

152412

Measuring Heroin Availability in Three Cities



**Executive Office of the President
Office of National Drug Control Policy**

Lee P. Brown, Director

November 1994

152412



Measuring Heroin Availability in Three Cities

By

**Ann Marie Rocheleau
David Boyum**

Contents

Executive Summary	9
Introduction	15
Methodology	19
Overview	19
Findings	29
Heroin Purchase Logistics	29
Search Times	31
Exhibit A: Distribution of Mean Search Times	
Among Participants	32
Exhibit B: Comparison of Mean Search Time by Site	33
Exhibit C: Comparison of Search-Time Components	
by Site	35
Barriers To Purchase	38
User-Dealer Relationship	41
Frequency, Quantity, And Cost Of Heroin Purchases	48
Heroin Use Behavior	52
Discussion	59
Appendix A: User Characteristics	63
Age, Sex, and Race	63
Family Status and Living Arrangements	63
Educational Attainment	64
Income and Employment	64

Appendix B: Additional Tables	67
Heroin Purchase Logistics	67
Barriers to Purchase	70
User-Dealer Relationship	73
Frequency, Quantity and Cost of Heroin Purchases	77
Heroin Use Behavior	78
 References	 83

Table of Tables

Table 1: Type of Connection Most Often Used	31
Table 2: Participants' Search Time in Minutes	34
Table 3: Total Search Time by Connection Most Often Used ...	36
Table 4: Reasons for Difficult Purchases	39
Table 5: Reasons for Easy Purchases	40
Table 6: Reasons Why Could Not Make a Connection	40
Table 7: Have a Main Source?	42
Table 8: Why Rely on Main Source?	43
Table 9: What Type of Connection is Main Source?	43
Table 10: Why Rely on Main Source by Type of Connection He Is	44
Table 11: Average Frequency of Weekly Beeper Usage	45
Table 12: Dealers' Willingness to Bargain	46
Table 13: Average Number of Dealers Bought From Weekly ...	47
Table 14: Average Frequency of Weekly Approaches	47
Table 15: Average Frequency of Weekly Purchases	48
Table 16: Average Number of Bags Bought During Recent Purchase	49
Table 17: Average Price Respondents Say They Usually Pay for a Bag	49
Table 18: Purchase Price and Available Cash at Recent Purchase	50
Table 19: Cost of Respondent's Weekly Heroin and Drug Habit	51
Table 20: Frequency of Initial and Current Heroin Use	53
Table 21: Average Number of Days Used Heroin in a Week	54
Table 22: Current Method of Administration Most Often Used	55

Table 23: Favorite Drug or Drug Combination	55
Table 24: Attempts at Stopping Heroin Use in the Past Year	56
Appendix Table 1: Distance Traveled to Purchase Location	67
Appendix Table 2: Mode of Transportation to Purchase Location	67
Appendix Table 3: Location of Recent Purchases (Percent Made Outside)	68
Appendix Table 4: Count of Responses to Beginning Location During Most Recent Purchase	68
Appendix Table 5: Count of Responses to Time of Day During Most Recent Purchase	68
Appendix Table 6: Percentage Who Purchased Alone During Most Recent Purchases	69
Appendix Table 7: Location of Most Recent Purchases	69
Appendix Table 8: Type of Connection Used as a Backup	69
Appendix Table 9: Number of Days Since Unable to Make a Connection	70
Appendix Table 10: Increase in Search Time by Difficult Purchase Over Average Purchase	70
Appendix Table 11: Reduction in Search Time by Easy Purchase Over Average Purchase	70
Appendix Table 12: Purchased from Main Source During Difficult and Easy Purchases	71
Appendix Table 13: Count of Responses of Mode of Transportation During Difficult and Easy Purchases	71
Appendix Table 14: Count of Responses of Distance Traveled During Difficult and Easy Purchases	72
Appendix Table 15: Number of Months Using Main Source	73
Appendix Table 16: Does Main Source Have a Beeper?	73
Appendix Table 17: Frequency of Beeper Usage per Week by Primary Type of Connection	74
Appendix Table 18: Frequency of Beeper Usage per Week by Whether Live with Children	74
Appendix Table 19: Does Main Source Have Restrictions?	74
Appendix Table 20: Does Main Source Have Restrictions?	74
Appendix Table 21: Dealer's Willingness to Bargain by Gender	75

Appendix Table 22: Circumstances Under Which Dealer Will Bargain (Count of Responses)	75
Appendix Table 23: What Do You Do If Main Source is Unavailable?	75
Appendix Table 24: Purchased from Main Source During Recent Purchases (If Participant Has Main Source)	75
Appendix Table 25: Number of Dealers Participants Know	76
Appendix Table 26: Average Bags of Heroin Bought During Recent Purchases	77
Appendix Table 27: Accuracy of Participant's Estimation of Habit Cost	77
Appendix Table 28: Participant's Opinion on Price Compared to One Year Ago	77
Appendix Table 29: Participant's Opinion on Purity Compared to One Year Ago	77
Appendix Table 30: Years of Heroin Use	78
Appendix Table 31: Frequency of Heroin Use per Day	78
Appendix Table 32: Average Bags Used After Recent Purchases	78
Appendix Table 33: Count of Responses of Location of Use After Most Recent Cop	79
Appendix Table 34: Percentage Who Used Heroin Alone After Most Recent Purchases	79
Appendix Table 35: Average Time Spent Between Buying and Using	80

Executive Summary

I came out of the house and you know, I was looking around, looking around to see who was out there. The night before I had went in they had some heroin called "blow-out." And it was pretty good, so I was looking for that particular type. I looked around and um, I found the person that had it that night, you know, and I asked him did he have any more. He told me, "No, not at the moment." So he tells me . . . says I would have to wait for about 5 minutes for the pickup. I waited for about 5 minutes, he went and picked it up and I purchased it.

- Forty-seven-year-old Black father on public assistance who also engages in illegal activities in New York

Recent data suggest an increase in heroin imports into the U.S. and a corresponding decrease in price. Since lower prices would tend to increase demand, there is a good possibility that rates of heroin use may be increasing in America. One way to gauge this possible increase in heroin use is to track its availability on the street. The rationale behind this is that if it is easily available on the street, there is apt to be more widespread use, whereas an underground market would be open only to those immersed in the heroin culture.

This study uses "search time" as an indicator of heroin availability. In this case, search time is the elapsed time from the point at which an individual decides to use heroin to the point where he has the drug in his hands. This definition does not include time to acquire money or time to return home after the purchase. Unlike price and purity, which are routinely measured through the undercover efforts of the Drug Enforcement Agency's (DEA's) System To Retrieve Information From

Drug Evidence (STRIDE) program and used to measure availability via price and purity (simple economics), search time provides a direct estimate of heroin availability. This study shows that search-time analysis is key in understanding the logistics of heroin distribution and, consequently, in measuring heroin availability.

Interviews with current heroin users proved to be a viable method of measuring search time in the 1992 Boston test-case study.¹ This project extended this methodology to New York, Chicago, and San Diego, which were chosen for their geographic diversity and high rates of heroin use. A total of fifty current users were recruited in the three sites, who varied by race, socioeconomics, and age. Ex-users and outreach workers were paid to recruit the current users, who were then interviewed in secure street-front locations over a ten-week period. Each respondent was given a lengthy initial interview, followed by three weekly follow-up interviews, which were shorter in duration.

The mean average search time within the sample was thirty-five minutes; the median was thirty minutes. Search time was divided into its three components: travel time, waiting time, and transaction time. Travel time, which in general was the largest component, accounted for 51 percent of total search time for all participants. Waiting time—either waiting for the dealer to show up or call back—accounted on average for 36 percent of total search time. Transaction time—the time when actual activity was taking place—was the smallest component, accounting on average for 13 percent of total search time.

Only three variables correlated with search time: number of weekly purchases, site, and type of heroin connection. As the number of purchases a user made in a week increased, search time decreased, presumably as a result of experience, familiarity with a dependable source, or the development of a network of backup sources. As for site, New York had the lowest mean search time (26 min.), Chicago's was 39 minutes, and San Diego's was 40 minutes. Search-time components also varied by site, with New York and Chicago having a larger percentage of travel time and San Diego having a larger percentage of waiting time.

Over half of the sample user population used only one type of connection (dealer), with the remainder citing different combinations of street, beeper, and phone connections. A small number of users reported using house connections, shooting galleries (mostly as a backup), and work connections. Heroin users who most often used a beeper connec-

tion had much higher mean search times (67 minutes) than those using either a street or phone connection (31 and 32 minutes, respectively). Not surprisingly, search-time components also varied by type of heroin connection. Participants who most often used a street connection spent a greater percentage of their total search time traveling, while those using a phone or beeper connection spent more of their time waiting.

Two-thirds of the users interviewed reported having a main source, and cited the particular quality of heroin, dependability, credit extension, and availability of the dealer and his heroin supply as reasons for using him as a main source. However, 89 percent of those users who claimed to have main sources said that they had backup sources in case their main dealer was unavailable. In addition, 69 percent of users reported swapping goods or services for drugs at some point in their using careers, including stolen goods, other drugs, sex, and personal property.

Three main reasons were commonly cited by users as reasons why they had difficulty in obtaining heroin, although "difficulty" does not mean that they did not obtain heroin. Problems with dealer availability or a dealer's lack of supply accounted for 45 percent of difficult "cops," or heroin purchases. Transportation problems, either arising from distance or problems with public transportation, accounted for 8 percent of difficult buys. Police presence was the source of difficulty in 19 percent of difficult buys.

Among the user pool in this study, the mean number of heroin buys a week was thirteen, or just about twice a day. At each one of these transactions, the user bought just under two bags of heroin, with the price of heroin fluctuating between \$10 to \$20 depending on the purity and the size of the bag, which is usually around twenty-five milligrams. The majority of these users reported spending about the same amount on heroin now as they did last year, although it is likely that they could have lost track of how much they were actually spending. Of the 77 percent who had attempted to quit at some point in the past year, 66 percent had sought some form of treatment, but few had made it more than one week before relapsing. Of those users who attempted quitting, the majority of them reported that they were tired of the constant hustle, uncertainty, and difficulty associated with purchasing heroin.

The findings of this study exemplify how search time can be used as a quantifiable indicator of heroin availability. Furthermore, search time and street-level dealing should be most heavily targeted by police, since

police presence at dealing sites was cited as a large problem among users. By increasing search time through enforcement, drug officials could affect the economics of heroin markets, so that the direct and indirect costs of obtaining heroin become so high that demand is reduced.

Footnote

- ¹ BOTEK Analysis Corporation, *Measuring Heroin Availability: A Demonstration*, [Prepared for the Office of National Drug Control Policy], September 1993.

CONFIDENTIAL

Introduction

During the past two years drug experts, criminologists, and law enforcement officials have been engaged in a debate about whether or not the United States is at the beginning of another heroin epidemic. While many street ethnographers, outreach workers, substance abuse treatment professionals, and law enforcement officials insist that there has been a significant increase in heroin use, others are skeptical, and no strong evidence has been found to confirm that the number of people using heroin has actually increased. What is more certain is that conditions are ripe for a resurgence in heroin use. Recent data show that heroin is, by historical standards, very cheap and very pure, in part, it appears, because Columbian cocaine organizations have entered the heroin business. If newspaper, magazine, and television stories are to be believed, heroin has lost much of its stigma, even outside of inner-city areas.

In November and December, 1992, BOTEK Analysis Corporation conducted a pilot study in Boston for the Office of National Drug Control Policy. The project had two goals: (1) to learn more about the mechanics of retail heroin purchases; and (2) to demonstrate the feasibility of two methods of measuring the availability of heroin to street buyers: (a) by interviewing Boston heroin users to measure their heroin "search times" (the time required to purchase heroin once the user has the money in hand); and (b) by observing the volume of activity at heroin-dealing locations in Boston. Through these interviews, much information was gathered about the purchasing or "copping" process of heroin in Boston. While the observation of heroin-dealing activity proved to be unsuccessful,

ful in Boston, the study did demonstrate that information about heroin search times could be successfully elicited from current heroin users. Mean total search time for the Boston users was 48 minutes.

This follow-up study extends the research to three other cities where the Drug Use Forecasting (DUF) system shows heroin use among at least 20 percent of the arrestees: New York, Chicago, and San Diego. The goals of this study are threefold: (1) to provide a more complete description of heroin users, including their drug careers, drug use patterns, and living situations, as well as their habits of heroin purchasing; (2) to provide data on city-to-city variability in search times; and (3) to assess the feasibility of adding search-time questions to the DUF interview questionnaire.

This report focuses on the mechanics of heroin purchase (including, especially, heroin "search times") in New York, Chicago, and San Diego. A companion report, "Heroin Users In New York, Chicago, and San Diego," describes the characteristics of heroin users recruited in these three cities, including their drug careers, drug use patterns, and living situations.

Methodology

OVERVIEW

This study is a replication of the Heroin Availability Project conducted by BOTEC in Boston during 1992, in which 32 current heroin users were recruited and interviewed for eight consecutive weeks about their heroin-buying habits. The current study was conducted between January and April, 1994, in Chicago, New York, and San Diego. In each city, 50 current heroin users were recruited and interviewed for three consecutive weeks. The preliminary interview given to each participant elicited information on demographics, substance abuse history, current substance abuse, criminal activity, and relationships with dealers. In addition, detailed descriptions of heroin-purchasing behavior were obtained during the preliminary and two follow-up interviews.

Questionnaire Construction

As a result of the original Heroin Availability Project, BOTEC developed an extensive preliminary questionnaire that probed demographic characteristics, substance abuse history, current heroin and other drug use patterns, criminal history, and substance abuse treatment history, as well as heroin-purchasing habits. A much shorter questionnaire was developed for the weekly follow-up interviews, focusing mainly on the prior week's heroin purchases and usage, including the search-time questions. However, since the ultimate goal would be to add the search-time questions to the Drug Use Forecasting (DUF) system, parts of the DUF questionnaire were used for the preliminary interview, supple-

mented by BOTEC's search-time questions and those other questions that address the mechanics of heroin purchase. Using the DUF questionnaire as a basis for the preliminary interview had two benefits: 1) two of the agencies were already DUF data collectors and were thus familiar with most of the questionnaire; and 2) the results from this study could be compared to the results obtained from the proposed Part B of this study, in which search-time questions would be added to selected DUF sites. A shortened version of the follow-up questionnaire developed in the original study was used for the two follow-up interviews in this study.

Site Selection

Chicago, New York, and San Diego were chosen as sites for this project because they varied geographically and they had the highest heroin usage among male arrestees as reported by the DUF system. In the 1992 DUF figures, 19 percent of males in Chicago; 18 percent of males in Manhattan, New York; and 16 percent of males in San Diego tested positive for heroin. It was decided that it would be preferable to subcontract the interviewing, rather than conduct the interviews ourselves. Agencies/institutions were chosen that either had experience with heroin users and/or had experience conducting DUF interviews, since we were planning to use portions of the DUF questionnaire in our interviews. In Chicago, the Community Outreach Intervention Projects, headed by Wayne Weibel at the University of Illinois at Chicago, was chosen because of their extensive work with heroin users in its AIDS prevention and research efforts. In New York, National Development and Research Institutes (NDRI) - USA, Inc.—and specifically Bruce Johnson—were chosen because of their experience in both conducting the DUF interviews and conducting research on heroin users. Finally, in San Diego, the Criminal Justice Research Division, headed by Susan Pennell at the San Diego Association of Governments, was chosen for its experience in interviewing both DUF arrestees and drug users in general. The site contractors were given guidelines for recruiting and conducting the interviews with heroin users, but were asked to submit work plans with the details of the interviewing logistics. At each site, a site supervisor and one or two interviewers were selected to work on the project. The combined staff from all three sites traveled to Boston for training on the logistics of the project and the interview process.

Site Staff

The original study depended on street-level recruitment of participants, hiring ex-heroin users to recruit and interview participants. This approach worked well: the ex-users were able to recruit ample appropriate participants for the study, although the use of inexperienced interviewers posed problems during the interview process. To replicate the street recruitment, but to avoid the problems resulting from using inexperienced interviewers, it was decided that this study would use a different approach—recruiters still were paid to recruit the current heroin users as participants, but experienced interviewers were hired to actually conduct the interviews. The recruiters could be anyone who had extensive contact with current heroin users, including ex-heroin users, current heroin users, and AIDS/heroin outreach workers. The recruiters were responsible for recruiting the participants, initially explaining the study to them, and escorting them to their first interview. Each site selected a site supervisor who was responsible for the overall subcontract for that site. He/she supervised the interviewers and recruiters, and monitored the entire interview process, including the quality of the interviews. The number of interviewers hired varied by site. In Chicago, two interviewers were utilized and the site supervisor also conducted interviews on a part-time basis. In New York, one interviewer conducted all of the interviews. Finally, in San Diego, two interviewers were utilized. New York and Chicago each had one interviewer who was Spanish-speaking.

Interview Location

Each site was required to identify interview locations that would ensure the safety and confidentiality of the interview process. A description of each site's interview location(s) is outlined below.

Chicago

The Community Outreach Intervention Projects of the University of Illinois at Chicago maintains a number of field stations in Chicago for their AIDS prevention and research efforts. Three of these field stations were used as locations for recruiting and interviewing participants for this

study. The field stations, located in the North, South, and Northwest Sides of Chicago, are basically storefronts in easily accessible areas that consist of reception rooms, meeting rooms, and private interview rooms. An equal number of participants were recruited and interviewed at each of the three field stations. Both of the two interviewers and the site supervisor were each assigned to a field station and were responsible for overseeing the interview process at their respective site.

New York

In New York, NDRI's AIDS Outreach Program also maintains storefronts in a number of locations. Most of the interviews for this study were conducted at the South Bronx and Harlem sites. These sites were familiar to many potential subjects and provided good security for research staff and participants alike.

San Diego

The San Diego Association of Governments (SANDAG) worked in conjunction with the San Diego Health Alliance and two of their methadone clinics to recruit and interview potential participants. This alliance resulted in the interviews being conducted at the two methadone clinics; one in the City of San Diego and one in the North County. Although they are both in suburban locations, the clinics draw upon clientele from throughout San Diego County. Interviews were conducted in private interview rooms in the clinics to ensure the confidentiality of the participants, some of whom were also new clients of the clinics.

Participant Recruitment

Each site subcontracted to recruit and interview 50 participants three times each over a ten-week period. Due to a number of last-minute participant replacements, an additional two weeks of interviewing were added. Participants who were "dropouts" after their first interview had to be replaced. There were a total of 21 replacements: twelve in New York, seven in Chicago, and four in San Diego. The most frequent reason for participants being replaced was due to their not showing up for the interview and not being able to be located subsequently. There were a couple of cases where it was evident at the preliminary interview that

the person had mental health problems and thus would not be competent to answer the questions. Several other participants were replaced when it became evident at the preliminary interview that they did not purchase heroin frequently enough to qualify for the study. A few others were replaced as a result of being hospitalized or jailed. Replacements were not required when a participant completed the preliminary and first follow-up interviews. There was no second follow-up interview for only three of the 150 participants.

Each site was required to set broad targets for participant demographic characteristics and to tailor their sampling plan to local data on either heroin users in treatment or some other identifiable segment of heroin users. In addition to mirroring the local heroin-user population in terms of race, ethnicity, gender, and age, we expected each site to recruit a small number of relatively new heroin users—those that initiated use within the last two years. However, only Chicago was able to recruit new users. They did so through contacts at a methadone clinic and through the outreach workers' close familiarity with long-time users whose children had recently begun to use heroin. In San Diego, the heroin subculture is such that new users keep to themselves until they become acclimated to the heroin-using underground. Those interviewed in San Diego were seasoned veterans who associated with others in their circle. They were not able to recruit new users who had not joined their subculture yet, and therefore were not in the network. Below are the sampling plans and recruitment strategies for each of the three sites.

Chicago

The sociodemographic characteristics of the Chicago participants varied by each field-station site. A targeted sampling scheme was set up that adhered closely to the sociodemographics of heroin-injection drug users in the communities covered by the field stations. The field stations are in inner-city locations of the highest usage of heroin in the city, and the participants recruited were approximately representative of the heroin-injection users found in these areas. In the Northside, participants were 45 percent Black, 20 percent Hispanic, 35 percent white, and 70 percent male. In the Southside, they were 99 percent Black and 66 percent male. In the Northwest Side, they were 22 percent Black, 57 percent Hispanic, 18 percent white, and 65 percent male. The two interviewers and the site supervisor therefore attempted to recruit par-

ticipants according to the above distribution of heroin users at each station. All participants in Chicago were 18 years or older.

All participants were recruited from the heroin-user social networks that are in contact with the Community Outreach Intervention Projects (COIP). The interviewer at each of the Chicago field stations was responsible for overseeing the recruitment of participants at his site. Field-station outreach workers were utilized as recruiters and directly contacted and recruited participants from the community social networks of heroin users for whom they serve as liaisons with the COIP project. Outreach workers were paid either a lump sum of \$150, if there were two outreach workers recruiting participants at a site, or \$100 each, if there were three outreach workers involved at a site. One of the three sites did not use outreach workers, but the interviewer recruited participants himself by telephone or through his daily contact with the heroin users at the field station. Most of the participants were clients of the COIP project. However, between 15 and 20 percent of them were not clients. The outreach workers (who were all former addicts) utilized their knowledge of individual heroin users in the area to personally contact and recruit participants either directly on the streets or by telephone.

New York

New York set broad targets for recruiting their participants based on the sociodemographic characteristics of the DUF-Manhattan sample of arrestees who were heroin users. This resulted in targeting 50 participants who were 75 percent male, 15 percent white, 35 percent Hispanic, and 50 percent Black.

Participants were recruited by the interviewer and trained outreach workers associated with other outreach and research projects taking place at each NDRI storefront location.

San Diego

San Diego participants were taken from various neighborhoods in San Diego County. The broad targets utilized to select participants were based on the sociodemographic characteristics of the heroin-using DUF-San Diego population and those in publicly funded treatment in

San Diego County. It should be noted that in San Diego, methadone clinics are privately funded. Users in both groups were somewhat similar, except that the treatment attendees tended to have a higher percentage of whites (54 percent) than the DUF sample (41 percent) and a lower percentage of Hispanics (19 percent) than those in DUF (44 percent). Both the treatment and DUF samples were about two-thirds male and one-third female.

The San Diego Health Alliance and two of their methadone clinics agreed to help facilitate the recruitment of participants for this study and to provide interview locations. The maintenance clients of the methadone clinics were generally not eligible to participate in this study, although a few were accepted who were simultaneously using heroin. New clients coming into the 21-day detoxification program were targeted for participation in the study, since new clients generally continue to use heroin for the first few weeks. The SANDAG interviewers held an informational meeting to brief new detox clients on the study. Potential participants were given a screening questionnaire which they filled out and forwarded to the interviewers. If they fit the criteria for the study—namely, regular heroin use and heroin purchase—they were scheduled for their preliminary interview. In addition, a snowball approach was used where detox client participants recruited other general heroin users for the study. Detox clients were paid \$20 for each participant they recruited who actually completed his or her preliminary interview. Each recruiter was allowed to recruit a maximum of three participants to ensure that the respondents were representative of a large area and not grouped in a specific location.

Participant Interviews

Interviews were conducted over a ten-week period with fifty current heroin users at each site. Although in the original study a preliminary interview was followed by eight weekly follow-up interviews, an analysis of the data led us to conclude that three weeks of search-time questions would be sufficient to collect reliable data. Therefore, each participant was given a preliminary interview of about an hour, followed by two weekly interviews which lasted approximately fifteen to thirty minutes each. Interviewers explained the study and components of the consent form and ensured that participants signed the consent forms before the preliminary interview began. All interviews were taped in order to monitor interview quality and to capture as much detail as possible. Up-

front discussion of the taping and the reasons for it were sufficient to overcome any potential participant's fears, and no participant refused to do the interview as a result of his or her being taped.

Each site was given sufficient resources to pay up to \$60 per participant for all three interviews. In San Diego and Chicago, participants were paid \$20 for each interview, regardless of whether it was the preliminary or follow-up interview. In New York, participants were paid \$20 for the preliminary interview, \$15 for each follow-up interview, and an additional \$10 if they completed all three interviews. All participants were paid in cash and were required to sign receipts for payment. To assist them in keeping track of time, participants were given inexpensive digital watches at the completion of the preliminary interview, regardless of whether or not they initially carried timepieces. A few of the San Diego participants refused the watches, since they had "better" ones themselves.

Data Analysis

Interview tapes and questionnaires were forwarded to BOTEC as they were completed. This was especially important in the first week of interviewing so that the interviews could be monitored for quality and consistency. During the initial weeks of interviews, general and site-specific feedback was given to the sites about the interview process. Questions concerning search time again proved to be easily misunderstood by both the interviewers and participants. Every tape was listened to, and the answers given on tape were compared to the one on the questionnaire for accuracy. BOTEC staff also transcribed a number of 'stories' that participants told in discussing their initiation into heroin use, their first injection, and their most recent, easiest, and most difficult heroin purchase of the week.

Once all of the interviews were completed, listened to, and coded, BOTEC staff entered the data into the computer. Analysis was conducted using the SPSS program.

Findings

HEROIN PURCHASE LOGISTICS

I went to a pay phone. I called the guy's number. It rang a few times . . . he answered it. I said um, "[code name]." He asked me what I wanted, I told him. He said, "Okay. How long is it going to take you to get over here?" . . . get over there to his house. I told him 20-30 minutes. He said okay. I hung the phone up. I went out and I got my car . . . I drove over to his house.. and parked around the corner . . . walked inside. After a few minutes he came out to the living room. We walked into the dining room. I put the money on the table. He gave me the drugs.

- Forty-six-year-old white male who attended college, steals, and is on public assistance in San Diego

During each of the three interviews, participants were asked about their most recent heroin purchase. As part of this inquiry, questions were asked about the logistics of the heroin purchase. This section summarizes participants' discussion of the heroin-purchase logistics.

In most cases, participants were at home (64 percent) when they first decided to buy heroin and started the heroin-buying process. About a quarter of the time, they were already on the street (22 percent). Forty-three percent (43 percent) of the purchases took place during the morning, 31 percent during the afternoon, and 21 percent during the evening. Few purchases were made after 10 P.M. (5 percent). In almost two-thirds of the purchases (63 percent), participants reported being alone when they went to make the purchase.

In 13 percent of the recent buys, no traveling was necessary because the heroin was delivered. Of the remainder, 44 percent of the purchases were made less than one mile from where the participant started, 16 percent were made one to three miles away, and 27 percent were made more than three miles away. There was the greatest amount of variation in San Diego, where 30 percent of the buys were deliveries, yet in 40 percent of the buys, users had to travel more than three miles. The majority of New Yorkers (68 percent) and almost half of the Chicagoans (45 percent) traveled less than one mile to their purchase site, which is interesting considering that travel was their largest component of search time. However, an examination of the mode of transportation used to the purchase site explains this discrepancy, because most of the New York participants (73 percent) and almost half of those in Chicago (45 percent) walked to their purchase site. Travel by car was the most popular mode of transportation for the San Diego participants (52 percent). Overall, participants reported using only one mode of transportation to reach their heroin purchase destination.

During the preliminary interview, participants were asked whether they usually purchased heroin inside or outside. The majority reported buying outside (69 percent). This information was confirmed by the actual recent buys, of which 72 percent took place outside and 28 percent took place inside. Only 9 percent of the participants made all of their reported buys inside, compared to 48 percent who made all of their buys outside. By site, there was a statistical difference. New York's participants reported the most outside buys (87 percent), while San Diego and Chicago participants reported fewer outside buys (64 and 66 percent, respectively).

Whether a heroin user buys inside or outside is often a function of the type of connection that he/she utilizes. Street connections almost always occur outside. Conversely, house connections and buys in shooting galleries always occur inside. For phone and beeper connections, the actual buy can be set up either inside or outside. Fifty-seven (57) percent of the participants reported that the type of connection they most often used was a street connection. Another 29 percent used a phone connection. Only 5 percent reported using a beeper connection to buy their heroin. Other types of connections included a house connection (where the participant goes right to a specific house), a shooting gallery, and a work connection. Half of the participants used only one type of connection. The other half had backup connections that were divided evenly between street connections, phone connections, and beeper connections.

Table 1: Type of Connection Most Often Used

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
Street connection	45	90	37	74	3	6	85	57
Phone connection	0	0	4	8	39	78	43	29
Beeper	0	0	3	6	5	10	8	5
House connection	3	6	6	12	2	4	11	7
Other	2	4	0	0	1	2	3	2
Valid cases	50	100	50	100	50	100	150	100

Again, the difference among the sites was statistically significant. In New York, 90 percent of the participants reported mostly using street connections. No New York participants reported mostly using phone or beeper connections, while a few used a house connection or a shooting gallery. A look at participants' backup connection reveals that all but one of the participants using a shooting gallery were from New York. Also phone connections and beepers were rarely used in New York as back-ups. Chicago had more of a mix, with most using a street connection (74 percent), but some using a phone connection, a beeper connection, or a house connection. Most often these latter types were used as backups. In San Diego, the phone connection was most prevalent (78 percent), with others using a beeper connection, street connection, house connection, or work connection.

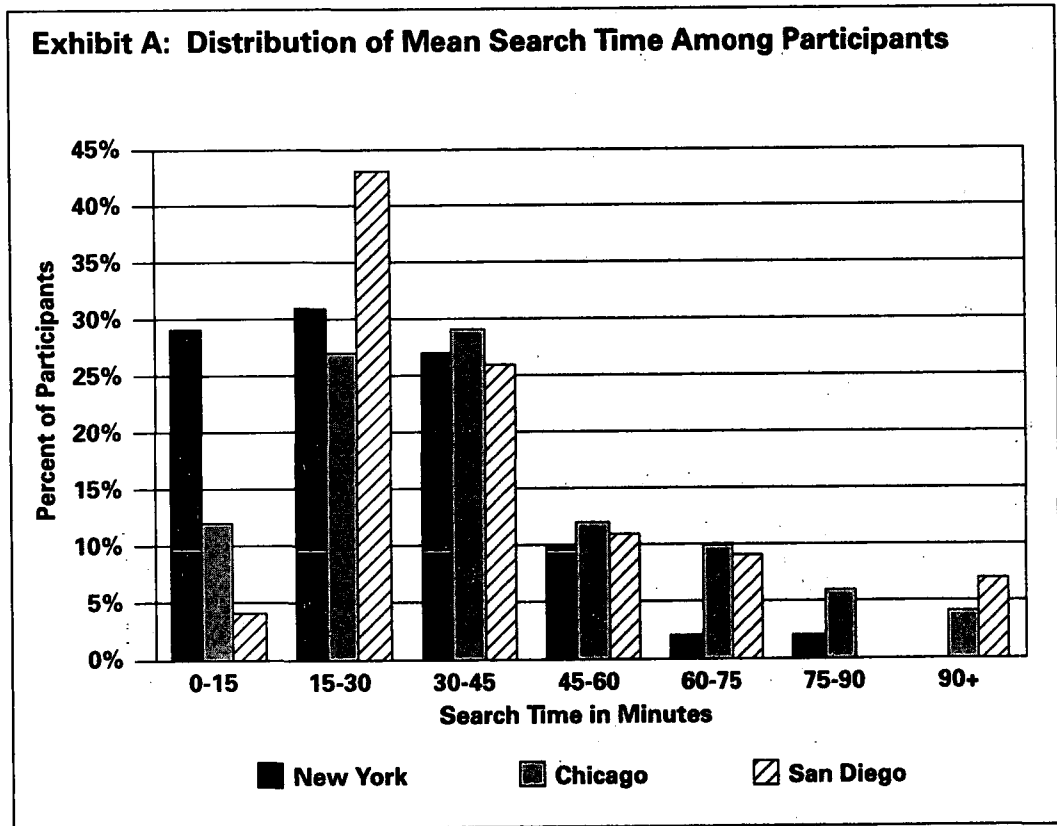
SEARCH TIMES

I cashed in and I drove to the area to this little . . . to a liquor store. I got on the phone I called him; ordered what I wanted—told him I wanted a half and a half, which is a half a gram of cocaine, half a gram of heroin. Together that costs me \$100. He tells me the street to go to. I hang up the phone. I drive just a few blocks away. And I wait anywhere between 5 minutes to 25 minutes. Usually it's fairly quick. [This last time, how long was it?] About 10 minutes. Then I leave my car; walk over to his. Hand him the money; he hands me the dope. He's gone, I get in my car and drive back home and fix.

—Thirty-year-old white female who lives in a clean and sober home and is supported by shoplifting and public assistance in San Diego

During their three interviews, participants were asked to describe their most recent heroin purchase, with particular emphasis on their “search time.” They were instructed to include the time it took to make telephone calls, solicit advice about where to buy, travel to the dealing location, wait for either a return call or for the dealer to show up, and execute the actual transaction. They were not to include the time it took for them to obtain the money to purchase the heroin, nor the return traveling time from the purchase location.

Search times were computed for each participant and averaged over the three weeks of interviews. The mean for all participants’ average search times was 35 minutes; the median was 30 minutes. Average search time was lowest in New York (26 minutes), but similar in Chicago (39 minutes) and San Diego (40 minutes). The differences between New York and the other two cities were statistically significant. The distribution of mean search time (Exhibit A) illustrates how a much larger percentage of New York participants had search times between zero and 15 minutes and none in the 90-minute-or-above category. All three cities’ participants do tend to cluster in the 15- to 30-minute category. The variation in search time was lowest in New York (standard deviation =



17 minutes); highest in San Diego (standard deviation = 32 minutes); and midway in Chicago (standard deviation = 24 minutes).

In addition to asking participants about their total search time, they were asked about the time that it took for them to travel and the time they spent waiting. This enabled search time to be divided into three components: travel time, waiting time, and transaction time. Travel time included all of the time it took for participants to reach their purchase location, and whether they were able to purchase in one location or had to travel to one or two additional locations. It did not include travel back from purchase. Waiting time was all the time participants spent waiting, including waiting for the dealer to return an initial call or to answer his beeper, waiting on the street for the dealer to show up or at home for delivery, and waiting in line. Transaction time was all of the remaining activity. It not only included the actual exchange of drugs for money, but also the phone calls to the dealer; any discussion with dealers and others about quality, availability and price; and any arrangements made to facilitate the deal, such as contacting a friend for transportation or to actually make the deal.

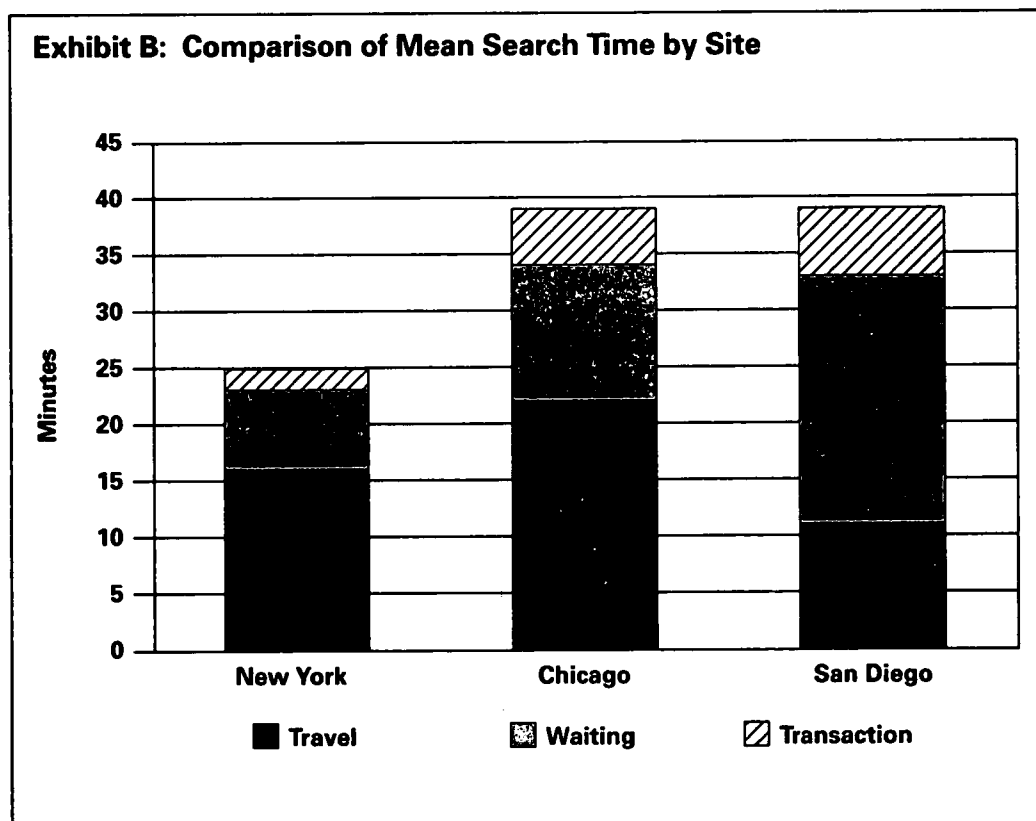


Table 2: Participants' Search Time in Minutes

	Mean	Median	Std Dev	% of Total Search Time
New York				
Travel time	16	12	14	63
Time waiting for dealer	7	6	6	28
Transaction time	2	1	3	9
Total search time	26	22	17	100
Valid cases: 49				
Chicago				
Travel time	22	18	17	55
Time waiting for dealer	12	10	11	31
Transaction time	5	1	12	14
Total search time	39	33	24	100
Valid cases: 49				
San Diego				
Travel time	11	10	11	28
Time waiting for dealer	22	16	26	56
Transaction time	6	6	6	16
Total search time	40	32	32	100
Valid cases: 45				

Note: Component means might not add to total time due to rounding.

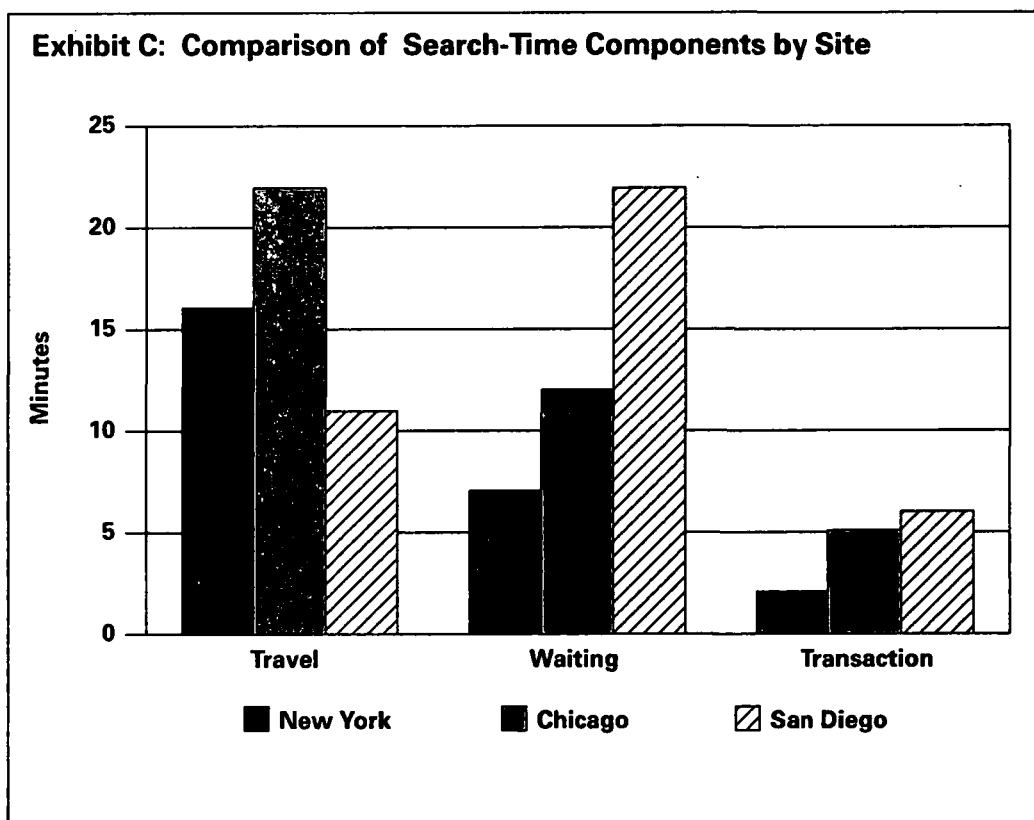
Overall, travel time was the largest component of search time, accounting for 51 percent of total search time for all participants. The percentage of search time spent traveling ranged from zero, when heroin was delivered, to 100 percent in circumstances where there was no waiting and the actual transaction took less than one minute. The mean of all of the participants' travel time was 17 minutes; the median was 13 minutes.

Waiting time accounted on average for 36 percent of the total search time. The percentage of search time spent waiting for the dealer ranged from zero time to 100 percent of the time during deliveries when no travel was required and the actual transaction took less than one minute. The mean of all of the participants' waiting time was 14 minutes; the median was 9 minutes. Less than 20 percent of the participants had to wait in some capacity for their dealer for 20 minutes or more.

Transaction time—the time when actual activity was taking place—accounted on average for 13 percent of total search time. The percentage of total search time spent transacting the heroin deal ranged from zero time—for those transactions that took less than one minute—to 54 percent. The mean of all participants' transaction time was five minutes; the median was two minutes. Thirty-one participants had average transaction times of less than one minute. Ninety percent of the participants spent 11 minutes or less transacting the deal.

Statistical analysis revealed no correlation between search times and any of the sociodemographic variables. Only three variables were found to be correlated to search times: site, type of heroin connection, and number of weekly purchases made. As mentioned previously, New York had a significantly lower search time than did either Chicago or San Diego. However, there were even differences in the components of search time.

In New York and Chicago, the percentage of search time spent traveling (63 and 55 percent, respectively) was the largest component and was



twice as high as in San Diego (28 percent). The differences were significant. Looking at the data by site, the average travel time was 16 minutes in New York, 22 minutes in Chicago, and 11 minutes in San Diego.

The greatest component of search time in San Diego was waiting time (56 percent). It was the next largest component in New York (28 percent) and Chicago (31 percent). Again, the differences were statistically significant. Waiting time averaged only 7 minutes in New York, and 12 minutes in Chicago, but in San Diego it averaged 22 minutes. There was relatively little variation in waiting time in New York and Chicago (standard deviations = 6 and 11 minutes, respectively). However, waiting time varied significantly in San Diego (standard deviation = 26 minutes).

The actual transacting of the heroin deal was the smallest search-time component in all three cities. The percentage of total search time spent transacting the deal varied from a low of 9 percent in New York to a high of 16 percent in San Diego. The differences were statistically different. The actual transaction took two minutes in New York, five minutes in Chicago, and six minutes in San Diego.

Another variable significantly related to search time was type of heroin connection. Specifically, participants who most often used a beeper connection had much higher search times (mean = 67 minutes) than those using a street or phone connection (mean = 31 and 32 minutes, respectively). Two types of connection variables were used, both yielding the same results. The first was to test the correlation of the type of connection most often used with the search-time variables. These results are detailed below. The second was to correlate the actual type of main source connection used in the recent heroin purchases with the search-time variables from those purchases. The correlations were again similar.

Table 3: Total Search Time by Connection Most Often Used

	Street	Phone	Beeper	House	Other
Mean	31	32	67	36	83
Median	27	30	60	33	35
Standard deviation	20	14	33	30	93
Valid cases	83	39	8	11	3

Although straight travel time did not vary significantly by type of connection, it did as a percentage of total search time. Those participants with a street connection spent 60 percent of their search time traveling to the purchase location, compared to 35 percent for phone connections and 25 percent for beeper connections. This makes sense, because participants who utilize street connections must travel to specific parts of the city where heroin is sold, yet usually do not have to wait very long once they are there, nor spend much time transacting the deal.

Both straight waiting time and waiting time as a percentage of total search time varied significantly by type of heroin connection. Those participants most often using a beeper connection spent 62 percent of their search time waiting, compared to 46 percent for phone connections and 29 percent for street connections. This is not surprising, since those who use a street connection usually do not have to wait unless there is a line or the dealer is not in his usual spot. The average waiting time for street connections was 9 minutes. Those with phone connections waited an average of 17 minutes, either for the dealer to call back with specifics or for the dealer to show up at the agreed-upon delivery spot. Participants using a beeper had to wait the longest (41 minutes) because they had to wait for the dealer to answer the beeper and then possibly again for the dealer to show up at the agreed-upon site.

Only the percentage of total search time spent transacting the deal, and not straight transaction time itself, was significantly affected by type of heroin connection. Heroin users who contacted their dealer by phone spent a greater percentage of their time transacting the deal (19 percent) than those who bought through a street connection (11 percent) or a beeper (13 percent).

The final variable correlated to search times was the number of purchases per week. That is, as the number of purchases participants made increased, their search times were lowered. While the differences were significant overall, the correlation was weak. However, when one examines the data by site, there is no correlation in New York and Chicago, but a strong correlation in San Diego. This is probably true, because San Diego heroin users are more apt to utilize main sources and to use phone connections or a beeper. Since both of these factors would tend to slow the search-time process down, a high frequency of purchases would most likely speed up the search-time process because the relationship with their dealer would be stronger and the arrangements for buying the heroin would tend to be more regular.

BARRIERS TO PURCHASE

I had to go to about six spots to finally buy heroin, because every place I went the police was there, so it was closed. So I had to travel less than a mile to go to each of the spots. And I went to seven different places but the police was all around. So it took me like two hours to cop. That was a particularly hard day to cop.

-Thirty-seven-year-old Black Hispanic
drug dealer from New York

To isolate possible factors that affect search time, participants were asked about their most difficult and easiest heroin buys of the week. Almost the same number of participants described “easy” heroin purchases every week (60 percent) as participants describing “difficult” purchases (58 percent). Two percent reported no “easy” purchases and six percent reported no “difficult” purchases. There was little difference among sites, except that more Chicago participants reported easy buys each week.

Although participants were asked to describe these buys in detail, along with logistics and the reasons why purchases were difficult or easy, an underlying assumption was that “easy” purchases would have short search times and “difficult” purchases would have longer search times. This appears to not be the case, since the mean and median search times for easy purchases (68 and 57 minutes, respectively) are higher than those for difficult purchases (mean = 50 minutes; median = 43 minutes). Furthermore, the mean and median travel and wait times for both “easy” and “difficult” purchases were identical.

If one takes the mean difference between easy and recent purchases, one finds that easy purchases take a median of 11 minutes less. However, 16 percent of the easy buys took longer than the recent buys they were compared to. Similarly, although difficult buys took a median of 36 minutes more, 7 percent of the difficult buys were shorter than the recent buys they were compared to. This leaves us with the question of what makes an “easy” buy easy, and a “difficult” buy difficult.

These questions were put to participants each week. In addition, participants were asked about the last time they were unable to make a heroin connection and the reasons why. Fifty-four (54) percent of the participants were able to discuss an instance in which they were unable to make a heroin purchase. Most of these uncompleted buys had taken place within three months prior to the interviews; the median number of

days was seven. There were significant differences among the sites in that New York and Chicago participants were less likely to have failed to make a connection in the last week than San Diego participants.

Participants reported a lack of money as the reason why 31 percent of the difficult buys were so defined and why they were unable to make a heroin connection (24 percent). While this may be a legitimate concern from the heroin user's point of view, it does not shed light on outside factors that affect the mechanics of heroin purchase. Once lack of money is discounted, there were three prominent factors that made heroin difficult or impossible to buy: availability of the dealer, travel logistics, and police presence.

Table 4: Reasons for Difficult Purchases

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Dealer not on street	17	12	33	18	8	5	58	12
Couldn't contact dealer	1	1	16	9	45	29	62	13
Dealer out of heroin	7	5	36	20	27	17	70	15
Had to find new dealer	1	1	10	6	12	8	23	5
Travel problems	8	6	18	10	13	8	39	8
Police presence	61	45	25	14	6	4	92	19
No money	24	18	5	3	15	10	44	9
Quality of heroin a problem	1	1	4	2	2	1	7	1
Bad weather/Sunday/ holiday	6	4	16	9	2	1	24	5
Other	11	8	16	9	27	17	54	11
Total Responses	137	100	179	100	157	100	473	100
Valid cases (n)	46		46		49		141	

Table 5: Reasons for Easy Purchases

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Delivered	36	27	41	23	20	13	97	21
Dealer on street	17	13	37	21	39	25	93	20
Dealer contacted easily	0	0	7	4	28	18	35	8
Dealer expected them	5	4	34	19	21	14	60	13
Travel time easy	33	25	27	15	20	13	80	17
Had the money	32	24	29	16	18	12	79	17
Other	9	7	5	3	8	5	22	5
Total Responses	132	100	180	100	154	100	466	100
Valid cases (n)	49		48		49		146	

Table 6: Reasons Why Could Not Make a Connection

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Dealer not available	4	15	5	20	7	24	16	20
Police activity	8	30	6	24	2	7	16	20
Dealer out of heroin	5	19	4	16	9	31	18	22
Holiday/Sunday	0	0	2	8	0	0	2	2
No money	7	26	6	24	6	21	19	23
Other	3	11	2	8	5	17	10	12
Valid cases	27	100	25	100	29	100	81	100

The first factor, availability of the dealer, accounted for 45 percent of the reasons for difficult buys and 62 percent of the reasons for easy buys. It also accounted for 34 percent of the reasons why participants were unable to make a heroin connection. Depending on the participant, availability of the dealer could mean: (1) that he could/could not be located on the street, (2) that he could/could not be reached by phone or beeper, (3) that he was able to deliver the heroin, or (4) that he was/was not out of heroin. Failure to locate a dealer usually resulted in increased waiting time or a need to locate another dealer. A comparison of the sites illustrates that dealer availability is more apt to make a difference in San Diego and Chicago, where more participants rely on a main source than in New York. In fact, 82 percent of the reported easy heroin purchases were from the participant's main source, compared to 60 percent of the difficult buys.

Travel logistics accounted for only 8 percent of the reasons why purchases were difficult and 17 percent of why they were easy. Only two users mentioned it as a reason for being unable to make a heroin connection. This is no surprise, since the travel times for easy and difficult heroin purchases were virtually identical, as mentioned previously. Modes of transportation were similar in the easy and difficult buys. There were two notable differences. There were slightly more deliveries in easy buys (16 percent) than in difficult ones (9 percent), and public transportation made up more of the difficult vs. easy buys (16 and 9 percent respectively). Participants had to travel farther in difficult purchases than in purchases defined as easy.

Police presence was a major factor in purchasing heroin. Nineteen (19) percent of the all of the reasons given for a difficult purchase had to do with police presence. It was also given as the reason why participants could not make a connection (20 percent of those not making a connection). Although quite a few participants mentioned police as causing them difficulty in buying heroin (65 percent), this factor seemed most prevalent in New York. In their stories of difficult buys, participants talked about how heroin-dealing was often shut down, with buyers either gone or simply not selling and potential buyers roaming up and down the street waiting for the police to leave. In New York, participants referred to the police as "TNT," which stands for the Tactical Narcotics Teams, which is a special narcotics unit in the New York Police Department.

USER-DEALER RELATIONSHIP

[Do you have a main source?] Not nowadays. Nowadays, I'm jumping a lot because of the quality of the drug, it's so weak that every day it changes. One day it's good with one person, one day it's not, so I keep switching. There's no one in particular that supplies me. Because it's weak. Like you buy something today and it's fine, you go back like an hour or two later and it's different. They've given it a different cut, they've mixed it differently and it's no good.

—Forty-three-year-old Hispanic mother who engages in illegal activity in New York

I go to the phone. I beep him. He calls me back. And he always says, "I'm on my way." And it always takes him at least an hour.

—Thirty-three-year-old white female housecleaner on public assistance in Chicago

One of the key factors in the mechanics of heroin purchase is the user's relationship with the dealer. Does the user have a dealer he usually goes to, a main source, or must he/she search for a source at each purchase? Also, if a user has a main source, how dependent is he/she on that source and what backups are available if the main source is not around? This section addresses the issues surrounding the dealer.

Overall, two-thirds (68 percent) of the participants reported using a main source for most of their heroin purchases. The differences among the sites were statistically significant. Less than half of the New York participants (46 percent) had a main source, compared to 71 percent of Chicago participants and 86 percent of San Diego participants.

Table 7: Have a Main Source?

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Yes	23	46	34	71	43	86	100	68
No	27	54	14	29	7	14	48	32
Valid cases	50	100	48	100	50	100	148	100

Participants were asked for the reasons why they liked buying from their main source. Over a quarter of the responses (28 percent) highlighted the good quality of the heroin that the dealer sold, and another quarter (25 percent) emphasized the dependability and consistency of the dealer himself. Other responses included the dealers' ready supply of heroin (18 percent), their convenient location (13 percent), and their willingness to extend credit (8 percent). The reasons for utilizing a main source are similar to the factors important to consumers of licit goods as they make their decisions as to where to shop in retail markets.

By site, a greater percentage of New York and Chicago responses reflected concerns about quality as the reason they used their main source (45 and 39 percent, respectively). Only 14 percent of the San Diego responses reflected similar quality concerns. This is probably because the quality of the black-tar heroin available in San Diego is much less likely to be tampered with than the white-powder heroin available in

Table 8: Why Rely on Main Source?

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Quality good	14	45	21	39	10	14	45	28
Always has it/ is always there	8	26	8	15	12	16	28	18
Convenient/ easy to get to	2	6	7	13	11	15	20	13
Dependable/ consistent	6	19	14	26	20	27	40	25
Extends credit	0	0	2	4	10	14	12	8
Other	1	3	2	4	11	15	14	9
Total Responses	31	100	54	100	74	100	159	100
Valid cases (n)	23		34		42		99	

New York and Chicago. The dealer's consistency and dependability was the most popular reason (27 percent) why San Diego participants said that they used their main source. If one limits the data to the first reason given by participants, there is a statistical difference between sites, with New York and Chicago participants highlighting good quality and San Diego participants pointing to a number of reasons, including the dependability of the dealer, the quality of the heroin, the convenient purchase location, and the ready supply of the dealer.

Table 9: What Type of Connection is Main Source?

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Street connection	19	83	20	59	0	0	39	39
Phone connection	0	0	5	15	35	83	40	40
Beeper	0	0	3	9	6	14	9	9
House connection	3	13	6	18	0	0	9	9
Other	1	4	0	0	1	2	2	2
Valid cases	23	100	34	100	42	100	99	100

Interestingly, the reasons why participants used their dealers also varies by the type of connection that dealer was. Overall, the majority of main sources in New York and Chicago were street connections (83 and 59 percent, respectively), while the majority of San Diego main sources were phone connections (83 percent). For those participants whose dealer was a street connection, the good quality of the heroin he provided accounted for 45 percent of the responses and the dealer's ready supply accounted for 23 percent. But for those who used a phone connection, the most popular response was that the dealer was dependable (29 percent). People with phone connections also mentioned quality (16 percent), ready supply (16 percent), and convenience (16 percent) in their responses.

Table 10: Why Rely on Main Source by Type of Connection He Is

	Street Connection		Phone Connection		Beeper		Other	
	count	%	count	%	count	%	count	%
Quality good	25	45	12	16	1	9	0	0
Always has it/ is always there	13	23	12	16	1	9	1	33
Convenient/ easy to get to	3	5	12	16	2	18	1	33
Dependable/ consistent	11	20	21	29	2	18	1	33
Extends credit	2	4	6	8	4	36	0	0
Other	2	4	10	14	1	9	0	0
Total Responses	56	100	73	100	11	100	3	100
Valid cases (n)	39		40		9		2	

Two-thirds of the respondents (64 percent) had been using their main source for one year or less. The median number of months the respondents had been using their main source was 12 months. One-tenth of the participants had been dealing with their main source for five or more years. There were no appreciable differences in the length of the user/dealer relationship, either among sites or type of connection.

While only nine percent of participants characterized their main source as a beeper source, one-third of the participants with main sources were able to contact their dealer through a beeper. Only two of New York's participants could contact their main source through a beeper, compared to 45 percent of Chicago's participants and 38 percent of San

Diego's participants who had main sources. The differences were statistically significant. In addition, each week participants were asked how many times they had used a beeper in the previous week. When the responses for all three weeks are averaged, it appears that participants used their beeper once per week. Again, there are differences by site, with those in New York not using it at all, those in Chicago using it once per week, and those in San Diego using it twice per week.

Table 11: Average Frequency of Weekly Beeper Usage

	New York	Chicago	San Diego	All Sites
Mean	0.0	1.0	2.5	1.2
Median	0.0	0.0	0.0	0.0
Standard deviation	0.1	3.3	9.3	5.7
Valid cases	49	50	48	147

As one might expect, the type of connection is statistically related to the number of times participants used a beeper each week. Participants with beeper connections called their beeper connection an average of 17 times per week. In contrast, participants with street connections, and those using a shooting gallery or work connection, almost never used a beeper. Finally, those with a phone or house connection used a beeper about once a week. Although few other variables correlated with the frequency of beeper usage, one other variable was statistically correlated—whether one had children living with them or not. Participants without children never used a beeper and those who had children but did not live with them used a beeper less than weekly. However, those participants with children living with them used a beeper an average of three times per week.

Participants were asked if their main sources had any time restrictions. Thirty-eight (38) percent reported no time restrictions at all. Fifty-six (56) percent said that their dealer would not sell heroin at night, usually after 10 P.M. A few of the main dealers sold heroin only in the morning or would not sell it during the hours that schools let out, between 2 and 4 P.M. About half of the New York and Chicago participants had main sources that had no time restrictions on selling heroin (55 and 50 percent respectively). Eighty-three (83) percent of San Diego's main sources had some type of time restrictions.

During the preliminary interview, respondents were asked if they had ever traded any kind of service for heroin, instead of paying money. Sixty-nine (69) percent of them reported trading services for heroin at some point in their heroin-using careers. Trading services or goods appeared to be most prevalent in San Diego (84 percent), followed by Chicago (64 percent) and New York (59 percent). The differences were statistically significant. However, of those 103 participants that had traded for heroin, only 34 percent of them had done so in the previous week, and most of them had only traded once during that week. Almost half of the trades involved swapping stolen goods with the dealer in exchange for heroin. Other trades with the dealer included swapping other types of drugs, sex, personal property, or repair services. A small number of participants somehow traded the above items with others in order to purchase their heroin.

More than half of the participants said that their sources of heroin were not willing to bargain or negotiate price. Again, the differences were statistically significant by site, with 82 percent of the San Diego participants reporting that they could bargain, while only 24 percent of New York and 29 percent of Chicago participants reported an option to bargain. Interestingly, more women (60 percent) reported being able to bargain than did men (38 percent). The three circumstances under which dealers were most likely to bargain were when the user was either a good customer or a friend, when the user was short of cash (San Diego only), and when the user was buying a large quantity. Other reasons included heated competition among dealers, bargaining with stolen items, and low-quality heroin.

Table 12: Dealers' Willingness to Bargain

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Yes	12	24	14	29	41	82	67	45
No	38	76	35	71	9	18	82	55
Valid cases	50	100	49	100	50	100	149	100

While two-thirds of the participants had main sources of heroin that they mostly relied upon, they did not necessarily buy from their main sources all of the time. In fact, 89 percent of the participants with main sources said that they would look for another connection if their main source was unavailable. When one examines the three most recent

buys of participants, overall 24 percent were made with dealers other than their main source. Eighty-two (82) percent of the recent San Diego purchases were from participants' main sources, compared to 77 percent of Chicago participants and 65 percent of New York participants. The differences were statistically significant. Each week participants were asked how many different dealers they had used during the previous week. The average number of dealers used per week in New York was four, compared to two in both Chicago and San Diego.

Table 13: Average Number of Dealers Bought From Weekly

	New York	Chicago	San Diego	All Sites
Mean	3.7	2.5	2.1	2.8
Median	2.7	2.3	1.7	2.0
Standard deviation	3.1	1.5	1.2	2.2
Valid cases	49	50	48	147

Finding other dealers to use as backup sources did not seem to be a problem for most participants. Only four percent of the participants reported knowing only one or two heroin dealers. The median number of dealers known by participants was 10 different dealers. Furthermore, more than half (56 percent) of the participants reported being approached by dealers on a regular basis and being asked if they were looking to buy. The mean number of weekly approaches was 6; the median was one approach. Being approached happened most frequently in New York, where participants reported being approached an average of 13 times per week. Approaches took place in Chicago an average of three times per week and in San Diego about once per week. Only 8 percent of New York participants were not approached during the three weeks, compared to 38 percent in Chicago and 35 percent in San Diego. Again, the differences were statistically significant.

Table 14: Average Frequency of Weekly Approaches

	New York	Chicago	San Diego	All Sites
Mean	12.7	3.0	1.0	5.6
Median	5.8	0.7	0.5	1.2
Standard deviation	22.8	7.3	1.4	14.7
Valid cases	48	50	46	144

FREQUENCY, QUANTITY, AND COST OF HEROIN PURCHASES

It was, uh, because I didn't have enough money. Okay, I had like, it was \$13 or something at the time. So I had to wait until his main guy got there to give me the okay. And it took an hour and a half, two hours, to get an okay to be \$8 short. You know, yeah, credit.

—Forty-two-year-old white plumbing contractor in San Diego

Participants were asked each week how many times they had purchased heroin during the previous week. Averaging the number of weekly heroin purchases for each participant, we found that half of the participants bought heroin 11 times per week or less. The mean number of buys per week was thirteen—just about twice a day. Thirty (30) percent of the participants bought more than twice a day. New York participants bought more frequently (average of 16 times per week) than either San Diego or Chicago participants (average of 12 and 10 times per week, respectively).

Table 15: Average Frequency of Weekly Purchases

	New York	Chicago	San Diego	All Sites
Mean	16	10	12	13
Median	14	10	10	11
Standard deviation	12	6	11	10
Valid cases	48	48	48	144

Both the mean and median number of bags purchased during the recent buys was just under two bags (1.9 and 1.7 bags, respectively). Fully 76 percent of the participants bought less than two bags at purchase. There was little difference by site. One of the interesting findings of this study is the definition of what constitutes a bag of heroin. A typical bag of heroin in New York and Chicago looks pretty similar and usually contains around 25 milligrams of pure heroin. However, in San Diego, users do not identify with the concept of “bags,” but instead buy by size, typically asking for increments in quarter grams. When participants were asked what they usually pay for a bag of heroin, almost all of the New York participants reported \$10, their mean expenditure being \$9.86. In Chicago the range was longer, with almost half of the participants (48 percent) paying \$10 per bag and another 38 percent saying

Table 16: Average Number of Bags Bought During Recent Purchase

	New York	Chicago	San Diego	All Sites
Mean	1.7	1.9	2.0	1.9
Median	1.7	1.7	1.7	1.7
Standard deviation	0.7	0.9	1.3	1.0
Valid cases	49	50	48	147

Table 17: Average Price Respondents Say They Usually Pay for a Bag

	New York	Chicago	San Diego	All Sites
Mean	\$9.90	\$15.70	\$22.20	\$15.90
Median	\$10.00	\$10.00	\$20.00	\$10.00
Standard deviation	\$0.80	\$8.00	\$16.00	\$11.40
Valid cases	50	50	50	150

that they usually pay \$20 per bag. Because of the different weights being purchased, San Diego users reported spending from \$2 to \$100 per bag. As with their Chicago counterparts, \$10 and \$20 bags were most popular.

Each week participants were asked how much money they had when they went to make the purchase, in addition to how much they spent. Overall, participants had an average of \$51 dollars on their person when they went to purchase heroin and spent an average of \$26. The median amount of money they had was \$30, of which they spent a median of \$20. When one examines the percentage of money they had that was spent, the mean was 76 percent; the median was 80 percent. San Diego participants had and spent the most money. Participants in all of the cities spent about three-quarters of their available money on heroin.

Participants were questioned about their overall drug and heroin spending habits during the preliminary interview. Overall weekly cost of drug use ranged from a low of \$30 to a high of \$1925. The average weekly cost of drugs was \$350; the median cost was \$250. Chicago participants' average weekly drug expenditures (\$317) were less than those for both New York and San Diego participants (\$368 and \$365, respectively). The differences by site were statistically different. Focus-

Table 18: Purchase Price and Available Cash at Recent Purchase

	Mean	Median	Std Dev	Valid Cases
New York				
Average spent at recent purchases	\$16.90	\$16.70	\$6.50	49
Average money available for recent purchases	\$30.60	\$20.00	\$30.10	49
Chicago				
Average spent at recent purchases	\$24.40	\$20.00	\$12.10	50
Average money available for recent purchases	\$35.10	\$30.20	\$22.50	50
San Diego				
Average spent at recent purchases	\$37.10	\$35.00	\$22.80	47
Average money available for recent purchases	\$88.20	\$48.30	\$89.40	47
All Sites				
Average spent at recent purchases	\$25.90	\$20.00	\$17.20	146
Average money available for recent purchases	\$50.70	\$30.00	\$60.70	146

ing on the weekly cost of heroin alone yields a similar lengthy range (\$10 to \$1925). The average weekly cost of heroin was \$267; the median was \$210. Chicago users spent the least average amount on heroin weekly (\$214), compared to New York (\$254) and San Diego users (\$334). The differences were again statistically significant. The percentage of weekly drug money spent on heroin averaged 78 percent; the median was 82 percent, indicating that heroin was clearly the most-used drug for these participants.

In examining the actual interviews, it was found that participants' estimates of how much they spent on heroin or all drugs simply did not jibe with what they said that they earned and, also, with the amount of drugs or heroin they said that they used. In some instances the inconsistencies were pointed out in time for the participants to either explain the discrepancies or to revise their estimates. Often the discrepancy had to do with the fact that they often received drugs for in-kind services, such as providing stolen goods or other services to the dealer, or purchasing drugs for others and receiving a small amount of heroin as

Table 19: Cost of Respondent's Weekly Heroin and Drug Habit

	Mean	Median	Std Dev	Valid Cases
New York				
Cost of weekly heroin use	\$254.00	\$210.00	\$199.90	50
Cost of weekly drug use	\$367.70	\$300.00	\$308.10	50
Chicago				
Cost of weekly heroin use	\$214.40	\$150.00	\$204.60	50
Cost of weekly drug use	\$316.70	\$202.50	\$334.70	50
San Diego				
Cost of weekly heroin use	\$334.00	\$265.00	\$307.30	50
Cost of weekly drug use	\$365.20	\$290.00	\$307.30	50
All Sites				
Cost of weekly heroin use	\$267.40	\$210.00	\$245.90	150
Cost of weekly drug use	\$349.80	\$250.00	\$315.70	150

payment. Other times, it was either an over- or underestimation of either heroin expenditures or amount used. Another weekly expenditure variable was created which multiplied the number of times participants reported using heroin per week by the number of bags they reportedly used by the price of a bag they usually pay. This figure results in much higher weekly heroin costs, the mean of which was \$500 per week and median of which was \$315 per week. A comparison of this created expenditure variable to the reported one reveals that 59 percent of the participants underestimated their heroin expenses, while 25 percent overestimated their heroin expenses. San Diego participants tended to underestimate their heroin expenses even more than the other cities' participants, and New Yorkers tended to overestimate their expenses; however, the differences were not statistically significant. In general, participants tended to exaggerate how much heroin they used almost in a bragging manner, as if the use of great quantities of heroin was somehow a positive reflection on themselves. On the other hand, they tended to underestimate their expenses either out of ignorance (many had never added it up before) or embarrassment (participants did not want to admit to wasting so much money on drugs).

Participants were asked questions about the quality of the heroin they purchased. During the preliminary interview, users were asked to compare the cost and purity of the heroin they were currently purchasing to that which they purchased a year prior. A majority of users (66 percent) reported that they were paying about the same price this year as last

year. Twenty-two (22) percent reported spending less now and only 13 percent reported spending more now than a year ago. This varied significantly by site, with the majority of New Yorkers (80 percent) spending the same as last year, but only 58 percent of both Chicago and San Diego participants reporting the same cost. In Chicago, 21 percent reported that prices had decreased and another 21 percent reported that prices had increased. In San Diego, more participants reported decreases (30 percent) than increases (12 percent).

As for the purity of the heroin, overall 62 percent reported lower purities than the prior year, while 22 percent reported equal purities and 16 percent reported greater purities. This varied significantly by site, with 80 percent of New York participants reporting a decrease in purity, compared to 58 percent for Chicago and 47 percent for San Diego. This reported decrease in purity could be attributed to the fact that heroin users traditionally underestimate the purity of the heroin that they are currently using. In fact, when asked each week about the quality of their most recent purchase, only 42 percent reported good-quality heroin, while 58 percent reported either mediocre- or bad-quality heroin.

HEROIN USE BEHAVIOR

I had been sent away to Puerto Rico to live with my grandparents. When I returned to New York, it was a Friday. I called my girlfriend and I asked her if we were going to get high. We used to get high with alcohol and the valiums. She said, "Yeah we are, but I've got something new that I want you to try." So when I came down, there was about four of us. And what they did, they took out a bag, it was in the sixties and it was a \$5 bag and in those days that was like sufficient for like four people, you know, especially young kids who were starting, and we did a \$5 bag between the four of us. The first time it was given to me and what do you call it, a skin-pop. That's intra-muscular, they call it skin-popping and that's how it was introduced to me.

—Forty-three-year-old Hispanic mother in
New York

The participants in this study were definitely an experienced heroin-using population. The median number of years that they had used was 21 years. The standard deviation was only 9 years. As mentioned previously, Chicago was the only site that was able to recruit recent users and thus, eight of their participants had only begun use within the past two years. Indeed, despite the fact that the recruitment process was virtually the same in New York and Chicago, the Chicago sample had

the most novice users and the New York sample had the most experienced users.

Participants were asked in several ways about their frequency of heroin use. In the preliminary interview, participants were asked how often they used at initiation and currently. Surprisingly, over half (52 percent) reported at least daily use at initiation. Only 12 percent had initially used less than weekly. By site, New York users were more likely to have used daily at initiation than either Chicago or San Diego users. As one would expect, participants reported increased heroin use, in that 77 percent of the participants said that they currently use heroin more than once a day, and only 14 percent say they use less than daily. More Chicago participants used less than daily (26 percent), compared to participants in New York (10 percent) or San Diego (8 percent). Only 9 participants reported using heroin less often now than at initiation. Interestingly, no San Diego participant reported using less often now than at initiation, despite the fact that many of these participants were recruited through methadone clinics.

Table 20: Frequency of Initial and Current Heroin Use

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
Initial								
More than once a day	12	24	15	30	6	12	33	22
Once a day	20	40	9	18	16	32	45	30
1 to 6 times/week	17	34	18	36	19	38	54	36
1 to 3 times/month	1	2	6	12	4	8	11	7
Once a month or more	0	0	2	4	5	10	7	5
Valid cases	50	100	50	100	50	100	150	100
Current								
More than once a day	40	80	35	70	41	82	116	77
Once a day	5	10	2	4	5	10	12	8
1 to 6 times/week	4	8	12	24	4	8	20	13
1 to 3 times/month	1	2	1	2	0	0	2	1
Valid cases	50	100	50	100	50	100	150	100

During each of the three weeks, participants were asked to report on their actual frequency of use during the previous week. They were asked to go day by day and report whether or not they had used that day. The results of this method of tracking frequency of use yielded different results than the general question about frequency of use. While eighty-five (85) percent of the participants had said that they used heroin at least once a day, only 44 percent of the participants actually used every day during the three weeks that they were interviewed. One quarter of the participants (25 percent) averaged five days of heroin use or less over the three-week period. The likeliest explanation for the discrepancy is that heroin users, as mentioned previously, often exaggerate their drug use when asked in general terms. What is interesting is that despite being heavy heroin users, participants in this study were able to flow into and out of heroin usage from day to day. Of those who used daily, both the mean and median number of heroin usages per day was three. There was a statistical difference by site, with Chicago participants using slightly less often per day (twice), compared to users in New York or San Diego (both three times per day).

Table 21: Average Number of Days Used Heroin in a Week

	New York	Chicago	San Diego	All Sites
Mean	6.1	5.6	5.9	5.8
Median	6.7	6.3	6.7	6.7
Standard deviation	1.6	1.7	1.6	1.6
Valid cases	49	50	47	146

Participants were asked how many bags they used immediately after purchasing. The number of bags used during each of the three weeks' recent buys were averaged. Forty (40) percent of the participants used only one bag on average. Another 40 percent averaged between one and two bags during recent use. The remainder used two bags of heroin or more. The median was 1.3 bags per use. There were no differences among the sites.

Injection was the primary mode of administration for 79 percent of the users. Intranasal ingestion (snorting) was relied on by 15 percent of users, skin-popping by 5 percent; and smoking by only 1 percent. There were some differences across cities. Injection was favored by 84 percent of users in New York, 64 percent in Chicago, and 90 percent in San Diego.

Table 22: Current Method of Administration Most Often Used

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
Shoot	42	84	32	64	45	90	119	79
Snort	7	14	14	28	1	2	22	15
Skin-pop	1	2	4	8	2	4	7	5
Smoke	0	0	0	0	2	4	2	1
Valid cases	50	100	50	100	50	100	150	100

Although all of the participants were heavy heroin users, most used other drugs as well, frequently in combination with heroin. Only 36 percent of users reported that heroin by itself was their “favorite drug or drug combination,” while almost all of the rest (61 percent) cited heroin in combination with another drug. Cocaine and heroin, commonly referred to as “speedballing,” was the most popular combination, picked by 44 percent of the users. There were differences by site, with more San Diego users preferring heroin alone (52 percent) and New York users preferring “speedballing” to any other drug or drug combination.

Table 23: Favorite Drug or Drug Combination

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
Heroin alone	11	23	17	34	26	52	54	36
Heroin and cocaine	32	67	20	40	13	26	65	44
Heroin and other	5	10	9	18	6	12	20	14
Other	0	0	4	8	5	10	9	6
Valid cases	48	100	50	100	50	100	148	100

Two-thirds of the users currently use cocaine and heroin in combination. Other combinations were also common, such as heroin with methadone, crack, alcohol, marijuana, tranquilizers, and amphetamines. Although a large majority of the participants used a number of drugs, most did not use drugs other than heroin on a daily basis. For instance, when asked how many days in the past week they had used cocaine, 49 percent had not used at all, and only 22 percent had used cocaine every day. Percentages were similar for alcohol: 48 percent had not drunk at all and 19 percent drank all seven days in the previous week.

A full 77 percent of the participants had attempted to stop heroin use in the past year. Of those, the mean number of quit attempts in the past year was six; the median was two. Most of the participants who had tried to abstain reported that they did so because they were tired of the life associated with heroin use—the constant hustle and the uncertainty of it all. Sixty-six (66) percent said that they sought treatment in their most recent quit attempt, which averaged 22 days. However, the median was only 5 days, indicating that while some did manage to stop use for several months, most were not able to make it through the week without relapsing. The two biggest reasons given for relapsing were the strong temptation to use and physical craving.

Table 24: Attempts at Stopping Heroin Use in the Past Year

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
No Quit Attempts	14	28	12	24	8	16	34	23
1-2	24	48	19	38	22	44	65	43
3-4	5	10	9	18	10	20	24	16
5 or more	7	14	10	20	9	18	26	17
Valid cases	50	100	50	100	50	100	150	100

In addition to information about each week's most recent heroin purchases, information was also gathered about the location of use of the heroin purchased during those recent buys. Overall, more than half (56 percent) of the participants went home to use their heroin. Other locations of use included in other people's houses (16 percent), in the car (9 percent), in random or public buildings (8 percent), or on the street (5 percent). A few participants reported using in shooting galleries, under expressways, or on public transportation. Location of use varied by site, with two-thirds of Chicago and San Diego participants returning home to use, but only 40 percent of New York participants doing so. Instead, New York users were more apt to use their heroin right on the street, in a public or random building, or in other types of outside locations. San Diego participants were more likely to use in their cars than users in the other two cities. Participants reported using alone in 58 percent of the recent buys. There was little difference by site.

Over the three weeks, the average median time between purchase of heroin and its actual usage was 12 minutes, while the average median travel time was 7 minutes. Traveling consumed 55 percent of the time

between purchase and use. New York users averaged the least amount of time to use (median = 11 minutes), which is not surprising, given the fact that they are less apt to return home to use. Chicago users spent the greatest percentage of their time traveling before use (68 percent), and San Diego users spent the least amount of time before use traveling (42 percent), even though overall they waited the longest time before using (median = 15 minutes).

Discussion

The goals of this study were threefold: (1) to provide a more complete description of heroin users, including their drug careers, drug use patterns, and living situations, as well as their habits of heroin purchasing; (2) to provide data on city-to-city variability of the mechanics of purchase; and (3) to assess the feasibility of adding search-time questions to the DUF system. The first goal, a description of heroin users in the three cities, is covered in a companion report. The second goal, a description of the mechanics of purchase and its variability from city to city, was realized in this report.

Purchasing heroin in each of the three cities was very different. In New York, where users appeared to be the most dysfunctional, heroin purchase was conducted on the street in drug-infested areas. Dealing was very business-oriented, in that the price was fixed (usually \$10), the deal was very quick (the transaction taking only two minutes), and bargaining and trading were at a minimum. Less than half of the New York users had main sources they relied on, preferring instead to take their business to whatever dealer had the best-quality heroin that day. New York users were also the least apt to return home to use, preferring instead to use as quickly as possible, usually right on the street.

San Diego heroin users were, in contrast, more functional, in that they were more apt to work, have children, and pay rent. Their process of purchasing heroin was less anonymous, with the majority of San Diego users relying on a main source for their heroin supply. Instead of buying in high-drug areas, San Diego users more often called their main source and drove to a designated meeting place. They were more apt to

bargain and trade with their main source, whom they liked because he was dependable and consistent, and sometimes even extended them credit.

Buy practices of Chicago heroin users were mixed; some bought from street connections, much like the New York users, and others used dealers that they either contacted by phone or beeper, or at their home. Three-quarters of Chicago users relied on a main source, and some could bargain and trade goods for heroin. They were the most apt to choose heroin alone as their favorite drug or drug combination, in contrast to users in New York or San Diego, who favored combination use.

Average search time was lowest in New York (26 minutes), but similar in Chicago (39 minutes) and San Diego (40). Travel time made up the largest component in New York and Chicago, whereas waiting time made up the largest component of search time in San Diego.

Interviewers in each of the sites were able to successfully elicit search-time data from the heroin users. Search times varied little between the first and follow-up interviews, indicating that with sufficient training, search-time data could be collected successfully in a one-shot interview process such as in the DUF system.

Adding search-time questions to the DUF system would enhance our knowledge of heroin availability over time and from city to city. However, other questions regarding the concept of search time remain unanswered. More research is necessary to determine, first, how increased law enforcement may affect total search time, and, second, how an increase in search time might affect the consumption of heroin by both experienced and potential new users.

Appendix A:

User Characteristics

AGE, SEX, AND RACE

The age of participants ranged from 19 to 58. The median age was 39; slightly more than half of the users were between 35 and 45. There were some differences in ages across cities, but they were not statistically significant.

Overall, 104 of the 150 participants were male. The fraction was highest in New York (41 of 50) and lowest in San Diego (31 of 50).

The study participants were ethnically balanced, with roughly equal shares of white, Black, and Hispanic users (32 percent, 30.7 percent, and 32.7 percent, respectively). However, there were significant differences across cities. In New York, 8 users were white, 18 Black, 21 Hispanic, and 3 other. In Chicago, there were 10 whites, 28 Blacks, 11 Hispanics, and 1 other. The San Diego sample consisted of 30 whites, no Blacks, 17 Hispanics, and 3 others.

FAMILY STATUS AND LIVING ARRANGEMENTS

Fourteen percent of the users were married, and five percent were widowed. Approximately equal percentages of the rest were single, separated/divorced, or living with a mate. The numbers were quite steady across sites.

Eighty percent of the users had children, but only half of those had children living with them. There were notable differences across sites. In

New York, only 7 of the 50 participants had children living with them. In Chicago, 16 of the 50 users lived with children, while in San Diego the fraction was more than half (26 of 50). This is one of many indications that the New York heroin users were more socially dysfunctional than users in Chicago and San Diego.

Living arrangements are another indication. Overall, 16 percent of the participants lived alone, 38 percent lived with a spouse or mate, 27 percent lived with family, 9 percent lived with friends, 7 percent lived in homeless or other shelters, and 3 percent had other living arrangements. Two-thirds of participants paid rent.

However, in New York, only 26 percent lived with a spouse or mate, and fully 18 percent lived in shelters (compared to four percent in San Diego and none in Chicago). Only 48 percent of New York users paid rent, as compared to 80 percent of Chicago users and 70 percent of San Diego users.

EDUCATIONAL ATTAINMENT

Educational attainment of users was very similar across cities. As a group, 39 percent of participants were high school graduates and another 24 percent had GED degrees. But participants had little higher education: 2 percent had a college degree (6 percent including AA degrees).

INCOME AND EMPLOYMENT

When participants were asked their highest source of income, the most common responses were public assistance (29 percent of users) and non-drug-dealing illegal activity (29 percent). Legal employment—either full-time, part-time, or odd jobs—was third (13 percent), dealing drugs was fourth (11 percent), and prostitution was fifth (10 percent).

On average, legal and illegal sources made equal contributions to total income. Median legal income for the past month was \$522.50; median illegal income was \$500. When users were asked the percentage of their income derived from illegal sources, the median response was exactly fifty percent.

The most notable difference in incomes across cities was the higher legal income among San Diego users. A legal activity (employment, panhandling, gifts, loans) was the highest source of income for 32 percent of San Diego users, compared to 18 percent of New York users and 12 percent of Chicago users. Moreover, 52 percent of San Diego users reported legal income of over \$750 for the past month, and 28 percent reported legal income of over \$1000. By contrast, only 16 percent of New York users, and 14 percent of Chicago users, reported more than \$750 in legal income.

Appendix B: Additional Tables

HEROIN PURCHASE LOGISTICS

Appendix Table 1: Distance Traveled to Purchase Location

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
No travel	1	1	11	7	45	30	57	13
Less than 1 mile	102	68	67	45	29	20	198	44
1 to 3 miles	18	12	39	26	15	10	72	16
More than 3 miles	28	19	32	21	59	40	119	27
Total Responses	149	100	149	100	148	100	446	100
Valid cases (n)	50		50		50		150	

Appendix Table 2: Mode of Transportation to Purchase Location

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
No travel/delivered	1	1	11	7	45	30	57	12
Car	13	8	46	30	77	52	136	29
Public transportation	28	17	25	17	4	27	57	12
Walk	123	73	68	45	19	13	210	45
Taxi	3	2	1	1	0	0	4	1
Other	1	1	0	0	4	3	5	1
Total Responses	169	100	151	100	149	100	469	100
Valid cases (n)	50		50		50		150	

Appendix Table 3: Location of Recent Purchases (Percent Made Outside)

	New York	Chicago	San Diego	All Sites
Mean	87%	66%	64%	72%
Median	100%	100%	67%	100%
Standard deviation	25%	41%	37%	36%
Valid cases	48	47	48	143

Appendix Table 4: Count of Responses to Beginning Location During Most Recent Purchase

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Home	71	48	112	75	102	69	285	64
Work	5	3	1	1	11	7	17	4
On street	53	36	25	17	22	15	100	22
Other person's home	8	5	5	3	10	7	23	5
Other	12	12	7	5	3	2	22	5
Total Responses	149	100	150	100	148	100	447	100
Valid cases (n)	50		50		50		150	

Appendix Table 5: Count of Responses to Time of Day During Most Recent Purchase

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Morning	67	46	57	38	68	46	192	43
Afternoon	41	28	53	36	42	28	136	31
Evening	30	20	28	19	34	23	92	21
Night	9	6	11	7	4	3	24	5
Total Responses	147	100	149	100	148	100	444	100
Valid cases (n)	50		50		50		150	

Appendix Table 6: Percentage Who Purchased Alone During Most Recent Purchases

	New York	Chicago	San Diego	All Sites
Mean	73%	63%	55%	64%
Median	67%	67%	67%	67%
Standard deviation	31%	32%	38%	34%
Valid cases	49	48	48	145

Appendix Table 7: Location of Most Recent Purchases

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Inside	4	8	12	24	20	40	36	24
Outside	42	84	34	68	28	56	104	69
Both	4	8	4	8	2	4	10	7
Valid cases	50	100	50	100	50	100	150	100

Appendix Table 8: Type of Connection Used as a Backup

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Street connection	5	25	4	17	9	31	18	25
Phone connection	1	5	10	43	6	21	17	24
Beeper	1	5	5	22	13	45	19	26
Shooting gallery	9	45	1	4	0	0	10	14
House connection	3	15	3	13	1	3	7	10
Other	1	5	0	0	0	0	1	1
Valid cases	20	100	23	100	29	100	72	100

BARRIERS TO PURCHASE

Appendix Table 9: Number of Days Since Unable to Make a Connection

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
1 week or less	21	42	13	32	11	22	48	32
1 week to 1 month	2	4	5	10	6	12	13	9
1 month or more	4	8	4	8	12	24	20	13
Never been unable	23	46	25	50	21	42	69	46
Valid cases	50	100	50	100	50	100	150	100

Appendix Table 10: Increase in Search Time by Difficult Purchase Over Average Purchase

	New York	Chicago	San Diego	All Sites
Mean	34.1	56.2	68.8	53.0
Median	22.5	47.3	45.8	36.3
Standard deviation	44.6	49.6	76.0	59.7
Valid cases	45	45	45	135

Appendix Table 11: Reduction in Search Time by Easy Purchase Over Average Purchase

	New York	Chicago	San Diego	All Sites
Mean	-10.7	-17.6	-18.3	-15.0
Median	-8.1	-11.0	-14.7	-11.0
Standard deviation	17.0	19.6	22.4	20.0
Valid cases	48	47	46	141

Appendix Table 12: Purchased from Main Source During Difficult and Easy Purchases

Difficult Purchase	New York	Chicago	San Diego	All Sites
Mean	56%	57%	63%	60%
Median	58%	67%	67%	67%
Standard deviation	32%	41%	40%	38%
Valid cases	22	30	42	94

Easy Purchase	New York	Chicago	San Diego	All Sites
Mean	70%	83%	87%	82%
Median	100%	100%	100%	100%
Standard deviation	39%	27%	24%	30%
Valid cases	23	32	43	98

Appendix Table 13: Count of Responses of Mode of Transportation During Difficult and Easy Purchases

Difficult Purchases	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
No travel/delivered	0	0	6	5	30	25	36	9
Car	16	12	50	41	65	54	131	34
Public transportation	27	20	22	18	12	10	61	16
Walk	90	66	43	36	14	12	147	39
Taxi	3	2	0	0	0	0	3	1
Other	1	1	0	0	2	2	3	1
Total Responses	137	100	121	100	123	100	381	100
Valid cases (n)	46		46		49		141	

Easy Purchases	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
No travel/delivered	1	1	15	11	44	35	60	16
Car	13	9	43	33	63	50	119	31
Public transportation	19	15	11	8	3	2	33	9
Walk	85	69	60	46	15	12	160	42
Taxi	4	3	1	1	0	0	5	1
Other	1	1	0	0	2	2	3	1
Total Responses	123	100	130	100	127	100	380	100
Valid cases (n)	49		48		50		147	

Appendix Table 14: Count of Responses of Distance Traveled During Difficult and Easy Purchases

Difficult Purchases	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
No travel	0	0	6	5	31	26	37	10
Less than 1 mile	62	52	22	20	13	11	97	28
1 to 3 miles	27	22	41	37	18	15	86	24
More than 3 miles	31	26	43	38	58	48	132	38
Total Responses	120	100	112	100	120	100	352	100
Valid cases (n)	46		46		49		141	

Easy Purchases	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
No travel	1	1	14	11	42	34	57	16
Less than 1 mile	76	69	61	48	22	18	159	44
1 to 3 miles	16	14	35	28	14	11	65	18
More than 3 miles	17	15	17	13	46	37	80	22
Total Responses	110	100	127	100	124	100	361	100
Valid cases (n)	49		48		50		147	

USER-DEALER RELATIONSHIP**Appendix Table 15: Number of Months Using Main Source**

Number of Months	Participants
1	1
2	9
3	6
4	5
5	3
6	9
7	5
8	4
10	1
12	20
14	1
18	5
24	8
30	1
36	5
48	5
60	3
72	1
84	2
108	1
120	1
156	1
180	1
No Main Source	50
Valid cases	148

Appendix Table 16: Does Main Source Have a Beeper?

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
Yes	2	9	15	45	16	38	33	34
No	21	91	18	55	26	62	65	66
Valid cases	23	100	33	100	42	100	98	100

Appendix Table 17: Frequency of Beeper Usage per Week by Primary Type of Connection

	Street	Phone	Beeper	House	Other
Mean	0.1	0.6	17.0	0.5	0.0
Median	0.0	0.0	11.5	0.0	0.0
Standard deviation	0.4	1.5	18.8	1.2	0.0
Valid cases	84	41	8	11	3

Appendix Table 18: Frequency of Beeper Usage per Week by Whether Live with Children

	Have Children and Live with	Have Children but Don't Live With	No Children
Mean	2.8	0.5	0.0
Median	0.0	0.0	0.0
Standard deviation	9.4	1.8	0.0
Valid cases	49	70	28

Appendix Table 19: Does Main Source Have Restrictions?

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
None	12	55	16	50	8	20	36	38
Unavailable at night	6	27	14	44	33	80	53	56
Available mornings only	1	5	2	6	0	0	3	3
Other	3	14	0	0	0	0	3	3
Valid cases	22	100	32	100	41	100	95	100

Appendix Table 20: Does Main Source Have Restrictions?

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
Yes	29	59	32	64	42	84	103	69
No	20	41	18	36	8	16	46	31
Valid cases	49	100	50	100	50	100	149	100

Appendix Table 21: Dealer's Willingness to Bargain by Gender

	Male		Female	
	n	%	n	%
Willing to bargain	40	38	27	60
Not willing to bargain	64	62	18	40
Valid cases	104	100	45	100

Appendix Table 22: Circumstances Under Which Dealer Will Bargain (Count of Responses)

	New York		Chicago		San Diego		All Sites	
	count	%	count	%	count	%	count	%
Buy large quantity	3	23	3	18	8	15	14	17
Good customer/friend	7	54	4	24	11	21	22	27
Competition/market conditions	2	15	2	12	4	8	8	10
When buyer short of cash	0	0	1	6	14	27	15	18
Other	1	8	7	41	10	19	18	22
No special reason	0	0	0	0	5	10	5	6
Total Responses	13	100	17	100	52	100	82	100
Valid cases (n)	12		14		41		67	

Appendix Table 23: What Do You Do If Main Source is Unavailable?

	n	%
Go to someone else	84	89
Get it through a friend	1	1
Will not buy	7	7
Other	2	2
Valid cases	94	100

Appendix Table 24: Purchased from Main Source During Recent Purchases (If Participant Has Main Source)

	New York	Chicago	San Diego	All Sites
Mean	65%	78%	84%	78%
Median	67%	100%	100%	100%
Standard deviation	32%	30%	18%	27%
Valid cases	23	31	40	94

Appendix Table 25: Number of Dealers Participants Know

Number of Dealers	Participants
1	1
2	5
3	10
4	10
5	18
6	8
7	6
8	8
9	2
10	25
12	8
13	1
15	6
17	1
18	2
20	13
25	6
28	1
30	3
35	2
40	1
50	5
100	6
150	1
Valid cases	149

FREQUENCY, QUANTITY, AND COST OF HEROIN PURCHASES**Appendix Table 26: Average Bags of Heroin Bought During Recent Purchases**

	New York	Chicago	San Diego	All Sites
Mean	1.7	1.9	2.0	1.9
Median	1.7	1.7	1.7	1.7
Standard deviation	0.7	0.9	1.3	1.0
Valid cases	49	50	48	147

Appendix Table 27: Accuracy of Participant's Estimation of Habit Cost

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
Underestimated	27	54	27	54	34	68	88	59
Estimated accurately	8	16	11	22	6	12	25	17
Overestimated	15	30	12	24	10	20	37	25
Valid cases	50	100	50	100	50	100	150	100

Appendix Table 28: Participant's Opinion on Price Compared to One Year Ago

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
More costly now	3	6	10	21	6	12	19	13
Same cost now	40	80	28	58	29	58	97	65
Less costly now	7	14	10	21	15	30	32	22
Valid cases	50	100	48	100	50	100	148	100

Appendix Table 29: Participant's Opinion on Purity Compared to One Year Ago

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
More pure now	6	12	11	23	7	14	24	16
Same purity now	4	8	9	19	19	39	32	22
Less pure now	40	80	28	58	23	47	91	62
Valid cases	50	100	48	100	49	100	147	100

HEROIN USE BEHAVIOR**Appendix Table 30: Years of Heroin Use**

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
2 years and less	1	2	8	16	1	2	10	7
3 to 10 years	10	20	7	14	6	12	23	15
11 to 20 years	7	14	12	24	22	44	41	27
21 years or more	32	64	23	46	21	42	76	51
Valid cases	50	100	50	100	50	100	150	100

Appendix Table 31: Frequency of Heroin Use per Day

	New York	Chicago	San Diego	All Sites
Mean	3.1	2.0	2.9	2.7
Median	3.0	2.0	2.0	2.2
Standard deviation	2.2	1.3	3.0	2.3
Valid cases	50	50	50	150

Appendix Table 32: Average Bags Used After Recent Purchases

	New York		Chicago		San Diego		All Sites	
	n	%	n	%	n	%	n	%
1.00	17	35	20	41	20	43	57	40
1.33	11	23	14	29	12	25	37	26
1.67	8	17	7	14	5	11	20	14
2.00	7	15	6	12	4	9	17	12
2.33	3	6	2	4	3	6	8	6
2.67	0	0	0	0	2	4	2	1
3.67	2	4	0	0	1	2	3	2
Valid cases	48	100	49	100	47	100	144	100

Appendix Table 33: Count of Responses of Location of Use After Most Recent Cop

	New York		Chicago		San Diego		All Sites	
	count	% of n	count	% of n	count	% of n	count	% of n
Home	59	40	99	66	93	63	251	56
Street	16	11	4	3	4	3	24	5
Other person's house	28	19	18	12	27	18	73	16
Public/random building	22	15	12	8	3	2	37	8
In car	7	5	13	9	20	14	40	9
Other	17	11	3	2	0	0	20	5
Total Responses	149	100	149	100	147	100	445	100
Valid cases (n)	50		50		50		150	

Appendix Table 34: Percentage Who Used Heroin Alone After Most Recent Purchases

	New York	Chicago	San Diego	All Sites
Mean	66%	53%	56%	58%
Median	67%	67%	67%	67%
Standard deviation	38%	39%	45%	41%
Valid cases	47	50	47	144

Appendix Table 35: Average Time Spent Between Buying and Using

	Mean	Median	Std Dev	Valid Cases
New York				
Total time between buying and using	17	11	33	49
Time spent traveling between buying and using	7	6	5	49
Travel time as a percentage of total	57%	56%	17%	49
Chicago				
Total time between buying and using	18	13	13	47
Time spent traveling between buying and using	12	9	11	42
Travel time as a percentage of total	64%	68%	25%	41
San Diego				
Total time between buying and using	26	15	35	47
Time spent traveling between buying and using	8	5	10	46
Travel time as a percentage of total	37%	42%	24%	46
All Sites				
Total time between buying and using	20	12	29	143
Time spent traveling between buying and using	9	7	9	137
Travel time as a percentage of total	52%	55%	25%	136

References

Agar, Michael. 1973. *Ripping and Running: A Formal Ethnography of Urban Heroin Addicts*. New York: Seminar Press.

Blumstein, Alfred A., Jacqueline Cohen, Jeffrey A. Roth, and Christy A. Visher, eds. 1986. *Criminal Careers and "Career Criminals."* Washington D.C.: National Academy Press.

BOTEC Analysis Corporation. 1992. *Heroin Situation Assessment*. Prepared for the Office of National Drug Control Policy. January, 1992.

BOTEC Analysis Corporation. 1993. *Cocaine and Heroin Market Structure*. Prepared for the Office of National Drug Control Policy. March, 1993.

BOTEC Analysis Corporation. 1993. *Measuring Heroin Availability: A Demonstration*. Prepared for the Office of National Drug Control Policy. September, 1993.

Farrington, David P. 1986. "Age and Crime." In *Crime and Justice*, Volume 7, eds. Michael Tonry and Norval Morris. Chicago: University of Chicago Press.

Federal Bureau of Investigation, Uniform Crime Reporting Program. 1986. *Age-Specific Arrest Rates 1965-1983*. Washington, D.C.: U.S. Department of Justice.

Hughes, Patrick H., MD, and Jerome H. Jaffe, MD. 1971. "The Heroin Copping Area." *Archives of General Psychiatry*, May, 24: 394-401.

- Hughes, Patrick H., MD 1977. *Behind the Wall of Respect*. Chicago: The University of Chicago Press.
- Inciardi, James. 1986. *The War on Drugs*. Mountain View, California: Mayfield Publishing Company.
- Inciardi, James A. 1979. "Heroin Use and Street Crime." *Crime and Delinquency*, July, p. 335-346.
- Johnson, Bruce D., Paul J. Goldstein, Edward Preble, James Schmeidler, Douglas S. Lipton, Barry Spunt, and Thomas Miller. 1985. *Taking Care of Business: The Economics of Crime by Heroin Abusers*. Lexington, Massachusetts: Lexington Books.
- Kleiman, Mark A.R. 1988. "Crackdowns: The Effects of Intensive Enforcement on Retail Heroin Dealing." Program in Criminal Justice Policy and Management Working Paper #88-01-11, John F. Kennedy School of Government, Harvard University.
- Kleiman, Mark A.R. and Kerry D. Smith. 1990. "State and Local Drug Enforcement: In Search of a Strategy." In *Crime and Justice: An Annual Review of Research*, eds. Norval Morris and Michael Tonry. Chicago: University of Chicago Press.
- Kleiman, Mark A.R. and Rebecca M. Young. 1992. "The Effects of Retail Drug Enforcement on Drug Consumption and Associated Criminal Behavior." Prepared for the National Institute on Drug Abuse.
- Moore, Mark H. 1973a. "Achieving Discrimination on the Effective Price of Heroin." *American Economic Review* 63(2):270-277.
- Moore, Mark H. 1973b. "Policy Toward Heroin Use in New York City." Ph.D. Dissertation, John F. Kennedy School of Government, Harvard University.
- Moore, Mark H. 1977. *Buy and Bust*. Lexington, Massachusetts: Lexington Books.
- National Institute of Justice. 1993. "Drug Use Forecasting: 1992 Annual Report, Drugs and Crime in America's Cities." Washington D.C.: National Institute of Justice, U.S. Department of Justice.

**Office of National Drug Control Policy
Executive Office of the President
Washington, D.C. 20500**