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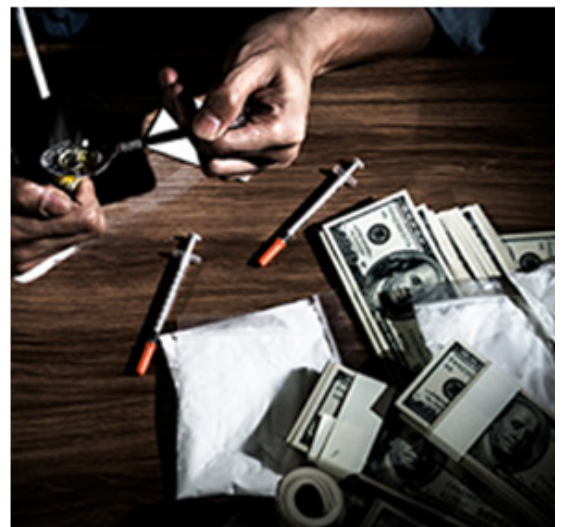
# 2015 HEROIN DOMESTIC MONITOR PROGRAM

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DEA  
INTELLIGENCE  
REPORT



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# 2015 HEROIN DOMESTIC MONITOR PROGRAM



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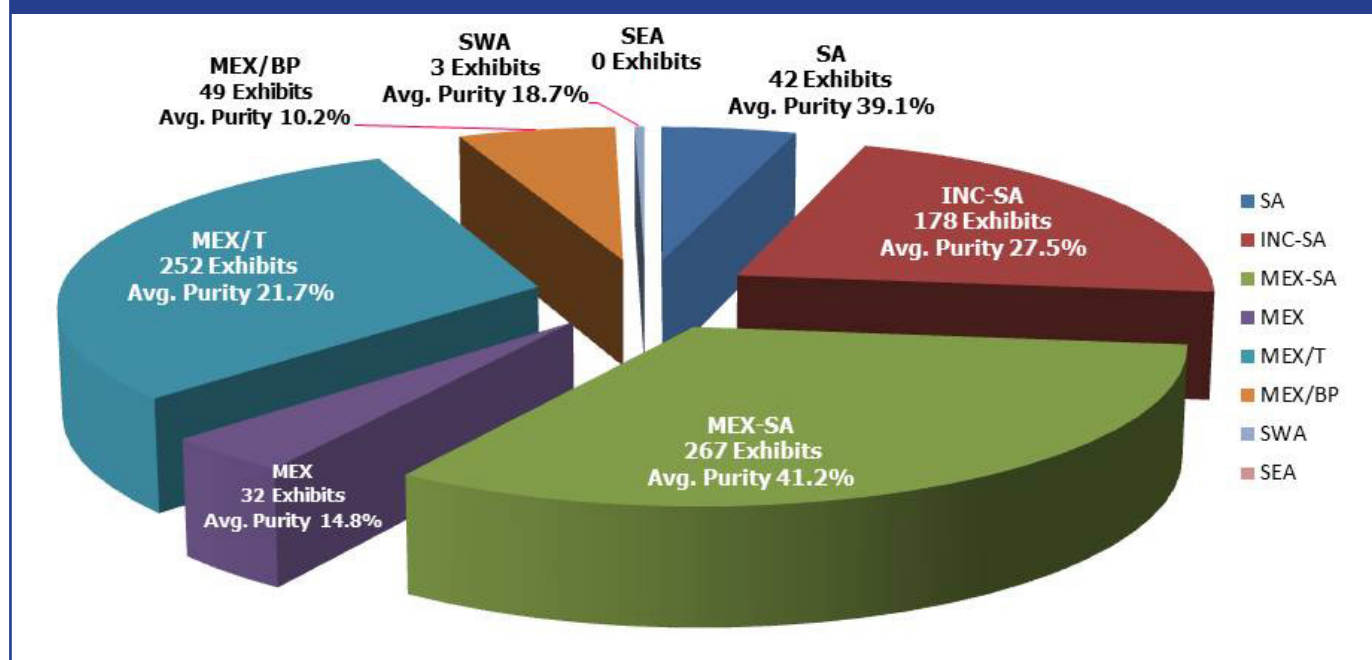
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## Executive Summary

The Drug Enforcement Administration's (DEA) Heroin Domestic Monitor Program (HDMP) is a retail-level heroin purchase program that provides data analysis about the geographic source of heroin, along with price, purity, adulterants, and diluents sold at the street-level in 27 U.S. cities. In 2015, a total of 823 qualified exhibits were purchased. Of those exhibits, 600 were classified as Mexican-origin heroin (267 Mexican-South American [MEX-SA], 252 Mexican-Black Tar [MEX/T], 49 Mexican-Brown Powder [MEX/BP], and 32 Mexican [MEX]); 178 heroin exhibits were classified as Inconclusive Origin-South American Processing Method (INC-SA); 42 were classified as South American (SA) heroin; and 3 were classified as Southwest Asian (SWA) heroin. During 2015, for the tenth consecutive year, no Southeast Asian (SEA) heroin exhibits were purchased through the HDMP.

2015 HDMP data indicated that Mexican-origin heroin was the predominant type of heroin available in U.S. retail drug markets. In 2015, the overall average purity of Mexican-origin heroin was 29 percent, an increase of 7.9 percentage points<sup>1</sup> from 2014. The purity levels of Mexican-origin heroin in 2015 varied within the signature classifications that were developed by DEA's Special Testing and Research Laboratory (SFL1) for Mexican-produced heroin. MEX/T averaged 21.7 percent pure, a decrease of 1.2 percentage points from 2014; and MEX/BP averaged 10.2 percent pure, a decrease of 3.3 percentage points from 2014. Heroin exhibits classified as MEX-SA (new formal signature for Mexican white powder heroin) averaged 41.2 percent pure, a decrease of 16 percentage points from 2014. Heroin classified as MEX that is refined or crudely manufactured heroin from Mexico that does not fit in one of the other Mexican signature categories, averaged 14.8 percent pure, an increase of 13.2 percentage points from 2014 (see Figure 1).

**Figure 1: Heroin Exhibits: Origins and Purities.**



Source: DEA

<sup>1</sup> A percentage point is a unit expressing the arithmetic difference between two percentages, e.g., a decline of one percentage point would be a decrease from 10 percent to nine percent. A complete list of other definitions is available in Appendix D.

Mexican-origin heroin exhibits reflected an average price per milligram pure of \$0.93,<sup>2</sup> a decrease of \$0.22 from the 2014 price of \$1.15 per milligram pure. Heroin classified as MEX cost \$1.10 price per milligram pure, a decrease of \$8.88 from the 2014 price of \$9.98 per milligram pure. MEX/T cost \$0.80 price per milligram pure, a decrease of \$0.24 from the 2014 price of \$1.04 per milligram pure; and MEX/BP cost \$1.29 price per milligram pure, an increase of \$0.32 from the 2014 price of \$0.97 per milligram pure. Heroin exhibits classified as MEX-SA cost \$0.97 per milligram pure, an increase of \$0.61 from the 2014 price of \$0.36 per milligram pure.

A significant number of 2015 HDMP heroin exhibits were classified as INC-SA, which is the new formal signature classification assigned by SFL1 to heroin where either Mexico or South America could be the geographic origin, but is produced or refined using South American processing methods. Extremely adulterated and/or diluted (low purity) heroin, such as that purchased at the retail level, is likely to generate this classification.

2015 HDMP data indicated that SA heroin and heroin classified as INC-SA were encountered most often in the Eastern and Midwestern United States. HDMP data revealed that heroin classified as INC-SA had an average purity of 27.5 percent, a decrease of 10.5 percentage points from 2014, while SA heroin exhibits had an average purity at 39.1 percent, an increase of 8 percentage points from 2014. HDMP data further reflected the average price per milligram pure for heroin classified as INC-SA was \$1.19, an increase of \$0.12 from 2014. SA heroin exhibits had an average price per milligram pure of \$1.05, an increase of \$0.02 from 2014.

SWA heroin exhibits purchased in 2015 under the HDMP were obtained in Baltimore, Maryland and New York, New York. These exhibits had an average purity of 18.7 percent, an increase of 2.5 percentage points from 2014. SWA heroin exhibits had an average price per milligram pure of \$0.86, a decrease of \$0.20 from 2014.

Exhibits classified as “unknown” (UNK) were purchased in all but ten of the HDMP cities. Heroin exhibits are classified as UNK when their signature profiles are inconsistent with the signature profiles of authentic heroin exhibits<sup>3</sup> collected from the four geographic source regions: Mexico, South America, Southeast Asia, or Southwest Asia. Comparison of 2009 HDMP data to 2015 data reflected a 69.6 percent decrease in exhibits whose signature was classified as UNK by SFL1. This decrease is due in large part to the new forensic protocols introduced by SFL1 in May 2015. These protocols allow chemists to better differentiate and isolate the origin of heroin exhibits previously classified as UNK to either Mexico or South America.

## Background

The HDMP collects data on the geographic origin of street-level heroin along with price, purity, adulterants, and diluents available in major metropolitan areas of the United States. Each quarter, the DEA Intelligence Division provides funding for the purchase of retail (street-level) heroin exhibits in 27 metropolitan areas. Each purchase is submitted for in-depth chemical analysis at SFL1.

The goal of the HDMP is to provide Federal, state, and local law enforcement authorities, as well as drug policymakers and drug abuse researchers, with information regarding domestic heroin available at the street level. Through Heroin Signature Analysis,<sup>4</sup> SFL1 also determines the geographic origin

<sup>2</sup> All prices are listed in U.S. dollars throughout the report.

<sup>3</sup> An authentic heroin exhibit meets at least one of the following criteria: 1) a heroin exhibit seized in heroin producing countries; 2) a heroin exhibit seized in a heroin/opium processing laboratory in a heroin/opium source country; 3) a heroin exhibit transported directly to the United States from a source country and seized at a U.S. land, sea, or airport port of entry.

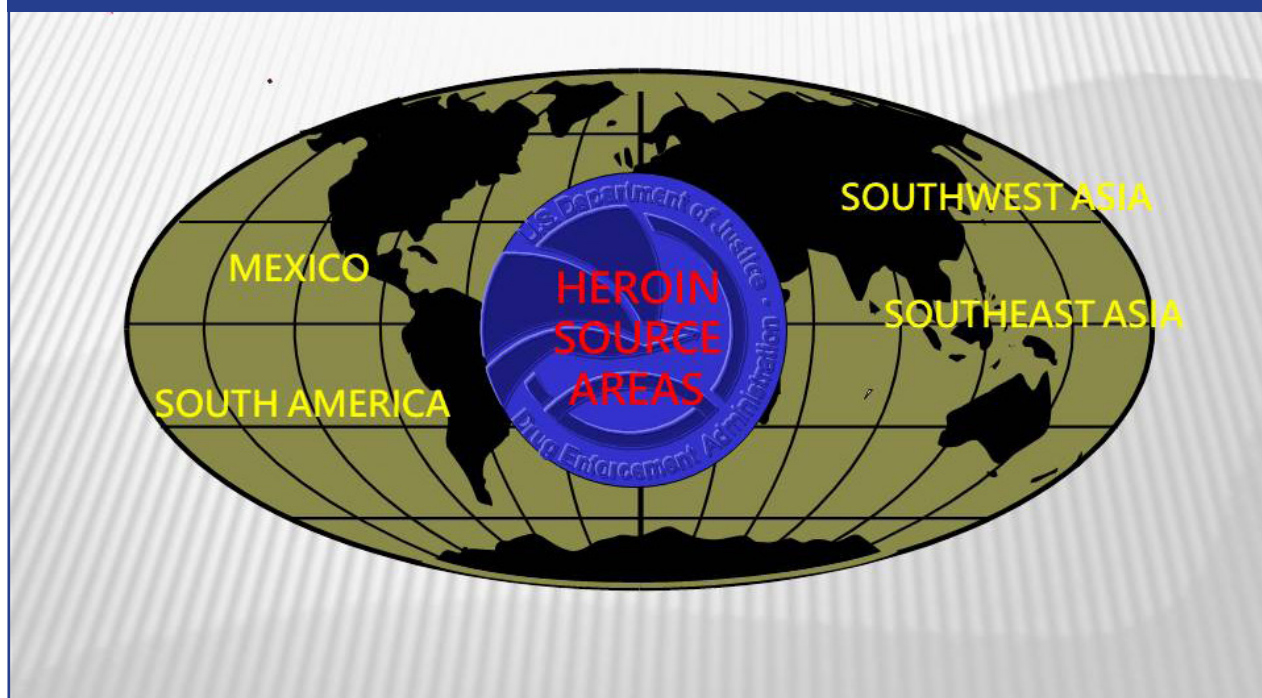
<sup>4</sup> Heroin Signature Analysis is a program developed by the DEA to identify the geographic source area of a heroin exhibit. Heroin signature analysis is based on exhaustive chemical profiles of authentic exhibits acquired from each of the four major heroin source areas: Mexico, South America, Southeast Asia, and Southwest Asia.



of each qualified heroin exhibit submitted to the program. HDMP data analyses also reveal changes in heroin availability, price and purity, adulterants and diluents, use patterns, and marketing practices.

Since its inception more than 35 years ago, the HDMP has proven to be a valuable and reliable indicator for the detection of trends in U.S. retail-level heroin trafficking. The program also has provided accurate assessments of the fluctuations in the domestic retail availability of heroin sourced from each of the major heroin source areas—Mexico, South America, Southeast Asia, and Southwest Asia (see Figure 2). In recent years, the HDMP has tracked the increasing presence of Mexican white powder heroin at the retail level, particularly in the East and Midwest sections of the

**Figure 2: Heroin Source Areas.**



Source: DEA

United States. In years past, the HDMP also documented the increased availability in the early to mid-1980s of SEA heroin at the retail level in a number of U.S. cities; further documented significant increases in the mid-1990s in the amount of SA heroin available at the retail level, particularly in the key metropolitan heroin markets of the Northeastern United States; and, in the early 2000s, HDMP program data highlighted the growth in competitive drug markets containing heroin from multiple geographic sources.

The HDMP was initiated in DEA's New York Division in 1979 and, to this day, particular attention is paid to HDMP results for New York City because it remains one of the most prominent heroin destination and distribution centers in the United States. Between 1979 and 1991, the number of DEA offices that participated in the HDMP fluctuated between 6 and 12. In 1991, the DEA expanded the HDMP to include one city in each of DEA's 21 domestic field divisions. Between 1995 and 1999, Baltimore, Maryland; Orlando, Florida; and El Paso, Texas joined as program participants. San Antonio, Texas and Richmond, Virginia were added as participants in early 2003. In 2006, the program was expanded further to include Pittsburgh, Pennsylvania; Minneapolis, Minnesota; and Portland, Oregon. In January 2010, the El Paso Field Division transferred the program from El Paso, Texas to Albuquerque, New Mexico, and in September 2011, Minneapolis-St. Paul, Minnesota was removed from the HDMP.

As previously noted, the HDMP is conducted in 27 metropolitan areas, as opposed to nationwide sampling. Consequently, attempts to calculate a national average for price and purity cannot be extrapolated solely from program results because the sampling reflects local user preferences and market availability. The dynamics of the local heroin market are unique to each metropolitan area; 2015 HDMP data accurately reflect long-term local trends as well as changes in price per milligram pure and purity in the participating cities.

## Qualified Exhibits

The DEA offices in most cities where the HDMP is conducted are tasked with 10 street-level heroin purchases per quarter, or a total of 40 purchases per year. In New York City, 15 purchases are made per quarter, a total of 60 per year. The following cities purchase only five exhibits per quarter, a total of 20 per year: Albuquerque, New Mexico; Houston, Texas; Orlando, Florida; Pittsburgh, Pennsylvania; Portland, Oregon; Richmond, Virginia; and San Antonio, Texas. Thus, 960 heroin exhibits were scheduled for purchase during 2015 as part of the HDMP.

The total number of exhibits included in HDMP analysis varies year to year based on a number of factors. For example, some purchased exhibits are determined to contain no controlled substance; some are determined to contain another controlled substance such as cocaine; and others, while containing heroin, do not include a sufficient amount to allow for geographic signature classification. Such exhibits are not included in this report. Those that are included in the yearly HDMP analysis are deemed “qualified exhibits,” signifying that geographic source data could be obtained for the exhibit.

## Exhibits Classified as Inconclusive – South America (INC-SA)

A significant number of 2015 HDMP heroin exhibits (178) were classified as INC-SA. This new signature classification indicates inconclusive geographic origin for a heroin sample that was produced using South American processing methods. It is generally employed when adulterants in the sample hinder the determination of origin as to South America or Mexico. Extremely adulterated and diluted (low purity) heroin, such as that purchased at the retail level, is likely to generate this classification. 2015 HDMP results reflect that the average purity of INC-SA heroin was only 27.5%, indicating high levels of adulteration and/or dilution.

Although the majority of the 2015 HDMP exhibits classified as INC-SA were purchased in the Eastern and Midwestern United States where SA heroin has typically dominated the market, SFL1 is currently unable to provide any additional attribution (i.e., Mexico or South America, as origin) for these exhibits as both SA and MEX-SA heroin types were well-represented in this group. SFL1 reports that the overlapping presence of common adulterants in SA, MEX-SA, and INC-SA heroin types indicates an elaborate but consistent cutting pattern for heroin distributed in Eastern and Midwestern retail markets. Regardless of origin (Mexico or South America), powder HDMP exhibits continue to identify an overwhelming use of other chemical compounds with heroin.

### Is it Possible for SWA heroin to be misclassified as SA, MEX-SA or INC-SA heroin?

- SWA heroin has a unique chemical signature that displays no similarities to the chemical signatures of the heroin types produced in either South America or Mexico. Due to the distinct signature differences, it is not possible to misclassify SWA heroin as either South American or Mexican origin.
- DEA's SFL1 continues to monitor SWA heroin production and finds its signatures remaining consistent since the inception of the Heroin Signature Program (HSP).
- Over the last 40 years, SFL1 has used thousands of authentic samples to establish the signature profiles of heroin produced in various regions of the world. Currently, about 7,000 authentic samples are employed to classify a heroin sample at a 95 percent confidence level with four independent signature methods.

Source: DEA

## 2015 HDMP Results

### GENERAL

In 2015, a total of 823 qualified exhibits were purchased under the HDMP. Of those exhibits, 600 were classified as Mexican origin heroin (267 MEX-SA; 252 MEX/T; 49 MEX/BP; and 32 MEX), 178 were classified as INC-SA, 42 were classified as SA heroin, and 3 were classified as SWA heroin. During 2015, for the tenth consecutive year, no SEA heroin exhibits were purchased through the HDMP.

According to 2015 HDMP data, the average purity for Mexican-origin heroin was 29 percent (MEX heroin 14.8 percent pure; MEX/T 21.7 percent pure; MEX/BP 10.2 percent pure; while MEX-SA heroin exhibited the highest purity in the program at 41.2 percent). Heroin exhibits under the classification of INC-SA exhibited an average purity of 27.5 percent, while SA heroin exhibits exhibited an average purity at 39.1 percent. SWA heroin exhibits exhibited an average purity at 18.7 percent pure. Mexican-origin heroin exhibits reflected an average price per milligram pure of \$0.93 (MEX-SA \$0.97 price per milligram pure; MEX/T \$0.80 price per milligram pure; MEX/BP \$1.29 price per milligram pure; and MEX heroin \$1.10 price per milligram pure). The average price per milligram pure for heroin classified as INC-SA and SA heroin was \$1.19 and \$ 1.05, respectively while SWA heroin exhibits reflected an average price per milligram pure of \$0.86.

From 2014 to 2015, the average price per milligram pure of Mexican-origin heroin decreased \$0.22, while the average purity of Mexican-origin heroin in 2015 increased to 29 percent from 21.1 percent in 2014. The average price per milligram pure of INC-SA heroin increased \$0.12 in 2015, from the 2014 price of \$1.07 per milligram pure. INC-SA average purity decreased 10.5 percentage points in 2015. The average price per milligram pure of SA heroin increased \$0.02 in 2015, from the 2014 price of \$1.03 per milligram pure. In 2015, the average purity of SA heroin increased 8 percentage points. The purity of SWA heroin increased to 18.7 percent in 2015 from 16.2 percent in 2014, while the average price per milligram pure dropped to \$0.86 in 2015 from its 2014 price of \$1.06 per milligram pure.

Figures 6 and 7 reflect the characteristics of heroin purchased in the 27 unique heroin markets sampled by the HDMP. The values shown in these tables are “snapshots” and are not representative of national averages. Figure 3 reflects 2015 values for heroin price and purity by source area and includes price and purity values for the period 2011 through 2015.

**Figure 3: Heroin Exhibits: Origin, Purities, and Price.**

| HEROIN SOURCES  | 2011   | 2012   | 2013   | 2014   | 2015   |
|---|--------|--------|--------|--------|--------|
| Mexican Origin Exhibits                                     | 296    | 339    | 357    | 287    | 600    |
| Mexican Origin Percent Pure                                 | 16.8%  | 17.6%  | 20.3%  | 21.1%  | 29%    |
| Mexican Origin Price Per Milligram Pure                     | \$1.35 | \$1.40 | \$1.13 | \$1.15 | \$0.93 |
| South America Exhibits                                      | 323    | 375    | 334    | 34     | 42     |
| South America Percent Pure                                  | 31.1%  | 35.3%  | 35.1%  | 31.1%  | 39.1%  |
| South America Price Per Milligram Pure                      | \$1.18 | \$1.15 | \$1.04 | \$1.03 | \$1.05 |
| Inconclusive Origin-South America Exhibits                  | -      | -      | -      | 303    | 178    |
| Inconclusive Origin-South America Percent Pure              | -      | -      | -      | 38%    | 27.5%  |
| Inconclusive Origin-South America Price Pure Milligram Pure | -      | -      | -      | \$1.07 | \$1.19 |
| Southwest Asia Exhibits                                     | 23     | 12     | 8      | 1      | 3      |
| Southwest Asia Percent Pure                                 | 12.3%  | 18.6%  | 23%    | 16.2%  | 18.7%  |
| Southwest Asia Price Per Milligram Pure                     | \$1.66 | \$1.10 | \$1.23 | \$1.06 | \$0.86 |

Source: DEA

**FENTANYL**

Fentanyl is a Schedule II narcotic controlled substance which is used as an analgesic and anesthetic. It is one of the most potent opioids available for human or veterinary use. Fentanyl is generally considered 50 to 100 times more potent than morphine and 30 to 50 times more potent than heroin. Fentanyl is potentially lethal at very low levels of ingestion. While diversion and/or theft of fentanyl from legitimate supplies occurs, the vast majority of fentanyl encountered in the illicit market is clandestinely manufactured outside the United States or illegally smuggled into the United States from overseas suppliers.

In 2015, 53 HDMP exhibits were analyzed as containing fentanyl, fentanyl (trace), fentanyl (acetyl), and fentanyl (not quantitated). These fentanyl exhibits were purchased in Atlanta, Baltimore, Boston, Chicago, Detroit, Miami, New Orleans, New York, Orlando, Philadelphia, Pittsburgh, San Diego, St. Louis, and Washington, DC (see Figure 4).

SFL1 analysis of these fentanyl exhibits indicated they also contained adulterants such as dipyrone, ketamine, methamphetamine, cocaine, tramadol, alpha-PVP, N-EthylIMDCATH, mirtazapine, meprobamate, quetiapine, alprazolam, gabapentin, noscapine, and pyrilamine.

By comparison, in 2014, 21 exhibits purchased under the HDMP were analyzed as containing fentanyl, fentanyl (trace), and fentanyl (not quantitated). These exhibits were purchased in Atlanta, Baltimore, Boston, Detroit, Miami, New York, Philadelphia, Richmond, and Washington, DC.



**Figure 4: Heroin Domestic Monitor Cities with Fentanyl Exhibits.**

| CITY           | 2015 |
|----------------|------|
| Atlanta        | 5    |
| Baltimore      | 3    |
| Boston         | 9    |
| Chicago        | 3    |
| Detroit        | 13   |
| Miami          | 6    |
| New Orleans    | 1    |
| New York       | 3    |
| Orlando        | 2    |
| Philadelphia   | 2    |
| Pittsburgh     | 2    |
| San Diego      | 2    |
| St. Louis      | 1    |
| Washington, DC | 1    |

Source: DEA

## Heroin Adulterants and Diluents

Heroin (diacetylmorphine) is produced from morphine by a chemical process known as acetylation. The morphine is extracted from opium, which is derived from the opium poppy plant (*Papaver somniferum L*). Adulterants are pharmacologically active substances such as caffeine, procaine, and quinine, which are added subsequent to the heroin conversion process. Diluents are pharmacologically inactive substances (i.e. cutting agents) such as lactose, mannitol, starch, and sucrose, added to the heroin to increase bulk/quantity.

### SA Heroin Adulterants and Diluents

- Analysis of 2015 HDMP exhibits identified quinine as one of the most commonly used adulterants for SA heroin and it was present in 53 percent of the HDMP SA heroin exhibits. SA heroin exhibits contained adulterants such as caffeine (45 percent), and diltiazem (3 percent). Diphenhydramine, acetaminophen, and lidocaine were also routinely detected. The most common diluent identified in SA heroin exhibits was lactose (identified in 48 percent of the exhibits), followed by mannitol (identified in 40 percent of the exhibits). Approximately 2 percent of SA heroin exhibits analyzed in 2015 contained no diluents.
- Four SA heroin exhibits purchased in Puerto Rico contained methorphan (as in dextromethorphan), which is usually found as an adulterant in SWA heroin.

- Three SA heroin exhibits purchased in Georgia (Duluth, Norcross, and Stone Mountain) and analyzed under the HDMP program were also found to contain fentanyl.

### Mexican-Origin Heroin Adulterants and Diluents

- Approximately 64 percent of Mexican-origin heroin exhibits analyzed under the HDMP in 2015 were unadulterated with others exhibits containing adulterants such as caffeine (16 percent), diphenhydramine (12 percent), lidocaine (8 percent), quinine (8 percent), and acetaminophen (5 percent). Cocaine was also identified in approximately 4 percent of Mexican-origin heroin exhibits. Fentanyl was identified in approximately 3 percent of Mexican-origin heroin exhibits. These exhibits were purchased in Florida (Miami, Orlando, and West Palm Beach); Chicago, Illinois; Massachusetts (Dorchester, Lynn, and Revere); Michigan (Detroit, Roseville, and Warren); St. Louis, Missouri; New York, New York; and Pennsylvania (Penn Hills and Philadelphia).
- Lactose was identified as the most common diluent for Mexican-origin heroin and was noted in 42 percent of the exhibits. Mannitol was detected in 18 percent of the exhibits followed by inositol at 11 percent. Dextrose was discovered in less than 10 percent of the HDMP Mexican-origin heroin exhibits. No diluents were identified in approximately 30 percent of Mexican-origin heroin exhibits analyzed in 2015.



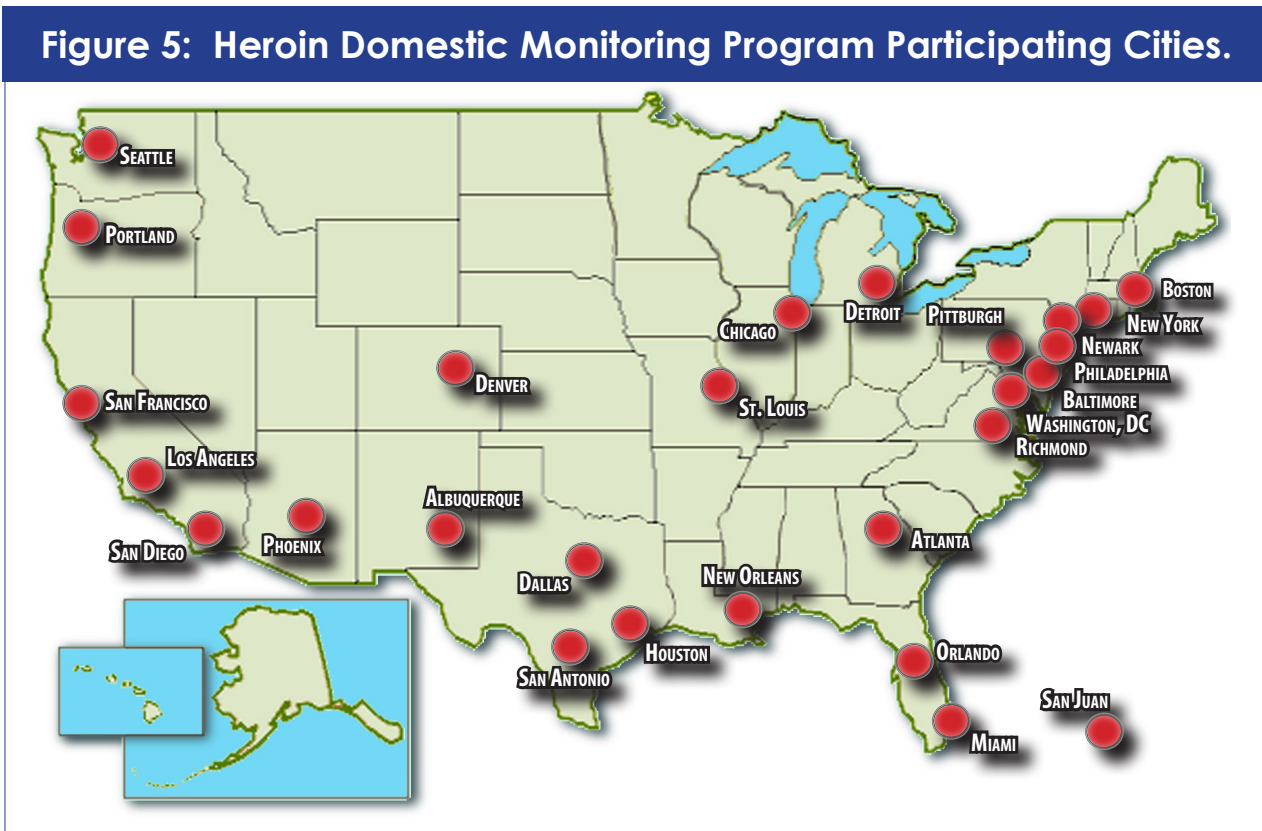
### SWA Heroin Adulterants and Diluents

- Only three SWA heroin exhibits were purchased via the HDMP in 2015 and adulterants detected in these exhibits included caffeine, quinine, diphenhydramine, and methorphan while diluents identified in these same heroin exhibits included lactose and mannitol.

### Regional

Analysis of 2015 HDMP data indicates that Mexican-origin heroin is now the predominant heroin type available in retail markets throughout the U.S. In 2015, 240 heroin exhibits classified as MEX-SA (white powder heroin) were purchased in retail markets east of the Mississippi River with another 34 MEX-SA exhibits purchased in markets west of the Mississippi. In addition, heroin classified as MEX/T, MEX/BP, and MEX continued to dominate markets west of the Mississippi. In 2015, only 42 heroin exhibits classified as SA heroin were purchased under the HDMP, primarily in traditional East Coast white heroin retail markets. Of the 178 HDMP exhibits classified as INC-SA, 171 were purchased in Eastern and Midwestern cities that are considered traditional white heroin markets. Three SWA heroin exhibits purchased under the HDMP in 2015 were obtained in Baltimore, Maryland and New York, New York.

**Figure 5: Heroin Domestic Monitoring Program Participating Cities.**



Source: DEA

## City by City

### ALBUQUERQUE, NEW MEXICO

In 2015, 17 qualified HDMP exhibits were purchased in the Albuquerque metropolitan area. Fifteen were classified as MEX/T heroin. The average purity of these exhibits was 16.4 percent with an average cost of \$0.58 per milligram pure. Compared to 2014 HDMP data, the average purity of MEX/T heroin decreased 2.7 percentage points, while the price per milligram pure increased by \$0.10.

Two exhibits were classified as MEX/BP with an average purity of 16.6 percent, while the average cost was \$0.47 per milligram pure. Compared to 2014 HDMP data, the average purity of MEX/BP heroin decreased 0.5 percentage points, while the price per milligram pure increased by \$0.11.

Overall, Mexican-origin heroin exhibits purchased in Albuquerque averaged 16.4 percent pure, while the average cost was \$0.57 per milligram pure. Compared to 2014 HDMP data, the average purity of Mexican-origin heroin in Albuquerque decreased 2.5 percentage points, while the price per milligram pure of this heroin increased by \$0.10.

One other HDMP exhibit purchased in Albuquerque in 2015 was classified as an UNK signature and was analyzed at 18.3 percent pure, and cost \$0.96 per milligram pure.

### ATLANTA, GEORGIA

In 2015, 36 qualified heroin exhibits were purchased in the Atlanta metropolitan area. Twenty-three of these exhibits were classified as MEX-SA. The average purity of these exhibits was 63.6 percent with an average cost of \$0.46 per milligram pure. Six exhibits purchased in Atlanta in 2015 were classified as INC-SA and were analyzed with an average purity of 43 percent with an average cost of \$1.80 per milligram pure. Compared to 2014 HDMP data, average purity increased by 0.4 percentage points, while the average price per milligram pure decreased by \$0.01.

Seven HDMP heroin exhibits purchased in Atlanta in 2015 were classified as SA heroin. These exhibits had an average purity of 58.2 percent and an average price of \$0.72 per milligram pure.

In 2015, one heroin exhibit purchased in Atlanta was classified as UNK signature and was analyzed at 2.6 percent pure and cost \$11.10 per milligram pure. Compared to 2014 HDMP data, the average purity of exhibits classified as UNK signature decreased 64.7 percentage points, while the price per milligram pure increased by \$9.09.

### BALTIMORE, MARYLAND

In 2015, 30 qualified heroin exhibits were purchased in Baltimore, Maryland. Twenty-three of these exhibits were classified as INC-SA. These exhibits reflected an average purity of 16.6 percent, with an average cost of \$0.62 per milligram pure. Compared to 2014 HDMP data, average purity increased by 3.7 percentage points, while the average price per milligram pure decreased by \$0.05.

Three exhibits were classified as MEX-SA. The average purity of these exhibits was 21.1 percent with an average cost of \$0.74 per milligram pure. Three HDMP heroin exhibits purchased in Baltimore in 2015 were classified as SA heroin. These exhibits had an average purity of 9.6 percent and an average price of \$0.68 per milligram pure. No SA heroin exhibits were purchased in Baltimore in 2014.

One SWA exhibit was purchased in Baltimore in 2015. The exhibit was 9 percent pure and cost \$0.65 per milligram pure. There were no SWA exhibits purchased in 2014.

Four other heroin exhibits purchased in Baltimore in 2015 were classified as an UNK signature. These exhibits had an average purity of 9.3 percent and cost an average of \$0.62 per milligram pure. Compared to 2014 HDMP data, the average purity of UNK signature exhibits decreased 1.5 percentage points, while the price per milligram pure decreased by \$0.43.

### **BOSTON, MASSACHUSETTS**

A total of 31 qualified heroin exhibits were purchased in the Boston metropolitan area. Twenty-three of these exhibits were classified as MEX-SA. These exhibits reflected an average purity of 13.4 percent and an average price of \$1.07 per milligram pure. Seven exhibits purchased were classified as INC-SA and were analyzed with an average purity of 9.6 percent with an average cost of \$2.60 per milligram pure. Compared to 2014 HDMP data, average purity decreased by 9.9 percentage points, while the average price per milligram pure increased by \$1.48.

One SA exhibit was purchased in Boston in 2015. The exhibit was 4.2 percent pure and cost \$3.09 per milligram pure. There were no SA exhibits purchased in 2014.

### **CHICAGO, ILLINOIS**

In 2015, 33 qualified HDMP exhibits were purchased in the Chicago metropolitan area. Nineteen of these exhibits were classified as INC-SA. The average purity of these heroin exhibits was 12.1 percent and the average price was \$0.87 per milligram pure. Compared to 2014 HDMP data, average purity increased by 1.1 percentage points, while the average price per milligram pure increased by \$0.39.

Eleven exhibits were classified as MEX-SA with an average purity of 13.5 percent and an average price of \$1.00 per milligram pure. Three exhibits purchased in Chicago in 2015 were classified as SA heroin with an average purity of 11.6 percent and an average price of \$0.46 per milligram pure. There were no SA exhibits purchased in 2014.

Five other HDMP exhibits purchased in Chicago in 2015 were classified as an UNK signature. These exhibits had an average purity of 12.9 percent and cost an average of \$0.64 per milligram pure. This represents an increase in purity of 1.2 percentage points, and an increase of \$0.25 in price per milligram pure when compared to 2014 HDMP statistics.

### **DALLAS, TEXAS**

In 2015, 40 qualified HDMP exhibits were purchased in the Dallas metropolitan area. Twenty-three of these exhibits were classified as MEX/BP heroin. The average purity of these exhibits was 8.5 percent with an average cost of \$0.82 per milligram pure. Compared to 2014 HDMP data, average purity increased by 1.2 percentage points, while the average price per milligram pure increased by \$0.26.

Ten HDMP exhibits purchased in Dallas in 2015 were classified as MEX/T and were analyzed with an average purity of 19.9 percent and an average cost of \$1.01 per milligram pure. Compared to 2014 HDMP data, average purity decreased by 5.2 percentage points, while the average price per milligram pure decreased by \$0.79.

Five other heroin exhibits were classified as MEX with an average purity of 18 percent and an average price of \$1.67 per milligram pure. One MEX-SA exhibit was purchased in Dallas in 2015 and was analyzed at 9.8 percent pure, and cost \$0.49 per milligram pure.

Overall, Mexican-origin heroin exhibits purchased in Dallas had an average purity of 12.7 percent, while the average cost was \$0.97 per milligram pure. Compared to 2014 HDMP data, the average purity of Mexican-origin heroin in Dallas decreased 8.3 percentage points, while the price per milligram pure decreased by \$0.55.

One other HDMP exhibit purchased in Dallas in 2015 was classified as INC-SA and was analyzed at 7.6 percent pure, and cost \$0.73 per milligram pure. There was also one HDMP exhibit purchased and classified as an UNK signature and was analyzed at 7.6 percent pure, and cost \$0.37 per milligram pure. Compared to 2014 HDMP data, the average purity of UNK signature exhibits increased 5.3 percentage points, while the price per milligram pure decreased by \$1.03.

### DENVER, COLORADO

In 2015, 40 qualified HDMP exhibits were purchased in the Denver metropolitan area. Thirty-six of these exhibits were classified as MEX/T heroin with an average purity of 17.6 percent and an average cost of \$0.77 per milligram pure. Compared to 2014 HDMP data, average purity decreased by 3.2 percentage points, while the average price per milligram pure decreased by \$0.57.

Two HDMP exhibits purchased in Denver were classified as MEX/BP with an average purity of 12.1 percent and an average cost of \$0.45 per milligram pure. Compared to 2014 HDMP data, average purity decreased by 1 percentage point, while the average price per milligram pure decreased by \$0.67. Two exhibits were classified as MEX heroin with an average purity of 13.6 percent, while the average cost was \$0.55 per milligram pure.

Overall, Mexican-origin heroin exhibits purchased in Denver averaged 17.2 percent pure, while the average cost was \$0.74 per milligram pure. Compared to the 2014 HDMP data, the average purity of Mexican-origin heroin in Denver decreased 2.4 percentage points, while the price per milligram pure of this heroin also decreased by \$0.57.

### DETROIT, MICHIGAN

In 2015, 33 qualified HDMP heroin exhibits were purchased in Detroit. Eleven of these exhibits were classified as INC-SA. The average purity of these heroin exhibits was 27.4 percent and the average price was \$0.85 per milligram pure. Compared to 2014 HDMP data, average purity decreased by 17.1 percentage points, while the average price per milligram pure increased by \$0.48.

One SA exhibit was purchased in Detroit in 2015 and was analyzed at 19.5 percent pure and cost \$0.64 per milligram pure. There were no SA exhibits purchased in 2014.

Nineteen heroin exhibits purchased in Detroit were classified as MEX-SA. These exhibits reflected an average purity of 49.4 percent and an average price of \$0.40 per milligram pure. Two exhibits were classified as MEX heroin with an average purity of 5.8 percent and an average price of \$4.03 per milligram pure. Mexican-origin heroin exhibits purchased in Detroit averaged 45.3 percent pure, while the average cost was \$0.74 per milligram pure.

Eight other HDMP exhibits purchased in Detroit in 2015 were classified as an UNK signature. These exhibits had an average purity of 25.2 percent and cost an average of \$1.00 per milligram pure. The average purity of these UNK signature exhibits decreased in 2015 by 6.4 percentage points, while the price per milligram pure increased by \$0.19.

### HOUSTON, TEXAS

In 2015, 20 qualified HDMP exhibits were purchased in the Houston metropolitan area. MEX/T heroin accounted for 13 of the qualified HDMP purchases made in Houston. These exhibits averaged 14.6 percent pure with an average cost per milligram pure of \$2.41. Compared to the MEX/T heroin

exhibits purchased in 2014, purity increased by 2 percentage points, while the price decreased by \$0.63 per milligram pure.

Seven HDMP exhibits purchased in Houston were classified as MEX-SA with an average purity of 18.1 percent and an average cost of \$3.45 per milligram pure.

Overall, Mexican-origin heroin exhibits purchased in Houston averaged 15.9 percent pure, while the average cost was \$2.77 per milligram pure. Compared to the 2014 HDMP data, the average purity of Mexican-origin heroin in Houston decreased 1.3 percentage points, while the price per milligram pure of this heroin increased significantly by \$2.03.

### LOS ANGELES, CALIFORNIA

In 2015, 40 qualified HDMP exhibits were purchased in Los Angeles. Thirty-eight exhibits were classified as MEX/T heroin. The purity of these exhibits averaged 21.6 percent, and the average price was \$0.80 per milligram pure. Compared to the MEX/T heroin exhibits purchased in 2014, purity decreased by 5.2 percentage points, while the price increased by \$0.09 per milligram pure.

Two exhibits purchased in Los Angeles in 2015 were classified as MEX with an average purity of 30.9 percent, and an average cost of \$0.58 per milligram pure.

Overall, the purity of Mexican-origin heroin exhibits purchased in Los Angeles in 2015 averaged 22.1 percent, and the average cost was \$0.79 per milligram pure. Compared to 2014 HDMP data, the average purity of Mexican-origin heroin exhibits in Los Angeles decreased 5.6 percentage points, while the price per milligram pure of Mexican-origin heroin increased by \$0.18.

### MIAMI, FLORIDA

In 2015, 24 qualified HDMP heroin exhibits were purchased in the Miami area; 14 were classified as MEX-SA. The average purity of these exhibits was 28.3 percent with an average cost of \$1.21 per milligram pure. Four exhibits were classified as MEX/BP heroin and were analyzed with an average purity of 9.4 percent and an average cost of \$3.13 per milligram pure. Compared to the MEX/BP heroin exhibits purchased in 2014, purity increased by 3.4 percentage points, while the price decreased by \$3.29 per milligram pure.

Overall, Mexican-origin heroin exhibits purchased in Miami averaged 24.1 percent pure, while the average cost was \$1.64 per milligram pure. Compared to the 2014 HDMP data, the average purity of Mexican-origin heroin in Miami increased 6.9 percentage points, while the price per milligram pure of this heroin also increased by \$0.90.

Two exhibits purchased in 2015 in Miami were classified as SA heroin. These exhibits had an average purity of 34.4 percent and an average price of \$0.66 per milligram pure. Compared to 2014 HDMP data, the average purity of SA heroin in Miami increased by 1.1 percentage points, while the average price per milligram pure decreased by \$0.24.

Four heroin exhibits purchased in Miami in 2015 were classified as INC-SA. These exhibits had an average purity of 32.2 percent and an average price of \$1.10 per milligram pure. Compared to 2014 HDMP data, the average purity of INC-SA decreased by 2.9 percentage points, while the average price per milligram pure decreased by \$0.72.

Two HDMP exhibits purchased in Miami in 2015 were classified as an UNK signature. These exhibits had an average purity of 36.3 percent and cost an average of \$0.89 per milligram pure. Compared to 2014 HDMP data, the average purity of UNK signature exhibits obtained in Miami increased by 16.4 percentage points, and the price per milligram pure decreased by \$2.40.



**NEWARK, NEW JERSEY**

In 2015, 38 qualified HDMP exhibits were purchased in the Newark metropolitan area; 20 of these heroin exhibits were classified as MEX-SA with an average purity of 59.5 percent and an average cost of \$0.77 per milligram pure. Compared to 2014 HDMP data, the average purity of the MEX-SA heroin exhibits increased by 2.3 percentage points, while the average price per milligram pure increased by \$0.41.

Sixteen heroin exhibits purchased in Newark in 2015 were classified as INC-SA. These exhibits had an average purity of 41.3 percent and an average cost of \$1.11 per milligram pure. Compared to 2014 HDMP data, the average purity of INC-SA decreased by 15.7 percentage points, while the average price per milligram pure increased by \$0.36.

Two exhibits purchased in Newark in 2015 were classified as SA heroin with an average purity of 47.7 percent and an average price of \$0.83 per milligram pure. Compared to 2014 HDMP data, the average purity of the SA heroin exhibits obtained in Newark increased by 6.4 percentage points, while the average price per milligram pure decreased by \$0.39.

One other HDMP exhibit purchased in Newark in 2015 was classified as an UNK signature and was analyzed at 29.9 percent pure, and cost \$0.98 per milligram pure. Compared to 2014 HDMP data, the average purity of UNK signature exhibits obtained in Newark in 2015 decreased by 23.3 percentage points, while the price per milligram pure increased by \$0.47.

**NEW ORLEANS, LOUISIANA**

In 2015, 28 qualified HDMP heroin exhibits were purchased in the New Orleans metropolitan area; 18 of these heroin exhibits were classified as MEX-SA with an average purity of 26.6 percent and an average cost of \$2.16 per milligram pure.

Ten heroin exhibits purchased in New Orleans in 2015 were classified as INC-SA with an average purity of 22.4 percent and an average cost of \$1.83 per milligram pure. Compared to 2014 HDMP data, the average purity of INC-SA decreased by 1.8 percentage points, while the average price per milligram pure decreased by \$0.23.

Six HDMP exhibits purchased in New Orleans in 2015 were classified as an UNK signature. These exhibits had an average purity of 17.6 percent and cost an average of \$1.75 per milligram pure. Compared to 2014 HDMP data, the average purity of UNK signature exhibits obtained in New Orleans decreased by 4.6 percentage points, and the price per milligram pure increased by \$0.25.

**NEW YORK, NEW YORK**

New York City remains one of the most prominent heroin destination and distribution centers in the United States. Of the 55 qualified heroin exhibits purchased in New York City during 2015, 30 were classified as MEX-SA. The average purity of these exhibits was 48.6 percent with an average cost of \$0.52 per milligram pure. One exhibit was classified as MEX/BP heroin and was analyzed at 6.2 percent pure and cost \$1.65 per milligram pure. Mexican-origin heroin exhibits purchased in New York averaged 47.2 percent pure, while the average cost was \$0.56 per milligram pure.

Sixteen heroin exhibits purchased in New York in 2015 were classified as INC-SA. These exhibits had an average purity of 29.9 percent and an average price of \$1.22 per milligram pure. Compared to 2014 HDMP data, the average purity of INC-SA decreased by 24 percentage points, while the average price per milligram pure remained at \$0.72.

Six HDMP heroin exhibits purchased in New York City in 2015 were classified as SA heroin. These exhibits had an average purity of 42.5 percent and an average price of \$1.12 per milligram pure. Compared to 2014 HDMP data, the average purity of the SA heroin available in New York City increased by 4 percentage points and the average price per milligram pure increased by \$0.33.

Two SWA exhibits were purchased in New York in 2015 and these exhibits had an average purity of 23.6 percent and cost an average of \$0.97 per milligram pure. There were no SWA exhibits purchased in 2014.

Four HDMP exhibits purchased in New York in 2015 were classified as an UNK signature. These exhibits had an average purity of 29.8 percent with an average cost of \$1.62 per milligram pure. Compared to 2014 HDMP data, the average purity of UNK signature exhibits obtained in New York decreased by 3.2 percentage points, and the price per milligram pure increased by \$0.97.

### ORLANDO, FLORIDA

Twelve qualified HDMP exhibits were purchased in Orlando in 2015 and 11 of these heroin exhibits were classified as MEX-SA with an average purity of 38.9 percent and an average cost of \$0.68 per milligram pure.

One heroin exhibit purchased in Orlando in 2015 was classified as INC-SA and was analyzed at 35.1 percent pure, and cost \$0.53 per milligram pure. Compared to 2014 HDMP data, the average purity of INC-SA increased by 13.1 percentage points, while the average price per milligram pure decreased by \$2.66.

Three HDMP exhibits purchased in Orlando in 2015 were classified as an UNK signature. These exhibits had an average purity of 35.7 percent and cost an average of \$0.55 per milligram pure. Compared to 2014 HDMP data, the average purity of UNK signature exhibits obtained in Orlando increased by 5.6 percentage points, and the price per milligram pure decreased by \$0.83.

### PHILADELPHIA, PENNSYLVANIA

In 2015, 40 qualified HDMP heroin exhibits were purchased in Philadelphia; 25 of these heroin exhibits were classified as MEX-SA and had an average purity of 76.1 percent and an average cost of \$0.29 per milligram pure.

Fifteen heroin exhibits purchased in Philadelphia in 2015 were classified as INC-SA. These exhibits had an average purity of 59.6 percent and an average price of \$0.58 per milligram pure. Compared to 2014 HDMP data, the average purity of INC-SA decreased by 7.4 percentage points, while the average price per milligram pure increased by \$0.15.

One HDMP exhibit purchased in Philadelphia in 2015 was classified as an UNK signature. This exhibit was analyzed at 51 percent pure, and cost \$0.40 per milligram pure. Compared to 2014 HDMP data, the average purity of UNK signature decreased by 13.5 percentage points, while the price per milligram pure decreased by \$0.03.

### PHOENIX, ARIZONA

In 2015, 40 qualified HDMP exhibits were purchased in Phoenix; 33 of these exhibits were classified as MEX/T heroin with an average purity of 20.2 percent and an average cost of \$0.33 per milligram pure. Compared to 2014 HDMP data, average purity decreased by 6.6 percentage points, while the average price per milligram pure decreased by \$0.23.

Two HDMP exhibits purchased in Phoenix in 2015 were classified as MEX/BP with an average purity of 24 percent and an average cost of \$1.80 per milligram pure. Compared to 2014 HDMP data, average purity increased by 2.5 percentage point, while the average price per milligram pure decreased by \$1.43. Five other heroin exhibits were classified as MEX with an average purity of 15.9 percent, and an average cost was \$0.30 per milligram pure.

Overall, Mexican-origin heroin exhibits purchased in Phoenix in 2015 averaged 19.9 percent pure, while the average cost was \$0.40 per milligram pure. Compared to the 2014 HDMP data, the average purity of Mexican-origin heroin in Phoenix decreased 6.7 percentage points, while the price per milligram pure of this heroin also decreased by \$0.15.

#### **PITTSBURGH, PENNSYLVANIA**

In 2015, a total of 17 qualified heroin exhibits were purchased in Pittsburgh; 11 of these heroin exhibits were classified as MEX-SA and had an average purity of 48.8 percent and an average cost of \$1.17 per milligram pure.

Six heroin exhibits purchased in Pittsburgh in 2015 were classified as INC-SA. These exhibits had an average purity of 62.2 percent and an average price of \$0.97 per milligram pure. Compared to 2014 HDMP data, the average purity of INC-SA heroin obtained in Pittsburgh increased by 7.1 percentage points, while the average price per milligram pure increased by \$0.09.

#### **PORTLAND, OREGON**

In 2015, 16 qualified HDMP exhibits were purchased in Portland and all were classified as MEX/T heroin. These exhibits had an average purity of 25.4 percent and an average price of \$0.67 per milligram pure. Compared to 2014 HDMP data, the average purity of Mexican-origin heroin in Portland increased by 0.6 percentage points and the average price decreased by \$0.69 per milligram pure.

#### **RICHMOND, VIRGINIA**

A total of 15 qualified HDMP heroin exhibits were purchased in Richmond in 2015. Eight of these heroin exhibits were classified as INC-SA with an average purity of 12.5 percent and an average price of \$2.36 per milligram pure. Compared to 2014 HDMP data, average purity decreased by 2.4 percentage points, while the average price per milligram pure decreased by \$0.08.

Two exhibits purchased in Richmond in 2015 were classified as SA heroin. These exhibits had an average purity of 16.5 percent and an average price of \$2.21 per milligram pure. Compared to 2014 HDMP data, the purity of the SA heroin exhibits obtained in Richmond increased 5.6 percentage points while the average price per milligram pure increased by \$0.58.

Four heroin exhibits purchased in Richmond in 2015 were classified as MEX-SA and had an average purity of 31 percent and an average cost of \$1.19 per milligram pure. One exhibit obtained in Richmond was classified as MEX/BP and was analyzed at 1.2 percent pure, and cost \$13.89 per milligram pure. The average purity of Mexican-origin heroin in Richmond was 25.1 percent, while the average cost was \$3.73 per milligram pure.

Two other HDMP exhibits purchased in Richmond in 2015 were classified as an UNK signature. These exhibits had an average purity of 8.1 percent and cost an average of \$5.69 per milligram pure. Compared to 2014 HDMP data, the average purity of UNK signature exhibits obtained in Richmond decreased by 13.3 percentage points, and the price per milligram pure increased by \$4.66.

**SAN ANTONIO, TEXAS**

In 2015, 19 qualified HDMP exhibits were purchased in the San Antonio area; nine of these exhibits were classified as MEX/T heroin while two were classified as MEX/BP. The average purity of the MEX/T exhibits was 5.9 percent with an average cost of \$1.65 per milligram pure. Compared to 2014 HDMP data, average purity decreased by 1.9 percentage points, while the average price per milligram pure increased by \$0.97. The average purity of the exhibits classified as MEX/BP was 5 percent, while the average cost of these same exhibits was \$1.51 per milligram pure. Compared to 2014 HDMP data, average purity decreased by 2 percentage points, while the average price per milligram pure increased by \$0.35.

Four heroin exhibits purchased in the San Antonio area in 2015 were classified as MEX-SA. These exhibits had an average purity of 12.3 percent and an average cost of \$1.36 per milligram pure. Two other exhibits were classified as MEX with an average purity of 4.6 percent, while the average cost was \$0.95 per milligram pure.

Overall, the average purity of Mexican-origin heroin in San Antonio was 6.9 percent, while the average cost was \$1.48 per milligram pure. Compared to the 2014 HDMP data, the average purity of Mexican-origin heroin in San Antonio decreased 0.4 percentage points, while the price per milligram pure of Mexican-origin heroin increased by \$0.50.

One HDMP exhibit purchased in San Antonio in 2015 was classified as an UNK signature and was analyzed at 9.5 percent pure, and cost \$0.66 per milligram pure.

**SAN DIEGO, CALIFORNIA**

In 2015, 33 qualified HDMP exhibits were purchased in the San Diego metropolitan area. Twenty-nine of these exhibits were classified as MEX/T heroin with an average purity of 33.7 percent and an average cost of \$0.37 per milligram pure. Compared to 2014 HDMP data, average purity increased by 0.8 percentage points, while the average price per milligram pure increased by \$0.12.

Two HDMP exhibits purchased in San Diego in 2015 were classified as MEX/BP with an average purity of 39.4 percent and an average cost of \$0.17 per milligram pure. Compared to 2014 HDMP data, average purity increased by 0.6 percentage points, while the average price per milligram pure decreased by \$0.11. Two other exhibits were classified as MEX with an average purity of 42.9 percent and an average cost of \$0.20 per milligram pure.

Overall, the average purity of Mexican-origin heroin in San Diego was 34.6 percent, while the average cost was \$0.34 per milligram pure. Compared to the 2014 HDMP data, the average purity of Mexican-origin heroin in San Diego increased 1.2 percentage points, while the price per milligram pure of Mexican-origin heroin increased by \$0.08.

**SAN FRANCISCO, CALIFORNIA**

In 2015, 39 qualified HDMP exhibits were purchased in the San Francisco metropolitan area; 21 were classified as MEX/T heroin with an average purity of 9 percent and an average cost of \$1.35 per milligram pure. Compared to 2014 HDMP data, average purity increased by 1.8 percentage points, while the average price per milligram pure increased by \$0.10.

Eight heroin exhibits obtained in San Francisco in 2015 were classified as MEX/BP with an average purity of 7.1 percent and an average cost of \$0.59 per milligram pure. Compared to 2014 HDMP data, average purity decreased by 1.2 percentage points, while the average price per milligram pure increased by \$0.06.

Ten exhibits purchased in San Francisco in 2015 were classified as MEX with an average purity of 3.5 percent, while the average cost was \$1.24 per milligram pure. Compared to 2014 HDMP data, average purity increased by 1.5 percentage points, while the average price per milligram pure increased by \$0.48.

Overall, Mexican-origin HDMP heroin exhibits obtained in San Francisco in 2015 averaged 7.2 percent pure, while the average cost was \$1.17 per milligram pure. Compared to 2014 data, this represents a 0.1 percent decrease in average purity as well as a \$0.18 increase in the price per milligram pure.

### **SAN JUAN, PUERTO RICO**

In 2015, 33 qualified exhibits were purchased in San Juan under the HDMP; seven of these exhibits were classified as SA heroin with an average purity of 38.6 percent and an average cost of \$1.83 per milligram pure. Compared to 2014 HDMP data, the purity of SA heroin available in San Juan increased by 22.7 percentage points and the average price per milligram pure increased by \$0.53.

Seventeen HDMP heroin exhibits purchased in San Juan in 2015 were classified as INC-SA. These exhibits had an average purity of 21.8 percent and an average price of \$1.03 per milligram pure. Compared to 2014 HDMP data, average purity increased by 0.6 percentage points, while the average price per milligram pure decreased by \$0.50.

Nine heroin exhibits purchased in San Juan in 2015 were classified as MEX-SA and had an average purity of 25.2 percent and an average cost of \$2.18 per milligram pure.

Two other HDMP exhibits purchased in San Juan in 2015 were classified as an UNK signature. These exhibits had an average purity of 5.2 percent and cost an average of \$4.91 per milligram pure.

### **SEATTLE, WASHINGTON**

In 2015, 34 qualified exhibits were purchased in Seattle under the HDMP and all but two of these exhibits were classified as MEX/T heroin. These exhibits had an average purity of 33.6 percent and cost an average of \$0.57 per milligram pure. Compared to 2014 HDMP data, average purity increased by 7.1 percentage points, while the average price per milligram pure decreased by \$0.11.

Two heroin exhibits purchased in Seattle in 2015 were classified as MEX and had an average purity of 37 percent and an average cost of \$0.15 per milligram pure.

Overall, Mexican-origin HDMP heroin exhibits obtained in Seattle in 2015 averaged 33.8 percent pure, while the average cost was \$0.54 per milligram pure. Compared to 2014 data, this represents a 7.3 percent increase in average purity as well as a \$0.14 decrease in the price per milligram pure.

### **ST. LOUIS, MISSOURI**

A total of 28 qualified HDMP heroin exhibits were purchased in St. Louis in 2015. Fifteen of these heroin exhibits were classified as MEX-SA and had an average purity of 36.5 percent and an average cost of \$1.14 per milligram pure.

Seven exhibits purchased in St. Louis in 2015 were classified as SA heroin with an average purity of 54.8 percent, while the average cost was \$0.64 per milligram pure. There were no SA exhibits purchased in 2014.

Six additional exhibits purchased in St. Louis in 2015 were classified as INC-SA. These exhibits had an average purity of 16 percent and an average price of \$2.50 per milligram pure. Compared to 2014 HDMP data, average purity decreased by 30.5 percentage points, while the average price per milligram pure increased by \$1.97.



Six HDMP exhibits purchased in St. Louis in 2015 were classified as an UNK signature. These exhibits had an average purity of 20 percent and cost an average of \$3.50 per milligram pure. Compared to 2014 HDMP data, the average purity of UNK signature exhibits obtained in St. Louis decreased by 30.1 percentage points, and the price per milligram pure increased by \$3.12.

#### WASHINGTON, DISTRICT OF COLUMBIA

In 2015, 32 qualified exhibits were purchased in Washington, DC under the HDMP and 19 of these heroin exhibits were classified as MEX-SA with an average purity of 31.3 percent and an average cost of \$0.96 per milligram pure. One SA heroin exhibit was purchased in Washington, DC in 2015 and the purity of this exhibit was analyzed at 40.6 percent and cost \$0.35 per milligram pure.

Twelve heroin exhibits purchased in Washington, DC in 2015 were classified as INC-SA with an average purity of 24.1 percent pure, and an average price of \$1.35 per milligram pure. Compared to 2014 HDMP data, the average purity of heroin classified as INC-SA decreased by 12.4 percentage points, while the average price per milligram pure increased by \$0.57.

One other HDMP exhibit purchased in Washington, DC in 2015 was classified as an UNK signature and was analyzed at 51.8 percent pure, and cost \$0.36 per milligram pure. Compared to 2014 HDMP data, the average purity of UNK signature exhibits increased by 35 percentage points, and the price per milligram pure decreased by \$1.84.

Figure 6: 2015 Heroin Counts, Purities, Origin, and City by Geographic Region: Mexican Origin Heroin.

|                | MEX                |        |        | MEX/T              |        |        | MEX/BP             |        |        | MEX-SA             |        |        |
|----------------|--------------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| EAST           | Number of Exhibits | Purity | Price  | Number of Exhibits | Purity | Price  | Number of Exhibits | Purity | Price  | Number of Exhibits | Purity | Price  |
| ATLANTA        |                    |        |        |                    |        |        |                    |        |        | 23                 | 63.6%  | \$0.46 |
| BALTIMORE      |                    |        |        |                    |        |        |                    |        |        | 3                  | 21.1   | 0.74   |
| BOSTON         |                    |        |        |                    |        |        |                    |        |        | 23                 | 13.4   | 1.07   |
| CHICAGO        |                    |        |        |                    |        |        |                    |        |        | 11                 | 13.5   | 1.00   |
| DETROIT        | 2                  | 5.8%   | \$4.03 |                    |        |        |                    |        |        | 19                 | 49.4   | 0.40   |
| MIAMI          |                    |        |        |                    |        |        | 4                  | 9.4%   | \$3.13 | 14                 | 28.3   | 1.21   |
| NEW ORLEANS    |                    |        |        |                    |        |        |                    |        |        | 18                 | 26.6   | 2.16   |
| NEW YORK       |                    |        |        |                    |        |        | 1                  | 6.2    | 1.65   | 30                 | 48.6   | 0.52   |
| NEWARK         |                    |        |        |                    |        |        |                    |        |        | 20                 | 59.5   | 0.77   |
| ORLANDO        |                    |        |        |                    |        |        |                    |        |        | 11                 | 38.9   | 0.68   |
| PHILADELPHIA   |                    |        |        |                    |        |        |                    |        |        | 25                 | 76.1   | 0.29   |
| PITTSBURGH     |                    |        |        |                    |        |        |                    |        |        | 11                 | 48.8   | 1.17   |
| RICHMOND       |                    |        |        |                    |        |        | 1                  | 12     | 13.89  | 4                  | 31     | 1.19   |
| SAN JUAN       |                    |        |        |                    |        |        |                    |        |        | 9                  | 25.2   | 2.18   |
| WASHINGTON, DC |                    |        |        |                    |        |        |                    |        |        | 19                 | 31.3   | 0.96   |
|                | MEX                |        |        | MEX/T              |        |        | MEX/BP             |        |        | MEX-SA             |        |        |
| WEST           | Number of Exhibits | Purity | Price  | Number of Exhibits | Purity | Price  | Number of Exhibits | Purity | Price  | Number of Exhibits | Purity | Price  |
| ALBUQUERQUE    |                    |        |        | 15                 | 16.4%  | \$0.58 | 2                  | 16.6   | \$0.47 |                    |        |        |
| DALLAS         | 5                  | 18%    | \$1.67 | 10                 | 19.9   | 1.01   | 23                 | 8.5    | 0.82   | 1                  | 9.8%   | \$0.49 |
| DENVER         | 2                  | 13.6   | 0.55   | 36                 | 17.6   | 0.77   | 2                  | 12.1   | 0.45   |                    |        |        |
| HOUSTON        |                    |        |        | 13                 | 14.6   | 2.41   |                    |        |        | 7                  | 18.1   | 3.45   |
| LOS ANGELES    | 2                  | 30.9   | 0.58   | 38                 | 21.6   | 0.80   |                    |        |        |                    |        |        |
| PHOENIX        | 5                  | 15.9   | 0.30   | 33                 | 20.2   | 0.33   | 2                  | 24     | 1.80   |                    |        |        |
| PORTLAND       |                    |        |        | 16                 | 25.4   | 0.67   |                    |        |        |                    |        |        |
| SAN ANTONIO    | 2                  | 4.6    | 0.95   | 9                  | 5.9    | 1.65   | 4                  | 5      | 1.51   | 4                  | 12.3   | 1.36   |
| SAN DIEGO      | 2                  | 42.9   | 0.20   | 29                 | 33.7   | 0.37   | 2                  | 39.4   | 0.17   |                    |        |        |
| SAN FRANCISCO  | 10                 | 3.5    | 1.24   | 21                 | 9      | 1.35   | 8                  | 7.1    | 0.59   |                    |        |        |
| SEATTLE        | 2                  | 37     | 0.15   | 32                 | 33.6   | 0.57   |                    |        |        |                    |        |        |
| ST. LOUIS      |                    |        |        |                    |        |        |                    |        |        | 15                 | 36.5   | 1.14   |
| TOTAL          | 32                 | 14.8%  | \$1.10 | 252                | 27.7%  | \$0.80 | 49                 | 10.2%  | \$1.29 | 267                | 41.2%  | \$0.97 |

Report Parameters: Only qualified exhibits are shown. January 1 to December 31, 2015

Price Unit: Per milligram pure

Source: DEA

Figure 7: 2015 Heroin Counts, Purities, Origin, and City by Geographic Region.

|                | Southwest Asian Heroin |        |        | South American Heroin |        |        | InconclusiveOrigin-South American Processing |        |        |
|----------------|------------------------|--------|--------|-----------------------|--------|--------|--|--------|--------|
| EAST           | Number of Exhibits     | Purity | Price  | Number of Exhibits    | Purity | Price  | Number of Exhibits                           | Purity | Price  |
| ATLANTA        |                        |        |        | 7                     | 58.2%  | \$0.72 | 6  | 43%    | \$1.80 |
| BALTIMORE      | 1                      | 9%     | \$0.65 | 3                     | 9.6    | 0.68   | 23   | 16.6   | 0.62   |
| BOSTON         |                        |        |        | 1                     | 4.2    | 3.09   | 7  | 9.6    | 2.60   |
| CHICAGO        |                        |        |        | 3                     | 11.6   | 0.46   | 19   | 12.1   | 0.87   |
| DETROIT        |                        |        |        | 1                     | 19.5   | 0.64   | 11   | 27.4   | 0.85   |
| MIAMI          |                        |        |        | 2                     | 34.4   | 0.66   | 4  | 32.2   | 1.10   |
| NEW ORLEANS    |                        |        |        |                       |        |        | 10   | 22.4   | 1.83   |
| NEW YORK       | 2                      | 23.6   | 0.97   | 6                     | 42.5   | 1.12   | 16   | 29.9   | 1.22   |
| NEWARK         |                        |        |        | 2                     | 47.7   | 0.83   | 16   | 41.3   | 1.11   |
| ORLANDO        |                        |        |        |                       |        |        | 1  | 35.1   | 0.53   |
| PHILADELPHIA   |                        |        |        |                       |        |        | 15   | 59.6   | 0.58   |
| PITTSBURGH     |                        |        |        |                       |        |        | 6  | 62.2   | 0.97   |
| RICHMOND       |                        |        |        | 2                     | 16.5   | 2.21   | 8  | 12.5   | 2.36   |
| SAN JUAN       |                        |        |        | 7                     | 38.6   | 1.83   | 17   | 21.8   | 1.03   |
| WASHINGTON, DC |                        |        |        | 1                     | 40.6   | 0.35   | 12   | 24.1   | 1.35   |
|                | Southwest Asian Heroin |        |        | South American Heroin |        |        | InconclusiveOrigin-South American Processing |        |        |
| EAST           | Number of Exhibits     | Purity | Price  | Number of Exhibits    | Purity | Price  | Number of Exhibits                           | Purity | Price  |
| ALBUQUERQUE    |                        |        |        |                       |        |        |  |        |        |
| DALLAS         |                        |        |        |                       |        |        | 1  | 7.6%   | \$0.73 |
| DENVER         |                        |        |        |                       |        |        |  |        |        |
| HOUSTON        |                        |        |        |                       |        |        |  |        |        |
| LOS ANGELES    |                        |        |        |                       |        |        |  |        |        |
| PHOENIX        |                        |        |        |                       |        |        |  |        |        |
| PORTLAND       |                        |        |        |                       |        |        |  |        |        |
| SAN ANTONIO    |                        |        |        |                       |        |        |  |        |        |
| SAN DIEGO      |                        |        |        |                       |        |        |  |        |        |
| SAN FRANCISCO  |                        |        |        |                       |        |        |  |        |        |
| SEATTLE        |                        |        |        |                       |        |        |  |        |        |
| ST. LOUIS      |                        |        |        | 7                     | 54.8%  | \$0.64 | 6  | 16     | 2.50   |
| TOTAL          | 3                      | 18.7%  | \$0.86 | 42                    | 39.1%  | \$1.05 | 178  | 27.5%  | \$1.19 |

Report Parameters: Only qualified exhibits are shown. January 1 to December 31, 2015  
Price Unit: Per milligram pure

Source: DEA

## Geo-Probes: Views from Additional Cities

Since 2001, DEA has sponsored an initiative in the HDMP known as Geographical Probes, or Geo-Probes. The goal of the Geo-Probes is to gain additional information about existing and emerging heroin markets in areas outside of the 27 designated HDMP cities. In order to accomplish this, DEA provides funds for additional heroin exhibit purchases in selected cities across the United States.

Geo-Probe data, while important to identify emerging threats and market trends, are not calculated as part of the national average and are not compared against program-wide HDMP exhibits.

In 2015, under the Geo-Probe Initiative, heroin purchases were made in the following areas: Santa Fe, New Mexico; Dayton, Ohio; Norfolk, Virginia; Roanoke, Virginia; and Winchester, Virginia.

- A Geo-Probe conducted in Norfolk and Roanoke, Virginia in March 2015 resulted in the purchase of two heroin exhibits classified as MEX-SA and two heroin exhibits classified as INC-SA. The MEX-SA exhibits averaged 9.1 percent pure with a cost of \$1.50 per milligram pure. The INC-SA exhibits averaged 27 percent pure with a cost of \$2.62 per milligram pure.
- In March 2015, a Geo-Probe conducted in Winchester, Virginia resulted in the purchase of two heroin exhibits classified as INC-SA. The INC-SA exhibits averaged 13.2 percent pure with a cost of \$3.49 per milligram pure.
- In June and September 2015, a Geo-Probe in Santa Fe, New Mexico resulted in the purchase of five heroin exhibits; four were classified as MEX/T and one was classified as MEX/BP. The MEX/T exhibits averaged 20.7 percent pure with a cost of \$0.62 per milligram pure. The MEX/BP exhibit was analyzed at 13.4 percent pure with a cost of \$1.07 per milligram pure.
- A Geo-Probe conducted in Dayton, Ohio in December 2015 resulted in the purchase of two heroin exhibits classified as MEX-SA and one heroin exhibit classified as INC-SA. The MEX-SA exhibits averaged 56 percent pure with a cost of \$0.33 per milligram pure. The INC-SA exhibit was analyzed at 52.4 percent pure with a cost of \$0.68 per milligram pure. Two other exhibits purchased in Dayton, Ohio were analyzed as fentanyl, with purities of 1.4 percent pure and 3.9 percent pure, respectively.

## 2015 Summary of Findings

2015 HDMP data indicate that Mexican-origin heroin was the predominant type of heroin available in U.S. retail drug markets. MEX-SA heroin availability has significantly increased in Eastern white powder markets historically supplied by Colombian traffickers since the mid-1990s, while MEX/T, MEX/BP, and MEX heroin continue to dominate markets west of the Mississippi.

HDMP data also revealed that in 2015 heroin classified as INC-SA and SA were identified as the secondary types of heroin available primarily in U.S. retail markets east of the Mississippi River. Southwest Asian (SWA) heroin availability at the retail-level remains extremely limited and for the tenth consecutive year, no Southeast Asian (SEA) heroin exhibits were purchased under the HDMP during 2015.

SFL1 advises that numerous adulterants present in HDMP heroin exhibits hinder the new signature protocols established by SFL1 in May 2015 therefore an origin determination could not be made for 22 percent of the 2015 exhibits. 2015 HDMP results reflect that the average purity of INC-SA heroin was only 27.5 percent. Extremely adulterated and diluted (low purity) heroin, such as that purchased at the retail level, is likely to generate this classification. SFL1 reports that the overlapping

presence of common adulterants in SA, MEX-SA, and INC-SA heroin types indicates an elaborate but consistent cutting pattern for heroin distributed in Eastern and Midwestern retail markets. Regardless of origin (Mexico or South America), powder HDMP exhibits continue to identify an overwhelming use of other chemical compounds with heroin.

MEX-SA heroin (Mexican white powder heroin) with an average purity of 41.2 percent maintains the highest overall average retail purity of all the geo-sourced heroin analyzed under the HDMP in 2015, followed by SA heroin with an average retail purity of 39.1 percent.

The HDMP data from 2009 compared against 2015 data reflected a 69.6 percent decrease in heroin exhibits whose signature was classified as UNK by the SFL1. In 2009, 161 HDMP exhibits were classified as UNK, while in 2015, that number dropped to 49. This decrease is due in large part to the new forensic protocols introduced by SFL1 in May 2015. These protocols allow chemists to better differentiate and isolate the origin of heroin exhibits previously classified as UNK to either Mexico or South America.

## HDMP Consumers

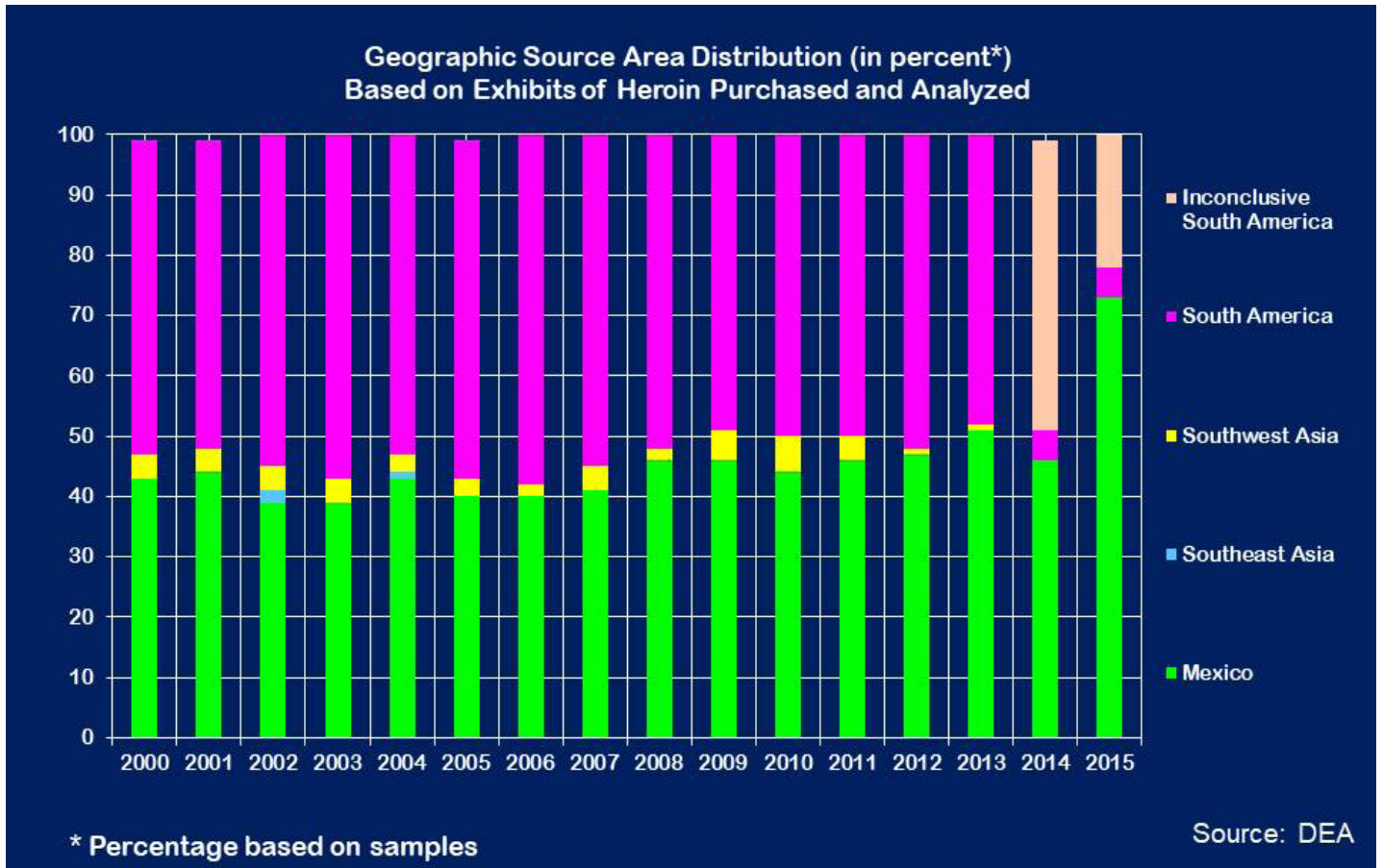
The HDMP is the sole U.S. Government source of data on the origin, price, and purity of heroin available on the streets of the United States and, as such, is an important assessment and trending tool for DEA, other Federal, state, and local law enforcement agencies, drug policymakers, and drug abuse researchers throughout the nation. The HDMP results are frequently included in intelligence and investigative reports designed to identify trends and inform DEA, other government agencies, Congress, and the White House Office of National Drug Control Policy (ONDCP) about the U.S. situation. The HDMP remains a valuable indicator of trends in the retail market, and when used in conjunction with other information, provides DEA with an overall, long-term assessment of retail-level heroin trafficking in the United States.



Source: DEA



## APPENDIX A: Heroin Domestic Monitor Program Results 2000-2015



**(U) Appendix B: 2014 Heroin Counts, Purities, Prices, Origin, and City  
by Geographic Region: Mexican Origin Heroin.**

|                | Mexican Heroin    |        |         | Mexican Tar Heroin |        |        | Mexican Brown Powder Heroin |        |        | Mexican South American Heroin |        |        |
|----------------|-------------------|--------|---------|--------------------|--------|--------|-----------------------------|--------|--------|-------------------------------|--------|--------|
| EAST           | Number of Samples | Purity | Price   | Number of Samples  | Purity | Price  | Number of Samples           | Purity | Price  | Number of Samples             | Purity | Price  |
| ATLANTA        |                   |        |         |                    |        |        |                             |        |        |                               |        |        |
| BALTIMORE      |                   |        |         |                    |        |        |                             |        |        |                               |        |        |
| BOSTON         |                   |        |         |                    |        |        |                             |        |        |                               |        |        |
| CHICAGO        |                   |        |         |                    |        |        |                             |        |        |                               |        |        |
| DETROIT        |                   |        |         |                    |        |        | 1                           | 5.7%   | \$1.43 |                               |        |        |
| MIAMI          | 1                 | 1.9%   | \$11.96 |                    |        |        | 2                           | 6      | 6.42   |                               |        |        |
| NEW ORLEANS    | 2                 | 1.3    | 13.61   |                    |        |        | 1                           | 8.1    | 1.06   |                               |        |        |
| NEW YORK       |                   |        |         |                    |        |        |                             |        |        |                               |        |        |
| NEWARK         |                   |        |         |                    |        |        |                             |        |        | 1                             | 57.2%  | \$0.36 |
| ORLANDO        |                   |        |         |                    |        |        |                             |        |        |                               |        |        |
| PHILADELPHIA   |                   |        |         |                    |        |        |                             |        |        |                               |        |        |
| PITTSBURGH     |                   |        |         |                    |        |        |                             |        |        |                               |        |        |
| RICHMOND       |                   |        |         |                    |        |        |                             |        |        |                               |        |        |
| SAN JUAN       |                   |        |         |                    |        |        |                             |        |        |                               |        |        |
| WASHINGTON, DC |                   |        |         |                    |        |        | 1                           | 8.7    | 1.04   |                               |        |        |
|                | Mexican Heroin    |        |         | Mexican Tar Heroin |        |        | Mexican Brown Powder Heroin |        |        | Mexican South American Heroin |        |        |
| WEST           | Number of Samples | Purity | Price   | Number of Samples  | Purity | Price  | Number of Samples           | Purity | Price  | Number of Samples             | Purity | Price  |
| ALBUQUERQUE    |                   |        |         | 18                 | 19.1%  | \$0.48 | 2                           | 17.1%  | \$0.36 |                               |        |        |
| DALLAS         |                   |        |         | 20                 | 25.1   | 1.80   | 6                           | 7.3    | 0.56   |                               |        |        |
| DENVER         |                   |        |         | 27                 | 20.8   | 1.34   | 5                           | 13.1   | 1.16   |                               |        |        |
| HOUSTON        |                   |        |         | 17                 | 12.6   | 3.04   |                             |        |        |                               |        |        |
| LOS ANGELES    |                   |        |         | 22                 | 26.8   | 0.71   | 6                           | 30.7   | 0.24   |                               |        |        |
| PHOENIX        |                   |        |         | 29                 | 26.8   | 0.56   | 1                           | 21.6   | 0.37   |                               |        |        |
| PORTLAND       |                   |        |         | 19                 | 24.8   | 1.36   |                             |        |        |                               |        |        |
| SAN ANTONIO    |                   |        |         | 7                  | 7.8    | 0.68   | 12                          | 7      | 1.16   |                               |        |        |
| SAN DIEGO      |                   |        |         | 29                 | 32.9   | 0.25   | 3                           | 38.8   | 0.28   |                               |        |        |
| SAN FRANCISCO  | 1                 |        |         | 17                 | 7.2    | 1.25   | 9                           | 8.3    | 0.53   |                               |        |        |
| SEATTLE        |                   |        |         | 28                 | 26.5   | 0.68   |                             |        |        |                               |        |        |
| ST. LOUIS      |                   |        |         |                    |        |        |                             |        |        |                               |        |        |
| TOTAL          | 4                 | 1.6%   | \$9.98  | 233                | 22.9%  | \$1.04 | 49                          | 13.5%  | \$0.97 | 1                             | 57.2%  | \$0.36 |

Report Parameters: Only qualified exhibits are shown. January 1 to December 31, 2014  
Price Unit: Per milligram pure

Source: DEA

## Appendix B: 2014 Heroin Counts, Purities, Prices, Origin, and City by Geographic Region.

|                | Southwest Asian Heroin |        |        | South American Heroin |        |        | InconclusiveOrigin-South American Processing |        |        |
|----------------|------------------------|--------|--------|-----------------------|--------|--------|--|--------|--------|
| EAST           | Number of Exhibits     | Purity | Price  | Number of Exhibits    | Purity | Price  | Number of Exhibits                           | Purity | Price  |
| ATLANTA        |                        |        |        |                       |        |        | 14   | 42.6%  | \$1.81 |
| BALTIMORE      |                        |        |        |                       |        |        | 24   | 12.9   | 0.67   |
| BOSTON         |                        |        |        |                       |        |        | 19   | 19.5   | 1.12   |
| CHICAGO        |                        |        |        |                       |        |        | 14   | 11     | 0.48   |
| DETROIT        |                        |        |        |                       |        |        | 18   | 44.5   | 0.37   |
| MIAMI          |                        |        |        | 4                     | 33.3%  | \$0.90 | 19   | 35.1   | 1.82   |
| NEW ORLEANS    |                        |        |        |                       |        |        | 18   | 24.2   | 2.06   |
| NEW YORK       |                        |        |        | 10                    | 38.5   | 0.79   | 40   | 53.9   | 0.72   |
| NEWARK         |                        |        |        | 4                     | 41.3   | 1.22   | 24   | 57     | 0.75   |
| ORLANDO        |                        |        |        | 1                     | 40.2   | 0.62   | 10   | 22     | 3.19   |
| PHILADELPHIA   |                        |        |        | 2                     | 65.3   | 0.46   | 22   | 67     | 0.43   |
| PITTSBURGH     |                        |        |        |                       |        |        | 10   | 55.1   | 1.06   |
| RICHMOND       |                        |        |        | 1                     | 10.9   | 1.58   | 11   | 14.9   | 2.44   |
| SAN JUAN       |                        |        |        | 12                    | 15.9   | 1.30   | 16   | 21.2   | 1.53   |
| WASHINGTON, DC | 1                      | 16.2%  | \$1.06 |                       |        |        | 19   | 36.5   | 0.78   |
|                | Southwest Asian Heroin |        |        | South American Heroin |        |        | InconclusiveOrigin-South American Processing |        |        |
| EAST           | Number of Exhibits     | Purity | Price  | Number of Exhibits    | Purity | Price  | Number of Exhibits                           | Purity | Price  |
| ALBUQUERQUE    |                        |        |        |                       |        |        |  |        |        |
| DALLAS         |                        |        |        |                       |        |        |  |        |        |
| DENVER         |                        |        |        |                       |        |        |  |        |        |
| HOUSTON        |                        |        |        |                       |        |        |  |        |        |
| LOS ANGELES    |                        |        |        |                       |        |        | 1  | 87.9%  | 0.10   |
| PHOENIX        |                        |        |        |                       |        |        |  |        |        |
| PORTLAND       |                        |        |        |                       |        |        |  |        |        |
| SAN ANTONIO    |                        |        |        |                       |        |        |  |        |        |
| SAN DIEGO      |                        |        |        |                       |        |        |  |        |        |
| SAN FRANCISCO  |                        |        |        |                       |        |        |  |        |        |
| SEATTLE        |                        |        |        |                       |        |        |  |        |        |
| ST. LOUIS      |                        |        |        |                       |        |        | 24   | 46.5   | 0.53   |
| TOTAL          | 1                      | 16%    | \$1.06 | 34                    | 31.1%  | \$1.03 | 303  | 38%    | \$1.07 |

Report Parameters: Only qualified exhibits are shown. January 1 to December 31, 2014  
Price Unit: Per milligram pure

Source: DEA

## Appendix C: 2013 Heroin Counts, Purities, Prices, Origin, and City by Geographic Region.

|                | SOUTHWEST ASIAN HEROIN |        |        | SOUTH AMERICAN HEROIN |        |        | MEXICAN HEROIN     |        |        | ALLEGED MEXICAN WHITE HEROIN |        |        |
|----------------|------------------------|--------|--------|-----------------------|--------|--------|--------------------|--------|--------|------------------------------|--------|--------|
| EAST           | Number of Exhibits     | Purity | Price  | Number of Exhibits    | Purity | Price  | Number of Exhibits | Purity | Price  | Number of Exhibits           | Purity | Price  |
| ATLANTA        |                        |        |        | 17                    | 38.4%  | \$1.34 |                    |        |        | 7                            | 55.2%  | \$0.56 |
| BALTIMORE      | 1                      | 2%     | \$2.17 | 23                    | 13.7   | 0.67   |                    |        |        | 4                            | 30.6   | 0.60   |
| BOSTON         | 1                      | 17.4   | 0.34   | 23                    | 20.5   | 0.80   |                    |        |        | 1                            | 18.1   | 0.64   |
| CHICAGO        |                        |        |        | 23                    | 16.4   | 0.72   |                    |        |        | 5                            | 24.8   | 0.45   |
| DETROIT        |                        |        |        | 22                    | 40.3   | 0.77   |                    |        |        | 9                            | 39.2   | 0.74   |
| MIAMI          |                        |        |        | 16                    | 21.9   | 2.17   | 2                  | 14.3%  | \$2.87 | 5                            | 9      | 4.29   |
| NEW ORLEANS    |                        |        |        | 17                    | 33.1   | 1.63   |                    |        |        | 6                            | 28.9   | 2.52   |
| NEW YORK       |                        |        |        | 43                    | 43.3   | 0.73   | 1                  | 29.8   | 2.40   | 2                            | 78.1   | 0.36   |
| NEWARK         |                        |        |        | 29                    | 57.9   | 1.01   |                    |        |        | 2                            | 66.8   | 0.37   |
| ORLANDO        |                        |        |        | 11                    | 25.8   | 1.34   |                    |        |        | 7                            | 20.7   | 1.50   |
| PHILADELPHIA   |                        |        |        | 23                    | 64.8   | 0.50   |                    |        |        | 2                            | 48.1   | 0.97   |
| PITTSBURGH     |                        |        |        | 15                    | 47.8   | 1.03   |                    |        |        | 1                            | 74.2   | 0.59   |
| RICHMOND       |                        |        |        | 12                    | 20.5   | 1.46   | 1                  | 10.2   | 3.06   | 3                            | 17.5   | 1.39   |
| SAN JUAN       |                        |        |        | 19                    | 13.4   | 1.70   |                    |        |        |                              |        |        |
| WASHINGTON, DC | 6                      | 27.4   | 1.22   | 16                    | 22     | 1.04   |                    |        |        | 3                            | 36.8   | 0.64   |
|                | SOUTHWEST ASIAN HEROIN |        |        | SOUTH AMERICAN HEROIN |        |        | MEXICAN HEROIN     |        |        | ALLEGED MEXICAN WHITE HEROIN |        |        |
| WEST           | Number of Exhibits     | Purity | Price  | Number of Exhibits    | Purity | Price  | Number of Exhibits | Purity | Price  | Number of Exhibits           | Purity | Price  |
| ALBUQUERQUE    |                        |        |        |                       |        |        | 14                 | 17.8%  | \$0.65 |                              |        |        |
| DALLAS         |                        |        |        |                       |        |        | 34                 | 12.1   | 0.61   |                              |        |        |
| DENVER         |                        |        |        |                       |        |        | 33                 | 22     | 1.40   |                              |        |        |
| HOUSTON        |                        |        |        | 1                     | 89%    | \$0.37 | 20                 | 3.5    | 3.58   |                              |        |        |
| LOS ANGELES    |                        |        |        |                       |        |        | 34                 | 25.2   | 0.42   |                              |        |        |
| PHOENIX        |                        |        |        |                       |        |        | 28                 | 26.4   | 0.58   |                              |        |        |
| PORTLAND       |                        |        |        |                       |        |        | 20                 | 16.9   | 1.65   |                              |        |        |
| SAN ANTONIO    |                        |        |        |                       |        |        | 20                 | 7.1    | 0.91   |                              |        |        |
| SAN DIEGO      |                        |        |        |                       |        |        | 30                 | 26.4   | 0.69   |                              |        |        |
| SAN FRANCISCO  |                        |        |        |                       |        |        | 31                 | 5.2    | 1.29   |                              |        |        |
| SEATTLE        |                        |        |        |                       |        |        | 26                 | 15.6   | 1.14   |                              |        |        |
| ST. LOUIS      |                        |        |        | 24                    | 46.8   | 1.02   |                    |        |        | 7                            | 40.4%  | \$0.62 |
| TOTAL          | 8                      | 23%    | \$1.23 | 334                   | 35.1%  | \$1.04 | 293                | 16.9%  | \$1.12 | 64                           | 35.5%  | \$1.21 |

Report Parameters: Only qualified exhibits are shown. January 1 to December 31, 2015  
Price Unit: Per milligram pure

Source: DEA

## APPENDIX D: DEFINITIONS

**Adulterant:** A pharmacologically active substance that is added to heroin to enhance or mimic the effect of heroin. Adulterants can be added to heroin shipments immediately after production, in transit, or prior to distribution. While dextromethorphan for Southwest Asian heroin and diltiazem for South American heroin are examples of adulterants that are added immediately after production, xylazine for Puerto Rico and quinine for Washington, DC-Baltimore are examples for city-specific adulteration prior to distribution.

**Diluent:** An inert ingredient (pharmacologically inactive compound) used to increase the bulk of a finished product. Typical diluents are sugars, starches, and inorganic salts.

**Heroin Signature Analysis:** A program developed by the DEA to identify the geographic source area of a heroin exhibit. Heroin signature analysis is based on an exhaustive chemical profile of authentic exhibits acquired from each of the four major heroin source areas: South America, Mexico, Southeast Asia, and Southwest Asia.

**Heroin Signature Classification:** The result of heroin signature analysis. Origin classifications currently defined include Mexican (MEX), Mexican Tar (MEX/T), Mexican Brown Powder (MEX/BP), Mexican South American (MEX-SA), South America (SA), Inconclusive South America (INC-SA where Mexico or South America could be the origin), Southeast Asia (SEA), and Southwest Asia (SWA) heroin. Exhibits meeting these classifications are referred to as “qualified exhibits.”

**Insufficient Weight:** An exhibit of heroin that is too small for signature analysis. Generally, an exhibit should weigh at least 1 gram net, including diluents and adulterants. This amount ensures at least 150 milligrams of pure heroin are available for signature analysis.

**Net Weight:** The total weight of the heroin exhibit, including diluents and adulterants, excluding its packaging.

**Price per milligram pure:** The price of the exhibit divided by the pure weight, expressed in milligrams. Price per milligram pure provides a constant in the price of exhibits of differing weights and purity so they can be compared.

**Pure Weight:** The weight of pure heroin is determined by multiplying the purity of an exhibit by its net weight.

**Purity:** The amount of heroin present in the exhibit compared to all other substances. Purity is expressed as a percent.

**Qualified Exhibit:** A heroin exhibit for which price, purity and geographic source data can be determined.

**Unknown:** A heroin exhibit analyzed by SFL1, but for which the results of the analysis do not match with authentic profiles of any known source region (refer to Heroin Signature Classification)



(U) This product was prepared by the DEA Intelligence Programs Section. Comments and questions may be addressed to the Chief, Analysis and Production Section at [dea.onsi@usdoj.gov](mailto:dea.onsi@usdoj.gov). For media/press inquiries call (202) 307-7977.