contact lists for the SAG members, SCEs, and other Community Epidemiologists, p. 28)

The 2015 Annual Sentinel Community Site Profiles and the Cross-Site Comparison Graphics highlighted in this report, as well as detailed information about NDEWS, can be found on the NDEWS website at www.ndews.org.

1. Project Overview

The National Drug Early Warning System (NDEWS) was launched in 2014 with the support of the National Institute on Drug Abuse (NIDA). NDEWS is an innovative public health surveillance system that identifies new drugs and drug trends as they emerge. The project focuses on new drugs, such as synthetic cannabinoids (e.g., Spice/K2) and designer stimulants (e.g., Molly), and changes in the use of more traditional drugs such as heroin. NDEWS components are designed to detect, monitor, and follow up on emerging drugs and drug trends to develop a more complete and accurate understanding of drug use and misuse in the United States. The key components of NDEWS (Figure 1) are the Scientific Advisory Group (SAG), 12 Sentinel Community Sites (SCSs), the NDEWS Network, and ongoing information gathering tasks, including news scans and social media scans.

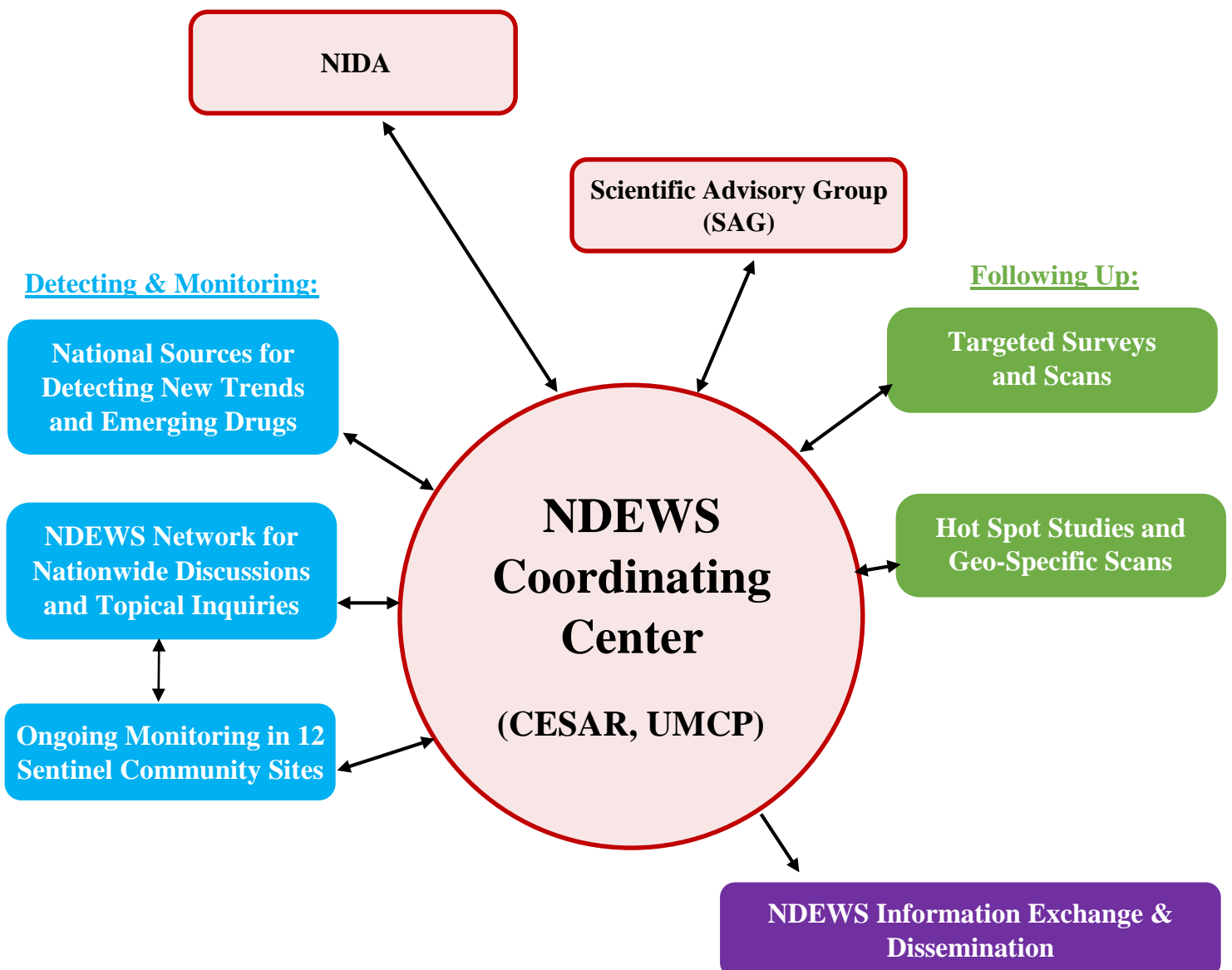
The Center for Substance Abuse Research (CESAR) at the University of Maryland manages the NDEWS Coordinating Center and has recruited a team of nationally recognized experts to collaborate with on building NDEWS. During Year 1, the NDEWS Coordinating Center worked with these experts and NIDA to implement the following 6 NDEWS goals. These goals enhanced the field of substance use epidemiology by developing new methods of data collection, new collaborations between researchers and practitioners, and providing enhanced mechanisms for information sharing, collaboration, and communication. The NDEWS goals for Year 1 were:

- 1) Select and convene the Scientific Advisory Group (SAG) once in-person and at least once as a virtual meeting in years 1 and 5. Virtual meetings will be held at least annually during years 2 through 5.
- 2) Create an NDEWS Network of scientists, public health experts, law enforcement representatives, SCS representatives, and others as part of a virtual community for sharing information and assisting with local research.
- 3) Conduct a national drug scan utilizing both traditional and innovative sources, such as social media scans, news scans, and an innovative collaboration with the American Association of Poison Control Centers.
- 4) Establish a system of harmonized community indicators and methodologies for tracking emerging drugs nationally and in up to 12 Sentinel Community Sites.
- 5) Establish a Rapid Response Team (RRT) to conduct on-site local studies of emerging drugs in one Hot Spot per year. To ensure that we remain responsive to drug outbreaks, we will work with NIDA to explore possibilities for additional on-site studies and alternatives to on-site studies using new technology. For instance, virtual Hot Spot studies could be conducted using methodologies such as focused media scans, working with SAG members or local liaisons to collect unique data indicators, and conducting web based interviews, focus groups, or surveys with key contacts/experts.
- 6) Disseminate NDEWS Alerts and annual reports through multiple mechanisms, including the virtual community and a NDEWS website.

This report highlights the key accomplishments within each of these goals. It is organized around the NDEWS graphic in Figure 1 and is divided into 6 sections and an Appendix.

- 1) Project Overview;
- 2) The People of NDEWS;
- 3) Detecting and Monitoring;
- 4) Following Up;
- 5) Information Exchange and Dissemination
- 6) Next Steps

Figure 1: NDEWS 2015: Detecting, Monitoring, and Following Up on Drug Trends



2. The People of NDEWS

The people of NDEWS include six interconnected groups: The NIDA project scientist, the Coordinating Center staff, the Scientific Advisory Group (SAG), Sentinel Community Epidemiologists (SCEs), Community Epidemiologists (CEs), and the NDEWS Network. NIDA and Coordinating Center staff are highlighted on the NDEWS website (www.ndews.org). The other groups are made up of scientists, government officials, public health experts, law enforcement representatives, and others using their diverse expertise to assist in the identification of new drugs and drug trends as they emerge.

The SAG is a combination of 7 federal and 11 non-federal representatives from across the country with expertise in a multitude of fields (Appendix 1). The SAG meetings and ongoing discussions provide a unique opportunity to create a new paradigm for identifying and understanding emerging drugs and drug trends. Coordinating Center staff, NIDA, and SAG members work together to build and shape each of the NDEWS components.

There are currently two types of local community epidemiologists: SCEs and CEs. The SCEs represent the 12 Sentinel Community Sites as the point of contact for their site and as members of the NDEWS Network. They work with Coordinating Center staff to prepare annual profiles on current drug use and abuse in their site and report on emerging drugs and drug trends. The CEs serve as the point of contact for an additional 7 sites (all former Community Epidemiology Workgroup sites) and as members of the NDEWS Network. (See Appendix 2 for a complete list of SCEs and CEs.)

The NDEWS Network is a virtual community of more than 500 researchers, practitioners, and concerned citizens across the country. This Network offers a forum to share and discuss information about emerging drugs and changing drug use trends, as well as to assist with local NDEWS research (see the Information Sharing and Dissemination section for more information).

3. Detecting & Monitoring

Detecting and monitoring is the first step of the NDEWS process. The goal of the five activities highlighted in this section is to monitor, interpret, and synthesize timely data that can be used to rapidly identify specific emerging drugs and new patterns of use. The activities involve collaborating with experts in different fields to develop a set of innovative methodologies that will be utilized throughout the duration of NDEWS. Four activities involve the utilization of national sources, such as email discussion lists maintained by the American Association of Poison Control Centers, social media sites such as Twitter, news scans of English language periodicals, and other traditional data sources. The fifth involves working with local epidemiological experts to monitor and report on trends in 12 Sentinel Community Sites (SCS) across the country.

National Sources

Collaboration with the American Association of Poison Control Centers (AAPCC)

Coordinating Center staff executed a contract with the AAPCC to support the regular sharing of information from members of three AAPCC email discussion lists. As a part of this collaboration, Coordinating Center staff received and reviewed two batches of postings from the AAPCC for August 2013 through February 2015. Two queries were prepared by Coordinating Center staff and posted on the AAPCC managing and medical director's discussion lists; one on synthetic cannabinoids (February 2015) and one on flakka (April 2015). In addition, AAPCC continued to share posts on other emerging drugs and drug use trends, such as fentanyl, clenbuterol, and heroin.

As a result of ongoing information sharing through this collaboration and the NDEWS Network, Coordinating Center staff worked with AAPCC to prepare a press release on synthetic cannabinoids. The press release and accompanying data and information can be accessed online at <http://www.aapcc.org/alerts/synthetic-marijuana/>.

Social Media Scans

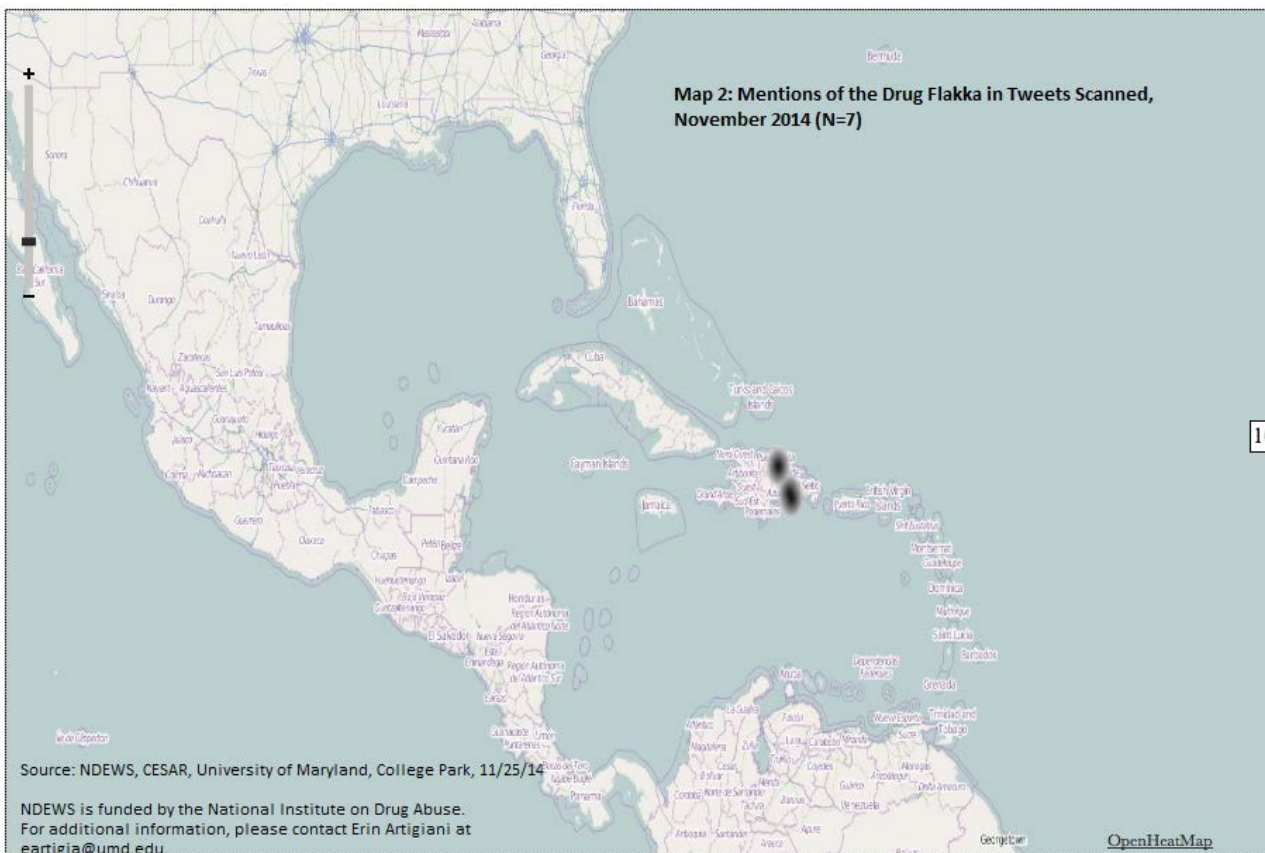
The social media team is currently pulling batches of tweets from Twitter using a set of drug terms provided by the Coordinating Center staff. These tweets are being used to adapt methodologies proven in other fields for collecting and sorting tweets and pulling out relevant information on substance use and misuse. Additional social media sites will be scanned in future years.

Dr. Jen Golbeck, Co-Investigator for the social media scans, and her staff developed and implemented an architecture for collecting real-time, streaming, geolocation-tagged tweets in the U.S. related to specific drug terms. They developed and implemented a series of filters to collect data on a variety of drugs and to discriminate between relevant and irrelevant tweets. As part of this, they built a codebook for

labeling tweets as relevant to develop ground truth training sets for their classification algorithms. They also built reporting mechanisms for the results, including heat mapping technologies to see trends.

Dr. Golbeck and her staff developed and tested a protocol for handling special requests and conducted a special scan for flakka for SCE and SAG member, Jim Hall. In addition, spreadsheets and heat maps of results using a subset of the keywords for synthetic cannabinoids were prepared by Dr. Golbeck and reviewed with Coordinating Center staff. Dr. Golbeck and her staff have a paper in progress on their work to date.

Figure 2: Mentions of the Drug Flakka in Tweets Scanned, November 2014 (N=7)



News Scans

The news scan methodology was used during Year 1 as a part of ongoing detecting and monitoring as well as to follow up on specific drugs and topics. Coordinating Center staff developed and organized terms, search strings, domains, and concept tables for conducting regular news scans. Search strings were created and/or updated and tested for each term. Scans were conducted weekly starting 8/18/14 for nearly 30 different drugs/topics in more than 2,200 national and international English language newspapers and web news sources using LexisNexis Academic. Both trend and content analyses will be conducted of scan results to monitor trends in the number and type of news reports. Additional scans on e-cigarettes and THC, synthetic cannabinoids, flakka, and ethylphenidate were conducted to respond to special requests from NIDA, NDEWS members, or Coordinating Center staff.

Traditional Data Sources

Coordinating Center staff completed researching potential sources/indicators for Sentinel Community Sites and prepared tables describing data availability. Sources and specific links were selected for national and state indicators. Links to national sources of data on drug and alcohol use, the consequences of such use, and the availability of drugs across the US, organized by indicator at the national and state levels, are posted on the NDEWS website in the Resources section under Data Sources (<http://ndews.umd.edu/resources/landingtopic/data-sources>).

In addition, Coordinating Center staff explored the availability of additional sources, such as hospital emergency department and Prescription Drug Monitoring Program (PDMP) data, for use in future years of the project.

Local Sources: 12 Sentinel Community Sites (SCS)

During 2015, 12 Sentinel Community Sites (SCSs) were established with input from the NIDA Project Scientist (Figure 2), each with an expert Sentinel Community Epidemiologist (SCE). These sites are based on the former Community Epidemiology Workgroup (CEWG) sites maintained by NIDA for more than 30 years. They were selected to maintain collaborations with local experts with ready access to local data and information. The NIDA Project Scientist and NDEWS Coordinating Center staff work with the SCEs to monitor indicators of drug use, consequences, and availability within and across the SCSs.

To initiate the selection process, an invitation letter was sent to 19 former CEWG Reps with the following 5 questions:

1. Recommended geographic scope of proposed site?
2. What, if any, emerging drugs/drug trends do you see now in your area?
3. Have laws/policies in your area recently changed in ways that might impact drugs/drug trends?
4. *Local Data*: What local indicators that would enhance our understanding of substance use in your SCS do you have access to? Do you have a key point of contact for each of these sources who is willing to provide data/information for SCS profiles?
5. *Innovative Data*: What innovative data source have you or other local researchers developed to identify emerging drugs/drug trends (e.g., urinalyses, waste water testing, drugged driver testing, PDMP, ED visits)? Why is this data important? How can it support identification of emerging drugs/drug trends?

The information provided by the local experts was used to assess the potential geography of each site, the range of substances that could be monitored over time, the availability of national and local data, important drug-related laws and policies that could be tracked, and the commitment of local experts

and resources to regularly provide local data and information. As a result of this process, 12 SCS were selected (Figure 2).

Figure 2: NDEWS Sentinel Community Sites



Coordinating Center staff and the SCE for each SCS worked together to produce a Sentinel Community Site (SCS) Profile. The 2015 Annual Profile developed for each SCS includes 3 sections:

- 1) The *Profile Snapshot* presents selected indicators of substance use, consequences, and availability;
- 2) The *Drug Use Patterns and Trends* contains the SCE’s review of important findings and trends; and
- 3) The *Appendix Data Tables* contains a set of data tables prepared by Coordinating Center staff and disseminated to each SCE for review in preparing their profiles..

The Profiles necessarily rely on using a variety of data sources produced by governmental and local agencies, and these sources often measure geographic areas that differ from the intended catchment

area of a Sentinel Site. For example, some surveys measure statewide patterns while others provide county-level estimates. Wherever appropriate, a note was provided with the data graphic or table specifying the area covered by the findings presented. The highlights prepared by the local SCE for each SCS are provided on the following pages. The complete 2015 Annual Profiles for the 12 Sentinel Sites can be found on the NDEWS website at www.ndews.org.

SCS Profile Highlights

Atlanta Metro, by Brian J. Dew, PhD, and Ned Golubovic, MS

Chicago Metro, by Lawrence J. Ouellet, PhD

Denver Metro, by Bruce Mendelson, MPS

Wayne County (Detroit Area), by Cynthia L. Arfken, PhD

Los Angeles County, by Mary-Lynn Brecht, Ph.D.

Maine, by Marcella Sorg, Ph.D.

New York City, by Denise Paone, EdD

Philadelphia, by Suet Lim, Ph.D.

San Francisco, by Phillip Coffin, MD, MIA

King County (Seattle Area), by Caleb Banta-Green, PhD

Southeastern Florida (Miami Area), by James N. Hall, BA

Texas, by Jane C. Maxwell, PhD

Atlanta Metro SCS Highlights, 2015

Brian J. Dew, PhD and Ned Golubovic, MS

- Heroin use in Atlanta continues to increase. Substance abuse treatment admissions for heroin in Atlanta increased 23% from 2013 to 2014 and now account for 7.5% of primary admissions. The number of decedents in Fulton County with heroin on board increased 148% (31 to 77) from 2013 to 2014.
- Although heroin indicators continued a multiyear rise, important changes in sociodemographic trends were noted. In particular, in the previous four years the percentage of users of heroin between the ages of 18 and 25 increased year over year. In 2014, this trend was not supported as young adults between 18 and 25 saw a 5% decrease among primary public treatment admissions from 30.3% to 25.4%. In 2014, Whites constituted 76.9% of heroin treatment admissions in Atlanta, compared with 74.5% in 2013 and 64.7% in 2012.
- Multiple indicators suggest that methamphetamine use in metropolitan Atlanta has reached the highest level since its peak in 2005.
- The synthetic cathinone ethylone, has replaced methylone in the retail supply of substances being marketed as Molly.
- Although the legalization of marijuana has taken place in select states, multiple indicators suggest that use and availability of the drug in metropolitan Atlanta remains stable. Multiple ethnographic, law enforcement, and HIDTA officials report decreasing retail costs for all grades of marijuana, including high THC-grade marijuana.
- Indicators of non-medical use of prescription opioids peaked at an elevated rate between the years of 2011-2013. Multiple indicators suggest a decrease in their use from 2013 to 2014.
- Similar to sociodemographic changes in heroin, users of prescription opioids in 2014 were more likely to be older and White than in 2013.
- Few local reporting sources differentiate between use of marijuana and synthetic cannabinoids. Therefore, it is difficult to ascertain patterns of use among local synthetic cannabinoid consumers. However, ethnographic reporters claim that use of synthetic marijuana remains high, while citing the use of vaporization techniques embedded in e-cigarette devices as a popular method of use.

Chicago Metro SCS Highlights

Lawrence J. Ouellet, Ph.D.

- Heroin continues to be the primary opioid abused in the Chicago region, and heroin use indicators increased or maintained levels that had been elevated since the mid-1990s.
- Hydrocodone is the most commonly used prescription opioid in the Chicago MSA.
- Cocaine indicators suggest a continuing decline. In 2012 cocaine fell to third in the number of drug reports among items seized and analyzed in NFLIS, behind marijuana and heroin, and the decline continued in 2014. Cocaine also fell to third among reasons for entering publicly -funded treatment programs in FY 2009 and then fell to fourth in FY 2012. Among detainees at the Cook County Jail who participated in the Arrestee Drug Abuse Monitoring Program (ADAM) II in 2012, urinalyses and self-reports indicated declines in cocaine use.
- PCP continues to increase in NFLIS reports for the Chicago MSA. Between 2007 and 2014, PCP reports increased from 115 to 563.
- The number of substituted cathinones reported in NFLIS for the Chicago MSA continues to increase, with 575 reports in 2014, 487 reports in 2013, 525 reports in 2012, and 140 reports in 2011. The prevalence of various forms of substituted cathinones in 2014 again changed notably from the preceding year.
- Compounds designed to mimic marijuana (synthetic cannabinoids) show a steep decline among items seized and analyzed by NFLIS, with 92 reports in 2014 compared to 281 reports in 2013, 363 in 2012, and 223 in 2011. The decline may be a consequence of local laws that penalize retailers for selling these compounds.
- Tryptamine reports in the NFLIS database declined steeply, from 403 in 2011, to 307 in 2012, 168 in 2013, and 57 in 2014.

Denver Metro SCS Highlights

Bruce Mendelson, MPA

- Alcohol ranks as the number one drug of abuse in the Denver Metro Area (DMA) according to prevalence and other indicator data. Alcohol prevalence has remained relatively stable while other indicators have shown mixed trends: treatment and emergency department (ED) visits are up; mortality and Rocky Mountain Poison and Drug Center (RMPDC) human exposure calls are stable; and hospital discharges are down.
- Both the DMA and Colorado respondents reported substantially higher past month marijuana use and lower perception of risk than national respondents. Marijuana treatment admissions and new users (admitted to treatment within the first three years of use) showed slight downward trends, while hospital discharges, ED visits and RMPDC calls showed strong upward trends. Because of marijuana legalization, National Forensic Laboratory Information System (NFLIS) and Denver Crime Lab (DCL) exhibit trends were downward (Exhibit 22).
- Synthetic cannabinoid supply and consequences of use (e.g., ED visits) peaked in 2013 in the DMA, but still remained plentiful in 2014. There were major changes in the varieties of synthetic cannabinoids available.
- Methamphetamine had declined from peak years in 2005-06 through 2010 in the DMA, but has resurged sharply since 2011, with all indicators (treatment admissions, hospital discharges, ED visits, mortality, NFLIS and DCL exhibits) on the rise (Exhibit 22).
- All heroin indicators in the DMA are increasing, including treatment admissions, hospital discharges, ED visits, mortality, calls to the RMPDC, and NFLIS and DCL exhibits (Exhibit 22).
- Prescription Opioids continue to be a major drug of abuse in the DMA. However trends are somewhat mixed. Past year use has remained stable. ED visits are up sharply, while treatment admissions, hospital discharges, NFLIS and DCL exhibits are up moderately. New users in treatment and mortality are stable (Exhibit 22).
- Cocaine prevalence has declined and all cocaine indicators have been declining through 2014 (i.e., treatment admissions, mortality, hospital discharges, NFLIS and crime lab exhibits, and calls to the RMPDC). Emergency department visits also declined from 2011 to 2012, but increased in 2013 back to the 2011 level (Exhibit 22).
- While still available in the DMA, bath salt indicators appeared to peak in 2012-13 and then declined in 2014.

Wayne County (Detroit Area) SCS Highlights

Cynthia L. Arfken, PhD

- Heroin continues to be the primary drug of abuse in Michigan and Wayne County. Deaths and treatment admissions rates are high and costly.
- Cocaine, while declining, has not disappeared but treatment admissions seem to be concentrated among older Black clients.
- Methamphetamine is also increasing but accounts for far fewer treatment admissions than other drugs of abuse.
- The largest change in 2014 compared to 2013 was a decline in the proportion of Schedule III prescriptions filled due to the rescheduling of hydrocodone.
- There were no substantial new patterns of drug use or new emerging drugs.

Los Angeles County SCS Highlights

Mary-Lynn Brecht, PhD

- The most frequently reported illicit substances across multiple indicator systems continue to be methamphetamine, marijuana, and heroin.
- Availability of methamphetamine remains high as evidenced by its accounting for the largest percentage of drugs identified from law enforcement seizures and its declining wholesale price. Methamphetamine-related problems ranked second in terms of primary drug at admission to treatment; at lower levels but highest among illicit drug reports from the Poison Control System and among illicit drugs as principal diagnosis for non-fatal emergency department cases; and tied with narcotic analgesics as highest in drugs detected in toxicology cases. The trend for methamphetamine was up across all five of the indicators mentioned.
- Marijuana was the second most frequently reported primary drug at treatment admission, continuing a sharply declining trend. A similar pattern was exhibited among law enforcement seizures. Marijuana ranked second among illicit drugs reported in the Poison Control System.
- Heroin admissions to treatment showed a sharp increase from the preceding year, ranking it first as primary drug at admission. Heroin ranked fourth, with increases over the previous year, among drugs identified among law enforcement seizures. Heroin trends among other indicators were relatively stable, with rankings of third or fourth among illicit drugs.
- Use of other opioids (including misuse of prescription opioids) showed mixed trends across indicators. Opioids ranked highest along with methamphetamine in terms of drugs detected in toxicology cases, increasing slightly from the previous year. Opioids ranked second (following benzodiazepines) with a slight decrease among types of drugs reported in the Poison Control System. Prescription opioids accounted for small but increasing levels of treatment admissions and were identified in small percentages of NFLIS drug reports.
- Indicators of emerging synthetic drugs remain at very low levels (<0.6% in any of the five general synthetic drug categories) in Los Angeles County compared to other substances in the two indicator systems where data are available. The highest prevalence rate was for synthetic cathinones (0.6%) among NFLIS drug reports, primarily for ethylone or methylone; synthetic cannabinoids were detected at lower levels among NFLIS reports. These substances were also reported as “bath salts” and “spice,” respectively, in the Poison Control system at low levels. NFLIS reports also included very small numbers of identified piperazines, tryptamines, and 2C-phenethylamines (n=20, 6, 2, respectively). While prevalence remains low across indicators summarized, there were increases in the number of reports of these emerging synthetic substances in 2014 over 2013.

Maine SCS Highlights

Marcella Sorg, PhD

- Since 2011, Maine has finally seen a leveling off of pharmaceutical opioid drug abuse indicators.
- The illicit opioids, heroin and fentanyl, are currently an emergent problem, with very high levels and increasing trends.
- In 2014, total drug-induced deaths reached 208, their highest total on record for the state, due primarily to heroin/morphine and fentanyl rather than pharmaceutical opioids or other substances, as in the past.

New York City SCS Highlights

Denise Paone, EdD

Prevalence (National Survey on Drug Use and Health):

In 2012-2013, one-fifth (20.1%, n=1,279,000) of New Yorkers aged 12 or older reported using any illicit drug, including marijuana, or misusing prescription drugs in the past year. Excluding marijuana, nearly one in ten (9.9%, n=626,000) New Yorkers reported using any illicit drug or misusing any prescription drug.

- Over the past ten years, the proportion of New Yorkers aged 12 or older reporting past year use of any illicit drug, excluding marijuana, has significantly increased from 6.9% (n=419,000) in 2002-2003 to 9.9% (n=626,000) in 2012-2013.
- White and Hispanic New Yorkers reported using illicit drugs in the past year (12.7% and 12%, respectively) at more than double the proportion of black New Yorkers (5.9%).

Cocaine: In 2012-2013, 2.4% (n=150,000) of New Yorkers aged 12 or older reported using cocaine within the past year, significantly lower than the proportion reporting cocaine use in 2006-2007 (3.9%; n=235,000).

Heroin: In 2012-2013, 0.1% (n=4,000) of New Yorkers aged 12 or older reported using heroin within the past year.

Opioid analgesics: In 2012-2013, almost 5% of New Yorkers aged 12 or older reported misusing opioid analgesics in the past year—a significant increase from 2002-2003 (3%).

Youth (Youth Risk Behavior Survey): In 2013, 16.2% (n=42,000) of NYC public high school students reported using marijuana in the past month, compared with 23.4% nationally. Lifetime heroin use among NYC youth increased almost threefold from 1.0% in (n=3,000) 1999 to 2.8% (n=7,000) in 2013. Ten percent (25,000) of students attending NYC public schools reported misusing prescription drugs in the past year; of those, 7.3% (19,000) misused prescription pain killers.

Morbidity: In NYC, nearly one in ten hospitalizations was drug-related in 2012.

- In 2012, 39,216 NYC residents aged 15 to 84 years had a drug-related hospitalization, resulting in over 58,000 drug-related hospital discharges
- While 26% of NYC residents lived in the highest poverty neighborhoods, they represented half of all New Yorkers hospitalized with a drug-related diagnosis.

Mortality: Unintentional drug overdose was the third leading cause of premature death (<65) in 2013. Unintentional drug overdoses killed more people in NYC in 2013 than firearm and motor vehicle accidents combined.

- In NYC, there were nearly 10,000 unintentional drug poisoning (overdose) deaths during the years 2000-2013, an average of 700 per year.
- From 2006-2010, the rate of overdose deaths decreased each consecutive year from 13.3 per 100,000 in 2006 to 8.2 in per 100,000 in 2010, a 38% decrease.
- From 2010-2013, the rate of overdose deaths increased three consecutive years, from 8.2 per 100,000 in 2010 to 11.6 per 100,000 in 2013.
- The rate of overdose deaths involving opioid analgesics increased by 256% from 2000-2013.
- The rate of overdose deaths in involving heroin increased for three consecutive years, from 3.1 per 100,000 (209 deaths) in 2010 to 6.2 per 100,000 in 2013 (420 deaths).
- More white New Yorkers (n=358) died of a drug overdose than Hispanic New Yorkers (222) or Black New Yorkers (172).
- Rates were highest among residents of very high poverty neighborhoods (15.9 versus 10.6 per 100,000 in low poverty neighborhoods).
- Opioids (heroin, opioid analgesic, and methadone) were the most common drugs involved in overdose deaths, involved in three-quarters of deaths in 2013.

Other: There were two **synthetic cannabinoid outbreaks** in New York City in July 2014 and April 2015.

Philadelphia SCS Highlights

Suet Lim, PhD

- Philadelphia experienced an outbreak of fentanyl-related intoxication deaths in 2014, with a major spike in March through mid-May; we observed a four-fold increase in fentanyl-related intoxication deaths from 2013.
- Numerous indicators suggest that heroin is a principal drug of abuse in Philadelphia. It is the drug most frequently detected amongst intoxication deaths in which a toxicology test was performed; treatment admissions for heroin as a primary drug of abuse have increased; and data from the National Forensic Laboratory Information System (NFLIS) show a higher percentage of drug items testing positive for heroin in 2014 than in 2013.
- Mortality indicator data shows that cocaine continued to be the 2nd most frequently detected drug amongst intoxication deaths; it was also the 2nd most identified drug in NFLIS items. In addition, there was a slight increase in primary treatment admissions for cocaine from 2013 to 2014.
- For prescription opioids, the mortality indicator and NFLIS reports identified oxycodone as the top ranked drug; treatment indicator showed little change in primary admissions for prescription opioids.
- Treatment admissions for benzodiazepines continued to increase in 2014; mortality indicator data shows three benzodiazepines in the top ten drugs detected amongst intoxication deaths: alprazolam, clonazepam, and diazepam.
- Alcohol continues to be a top substance in primary treatment admissions and is the fourth most frequently detected drug among drug intoxication deaths with toxicology results.
- Marijuana continues to be in the top three primary treatment admissions; it is the most commonly identified substance in NFLIS.

San Francisco SCS Highlights

Phillip Coffin, MD, MIA

- Alcohol and illicit substance use in general remains relatively stable in the City and County of San Francisco (CCSF), with the exception of reduced lifetime use of heroin and MDMA reported by public high school students from 2011 to 2013.
- Among adults, there has been a sustained increase in treatment admissions for heroin each year since 2010. This increase is also noted in lay naloxone overdose rescue events, which have increased fourfold since 2010, although there has not been a coinciding increase in heroin-related mortality. Over 90% of naloxone overdose reversals are for heroin-related overdose events and naloxone recipients most likely to use naloxone to reverse an overdose are community members who have previously witnessed an overdose and those who use heroin or methamphetamine.
- Use of prescription opioids is stable according to admissions to substance use disorder treatment, although local providers have undergone significant reforms in prescribing, leading to a dramatic reduction in the availability of prescription opioids in illicit markets.
- Use of stimulants overall remains stable, with slight increases in methamphetamine use indicators and decreases in cocaine use indicators among the general population and persons who inject drugs (PWIDs). In contrast, men who have sex with men (MSM) report increased cocaine use and decreased methamphetamine use.
- Cathinone and synthetic cannabinoid reports are rare in seizure tests and admissions for substance use disorder treatment.
- PWID report improved access to syringes from reliable sources and increasing rates of safe syringe use.
- New HIV infections are uncommon among PWID in CCSF. Nonetheless, PWID report declining rates of HIV testing. Overall HIV prevalence among PWID is 19.6% and a substantial proportion of HIV infections among PWID are unrecognized.
- Hepatitis C virus (HCV) infection remains common among PWID in CCSF, with an estimated prevalence of 53.5%. PWID report increased rates of HCV testing.

King County (Seattle Area) SCS Highlights

Caleb Banta-Green, PhD

- Drug-caused deaths involving heroin and/or methamphetamine peaked in 2014.
- Prescription opioid-involved deaths are at their lowest point in a decade.
- The number of treatment admissions with heroin as the primary drug doubled from 2010 to 2014 and are higher than any drug since 1999.

Southeastern Florida SCS Narrative

James N. Hall, BA

- The **opiate** epidemic involving **heroin** and the nonmedical misuse of **pharmaceutical opioids** is increasing in Palm Beach and Miami-Dade Counties, with rising numbers of deaths, primary treatment admissions, and crime lab cases. Yet, prescription opioid deaths in Broward County declined between 2013 and 2014 as heroin indicators increased.
- Nonetheless, the proportion of **heroin** consequences compared to all substances is lower in Southeast Florida than in most other areas of the nation.
- **Synthetic cathinone** (*e.g.*, ethylone, *alpha*-PVP, and methylone) crime lab cases in Southeast Florida during 2014 totaled 1,811, representing a 46% increase over the previous year and accounting for 16% of such reports nationwide and 54% of those in Florida.
- **Alpha-PVP** is sold as “Flakka” in the region and is attributed to at least 16 deaths in Broward County between September 2014 and May 12, 2015, including 5 between April 24 and May 12, 2015. There have been numerous incidents of excited delirium medical emergencies and bizarre behavior in Broward and Palm Beach Counties.
- **Synthetic Cannabinoid** crime lab cases totaled 228 during 2014 in the three Southeast Florida counties, representing a 57% increase over the previous year and just 11% of the 2014 reports Statewide. There were 30 Poison Information Center exposure calls for THC-homologs (synthetic cannabinoids) in Southeast Florida in calendar year 2014 (including 25 in Miami-Dade County) and 25 such reports in the first four months of 2015 (including 14 in Miami-Dade County).
- **Cocaine** remains a major drug problem across the region, with increases in treatment admissions in Miami-Dade County between 2013 and 2014. Cocaine-related deaths remained stable in Miami-Dade and Broward Counties between calendar year 2013 and the first half of 2014, yet increased in Palm Beach County.
- While significantly below the rates and numbers reported in the US West and the Atlanta, Georgia metro area in the East, **methamphetamine** deaths, treatment admissions, and crime lab reports increased in 2014, continuing a trend in rising consequences since 2011 (NIDA CEWG, June 2014, *Epidemiologic Trends in Drug Abuse*).
- More than half of **marijuana** primary treatment clients in Miami-Dade, Broward, and Palm Beach Counties are below the age of 18 years.
- **MDMA** has dramatically decreased in recent years as the drug detected in “ecstasy” or “Mollys.” Methylone was the drug most often detected in “ecstasy” and “Mollys” in 2012 and 2013 but has been surpassed by ethylone in 2014 according to the Broward County Sheriff’s Crime Lab and NFLIS data for Florida. Methylone was also most widely reported by NFLIS in the US South and Northeast in 2013 and then in the South in the first half of 2014. (NFLIS)
- **Benzodiazepine**-related deaths have decreased 37% Statewide since 2010.
- While **injecting drug use** (IDU) is the route of administration for most primary heroin treatment clients in all three Southeast Florida counties, 25% of Miami-Dade primary opioid treatment clients report injecting as compared with 49% in Broward and 41% in Palm Beach County.
- Increasingly, e-cigarette and other vaporizing devices are reported for use of marijuana, methamphetamine, and new psychoactive synthetic drugs, including *alpha*-PVP (“Flakka”). (personal communications treatment counselors, law enforcement officers, and Florida Department of Health)

Texas SCS Narrative

Jane C. Maxwell, PhD

- Methamphetamine indicators are now as high as or higher than they were before the pseudoephedrine ban. Since 2013, methamphetamine has been the drug most commonly reported by forensic laboratories, outranking both cocaine and cannabis. It is ranked by the DEA as the #1 threat in the Dallas area, #2 in the Houston area, and #4 in the El Paso area. The methamphetamine made in Mexico using the phenyl-2-propanone (P2P) method is increasingly pure and more potent, with more reports by outreach workers of use by men who have sex with men and high-risk heterosexuals which will result in increases in STD and HIV. Customs and Border Patrol reports show the seizures along the western part of the Texas border are up by 260% and up by 420% on the lower border. Methamphetamine dissolved in water is a method of importation into the U.S., where laboratories on the Texas side convert it back into ice. The increased availability of the drug has led to a decrease in prices; an eight-ball that cost \$400 in the summer of 2014 was selling for \$225 in February 2015.
- Heroin users are becoming younger and less likely to be people of color. Indicators have been rising and the increase of 352% in heroin seizures on the western part of the border may point to a new supply chain to provide heroin to West Texas and New Mexico. The new Mexican “white” heroin transits through Texas to the East but it is not as potent as the South American white.
- Cocaine indicators are low due to changes in the international market, with fewer coca bushes being grown in the Andes and more product diverted to Europe. However, based on 2013-2014 forensic data showing increased amounts of cocaine being identified along the border, there may be increases in the supply of cocaine in the future.
- The cannabis situation has been influenced by both supply and demand. Supply has seen market changes due to a drought in Mexico, gang warfare, and increased border protection. This limited the availability of Mexican cannabis, which led to increases in home-grown and hydroponic cannabis in Texas and now the availability of high quality cannabis from Colorado. The demand for the drug has been influenced by changes in patterns of use with blunts and now electronic cigarettes, “vaping” of hash oil, and “shatter.”
- The synthetic cannabinoid situation is marked by sporadic clusters of overdoses, which may be due to amateur chemists mixing the drugs or bad batches of precursor chemicals. Given the large number of cases reported along the lower border, importation of chemicals from Mexico may be a factor. The chemical ingredients have changed from JWH varieties to AB-CHMINACA, AB-FUBINACA, AB-PINACA, and PB-22. Spikes in overdoses continue with \$5 sales by street dealers.
- “Other Opiate” indicators are trending downward but pill mills remain a problem. Tramadol is not as abused in Texas as elsewhere, but with the rescheduling of hydrocodone to Schedule II, there is the possibility that tramadol use will increase since it is a Schedule IV drug. Fentanyl abuse and misuse involves the transdermal patches, not the fentanyl powder which is being mixed with the white South American heroin on the East Coast.
- MDMA indicators are down but “Molly” has become a more potent and dangerous drug with one death at Austin City Limits music festival last fall.
- PCP indicators are up, with more use now by females than males. The number of NFLIS toxicology lab items identified between 2006 and 2014 has tripled.
- There was a significant increase in the number of phenethylamines (2-C and NBOME) items reported by Texas forensic toxicology laboratories. The piperazine TFMPP is also trending upward.
- Synthetic cathinone users are shifting from mephedrone, methylone, and pentedrone to ethylone.
- Border-related differences in patterns of use are seen as students on the border report more use of marijuana, cocaine, and heroin while non-border students report more use of methamphetamine. The same patterns of drug use are seen in the treatment admissions data.
- STD-HIV-AIDS--2014 data are not available until July 1, 2015, but there are increasing reports from street outreach workers about risky sexual practices while using methamphetamine and reports of “blood shots” (injecting the blood of another user to maximize the amount of drug injected) could lead to future epidemics.

Cross-Site Comparison Graphics

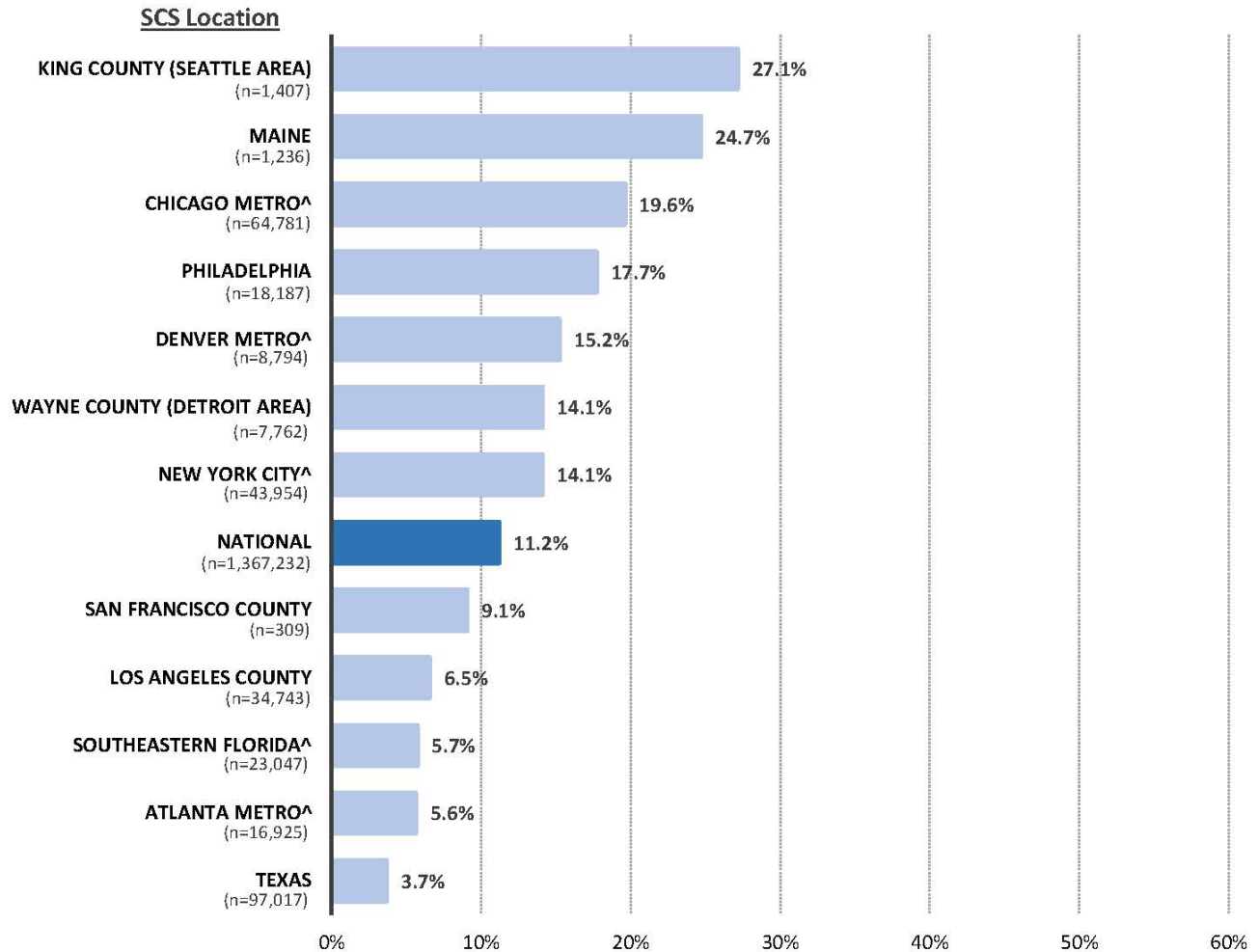
Emerging substance use in the twelve Sentinel Community Sites will be monitored and reported on throughout the project in two types of reports—Sentinel Community Site Profiles and Cross-Site Comparison Graphics reports. The annual Cross-Site Comparison Graphics report will present a collection of cross-site graphics displaying selected comparable data from national and local sources that is available for each of the 12 Sentinel Community Sites. This report compares information on drug use, substance use disorders and treatment, drug poisoning deaths, and drug seizures available from five sources:

- 1) National Survey on Drug Use and Health (NSDUH);
- 2) Youth Risk Behavior Survey (YRBS);
- 3) local treatment admissions data provided by the SCEs;
- 4) National Vital Statistics System mortality data; and
- 5) National Forensic Laboratory Information System (NFLIS).

A sample graphic is provided in Figure 3. All Cross-Site Comparison graphics are available online at www.ndews.org. In future years of the project, Coordinating Center staff will work with the NIDA project scientist, SCEs, and SAG members to discuss the best way to assess, present, and use the cross-site data.

Figure 3: Sample Graphic from Annual Cross-Site Comparison Graphics Report

**Heroin Drug Reports* Identified Among Total Drug Reports for Items Seized by Law Enforcement
in NDEWS Sentinel Community Sites (SCS)^, 2014
National Forensic Laboratory Information System (NFLIS)
Percent of Total Drug Reports Identified as Heroin (n=Total Drug Reports)**



^Atlanta Metro: Atlanta MSA (29 counties)
 ^Chicago Metro: Chicago MSA (14 counties)
 ^Denver Metro: Denver Metro Area (9 counties)
 ^New York City: NYC MSA (5 boroughs) & NYC Police Department Laboratory
 ^Southeastern Florida: Miami MSA (3 counties)

*Drug Report: drug that is identified in law enforcement items, submitted to and analyzed by federal, state, or local forensic labs, and included in the NFLIS database.

The NFLIS database allows for the reporting of up to three drugs per item submitted for analysis. The data presented are a total count of first, second, and third listed reports for each selected drug item seized and analyzed.

Source: Adapted by the NDEWS Coordinating Center from data provided by the U.S. Drug Enforcement Administration (DEA), Office of Diversion Control, Drug and Chemical Evaluation Section, Data Analysis Unit. Data were retrieved from the NFLIS Data Query System (DQS) May 2015.

4. Following Up

Initial planning sessions have been held involving Coordinating Center and NIDA staff to discuss follow up activities, such as Hot Spot studies and targeted social media and news scans, and periodic surveys of NDEWS Network members.

Future Hot Spot studies will be based on the CDC public health model of sending a team of experts to a site to collect targeted information over a short period of time. The Hot Spot team will be led by Dr. Joseph Richardson, from the University of Maryland Department of African American Studies. Potential methodologies for completing the studies include focus groups, interviews with key informants, review of local data, and urinalyses of key populations.

Hot Spots will be selected in future years of the project based on criteria to be determined in Year 2. The following topics and locations are currently under consideration for selection as the first Hot Spot study:

1. Miami (flakka)
2. Pittsburgh (acetyl fentanyl and/or synthetic cannabinoids)
3. Washington, DC, New York, Texas, or other sites (synthetic cannabinoids)
4. Maryland (heroin)
5. Indiana (Opana)

5. Information Exchange and Dissemination

The primary modes for exchanging and dissemination during Year 1 were the NDEWS Network and the NDEWS website. The Network supports ongoing discussions about drugs and drug use trends as they emerge. The website allows for the sharing of data and formal reports completed by both NDEWS members and other agencies/organizations. Additional methods for exchanging and disseminating information that have been developed include preparing joint press releases with partner agencies (i.e., synthetic cannabinoids with AAPCC) and internal briefings for Coordinating Center and NIDA staff.

NDEWS Website

Coordinating Center staff launched the NDEWS website (www.ndews.org) in June 2015. To build the site, Coordinating Center staff utilized existing University of Maryland (UM) technology and infrastructure. The website home page highlights information on emerging drugs and drug trends, including recent news alerts, reports and publications, links to social media sites that regularly discuss information about emerging drug use, and videos and webinars. The five main sections of the site—About Us, Research, Project Publications, Sentinel Sites, and Resources—are designed to highlight specific components of NDEWS and provide visitors with access to current information on drug use and drug use trends, upcoming conferences and events, and recent news articles. The site also serves as a hub for SCEs, CEs, and other NDEWS members to share reports, journal articles, and other publications. Features to be developed during Year 2 include expanding the presence of the Sentinel Community Sites on the website and adding a section that will serve as a one-stop-shop for information on new psychoactive substances (e.g., effects, legislation, chemical composition).

NDEWS Network

The NDEWS Network is a virtual community of researchers, practitioners, and concerned citizens across the country. This Network offers a forum to share and discuss information about emerging drugs and changing drug use trends, as well as to assist with local NDEWS research. The Network was set up to allow for information exchange and collaboration even while the NDEWS infrastructure was being developed. It also provides links to other virtual communities, such as the LinkedIn Emerging Drugs discussion group.

The Network was launched by the Coordinating Center staff as an email discussion list and now has more than 500 members from around the world who engage in ongoing discussions of emerging drugs and trends. The Network has enabled information sharing by its members who have posted queries, local news stories, reports, journal articles, and other information. As of June 11th, there have been 199 posts to the NDEWS Network email list on more 60 different topics (Figure 4).

Figure 4: Sample Topics from NDEWS Network Discussion

AB-CHMINACA	e-cigarettes	DMT
oxymorphone	fentanyl	PMMA
alpha-PVP	etizolam	synthetic drugs

Coordinating Center staff regularly monitored and contributed to NDEWS Network discussions. In addition, proactive queries of the NDEWS Network were made as necessary (e.g., soliciting information about increases in health consequences from synthetic cannabinoid use) and announcements and press releases were shared to alert members to harmful effects caused by emerging drugs, shifts in usage patterns, and other important issues.

In Year 2 of the project, a SharePoint-based NDEWS Network Portal will be developed to allow more extensive information sharing and discussions by Network members.

6. Next Steps

Coordinating Staff have identified seven preliminary next steps to pursue in the coming year. They will be reviewed with the NIDA Project Scientist, SCEs, and SAG members.

1. Develop and launch the NDEWS Network Portal to host the interactive virtual community
2. Finalize the Hot Spot protocol and conduct a Hot Spot study
3. Refine the content and production of the SCS Profiles
4. Move forward with the social media scans by scanning a second social media site and using the data collected in a modelling exercise
5. Develop additional substance use indicators based on local sources for inclusion in SCS profiles and/or cross-site graphics, such as poison center human exposure calls and drug poisoning deaths
6. Discuss the best way to assess, present, use the cross-site data
7. Discuss the best way to present and use the information collected through the news scans

7. Appendix

Appendix 1: NDEWS Scientific Advisory Group

Appendix 2: SCEs and CEs

Appendix 1: NDEWS Scientific Advisory Group (SAG)

The NDEWS Scientific Advisory Group (SAG) is a combination of 18 representatives from across the country with expertise in a multitude of fields. The SAG meetings and ongoing discussions will provide a unique opportunity to create a new paradigm for identifying and understanding emerging drugs and drug trends. Coordinating Center staff, NIDA, and SAG members will work together to build and shape each of the NDEWS components.

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Appendix 2: SCEs and CEs

The NDEWS Coordinating Center has organized two types of local experts: Sentinel Community Epidemiologists (SCEs) and Community Epidemiologists (CEs). The SCEs are the point of contact for the 12 NDEWS Sentinel Community Sites, communities across the U.S. that are experiencing significant substance use and/or misuse problems. These sites were selected from former Community Epidemiology Workgroup (CEWG) sites to maintain collaborations with local experts with ready access to local data and information. The CEs are the point of contact for an additional 7 sites across the U.S., all also former CEWG sites.

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