THE CRIMINAL BEHAVIOR OF DRUG PROGRAM PATIENTS

(A Final Report of the Impact on Crime of the Methadone Maintenance Program of the Addiction Research and Treatment Corporation, New York City)

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Dale K. Sechrest
Principal Research Investigator

Submitted by: The Center for Criminal Justice
Harvard Law School
James Vorenberg, Project Director
and
The Addiction Research and Treatment Corporation Evaluation Team, Columbia University School of Social Work
Irving Lukoff, Project Director

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Edward J. Dauber and the late Eleanor C. Halprin of the Center staff undertook the initial organizing tasks for the project and prepared the first year report. The first major analysis of the accumulating data on the project was undertaken by Dr. Gila J. Hayim. The final analysis including preparation of the final report has been carried out by Dr. Dale K. Sechrest with the assistance of Paul Cirel.

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CHAPTER I

SUMMARY AND CONCLUSIONS

This report has presented a portion of the findings of a five year study of the effectiveness of the Addiction Research and Treatment Corporation (ARTC) drug treatment program in the Bedford-Stuyvesant/Fort Greene area of New York City (Brooklyn). While the entire study had several components, including social and medical evaluations undertaken by the Columbia University School of Social Work and the Yale Medical School, the portion undertaken by the Center for Criminal Justice, Harvard Law School, focused on reduction in criminal activity of methadone patients due to treatment.

The specific questions dealt with were (1) whether ARTC treatment significantly reduced community criminal activity, (2) whether only specific groups of patients were involved in any decreases found, (3) what kinds of treatment were successful in reducing criminal activity, if any, (4) what were the relationships between the addicts and the criminal justice community -- i.e., police and the courts, and (5) additional questions about the relationship between crime and addiction and the future of ARTC-type programs in the reduction of criminal activity.

Several methodological problems were encountered in the study, which have been enumerated in the body of the report. Among these

was the lack of a control group of untreated patients against which to compare ARTC-treated patients. All measures of patient progress (outcome performance) were made against the patient's own level of functioning at the time of program admission (baseline). The principal outcome criterion (or dependent variable) for the Center study was criminal activity as measured over time. All other variables were treated as independent (or experimental) variables in their relationship to the outcome variable of criminal activity.

The measures of criminal activity were arrest rates and mean severity scores computed for the patients based on offenses officially recorded by the New York City Police Department. Both types of rates were computed for each patient for his pre-addiction period, the addiction period, during which he used heroin regularly, and each of the years after program entry. In addition to official police records, the study drew on self-reported information gained in interviews with patients, program records, and staff comments to provide data on patients.

The ARTC population was divided into two basic groups for study. The first included all 991 patients on whom data on criminal activity were available for two years after program entry. The second included 477 of the 991 patients on whom four years of criminal activity follow-up data was available. A third population

used in the analysis was a group of methadone patients from the Santa Clara County, California Methadone Treatment Program. These 277 patients had been treated in about the same time period using methods very similar to those used at ARTC. The criminal activity for these patients was collected from official records and placed in a format identical to the ARTC patients for purposes of comparison.

In this report the findings are grouped into six major areas and are summarized in the following sections:

Total Population Characteristics. Almost 90 percent of the total population reported being arrested at some time in their lives. Sixty-two percent were convicted at least once though 66 percent had been detained or committed in a jail, prison, or penitentiary at some time in their lives with a mean stay of about three years. On the average, heroin use began at about twenty years of age, and daily use about one year later. The average length of addiction prior to program entry was ten years, admission ocurring at the mean age of 31. Four out of five patients were male and the vast majority were Black (78%) or Spanish-speaking (13%). Just over half of all patients were married. Both the population (991) and the sample (477) revealed a very poor education and employment record, which was further verified through an examination of program records. A community survey in the project area showed

that patients closely resembled community residents on such characteristics as ethnicity and educational attainment. However, the primary difference between patients and community residents was in employment of males. Whereas 77.9 percent of community adult male residents were employed full time, only 13.1 percent of the ARTC male patients were employed full time. The patients also showed a much greater tendency to be unskilled laborers than did community residents.

Overall Crime Reductions. The individual patient data on arrest rates and mean severity scores showed that the criminal activity of patients declined somewhat after entry into ARTC. The process was not immediate, however. More than two years was required for most patients to show some reduction in criminal activity. The four-year follow-up period shows that non-drug crime rates did not begin to show a decline until the third year after program entry. Much of the initial decline in criminal activity was for drug crimes, making the treatment appear to have had more impact on total criminal activity than it had actually produced in that time period. Also this initial decline in drug crimes might have occurred whether the addict entered the program or not, since he was peaking in drug activity at entry. However, if the goal is defined as an effort to reduce all criminal activity to the pre-addiction level, this appears to have occurred only in the case of male patients for both drug and non-drug crimes at the fourth year after patient program entry. In contrast for the California population more impact was evident by the second year after entry; however, arrest rates were much higher on the whole

for the California population and their severity scores were lower on the average. California addicts were arrested more times per year but for less severe types of criminal activity. It should also be noted that a lag in recording of police records suggests a correction for the third and fourth years, possibly as high as one-third and four-fifths respectively. Such corrections would result in the third year rates being somewhere between the pre-addiction rates and the rates for the total addiction period, which considerably lessen but do not wholly eliminate the reductions obtained.

It is, of course, possible that the decline in criminal activity as measured by arrests is a reflection of changes in police arrest policies regarding drug addicts rather than a result of the treatment program. The declining arrest rates appear to show the effects of both of these influences. Overall narcotic arrests decreased 39 percent from 1971 to 1972 due to changes in police policy.[1] This policy stated that narcotic arrests would be the primary concern of the Narcotics Division which would concentrate its efforts on higher levels of drug activity, i.e., major dealers and distributors. This was coupled with an apparent feeling on the part of the patrolman that minimal levels of addiction would have to be tolerated and attempts made to refer known addicts to treatment programs in lieu of arrest. An analysis of total arrests, and those for drug and non-drug crimes, during the first, second and third year after program entry for those admitted in 1969 and also 1970 revealed evidence of this joint effect of policy

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[1]Crime Analysis Division, New York City Police Department, "Statistical Report, Narcotics, New York City, 1972." p. 2. (Mimeo.)

change and program treatment. The yearly comparison of the experience of the 1969 compared to the 1970 sample shows rate changes in addition to that which might be attributed to the shift in police arrest policies. A similar comparison using crime severity scores led to the same conclusion.

Though it seemed unlikely that these reductions in the criminal activity of ARTC patients as indicated by arrest rates would be sufficient to produce lower community crime rates, criminal complaints obtained from the New York City Police Department were examined for the ARTC service area ("catchment area"). Ten precincts were studied for reductions in relation to the number of ARTC patients in each precinct and the complaints per 10,000 population in each precinct. There were no marked reductions in criminal activity in the precincts served by ARTC. The relative rankings of criminal complaints by precinct remained about the same from 1968 through 1973, the period two years before and four years after the program began. The overall conclusion was that the crime rate decreased slightly for the entire ARTC catchment area (10 precincts), but not necessarily in those areas where ARTC patients were located.

What accounts for this apparent contradiction in results? If individual rates of crime by patients were decreasing why were crime rates relatively stable in the community? The simplest explanation is that ARTC was not serving enough patients to generate

a community-wide impact. No data was available on the number of addicts actually located in the ARTC catchment area, but figures from the New York City Narcotics register show that Brooklyn, followed closely by Manhattan, had the largest number of first-reported new addicts in the City - close to 9,000 in the peak year of 1972, a very large number of new addicts compared to the number treated in the ARTC program. However, the explanation which appears to handle the contradiction best is that the program was not reaching the most crime-prone population of addicts, and that ARTC patients are older and more likely to be "maturing out" or "burning out" of criminal activity. The sample ARTC population (477 patients) was age 33, on the average, with an addiction history spanning about 13 years. New York City Narcotics Register figures show that almost 85 percent of the individuals reported as "New Cases" in 1970 were age 30 or less, although this proportion went down slightly in 1971-73.[2] Data on the ARTC sample show consistently higher arrest rates for 22 to 29 year old patients. The FBI Uniform Crime Reports regularly show that about half of all crimes reported are for people 25 years of age or younger. The implications of these conclusions for future planning will be presented after other findings are summarized.

Characteristics Related to Program Outcome. One of the primary goals of the study was to determine those characteristics related

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[2]New York City Narcotics Register, "Analysis of Narcotics Addiction Trends Through June, 1973, September, 1973, p. 3.

to decreased criminal activity. For males and females a better pre-program drug history and decreased drug use while on the program (fewer morphine positives) were related to decreased criminal activity at the third year after program entry. White males were particularly prone to continue drug crimes after entry. In addition, for females several background factors were significantly related to decreased criminal activity. These included such variables as being better educated, not living alone at entry, and having low residential mobility. An additional predictive factor for males in relation to decreased criminal activity was family stability. Treatment variables were not found related to outcome. However, evidence of a high number of morphine positives (detection of "dirty" urines) was related to program failure. This detection of dirty urines is an important part of the program, especially when combined with intensified efforts to assist the patient in overcoming his drug abuse behavior. It was also found that patient age at program entry was significantly related to outcome. It appears that ARTC as well as other methadone treatment programs which have shown some reduction in criminal activity are dealing with populations which are older and have completed a cycle of drug use which has prepared them to "burn out" or "mature out" of both drug taking behavior and criminal activity. Programs which deal with the younger addict seem likely to have a

much more difficult time achieving this level of success in reducing criminal behavior in patients.

Self-Reported Criminal Justice System Involvement. A Criminal Evaluation Questionnaire (CREQ) was used with 361 patients to gather self-reported data on their criminal behavior before addiction, during addiction and after program entry. These questions provided additional information on the total extent of patient criminal activity and their reactions to the criminal justice system. Almost ninety percent of the 361 patients interviewed for this purpose reported an arrest or formal charge at some time in their lives, and about half said they had been identified as addicts by the courts at some time in their lives, many on several occasions. Almost all of these patients (98%) reported their last arrest to have been in New York State, most in Brooklyn (88%); 85 percent were arrested last between 1966 and 1971. Nearly half of the arrests resulted in conviction, and nearly half of the convictions resulted in incarceration.

Comparisons of criminal activity across the three periods showed that for this group of addicts becoming addicted generally led to more risky and less profitable criminal activity per crime, i.e., participation in crimes with a higher arrest potential and with less dollar gain than those pursued in the pre-addiction period. However, this was compensated by an increased frequency of criminal

activity which in many cases yielded a higher net dollar gain. It should also be noted that many of these post-addiction illegal activities were those which yielded drugs directly. After program entry patients tended to return to lower overall risk offenses, although those illegal activities which were most closely associated with addiction were more prevalent (such as pushing drugs, carrying drugs and works, and forging prescriptions). However, the actual frequency of all illegal activity declined markedly.

Crime and Addiction. Due to the oft-stated concern over which came first -- crime or addiction, the Brooklyn and California samples were analyzed with this question in mind. Since the project was unable to gain access to juvenile records, the following observations apply only to official contact as adults. It was found that somewhat less than half of both sample populations were officially involved in criminal activity as adults prior to becoming addicted. Thus, 53 percent of the ARTC patients and 58 percent of the California patients had no official criminal activity prior to addiction, which includes seven percent in both populations who were never officially involved in criminal activity across all three periods of study. Males showed consistently higher levels of criminal activity than females. An examination of patients by "crime groups" based on their activity in each of the three time

periods showed that patients officially involved in criminal activity in all three periods or in just the addiction and after-entry periods were the most criminally involved of all groups based on arrest rates and severity scores. It was also found that patients who began their criminal activity after addiction did not concentrate exclusively on drug crimes; they were very much like the other patients as to the nature of their criminal activity.

Police and Court Studies. The findings included two studies which were done independently of the evaluation of patient performance. They involved a study of interaction between addicts and police patrolmen in Brooklyn, and a study of addict disposition in a Brooklyn court. The findings from the police precinct study are too diverse to summarize easily. The principal conclusion, however, was that a combination of events had occurred in Brooklyn creating an environment between the police, the courts, and ARTC which diverted attention from the routine arrest and official processing of heroin users. This evolved out of a policy change emphasizing a concentration by the Narcotics Division on higher levels of drug activity in Brooklyn and an emphasis on addict diversion to programs such as ARTC to keep them out of the formal criminal justice system. The court study re-emphasized this finding in stating that diversion to community treatment is seen as more

appropriate for addicts than non-addict defendants, particularly if good programs are available.

In this report Chapters II through VI contain a detailed account of the research design, setting objectives, methods and findings of the study. Chapter VII presents some of the observations and recommendations as to the future development of methadone maintenance programs by the principal research investigator, Dale Sechrest, based on his own extensive acquaintance with the literature and his research activities on both the California and New York projects.

CHAPTER II

RESEARCH DESIGN: HISTORY AND PROBLEMS

This report represents the completion of over five years of study of the effectiveness of the Addiction Research and Treatment Corporation drug treatment program located in the Bedford-Stuyvesant/Fort Greene and Harlem areas of New York City. Findings are presented here for only one segment of a more comprehensive medical-social and criminal evaluation. The original purpose of the entire evaluation effort was stated as follows:

> (1) to measure the degree of rehabilitation achieved among patients; (2) to isolate the characteristics of those successfully rehabilitated; (3) to explain unlike rates of success among different groups of patients, according to their background, treatment modalities, etc.; (4) to determine whether the treatment program has any long-term psychological effects on the patients; and (5) to determine whether a proportion of successful program patients can maintain their level of success after detoxification from methadone.1

The Harvard portion of the study was proposed as an "independently directed criminal evaluation" because of the "severe social problems presented by addict-related crime and because the medical evaluation team ... may not possess the expertise to address specific problems of criminology and criminal justice procedures."[2] The Center was to have "primary responsibility for design of the criminal evaluation, analysis of crime-related data collected by the treatment corporation and medical evaluation teams, redesign of criminal

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1. From original grant application, beginning July 1, 1969, p.9.

evaluation based on information developed, and evaluation reporting."[3]

The criminal evaluation was seen as having two purposes:

> (1) to assess the effect of methadone treatment on the criminal behavior patterns of individual addicts; and (2) to evaluate its impact on criminal activity, drug use, the growth or contraction of criminal and drug subcultures and the overall quality of life in the treatment area.[4]

The original design included an experimental group of volunteer patients from the courts (pre-trial and pre-sentence phases), the prisons (upon release), and both solicited and unsolicited volunteers who requested entrance into the program. A control group was proposed to consist of untreated volunteers (those not accepted for treatment immediately because of a shortage of facilities) and untreated "refusers" (those refusing to accept treatment in the program when offered the opportunity). It appeared likely that the program would have a considerable number of such patients who could not be given treatment. They could be assigned to a control group. Appropriate sampling methods were planned to ensure randomization in experimental and control groups. A control group of "untreated refusers," for example, were to be taken from court and prison intake sources.

The treatment program is described in more detail elsewhere in this report and in the work of the Columbia Team which was responsible for the operation of the data collection process. Data to be collected consisted of background information designed "to

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[3]. Ibid., p.3.

[4]. Ibid., p.10.

obtain a picture of [patients'] past criminal activity and patterns of living."[5] Demographic characteristics such as age, ethnic group, sex, education, history of drug involvement, arrest and court history, employment history, past sources of support, residence patterns, and family integration were to be collected. Most of the information was to come from in-depth interviews with verification of criminal activity to be procured from official New York City criminal records. "In-treatment information" was also to be collected on a regular basis, as was "follow-up information." It was anticipated that control group subjects would need to be paid to participate in periodic follow-up interviews.

Comparisons of experimental and control populations were to occur over three periods: pre-treatment, in-treatment, and post-treatment. Reductions in criminal activity were to be correlated with changes in social, occupational, and family situations during and after treatment to see which variables were significant in reducing criminal activity. Subjects were to be analyzed in "sub-groups according to: (1) intake sources, (2) treatment modality, (3) demographic variables (age, race, sex, etc.), and (4) background histories (crime, drug use, employment, family integration, residence, etc.)."[6] The questions specific to the performance of these sub-groups are stated in the section entitled "The Center Study."

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[5]. Ibid., p.11.

[6]. Ibid., p.13.

As with any treatment plan and accompanying research design, difficulties arose over the years which have influenced the findings. They relate to three major problem areas in this study: the lack of a control group, the organization of treatment itself, and data collection. The original plan for the use of a control group of subjects was not implemented as the result of research design decisions reached in July of 1971.[7]

Control Procedures

The Need for Controls. The evaluation's primary analytic tool in determining the effect of the methadone program on crime involves comparing the conduct of addict patients before and after they began treatment, through the use of records and periodic interivews. This method of measuring the impact of the methadone program might appear at first to be sufficient in itself, particularly because it addresses directly the research issue: what change does methadone treatment produce in the criminal behavior of addicts?

However, there are serious limitations to this before-and-after techique, not only due to the inadequacies in the records but also because of methodological problems inherent in the technique itself. There are at least three basic limitations to this before-and-after technique which can be corrected by the use of appropriate control group procedures.

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7. "The Criminological Evaluation of A Large-Scale Methadone Maintenance Treatment Program: Some Methodological Considerations," July 7, 1971, Confidential Draft #2; much of the following discussion draws on a consultant report developed by Kenneth J. Lenihan. (mimeo); for a fuller discussion of these design problems see Donald T. Campbell, "Reforms as Experiments," American Psychologist, 24 (April, 1969).

Differential History. Times change. As with most human beings one year is not like the next. Addicts especially will experience the effects of changing social and economic conditions. There are more events affecting their life circumstances than simply the addition of treatment. For example, the police could get tougher, the strength of heroin could become stronger or weaker, job opportunities might increase, minority group causes might capture the commitment of some former addicts and so on. Thus, any number of situational changes other than methadone treatment, might explain variations in patients' criminal behavior. The unaccounted-for effects of such changes in subsequent historical circumstances constitutes the most serious limitation of the before-and-after technique for this type of evaluation.

Maturation. Some addicts may simply grow out of addiction as increasing age brings different opportunities, responsibilities, or constraints to their life styles. The before-and-after technique does not differentiate between those who would have matured out of addiction without the program and those for whom the program was the decisive factor.

Regression effects among extreme groups. The phenomenon of regression may appear similar in its effects to maturation, but it is really different since regression does not assume changes related to aging. It occurs if the people who come in for treatment are an extreme group, either positively or negatively, at the moment when they are first interviewed; that is, as a group they might be at

the most desperate point in their lives, or they could be in fairly good shape but anxious to avail themselves of some benefits of the program.. In either case, a change over time can be expected as a matter of course; if desperate, they will show improvement; if in fair shape, they are likely to get worse. This kind of change is a mathematical artifact because they are interviewed at the point when they are at their extreme. It is interestingly enough also an illustration of a general principle (existing in biology, sociology, and human life) that there is a tendency to pull back from extreme states to normal states. Such change could not be attributed to the treatment program.

General problems with control groups. We attempted to deal with these problems through the development of various control procedures. A control procedure would, in its ideal form, try to establish a comparison group of addicts, identical in every respect to the program addicts (or "experimental group"), except that the control group would not participate in the program. In this way, the effect of the program alone could be isolated and evaluated. While such an ideal control could not be developed in these circumstances, for reasons to be discussed below, the imperfect control procedures that could be employed, did provide additional leverage for analysis of the basic data and did help to minimize the limitations of that data.

The problem of establishing control groups which adequately eliminate extraneous variables has been the greatest obstacle to

successful evaluation research in social action programs. The network of influences that affect individual conduct is so complex that it becomes extremely difficult to develop an appropriate random selection of volunteers and of experimental and control groups. Perhaps the greatest difficulty exists in specifying the universe from which choices of controls are to be made.[8]

In addition, of course, with human subjects there are extremely difficult ethical and political considerations involved in offering treatment to some and refusing it to others in order to approximate the experimental model.

A further problem or constraint in the setting up of both experimental and control groups derived from the necessity of securing the same type of data for both of these groups. This means that the initial or data-gathering interviews with both experimental and control subjects would have had to cover the same content areas. Background information would have been needed for controls as well as for patients so that their criminal records could be documented and checked with the official system. Securing follow-up information from those addicts not receiving treatment (controls) would have been particularly difficult because they would have had no incentive to cooperate, although one way of keeping in touch with them might have been to pay them to cooperate in the research. These

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[8]. Selection of the appropriate universe was made even more difficult in the ARTC program, because patients were to enter the program through four different intake sources--potentially four different addict universes. This problem was wrestled with for quite some time. We finally decided that the pressures and motivations within each intake group were so varied, that it made little sense to categorize them for control purposes, according to intake sources. Instead, the patient population as a whole was considered the relevant group. (However, comparisons among the different sub-groups has been made for analytical purposes).

general problems required that extensive thought be given to the use of a variety of control procedures.

Alternative control group proposals. Many possible proposals were considered. The closest to the "ideal" control would have been the random assignment of some applicants to a control group which was denied treatment. However, the ethical problems raised by arbitrarily denying aid to addicts seeking help were so overriding that this proposal was rejected. Of the suggested alternatives, each presented serious problems as will be described below.

Proposals involving waiting lists. These proposals provided for the random assignment of interviewed volunteers into two groups, those who would start methadone treatment immediately, and those who would be put on a waiting list to act as controls. The criminal behavior during the waiting period of the controls would then be compared with the behavior of those undergoing treatment.

Under this procedure all volunteers would eventually receive treatment, thus avoiding the difficult ethical problem raised by other control procedures which, for research purposes, deny treatment to some volunteers. Here again, however, there were ethical problems in continuing to keep members of the control group on the waiting list while accepting for immediate treatment persons who volunteered at a later period in time. In addition, motivation for both groups may not have adequately controlled.[9] What the motivating

[9]. Trying to control for motivation is most important, since one of the main criticisms of methadone programs has been that their success has been due to their selection of only highly motivated applicants, who might have done well even without methadone.

factors would subsequently be for those who were placed upon the waiting list as opposed to those admitted immediately to treatment is still highly conjectural. Addicts might reduce their criminal activity so as not to jeopardize their chances for admission, or perhaps have engaged in heightened drug use in anticipation of guaranteed treatment. Conceivably it might have been possible to influence the control's motivation by not informing him of the length of the waiting period.

In practice, however, the waiting list proposal proved unfeasible. For one thing, many of those patients placed on the waiting list could not be found when the time came for their admission into the program. Therefore, the research staff had to fall back on information obtained from them at the time of application. Usually, this was sufficient identifying data for obtaining arrest sheets on these individuals, but wait-listed patients might not be as willing to consent to requests for data as were patients immediately admitted. In much the same way they are not particularly eager to subject themselves to self-report interviews prior to being admitted for treatment. Follow-up interviews are, obviously, out of the question for those addicts who cannot later be found, and even those who can be located may lack the incentive to submit to such an interview, if these is not immediate prospect of their admission to treatment.

In an effort to overcome these deficiencies, a "holding pattern" was developed. Under this proposal, applicants for whom there was no

room in the full treatment program were merely given daily doses of methadone, without any of the other services. While this succeeded in holding onto the applicants, it invalidated the control group for purposes of isolating and assessing the effect of the drug alone. In any event, the applicants did not remain in the holding pattern (or, previous to that, on the waiting list) for a long enough period of time to provide a meaningful comparison.

Measures other than those cited above were considered and discarded. They included a matched sample of the general addict population as controls, and the use of friendship networks also as controls. The latter design involved the use of aquaintances of patients as potential program volunteers and as controls in the research process. Problems of bias and the reticence of patients to nominate other addicts led to the rejection of this as a research technique.

In the final analysis, comparison groups, or sub-groups, were decided upon as the remaining analytical technique which might be successfully applied. This technique raises serious questions as to the effects of maturation, regression effects, and differential patient history. Therefore, the findings presented must be carefully interpreted with respect to these types of effects. These problems will be discussed in relation to the findings presented.

The second problem involves the organization of treatment at the Addiction Research and Treatment Corporation. While the program has grown and developed over the five years of study, it has been

necessary to use patients in the analysis for whom two to four years have elapsed since program entry. This allows for before and after comparisons of criminal activity over several years, but limits the study population to only those patients who entered the program in the first and second years of operation. During this period the primary form of treatment appears to have been the distribution of methadone. Proposals, such as those advanced by two consultants as early as August of 1969, which would have placed patients in as many as four treatment "tracks," including a control group (track), were apparently rejected.[10] An examination of treatment records done for the present study indicates that there was not a diversity of treatment for the first 477 patients admitted to the program (on whom four years of criminal activity follow-up data was collected). An additional problem relating to both the program and the research design is that of the political climate in which it operated. These problems involved those who obtained the funds and those who should have received the money for the program, and the use of the white man's research with black ghetto resident "guinea pigs." As suggested by Lenihan, to deny treatment to enhance the research design with a control group could have become a significant local issue leading to the demise of the research design in its entirety.

The third major problem with the research design involves data

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[10] Charles B. Arnold, "A Preliminary Note on the Ambulatory Methadone Treatment Program Evaluation Research Design," August 18, 1969, p.18 (mimeo); and Kenneth J. Lenihan, "Some Notes on Evaluating the Methadone Program," August 3, 1969, p.18 (mimeo).

collection. Perhaps the major obstacle to criminal justice research has been the inadequacy of the available data. Our task -- to compile a complete history of the patient's criminal career -- sounded simple. However, in no single instance in the criminal justice record system (federal, state, or local) were we able to find a complete and accurate record of an individual's official[11] criminal history. Arrests, dispositions, correctional data, parole and probation information, as well as addiction status, were scattered over a variety of agencies. To make matters worse, tracing an individual through all of the agencies proved to be a major task, as each agency's files were arranged differently.[12] Some were alphabetical, some by date, and some geographical. Furthermore, no single identifying number was consistently used. The "B" number,[13] FBI number, NYSIIS number,[14] and Department of Corrections number all had their roles. Also, each agency had different procedures for releasing the data for research purposes, and the resources

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11. By official criminal history, we mean that data related to an individual's criminal activity (including correctional data) which is known to governmental agencies.

12. Even within the same agency, the data is often differently arranged. In the New York City Police Department arrest data is kept in three separate places. Printable offenses (those offenses for which fingerprints of the arrestee are taken) are recorded at the BCI (Bureau of Criminal Identification -- now the Identification Section). Non-printable offenses are at the Information Unit and non-printable offenses that are more than two years old are located at the Old Records Unit. (By statute, all offenses will soon be made printable, thereby unifying this system for new offenses).

13. The "B" number is the identification number assigned to the arrestee by the New York City Police Department.

14. NYSIIS is the New York State Information and Identification System.

necessary to accomplish the job at some agencies would have been so massive as to nullify the effort.[15]

At best, the process of tracking down an individual's official history is time-consuming and frustrating. In 1971, we decided to select a sample of patients and find out if it were possible to reconstruct their criminal careers. Most agencies were very cooperative and opened their files to us, at least for the limited purpose of checking the records of those sample patients who had come into contact with the agency. After following the sample through the police department, the district attorney's office, the court, probation, correction, parole, the FBI, NYSIIS, the Social Service Exchange and the Narcotics Register of the City of New York, we decided to limit our official records information to the arrest records [16] of the New York City Police Department and to disposition information which would have to be gathered largely from the courts through our own efforts.[17] The data provided by

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15. It should be noted that New York State has made an effort to consolidate criminal justice data through NYSIIS. While the concept of NYSIIS is a good and needed one, it seems to be having some difficulty in fully executing its plan to obtain and provide complete data. NYSIIS requires the cooperation of numerous agencies throughout the State, some of whom seem to value their time and independence more than they do NYSIIS' success. One probation authority, for example, told us that his office did not plan on providing data to NYSIIS because of the work involved.

16. Only those at BCI and the Information Unit. Record searching at the Old Records Unit was excluded because of the effort and resources required for a rather marginal return.

17. While many of the dispositions are noted on the arrest records (or "yellow sheets" as they are called), disposition information is not always complete. At the beginning of the program, Kings County District Attorney Eugene Gold generously offered to have his staff assist us in completing that information where required, and thus enabled us to avoid a rather difficult process -- obtaining the information by pursuing each case to the record of the deciding court. However, the burden became so great with the increasing patient load that the District Attorney could no longer provide such assistance and extra research staff had to be hired to do the job.

other agencies was either redundant or non-existent for a sufficient number of program patients making it useless for purposes of evaluating the treatment program.[18]

Except as indicated in both instances of police and court sources, we could not trace the individual's prison experience or his experience under released supervision -- whether on probation or parole. While we were disappointed that the cost of obtaining this latter information was so great (because,as previously stated, of the way the data was organized in the various agencies), we still felt that for purposes of the evaluation we had the critical data which would indicate whether or not an individual was continuing his criminal activity. A procedure was established for obtaining arrest records from the police department. After the admission of a group of patients, a list containing each one's name, address, date of birth, and other identifying data was sent to the police department, which returned arrest sheets on those individuals for whom such records could be found. Unfortunately, in time, this process became overloaded and, for a brief period, it appeared that, due to the volume of requests, the arrests records would no longer be available to us. This created something of a crisis, since by then a good deal of reliance was being placed on this data. However, through the intercession of the police commissioner, arrangements were made for the continuing provision of this data, so long as requests were

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18. Information from the Narcotics Register Project was used, however, to determine which patients were previously enrolled in other drug treatment programs.

limited to batches of twenty to forty individuals.

While the arrest and disposition data are probably the best official indicators of continued criminal activity, their significance is still not clear-cut. It is basic to our system of law that a man is innocent until proven guilty. An arrest record alone cannot be regarded with confidence as a sign that the charged individual actually committed the offense. Even dispositions are not an accurate reflection of the crime picture. Some innocent men are convicted and others who are guilty are acquitted; charges are raised or lowered for reasons other than making them comport with the facts of the case; plea bargaining distorts the process, and so on. Also, there may be errors or negligence in recording data. Part of an individual's record may be located under an alias.[19] The suspect's status as an addict may not be checked off in the appropriate blank on the arrest form because such a notation requires additional paperwork for the officer involved.[20] Also, the individual's status as an addict may not be known to the Narcotics Register, because of incomplete reporting by the agencies upon whom they rely for all of their data.[21]

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19. Separate records for the same person under different names could be discovered through a fingerprint check. Fingerprinting of all patients, however, was felt to be inconsistent with the treatment and rehabilitation goals of the program. In addition, requests of the patients for revelation of their aliases was not very productive for obvious reasons.

20. To remedy this deficiency, an experimental check of this phenomenon in one or two precincts was suggested. Because of the imprecision of the data generally, it was felt that this minor refinement of the records would not be really helpful.

21. Certain agencies and all drug treatment programs are required by statute to report data on addicts known to them. While the Register keeps all data confidential, many of those required to report do not do so for all addicts identified. Reasons for non-reporting vary from misfeasance to deliberate non-reporting for fear that reporting will result in less addicts taking advantage of a program.

Yet, even if all of the official agencies' data are taken at face value, analysis is extremely arduous. Records vary for each individual in completeness, validity, and reliability. Some records, such as probation and parole reports, are subjective, thus difficult to compare. Coding of the data is very hard, because not only does each agency keep its information differently, but also within each agency the type of information recorded and the form in which it is recorded has often changed over the years.[22] In addition, some information simply does not exist in usable form. Much information about the victim, the method of operation of the criminal, the prisoner's adjustment, etc. is never recorded. Moreover, official records only reveal a small portion of total crime[23] and this is especially true for most addicts who often must commit crimes daily in order to support their habits. That is to say, in addition to all the difficulties with official records just mentioned, perhaps their greatest deficiency is that they frequently understate an individual's criminal activity. It may be that an individual is picked up, but, for one reason or another, released at the discretion of the police prior to formal arrest.[24] Or, the individual

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22. For example, the New York State criminal statutes have been completely revised and recodified. Consequently, arrest sheets show two sets of numbers for the offenses, one set for those offenses committed prior to recodification and one for after.

23. According to the President's Crime Commission only 1/3 of crimes committed are reported and arrests are made for only 1/4 of those cases reported.

24. Such discretion might be exercised because the activity while technically criminal is better handled in other ways (e.g., a family spat which involves a minor assault) or it might be exercised in exchange for information (or, in some cases, for graft), etc.

may not be apprehended at all, either because the crime goes undetected or unreported, or because he has not been identified with the crime, or because, although identified with the crime, he has evaded apprehension.[25]

Despite these deficiencies, we felt that arrest and disposition records would be the best indicators for evaluation purposes. With all their drawbacks, they still provided us with the "hardest" data available. Also, they have the most credence with the general population. Secondly, in comparing an addict's criminality before and after entry into the program, many of the deficiencies could be disregarded for purposes of assessing the effect of the program on that criminality, since presumably the deficiencies remain consistent over time. Of course, from an absolute point of view, the individual's criminal activity will always be understated, but the records still provide a means of determining whether there has been a relative increase or decrease in the person's criminal activity after entry into the program -- the goal of the evaluation.

Self-Report Data. In an effort to obtain a more accurate picture of the true level of patient criminality before and after entry into the program, an interview instrument was developed to obtain the patient's self-report on that portion of his criminal activity unknown to official agencies. In addition, we tried to use the presence of this addict population to learn more about addict criminal activity in general and asked in interviews about a number of areas not central to the evaluation (e.g., favorite targets of

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25. If the offender is identified, there will usually be a warrant, so that data on this class of cases is available.

addict crime, amount of money obtained from criminal activity, the criminal career of the addict, etc.). The results of this study are contained in an earlier report and are summarized in the findings of this report.[26] Many methodological issues were raised by the self-report process:

A. Who should do the interviewing?

B. When should the interview take place?

C. What policy should be followed vis-a-vis a patient who refuses to cooperate?

D. Centrally, what degree of validity should be accorded to a patient's response?

A. Who should do the interviewing?

The interviewer may be the key to the whole patient-interview process. Proper probing on his part accompanied by the creation of a good rapport with the patient could result in far more data, and reliable data, than mere rote querying by an ostensibly uninvolved interrogator. Probing techniques, of course, must be general over the entire interview process, so that the level of information obtained will be consistent and comparable, and rapport must not be allowed to inhibit the interviewing process instead of enhancing it.

Selection of the proper interviewer includes many factors: past interviewing experience, special technical or other knowledge, race, sex, knowledge (or lack of it) of the interviewee, similar status (past or present) as the patient, etc. We considered the following types of interviewers: members of ARTC's intake staff,

26. "Self-Reported Criminal Justice System Involvement for 361 ARTC Drug Program Patients," November, 1974. (mimeo).

members of ARTC's counseling staff, members of ARTC's medical staff, other patients, privately hired interviewers otherwise having no relationship to ARTC, and privately hired interviewers generally known at ARTC. Cutting across these possibilities were considerations of age, sex, ethnic background, and addiction status (past and present).

Our pre-test results indicated that the "who" would not make that much difference. As one patient said, "I'm gonna tell you what I'm gonna tell. There are some things I won't tell nobody." Some preference in making the choice was displayed for counselors, who knew the patients very well, and for other patients. There was a feeling that these two classes of interviewers would get somewhat better responses because they would be able to tell if someone was prevaricating. However, counselors were overburdened with work and, additionally, feared that this new role might jeopardize their relationships of trust with the patients. A similar problem existed with respect to other treatment personnel. The counselors did agree, though, to orient the patients to the need for cooperation with research and to its goals. The use of patients as interviewers presented other problems. Confidentiality, selection of patients for the job, retardation of rehabilitation by working inside the Center as opposed to seeking employment outside were all considerations which militated against the use of patients.

Yet, some rapport was necessary, so we opted for a combination

of intake workers[27] and specially hired interviewers. All were full-time employees at ARTC and so were generally known to the patient population. (This would not have been the case, for example, if a constant stream of outside interviewers had been used). This team[28] of intake and specially hired interviewers was then given special training on the use of the criminological questionnaire. A probe sheet was prepared to guide them in pursuing various questions.

B. When should the interview take place?

Because of the physical condition of many patients at the time of entry, immediate interviewing is often impractical even if it were desirable. It had been suggested that a prospective patient would be most cooperative immediately prior to entry because of his desire to get into the program. On the other hand, the counter-argument was offered that such an eager person might tell what he thinks the interviewer wants to hear rather than the actual facts.

In any event, our pretest results indicated that the best timing would place the initial interview shortly after the beginning of treatment even though a small number of interviews were missed with early dropouts. This period would allow the patient

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27. Intake workers interviewed patients upon entry into the program to obtain basic demographic data and data required by the National Institute of Mental Health and the Narcotics Register Project of the City of New York. The intake workers also got the information necessary for obtaining arrest data from the New York City Police Department.

28. Intake workers were used for two additional reasons: (1) economics and (2) administration of the initial criminological questionnaire was considered part of the intake process, so use of their personnel helped to integrate the research into that process.

to "get himself together" physically and would give him time to build up a sense of trust in the program. It would also provide time for orientation to research needs and goals. A longer waiting period might make it difficult for a patient to separate pre-entry behavior from post-entry behavior,[29] or it might cause a patient to lie either because of fear of jeopardizing his position in the program or from a desire to make the program look better.[30] That is to say, the ideal interviewing time is when the patient has sufficient trust in the program to make him desire to cooperate with its research goals, yet he should not have such a personal stake that he will alter the facts either to improve his position in the program or that of the program in the eyes of outsiders.[31]

C. What policy should be followed vis-a-vis a patient who refuses to cooperate with the research project?

The answer to this question in general, would depend mainly on the importance of the research to the overall program. In the case of ARTC, research was an integral part of the program. (The name -- Addiction Research and Treatment -- was chosen especially to reflect this fact). All funding sources require research and evaluation as conditions for their grants and the treatment staff itself espouses the need for research.

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29. Due to a variety of circumstances, the interview operation could not be integrated into the treatment program until a number of months after the latter had begun. This created a back-log of self-reports, which not only overloaded the available interviewing resources when that operation did finally begin but also decreased the likely validity of those interviews which had to be given retrospectively to patients already in the program for a substantial period of time.

30. The program itself does not in fact "penalize" a patient for criminal activity, but a recent entrant could conceivably fear such a penalty.

31. Most of the patients are aware of the political opposition to methadone programs and might try to help fight that opposition by overreporting their crimes prior to entry or underreporting them afterwards in order to improve the program's record.

Therefore, ARTC required cooperation with the research team as a precondition of participation in the treatment program. In theory lack of cooperation would have resulted in dismissal from the program. This, of course, meant turning an addict back into the streets, although he might have been rehabilitated equally well without participation in the research component. But a permissive policy toward an addict who refused to cooperate with the research could result in a breakdown of cooperation from all addicts and therefore no research whatsoever. This would mean no verified evaluation of the effectiveness of the treatment program. Critics of this argument might respond that the results would be obvious enough, but the question remains whether they would be sufficiently persuasive without thorough, independent evaluation to convince legislators, granting agencies, law enforcement officials, etc.?

In addition, internal difficulties might be created by allowing selected exceptions to a general policy of required participation in the research program. We should point out that most of the patients' uncooperativeness is not willful or "anti-research" but results from a lack of responsibility on their part in meeting interview appointments, etc. This is a general problem at ARTC, and research is only one area affected.

However, dismissal is not the only possible sanction for non-cooperation. The alternative which we have selected is withholding of methadone. The research staff would make many attempts to obtain the inmate's cooperation before using this somewhat dramatic

measure. Even then, the inmate is told the day before that he will not receive methadone on the following day, unless he reports for his research interview. This procedure has just been begun and it is too early to report on its effectiveness.

D. What degree of validity should be accorded to a patients responses?

Clearly the results of the self-report interviews should not be accorded 100% validity. As we have indicated, validity may be affected by the identity of the interviewer, the timing of the interview, and the importance of the research to the overall program. In addition, the answers may be subject to exaggeration or under-representation because of failure of memory, embarrassment, fear of adversely affecting one's own position or that of the program. Much also depends on the nature of the information requested and the extent to which the patient desires to keep particular information to himself.

Some techniques for dealing with these problems have already been discussed with respect to the selection of the interviewer and timing of the interview. Validity may also be enhanced by including validity checks within the interview document and by comparing the responses with other sources of information (e.g., official records[32] and interviews with others). Common sense provides another check. If an addict has no other possible source of income (legitimate job, spouse, friends, welfare, veteran's payments, etc.), it is likely that he is using illegal means to support his habit. Moreover,

32. One patient, for example, boasted to his self-report interviewer that, while he had committed a large amount of crime, he had never been apprehended. A spot check of his police record indicated an extensive list of arrests.

if he has had relatively few reported arrests, there is still reason to give credence to his self-reports of additional crime (in many cases, daily crime).

Still, these checks did not allow a fine enough correction of the responses to determine an accurate level of true criminality. At most, the self-reports provided some basis for supplementing the official records and for striving to obtain further insights into the addict criminal subculture.

Confidentiality of the Data

Another factor which is likely to affect the validity of the self-reports is the extent to which the patients feel that the responses are kept confidential. This question of confidentiality was of prime concern to both the patients and the treatment staff. In our early discussions with these two groups about their reactions to the self-report questionnaire, the bulk of the comments dealt with the protection of the research data[33] -- not only with respect to the self-reports, but also regarding the arrest and disposition data.

Under the laws of most jurisdictions, the self-reports from subject to researcher probably do not qualify as confidential communications which are immune from subpoena.[34] In addition, the interviewers themselves may be subject to legal process. While the arrest and disposition data are already public records known to law enforcement authorities, broad circulation of them may prove

[33]. In fact, they were so concerned about this issue, that, in order for us to conduct the pre-test of the self-report questionnaires, we had to assure the respondents that their replies would be removed from the jurisdiction, i.e., kept at Harvard Law School.

[34]. See generally

embarrassing to the patient in relation to acquaintances, employer, or even the treatment center itself.[35] Furthermore, there is always the possibility that treatment personnel will place undue emphasis on such data in making program decisions on the patient. While we do not feel that we completely resolved the confidentiality problem, we took a number of measures toward that end.

We tried to protect the self-report data by developing good relationships with the law enforcement authorities and by framing the questions in such a way that the responses could not subject the interviewees to any legal action. The latter approach was necessary, because while informal agreements with the district attorney and the police not to go after the research data may be generally helpful, they were not likely to be binding in a particularly important and/or serious case. However, if the questions were designed so that only general information about a patient's level and types of criminal activity was sought, it was unlikely that this information would be helpful enough to the authorities to induce them to interfere with the research program. Of course, this tactic can only be used where detailed data on particular crimes is not necessary for research purposes. We felt that this was the case with the methadone project.

Furthermore, we warned each patient of the possible legal consequences of disclosing specific information about their participation in crimes for which they had not yet been apprehended

[35] There have been recent efforts to limit the distribution of records. See e.g., Matter of Smith, 63 Miss. 2d 198 (1970); Irani v. District of Columbia, 272 A. 2d 849 (1971); In re Alexander, 259 A. 592 (1969).

and cautioned them that we were not interested in specific crimes. While such warnings might have tended to inhibit complete frankness, we felt that we could still obtain fairly honest answers to the broad types of questions we were asking.

Another protective measure was the use of numbers (or multiple sets of numbers) instead of names on the report forms.[36] We also catalogued our arrest records in this way to ensure as much anonymity as possible. Of course, a conversion list from numbers to names must be maintained to facilitate the addition of supplementary material and to allow for the correction of errors, but access to this list can be restricted to one or two members of the research staff. (In fact, access to the research data generally should be severely limited to only those with a "need to know"). Anonymity of the data can also be maintained by destroying the original sources (such as the self-reports and arrest sheets), but this may not be desirable because those sources may be needed for later reference.[37]

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[36]. Elaborate measures can be taken to disguise individual identities. For example, computers can scramble all of the information according to a certain code; phony numbers and records can be inserted to confuse unauthorized persons; and the data can be secreted at locations removed from the research and treatment offices.

[37]. For example, after coding and computerizing a few hundred arrest sheets, we realized that we had improperly coded one item. To correct this error, we had to refer to the original arrest sheets. Had these been destroyed, we would have had to go through the rather arduous process of obtaining these records all over again.

In addition, reference to the original documents may be desirable in writing the final report. As historian Oscar Handlin stated, in lamenting the new modes of research, "The mounting piles of printout raise a barrier between the author and his subject. We know that numbers are not people; aggregations suppress particularities, and, in gaining what we can about the sums, we lose something about the constituent integers." Handlin, "History: A Discipline in Crisis?" American Scholar (Summer, 1971) 447, 456.

CHAPTER III

THE ADDICTION RESEARCH AND TREATMENT CORPORATION

The Addiction Research and Treatment Corporation (ARTC) opened its doors to Brooklyn area New York City heroin addicts in October, 1969. As its name implies, ARTC was founded with a dual purpose. The first being to offer a community-based ambulatory drug treatment facility to the heroin addict population of the Bedford-Stuyvesant (and surrounding) area of Brooklyn and the second being to evaluate the impact of such a program on both individual and community crime rates. The Bedford-Stuyvesant area was chosen because of the extremely high incidence of heroin addiction -- it is one of the highest drug-use centers in New York City -- as well as being equally noted for high incidence of crime in general. The proposal for such a program came jointly from the Office of the Mayor of New York City, and the Vera Institute of Justice. Funds were provided by NIMH, the Model Cities Program, and the City of New York.

The initial treatment modality at ARTC was methadone maintenance. Although conversations with ARTC's chief administrators in the summer of 1974 disclosed that the maintenance emphasis was then shifting towards one of early drug-freeness and that a substantial (estimated at 26 percent) number of program admittees

were at that time being administered methadone only as a detoxifying agent, the program was, at the outset, entirely a methadone maintenance facility. However, it must be noted that ARTC has always maintained a low-dose orientation.

As stated above, the ARTC facility is a limited community-based program, distinguishing it from the city-wide programs with numerous constituencies throughout greater New York City. The catchment area was initially made up of fourteen city health areas which roughly defined the Bedford-Stuyvesant/Fort Greene area of Brooklyn. The catchment area has since been expanded to include thirty four health areas (10 precincts). The program has decentralized (1972) so that the original facility at 937 Fulton Street is now only one of four similar treatment centers. In 1973, a Harlem component of ARTC began operations.

ARTC is further distinguished from many of the city-wide programs in that the admissions criteria provide remarkably few constraints for admittance to treatment. No screening process exists to weed out "trouble" cases such as those with poly-drug problems or histories of psychiatric treatment. This is in notable contrast to the Dole-Nyswander programs, and others of that model, that exercise a very high degree of selectivity in their admissions criteria (for a complete discussion see Epstein's Methadone: The Forlorn Hope, Public Interest, June 1974). There are, in fact, only four admissions criteria: 1) the patient must be at least

twenty-two years of age; 2) the patient must have made one prior attempt to terminate his/her heroin addiction; 3) the patient must have been addicted for two or more years; and 4) the patient must have a residency within the catchment area. The patients' demographic characteristics, necessarily imposed by the required residency within the catchment area, further mitigates against a high degree of selectivity. It has also been suggested that the close proximity of a walk-in neighborhood clinic to its patients limits the measurability of motivation, as compared to the city-wide programs where mere attendance, by patients living a considerable distance from the clinic is, in itself, a demonstration of a commitment to treatment. Therefore, it is difficult to make comparisons between the ARTC program and other types of methadone maintenance programs which emphasize high dosages for even more carefully selected populations of addicts. The screening criteria at ARTC being relatively lenient in comparison to other methadone programs, produces a population reflecting a wide gamut of social characteristics and experiences, ranging from the well-socialized addict to the hard-core criminal. It includes patients afflicted with problems of alcoholism. This spectrum is further differentiated by factors related to the sex and age of the patients. As stated, ARTC has no eligibility standards determined by research requirements which may a priori exclude high-risk applicants; nor do the patients appear to have joined the program primarily as a result of deferred prosecution, court

referrals or other legal pressure. All of these factors lead us to expect less impressive results in comparison to other types of methadone treatment programs. Consequently, the successes attributed to the ARTC patients cannot be generalized easily relative to more conventional types of methadone maintenance programs, although successes may be highly regarded with respect to the type of population being treated.

In keeping with other programs, ARTC does not rest its treatment on the mere daily dispensation of methadone. Rather, methadone is only a small part of the entire treatment regime which is intended to offer a panoply of social services. The addict patient thus becomes amenable to these services through the stabilizing effect of daily methadone doses.

Upon presenting him/herself for treatment the ARTC patient is interviewed by the Intake and Social Services Departments. At that time, the necessary background information is taken and initial recommendations for treatment are made. This would include possible participation in such services as individual counseling, assistance in job-finding and referrals to other community service agencies that may provide a particular service applicable to the individual

patient. These services are not, of course, mutually exclusive and a patient may be referred to one or many of these departments. In any event, the patient is also assigned to an individual counselor with whom he or she meets on a regular basis. (It was initially expected that each counselor would maintain a case load of 20-25 patients). Decisions on chemotheraphy are made by the medical unit. In 1972, ARTC adopted an open dosage policy, allowing the patient to receive information regarding the name and dosage of his or her medication.

The above enumerated services remain available to the patient, and he or she may take advantage of them at any time on either his or her own initiative or on recommendation from the counselor. Many of the programs involve participation by the staff as well as the patients. The Education Department, for instance, offered a variety of services directed toward preparing students for high school equivalency exams; and college preparatory classes, for those students with high school diplomas but who were lacking in basic skills or background instruction necessary for college entrance. One such college preparatory project was administered in conjunction with Fordham University. The Education Department was also responsible for seminars and programs dealing with drug abuse prevention which, although mainly directed towards staff, was available to patients. The Fulton Street facility, which was initially the only clinic, also maintains a library donated by the Ford Foundation.

Although the Education Department also handles some referrals to vocational training, this is largely the responsibility of Job Development. Job Development functions primarily by establishing liaisons with the local business community, thereby locating employment opportunities and placing patients in the jobs. They also locate appropriate training programs and vocational schools that will accept ARTC patient placement. One initial function of the job developer is to see to it that, where applicable, patients get social security cards.

ARTC also maintains an active legal department. In addition to handling the necessary legal issues associated with a non-profit corporation, the legal department participates actively in patient service, frequently representing patients in court. There was a shift in policy in 1972 that required patients to fulfill their other treatment obligations before availing themselves of legal services. It was anticipated that this would allow the legal department to function more effectively as a part of the patients' entire treatment program. The ARTC legal department has also actively participated, in conjunction with various law reform organizations, in cases challenging discrimination practiced against individuals with prior criminal records or histories of drug abuse.

The medical department, too, offers patient services. Additionally to supervising the chemotherapy and monitoring the daily urines, treatment and referral are available to patients with non-addiction related medical problems.

The bulk of these services remained headquartered at the Fulton Street facility after the 1972 decentralization program. From that base of operation the various staff make regularly scheduled visits to the other facilities.

In conclusion, ARTC is basically a low-dose methadone maintenance drug treatment center, with a very broad admissions policy so that its services are available to virtually the entire heroin-addict population of a geographically defined area of Brooklyn, New York, centering around Bedford Stuyvesant/Fort Greene. In this sense, ARTC differs somewhat from the norm, which tends to be a bit more selective. Alternately, the supportive services available at ARTC are roughly the same one would expect to find in most drug treatment facilities. Finally, it must be noted that to say such services are available is not, necessarily, to say patients are availing themselves of such services. The number of patients in educational services, according to ARTC's own quarterly report is a paucity. The limited success of job development is evident in patient employment statistics, reported elsewhere in this report. The fact that the legal department found it necessary to make participation in other services a prerequisite to offering its own service also says something about a general patient participation. While these are the problems one might expect, certainly they are not confined only to ARTC, thus it is necessary to point them out.

CHAPTER IV

OBJECTIVES OF THE CENTER STUDY

Goals

The major goals of the Center portion of the study are (1) to determine the absolute amount of decrease in patient criminal activity for the total population, both retainees and dropouts, subsequent to admission and treatment, (2) to identify specific patient groups who manifest the greatest improvement (reduced criminal activity), or lack of improvement based on personal characteristics prior to (or at) program admission and on treatment received, (3) to assess the relationship between the program and criminal justice agencies in the community, and (4) to deal with other questions which arise from the analysis of the data.

While many questions can and have been generated in an effort to satisfy these goals, the most significant questions are stated as follows:

1. Does ARTC treatment significantly reduce community criminal activity?
   a. Is patient criminal activity reduced to pre-addiction levels, or lower, thus having an impact on community crime rates.
   b. Are overall reductions in the criminal activity of patients reflected in decreased crime rates in the community?

2. Does ARTC treatment produce decreased criminal activity only for specific groups of patients and not others?
   a. What background factors are most related to patient success?
   b. What types of treatment are most likely to produce program success?
3. What is the relationship between the addicts as patients in the program and the criminal justice community?
   a. What are law enforcement attitudes toward the program?
   b. How do the courts respond to the addict?
4. Other questions.
   a. What is the relationship between addiction and crime, i.e., which comes first?
   b. What is the future of drug treatment programs of the ARTC type?
   c. What are the long-term solutions to the drug problem?

Needless to say, these questions lead to many others. However, these deal with the most important initial concerns. Related questions and issues will be reported on as time allows.

In this report we will summarize earlier analytical work done in response to these questions and present some of the more current findings based on the analysis of a four year follow-up cohort of 477 patients.

Earlier Findings

Many of the findings from earlier reports on the Center

evaluation of ARTC are referred to throughout this report as they relate to the work of the last year. These earlier findings are summarized here, since the evaluation has involved both short term projects and ongoing data analysis. In the July, 1973 report which was entitled "Changes in the Criminal Behavior of Heroin Addicts: A Two-Year Follow-Up of Methadone Treatment," Gila J. Hayim reported on her analysis of 357 ARTC patients who had been followed for two years through official criminal records. Program retention was about 40 percent up to two years after program entry. This was seen as low in relation to other programs. The average length of stay in the program was 15 months, and the reasons given for the lower retention rate were the more lenient ARTC admissions criteria which produces more program dropouts and the absence of specific legal pressures on patients to stay in the program:

> To summarize, the self-selection process of the patients at ARTC, the absence of strict screening criteria, and the absence of eligibility standards for research requirements render the study of the patient behavior at ARTC only minimally affected by constraints that can operate in favor of success. This is perhaps one reason why the ARTC addicts achieve much less impressive results than addicts in other major methadone programs...1

As with the present report, length of stay on the program was the principal analytical distinction between patients. The benefits of a continuous stay in the program are hypothesized to result in several incremental results:

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1. Gila J. Hayim, "Changes in the Criminal Behavior of Heroin Addicts: A Two Year Follow-Up of Methadone Treatment," July, 1973, unpublished mimeo., p.21.

> Patients exposed to the treatment environment for a reasonable length of time will be relieved of their craving for drugs and may begin to benefit from the rewards of employment opportunities, counseling, vocational training, and the other services offered by the program, inducing them eventually to abandon their former life style; and that all of these influences may produce a reduction in the criminal behavior of the patients.2

While retention was thus equated with success, several issues were raised which incline to complicate this relationship, particularly movement by dropouts to other programs and the presence of subtle legal pressures which tend to keep such patients on the program who have no genuine desire to change their life styles.

Findings for the total population were roughly comparable to those reported in the present analysis: sharp increases in criminal activity from pre-addiction to addiction periods, and apparent declines some time after program admission. The pre-admission year was found to be the peak year of criminal activity, and any subsequent decline in criminal activity appeared to be exaggerated in relation to that year, particularly in the case of drug offenses. Crimes of violence, including robbery, and crimes involving property, forgery, and prostitution maintained a relatively constant level of activity prior to program entry. The rates generated suggested that "addicts who select themselves for methadone treatment at ARTC are motiviated to do so, among other reasons, by a heightened demand for drugs which lead to activities that increased their risk of arrest."[3] An unexpected

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2. Ibid., p.23.

3. Ibid., p.35

increase in crimes of violence was found, and a relationship between these increases and excessive alcohol use was suggested.

A determination was made of the types of patients who benefitted most from ARTC treatment. The active patients (retainees over two or more years) were seen as largely responsible for any decline in charge rates from the second year after program entry. Particularly notable were decreases in drug possession, purchase and sale, and property crimes (burglary, larceny, shoplifting). Program dropouts also showed some decreases in drug offenses, but other crimes remained relatively constant, except for decreases in prostitution and forgery charges.

Age was not found to be a critical factor in retention:

> The findings suggest that it is the social and occupational legacy that the patient brings with him to the program -- rather than age -- which influences most his chances to remain longer.[4]

The influence of the patients' pre-program social experiences was found to be related to subsequent program success on criminal activity. The relationship between patient background and outcome on criminal activity measures has been finalized in this report. The creation of a four year follow-up cohort has allowed for the better definition of patient sub-groups which have been successful or unsuccessful in reducing their criminal activity.

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[4]. Ibid., p.23.

CHAPTER V

RESEARCH METHODS

While ARTC has recently moved to a philosophy of treatment which emphasizes moving patients from methadone maintenance to abstinence (after one year), in the early stages of the program methadone maintenance was the principal thrust. Therefore, most of the patients in the cohort population represent long-term methadone treated patients. As with most such programs, ARTC emphasized (and still does) that the following benefits should accrue to their patients: (1) decreased drug use of all kinds (2) decreased criminal activity, and (3) improved performance in several areas of social functioning, such as employment, family relationships, relationships with friends and associates (including criminal justice agencies), and improved use of time. Recognizing that this may not be the case for all those who submit to treatment, it was also generally held that those who remained in the program for a minimum period might receive some benefits from treatment. Estimates of desirable minimum periods of treatment ranged from three months to six months, although ARTC specifies no minimum. In any case, program retention is often linked to patient success or failure, i.e., the longer the treatment, the more successful the patient. Also, following the various "maturing out" or "burning out" hypotheses which have been proposed, advanced chronological age alone is often linked to program success. Such assumptions have been tested for the ARTC population.

The chief methodological problem in evaluating programs such as ARTC is the accurate measurement of the variables which are seen as related to program success. These can be generally defined as those indicating improved social performance. Aside from the issue of whether these are the most appropriate indicators, the collection of data for patients who have left the program is very difficult and time-consuming, often limiting the data to patients remaining on the program. Follow-up data in the present study was obtained from official records of criminal behavior, with all of their inherent problems of comprehensiveness and accuracy. Adding to this problem was the fact cited in Chapter II that there was no way to develop an appropriate control group against which to measure the performance of program patients. Thus, the random placement of addicts into experimental (treated) and control groups (untreated) was not possible. Further, there was no strictly comparable treatment modality to which addicts were referred for purposes of comparison. At this juncture all measures of patient progress (outcome performance) have been made against the patient's own level of functioning at the time of program admission (baseline).

Design. The first major goal of the analysis was to determine the overall impact of the program on the community. This was done through an analysis of individual patient arrest rates over time and through an examination of changes in community arrest patterns. The second major goal of the analysis was a determination of which

groups of patients improve the most on criminal activity over time based on background characteristics and types of treatment received. Prior to any presentation of the findings, it is necessary to define successful outcome, arrest rate, mean severity score, the time periods under consideration, the demographic and background variables used in the study, the population studied, data collection methods, and to explain the precinct study.

Successful Outcome. The principle outcome criterion for the Center study has been criminal activity as measured over time. While drug treatment studies have traditionally used decreased addiction as the primary evidence of successful outcome, the purpose of the Center study has been to show the influence of ARTC-type treatment on criminal activity. All other variables have been treated as independent or experimental variables in their relationship to the dependent variable of reduced criminal activity, which is "success" from a criminal justice system stand point.

Reduced criminal activity has been converted to two types of measures, both of which were based on the offenses offically recorded for patients by the New York City Police Department. They are the arrest rate and the mean severity score.

Analyses of the data to-date have used charge rates because it was felt that arrest rates were not as sensitive an indicator of criminal activity.[1] Arrest rates have been used in the present

1. Gila J. Hayim, Irving Lukoff, and Debra Quatrone, Heroin Use and Crime in a Methadone Maintenance Program, (U.S. Department of Justice, Law Enforcement Assistance Administration, February, 1973), Appendix A, pp.53-61.

study for two reasons: (1) Arrests and arrest rates are comparable with almost all other studies of this type, and (2) charges may be less sensitive than arrests. Due to changes in police policies during the period of the late 1960's when heroin use reached epidemic proportions, narcotic dealers and users may have been charged with more offenses per arrest to assure their removal from the streets. This assumption was tested using the present population. The results are shown in Table 1. For both the California and Brooklyn patient populations there is a tendency for charges to increase over time per arrest. This finding found confirmation in the examination of precinct arrest activity reported in Chapter VI. A dramatic increase in narcotic complaints was found in the ARTC catchment area precincts, which appeared to be an indication of a police crackdown on narcotics offenders. Had this crackdown been accompanied by increased charges, which it appears to have been, the use of charge rates might tend to indicate higher crime rates for the patient pre-addiction year (generally 1969 and 1970) than would have occurred if only arrest rates were used. If all charges were truly an indication of increased criminal activity then charges would have been considered a more sensitive measure. The choice was to use arrest rates for the reasons cited here and those which follow.

A further danger with the use of all charges per arrest was that they tended to have a "doubling" effect on the computation of the rate. For example, an individual might in a single arrest

TABLE 1

RATIO OF ARRESTS TO CHARGES IN BROOKLYN
AND CALIFORNIA METHADONE PROGRAM POPULATIONS
FROM BEFORE 1960 to 1969

Ratio of Arrests to Charges	BEFORE 1960		1960 to 1965		1966 to 1969	
	Number	Percent	Number	Percent	Number	Percent
Brooklyn						
1:1	1,053	87.2	1,110	81.7	1,419	68.0
1:2	150	12.4	214	15.8	441	21.1
1:3	5	.4	30	2.2	171	8.2
1:4	-		4	.3	46	2.2
1:5	-		-		10	.5
California						
1:1	632	85.7	757	76.0	1,499	64.2
1:2	83	11.3	146	14.7	501	21.5
1:3	18	2.4	61	6.1	198	8.5
1:4	2	.3	25	2.5	74	3.4
1.5	2	.3	7	.7	56	2.4

be charged with both burglary and the possession of burglary tools. While only one crime of burglary was actually being charged, the rate would reflect two such crimes. On the other hand, if it was a single charge of possession of tools, we did not believe that it constituted a property crime with the money-raising implications denoted by that category. In this sense, the crime of possession was also treated as a "violation" rather than as a "property crime." (These categories will be explained momentarily). Also, were the individuals in the above example in possession of a weapon, the assault "charge rate" would reflect violent or assaultive activity where none was actually performed. The charge used to compute the arrest rate was the one having the highest mean severity score, as discussed below.

Arrest rates tend to equalize differences in patient age, length of addiction, and criminal history for the three major time periods used. These rates provide a uniform yardstick with which to compare criminal activity across time periods. The major problem with them has been that there are no criminal juvenile records available prior to age 16. Therefore, only the period from age 16 on can be considered in the analysis. If the patient reports, for example, that his addiction began at age 15, he has no "pre-addiction period" for the purposes of the study because no criminal activity would be available in that period, and his "addiction period" charge rate would represent only the time from age 16 to program entry (possible only at age 21, with one exception). The time periods are defined

as follows with numbers of patients indicated for the two year cohort:

The period before addiction (pre-addiction): the period from age 16 to the onset of addiction; if addicted before (or at) age 16, there would be no pre-addiction period; 20.9 was the average age at onset for the present population (N=864; 126 patients were addicted before age 16).

The period during addiction: the period from age 16 or from the age of daily use of heroin (17 or over) whichever is greater, until entry into the program; within this period the second year and the year before program entry have been analyzed separately, (N=990).

Each patient's individual charge rate has been computed for each period, and for each subdivision indicated, based upon the number of charges brought over the number of years spent in each period, as shown in Table 1. If, for example, the fictitious figures in Table 2 were for the pre-addiction period, patient number 439 is the most serious offender, having achieved an average of one and one-fifth charge per year for a five year time period. And, the overall charge rate for all cases is .5, indicating an average of just over half a charge per pre-addiction year for the aggregate of these five cases.

Mean Severity Scores. While rates were considered the primary outcome measure, it was felt that they might lack sensitivity in showing significant improvements in criminal behavior over time.

TABLE 2

EXAMPLE OF COMPUTATION OF ARREST RATES

(all data are fictitious)

Patient Code Number	Number of Years Spent in the Designated Period	Number of Arrests for the Designated Period	Individual Rate
026	2	0	.0
187	4	2	.50
439	5	6	1.20
475	5	2	.40
550	6	4	.67
OVERALL RATE FOR DESIGNATED PERIOD (2.77 ÷ 5)			.55

That is, a reduction in the number of crimes committed in a given period may reveal little about the magnitude of those crimes. Surely, an individual who has been involved in three assaults prior to treatment has improved if after treatment he is involved in three petty thefts. In such a case, the rate of criminal activity would show no reduction, but there would have been a reduced level of seriousness which could be a result of ARTC treatment. Therefore, it was felt necessary to use some sort of severity scale to classify the charges officially recorded for each individual. This not only allowed for increased sensitivity in determining reductions in criminal activity over time, but it allowed for one offense out of each series of charges recorded per arrest to be designated as the offense for which the patient was arrested. This offense was used in computing the arrest rates previously discussed.

The problem was one of selecting the appropriate severity scale. The one used in the first two years of study was rejected in favor of the scale developed by Sellin and Wolfgang, who have done the most extensive work on offense seriousness measurement.[2] Their scale was based on the assigned ratings of about 800 policemen, university students, and juvenile court judges on 141 different offense events. The scale was developed for use in providing an

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2. Thorsten Sellin and Marvin E. Wolfgang, The Measurement of Delinquency (John Wiley and Sons, Inc., 1964); also, Marvin E. Wolfgang, Robert M. Figlio, and Thorsten Sellin, Delinquency in a Birth Cohort (Chicago: University of Chicago Press, 1972).

index of severity that could be used for adults as well as juveniles. The main advantage of the scale was that it provided a statistically and logically justified reconciliation of the problem of combining the frequency of crimes with the types of crime committed in a single mathematical value. The original Sellin-Wolfgang scale development has been summarized as follows:

> The initial development of each Sellin score was empirical and was based on 16,586 arrests. The "Cohort Study" used as its population all boys born in 1945 who lived in Philadephia from their tenth to their eighteenth birthdays. Nearly 10,000 boys were involved, one-third of whom had at least one contact with the police before their eighteenth birthdays. The records of the Philadelphia Department contain sufficient detail about the criminal event for which an arrest or other police contact was made to permit a computation for every police contact among these boys prior to age 18. Subsequently, it was computed for every arrest from age 18 to 25, but this was done only for a ten percent sample of the cohort population. The figure of 16,586 arrests is thus weighted so as to account for the fact that the ten percent sample was used for offenses at age 18 through 25, whereas 100% of the arrests prior to age 18 were used; the unweighted number was 10,583 arrests. 3

The original Sellin-Wolfgang scale could not be applied to the ARTC data, however, due to the paucity of information available from official records. In order to apply the scale we were assisted by the staff of the Criminal Justice Evaluation Project of New York City. They had devised a method of using the Sellin-Wolfgang scale based on consultation with Marvin E. Wolfgang and Robert M. Figlio, of the University of Pennsylvania. With their counsel and help, a scale was developed for each of the 26 categories of the Uniform Crime Reports using the data they had collected in their

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3. Robert Fishman et al, from the final report of the Criminal Justice Evaluation Project, unreleased, June 1975.

Philadelphia "Cohort Study". The derivation computed by Wolfgang and Figlio consisted of taking all arrests in a given UCR category and computing their seriousness scores. Each arrest had been scored on the basis of descriptive information in the record. The scores of all the arrests in a given UCR category were then added together and divided by the number of arrests in that category, and the mean seriousness score was the result. This procedure was repeated for each of the 26 categories for various age groups and for all age groups combined. The combined age group scores were used in the present analysis. They are shown in Table 3 . Each charge for each offender was assigned the Mean Seriousness Score (MSS) of the UCR category into which it was classified. While there were problems with the assignment of offenses to categories, it was felt to be the case that the Sellin scale was the best standardized instrument available for measuring the severity of criminal behavior and the only one which could resolve the problem of expressing frequency and type of arrest. Also, there were neither resources nor time available to develop a new measure of severity on a similar magnitude. The result was a scaling of offenses which allowed for their summation and the computation of a mean severity score for various population groups across the three time periods under consideration.

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4. Arrangements were made with Mr. Robert Fishman of the Criminal Justice Evaluation Project to whom we are indebted. Much of the above discussion is taken from the final report of that project.

TABLE 3

MEAN SELLIN SCORE (MSS) VALUES ASSIGNED TO
ARREST CHARGES BY UCR OFFENSE CATEGORIES

U C R Offense Category	Uniform Crime Reports Offense Number	Total Population score
Homicide	1	2928
Forcible rape	2	1533
Robbery	3	583
Aggravated assault	4	777
Burglary	5	303
Larceny-theft	6	206
Auto-theft	7	206
Other assault	8	206
Arson	9	206
Forgery & counterfeiting	10	420
Fraud	11	206
Embezzlement	12	206
Stolen Property	13	155
Vandalism	14	59
Weapons	15	264
Prostitution	16	210
Sex offenses	17	254
Narcotics	18	408
Gambling	19	71
Families & children	20	59
Driving under influence	21	109
Liquor Laws	22	66
Drunkenness	23	66
Disorderly conduct	24	41
Vagrancy	25	38
All other offenses	26	59

Offense Categories. Arrests and charges were placed in eight categories for purposes of analysis. A complete listing of these categories is in Appendix A. The major offenses (those found most often) in each category were:

1. Drugs
   a. Possession of Dangerous Drugs (1st through 4th)
   b. Selling of Dangerous Drugs (1st, 2nd, 3rd)
2. Property
   a. Grand Larceny (1st, 2nd, 3rd)
   b. Petit Larceny
   c. Burglary (1st, 2nd)
   d. Possession of Stolen Goods (1st, 2nd, 3rd)
3. Forgery
   a. Forgery (1st, 2nd, 3rd)
   b. Possession of Forged Instruments (1st, 2nd, 3rd)
4. Robbery
   a. Robbery (1st, 2nd, 3rd)
5. Assault
   a. Assault (1st, 2nd, 3rd)
   b. Rape (1st, 2nd, 3rd)
   c. Homicide
6. Prostitution
   a. Prostitution
   b. Promoting Prostitution

7. Threshold Offenses
   a. Possession of Weapons
   b. Possession of Burglary Tools
   c. Criminal Trespass
8. Violations
   a. Disorderly Conduct
   b. Loitering
   c. Gambling Offenses

The major change from the earlier reports has been the creation of the category of threshold offenses. This was done in order to make each category as "pure" as possible. Within each category, as previously construed, there were certain offenses which, although more serious than violations, were not necessarily indicative of the activity described by the category in which they were placed. An example is possession of weapons which was previously categorized as assault and made up a major portion of the offenses in that category. Other examples are possession of burglary tools, previously classified as a property crime, also loitering to use drugs, previously classified as a drug offense. All of these offenses were placed in the category of "threshold" offenses because they were indicative of the conduct but did not involve overt participation. Assault now represents only those acts which actually involve physical assault.

The other category most significantly affected by the reclassification was "Violations" with the inclusion of several reclassified

offenses. This category includes a wide variety of offenses that range in severity (according to the New York Penal Code) from "Violations," such as vagrancy, public intoxication, loitering, and disorderly conduct through the misdemeanor categories (A and B), including obscenity (A), unlawful assembly (B), and other offenses against public order. Also a few of the least severe felony offenses (D and E) that do not reflect activity in other categories. In addition, the violations category includes all gambling offenses, previously classified with prostitution and parole violations. "Attempts," which were previously classified as violations are now classified according to the nature of the crime attempted.

Demographic and Background Variables. In order to determine which groups of patients improve the most on criminal activity it was necessary to gather data on patient background and demographic characteristics and on the types of treatment received at the Addiction Research and Treatment Corporation. The background data might be used to predict success or failure on the program. The treatment variables were more representative of the traditional independent variables in that they represented attempts to change the condition of the patient so that he or she might achieve success (the reduction of criminal activity). The background and treatment variables used are as follows:

PRE-PROGRAM ENTRY VARIABLES:

Demographic: Age, sex, cultural background (race, ethnicity), family orientation (structure, education, occupation).

Background: marital, education, occupation/employment, earnings or financial support, medical complications or disabilities, religion and religious commitment, drug use background -- age of first use, types and cost of drugs used, length of drug "runs", times stopped or treated, alcohol use/abuse, criminal history -- types of crimes, number and severity of arrests and convictions, time served in jail or prison, parole/probation involvement.

POST-PROGRAM ENTRY VARIABLES

At Entry: type of entry (voluntary, involuntary), legal status.
Treatment: employment obtained, education obtained, help sought, type treatment received, intensity of treatment effort, methadone dosage, program retention, reason for leaving program.

Other variables will be derived from combinations of those given here, such as socio-economic status, multiple drug use, and the age/length of addiction combination (the "maturation" variable). Obviously many other variables could have been appended to this listing; however, these variables have been found from similar studies at ARTC and elsewhere to be among the most important in their relation to program success.[5]

Populations Studied. There were 991 patients on whom criminal activity was obtained through official records for a two year follow-up period after program entry. They entered the program between October 8, 1969, and June 23, 1971. The more intensive analysis focused, however, on 477 of these patients on whom official criminal activity was available for a four year period after program entry. These patients had entered the program between October 8, 1969, and July of 1970. As will be shown, the four year period of follow-up was critical to an adequate analysis of the data. The third

5. Carl D. Chambers, Dean V. Babst, and Alan Warner, "Characteristics Predicting Long-Term Retention in a Methadone Maintenance Program," Proceedings of the Third National Conference on Methadone Treatment, November 14-16, 1970, pp.140-143.

population studied was a group of methadone patients from the Santa Clara County,California, Methadone Treatment Program. Santa Clara County is located 60 miles south of San Francisco with a population of just over one million residents. The principle city is San Jose, which contains roughly half of those residents. The principal author of this study was the project director for a similar LEAA-funded study of the Santa Clara County program. That program began operation in February of 1970, and 277 patients who entered that program in 1970 and the first half of 1971 were used as a comparison group with the 477 ARTC patients. Although the Santa Clara County program accepted addicts at age 18 instead of 21, in almost all other respects the ARTC and California programs were very similar.[6] As will be discussed in the next chapter these populations were similar in age and length of addiction, differing primarily in ethnic/racial background.

Data Collection. Primary data collection was the responsibility of the evaluation team of the Columbia University School of Social Work which was headed by Dr. Irving Lukoff. The Columbia Team had the primary responsibility since they were conducting studies on the broader social implications of the ARTC drug treatment program. These studies include examinations of the social and psychological correlates of drug abuse as well as those factors leading to abstinence and eventual rehabilitation of the addict.

The Columbia data provided for the Harvard portion of the study and included the "Admission Record" required (and created by) the

6. "Social Evaluation and Impact Study of the Santa Clara County Methadone Treatment and Rehabilitation Program,"Final Report (July, 1973), American Justice Institute.

National Institutes of Mental Health, acquisition and coding of the official criminal records of patients (although severity scores were added at the Center), and methadone dosage and urine data (including retention) produced through the auspices of Creative Bio-Medics and the Yale University medical research team. Finally Columbia team interviewers administered a Criminal Evaluation Questionnaire (CREQ) which was developed at the Center. In addition to coding severity scores, Center staff provided the data on the California population and conducted two specific studies, one on police integration with addicts in one ARTC census tract and another on court practices with addicts in Brooklyn courts. The details of these studies are presented along with their findings.

CHAPTER VI

FINDINGS

There are six major areas in which findings will be presented: (1) population characteristics, (2) reductions in criminal activity, (3) characteristics related to outcome, (4) self-reported criminal justice system involvement, (5) the relationship between crime and addiction, and (6) the relationship between addicts and the police and courts in Bedford-Stuyvesant/Fort Greene. A summary and conclusions will be presented in Chapter VII.

(1) Patient Population Characteristics

The distribution of patients by their background and demographic characteristics is shown in Tables 4 and 5 for the two year (990) and four year (477) follow-up groups of patients. The sample population, who represent the first 477 patients entering the program, tended to be older and addicted longer. They were also better educated and somewhat more likely to have been employed at program entry. These differences were so small, however, that they do not preclude generalization of findings to the total population of ARTC patients.

It is not surprising to find a great deal of criminal justice system involvement; 88.5 percent of the total population reported being arrested at some time in their lives, 61.5 percent ever convicted, and 65.5 percent having done time in a jail, prison, or penitentiary, with a mean stay of about three years.* Heroin use

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*It is not clear whether this time represented detention time and sentenced time combined, or just the latter.

TABLE 4

CHARACTERISTIC	TOTAL POPULATION (N=990)		SAMPLE POPULATION (N=477)	
	MEAN	6	MEAN	6
Times ever arrested	6.2	6.8		
Times ever convicted	3.6	5.0		
Months ever in jail, prison, penitentiary	34.9	48.3	39.2	48.8
Age first used heroin	19.9	4.7	20.2	5.0
Age first daily heroin use	21.3	5.1	21.3	5.2
Years of addiction	9.9	7.0	11.8	7.4
Age at program entry	31.2	7.8	32.7	7.8

TABLE 5

CHARACTERISTIC	TOTAL POPULATION PERCENT DISTRIBUTION	SAMPLE POPULATION PERCENT DISTRIBUTION
SEX		
Male	81.1	79.8
Female	18.9	20.1
CULTURAL BACKGROUND		
Caucasian	9.3	13.4
Black	77.6	78.2
Spanish-speaking	12.5	8.4
Other	.6	-
MARITAL STATUS		
Married	53.3	59.3
Other	46.7	40.7
HAVE HIGH SCHOOL DIPLOMA	30.3	37.5
EMPLOYMENT IN YEAR PRIOR TO ENTRY		
Full 12 months	8.0	11.6
1-11 months	35.8	33.5
Completely unemployed	56.2	54.8
NO PRESENT OCCUPATION REPORTED	71.3	71.9

began at about age twenty, with daily use starting approximately a year later. The average years of addiction is about ten for the total population, and almost twelve for the sample population. Program admission was at age thirty-one for the total population and almost age thirty-three for the sample population. Four out of five patients were male and nine out of ten were Black or Puerto Rican. As the program developed, fewer Caucasians entered; this is shown in Table 5 where there is a 4 percent drop in Caucasians even when the total population percentage is inclusive of the sample. About half the patients were married. The population and the sample showed a very poor education and employment record. (Appendix B contains more data on the population characteristics of the total population).

Comparisons with the Brooklyn Community. Before the evaluator can measure success (or the lack of it) he must have criteria measures that serve as a standard. For this study (and we believe for any drug study) we have chosen the community in which the patients live -- in this case the Bedford-Stuyvesant/Fort Greene area of Brooklyn, New York. When asking how much "better" a community-based, out-patient drug rehabilitation program can make a patient, it would be unrealistic for funding services or evaluators to expect that a patient do better than other members of the community in which he resides. With this in mind, we have undertaken a demographic study of the catchment area of the Brooklyn ARTC clinic

in order to make comparisons, where possible between the community as a whole and the ARTC patients (at entry).

The bulk of the demographic materials have been gathered through the volumes of "Employment Profiles of Selected Low-Income Areas"[1] published by the Bureau of the Census. Within the Brooklyn Borough of New York City, three areas were chosen for the census study. The data presented here are from Area II, which closely parallels the ARTC catchment area. Appendix D is a map of Brooklyn which outlines both the ARTC and the Census areas in question. Although the ARTC area appears to extend to what includes much of Area III in the census study, in actuality, the overwhelming majority of patients live within Area II. A detailed breakdown of the patient population dispersement by census tract is found later in this Chapter. The census material was published in January, 1972, but was gathered between August, 1970 and March, 1971. The patient comparison data is self-report information taken from the NIMH Admission Forms. The 991 patients reported on were admitted between October 8, 1969 and June 23, 1971.

Appendix C-1 shows the population breakdowns by ethnicity and sex. The community population of 149,920 includes all those between the ages of twenty-two and forty-four; women comprise 58.5% of the community population but represent only 18.9% of the patient population. This was not unexpected. However, the latest city health

1. Employment Profiles of Selected Low-Income Areas, Brooklyn Borough, New York City, Bureau of the Census, (Washington, D.C., 1972)

department figures indicate women are becoming increasingly involved with drugs (opiates) over time. There was no significant difference in black representation between the patient population and the community (78.2% of the community and 77.6% of the patient population). The Spanish-speaking population is somewhat underrepresented (14.8% to 12.5%) and there are a greater number of whites in the program (9.3% to 5.3%) than would be expected.

Appendices C-2 and C-3 chart educational attainment by ethnicity and sex, respectively. The community population of 226,548 represent all those aged twenty-five or more. The census data was gathered in a manner that precludes a finer breakdown with respect to age.* Assuming that a high school diploma is the most significant factor in educational attainment, at program entry, patients are very close to the community norm (30.3% of the patients as against 33.6% of the community), with Spanish patients above the community norm. The patient group also shows higher attainment through the third year of high school (this category includes those completing either the 9th, 10th, or 11th grades), although this may be somewhat deceptive and indicative of only the more recent concepts of compulsory education, as the community group includes only people aged twenty-five and over. For both populations, the black groups have the highest percentage of high school graduates, while both Spanish-speaking groups have the lowest. In the community, there is a minor inversion at the post high school

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1. The patient N of 983 in Appendix C-2 (educational attainment) does not include the six ethnic group "others" as the number is too small for valid comparison. These six are, however, included in Appendix Table C-3 (educational attainment by sex). There are two patients excluded from both charts for lack of data.

level, where the whites have the higher attainment percentage. This is not true, however, with regard to the patient population, where the whites not only fail to measure up to their community counterparts, but also fail to meet even the program norm. As illustrated in Appendix Table C-3, women do not achieve as highly as men in either group. Also, when males are taken alone, the difference between the patient group and the community becomes even greater; 31% patient high school graduates as compared to 36.6% in the community.

Appendix C-4, which charts employment activity by weeks during the twelve month period prior to the interview date, illustrates marked differences between the male patient population and the community (data is broken down only by black and white categories in order to conform to the census data). Defining full time employment as forty weeks or more per year, 77.9% of the community could be considered full time employees while only 13.1% of the patients were employed on a full time basis. Whereas only 16.9% of the community were employed less than twenty-six weeks, 79.1% of the patients reported less than half year employment. Over 50% of the male patient population were not employed in a single week in the year prior to entry, while only 10.1% of the community showed no employment for the same period.

Appendix Table C-5, illustrates the major occupation of employed males. The community population of 50,733 includes males between the ages of 22-44. The patient population is broken down into three

groups defined as pre-addiction, during addiction, and at program entry date. The types of employment are defined according to the following five categories, which conform to the categories used in both the census data and the NIMH admission form: (1) professional, business/managerial; (2) sales/clerical; (3) skilled manual; (4) semi-skilled; and (5) unskilled. While there is a significant difference across category one, there are fewer differences than might be expected in categories 2-5. Although in the entry date patient group there is a marked trend toward the unskilled category.

In examining the data presented here, one should read with not only an eye for the differences between the patients, at entry, and the community as a whole, but one should notice closely the facts of the depressed condition of the neighborhood in general. It is only by doing so that one can begin to comprehend not only the patients' backgrounds and the possibilities for their future, but also the very difficult job required of the Addiction Research and Treatment Corporation staff.

(2) Overall Crime Reductions

One of the primary objectives of the evaluation was to determine the overall impact of the program in reducing criminal activity both for the individual patients and for the community as a whole. The findings presented here deal first with reductions in individual criminal activity as determined by patient arrest rates and mean severity scores over the pre-addiction, addiction, and after program entry periods. A discussion

of reductions in community criminal activity in the ARTC catchment areas follows, the purpose of which was to determine the impact of any individual criminal activity reductions on the total community.

Arrest Rates and Severity Scores. Tables 6 through 11 and Appendix Tables E-1 through E-4 present findings based on arrest rates and severity scores for the three periods, including the first and second years before program entry (part of the addiction period). The patterns of arrest rates found in earlier reports were modified somewhat and the increased follow-up period was found essential to a complete analysis. As with the charge rates previously used, arrest rates rise significantly from the pre-addiction to the addiction periods for the total population, and for males and females (Table 6); arrest rates increase even more in the year prior to program entry and after two years begin to decrease until they are below those for the pre-addiction level for males but not female patients, a finding which will be discussed momentarily.

The importance of the four year follow-up lies in the examination of the non-drug rates, which do not begin to show a decline until the third year after program entry. Much of the initial decline in criminal activity which is noted after the second year is attributed largely to decline in drug crimes. This decrease makes the treatment appear to have more impact than it has produced in that period. It may be hypothesized that much of the initial post entry decline might have occurred in any event, since the

TABLE 6

ARREST RATES, MEAN SEVERITY SCORES, AND NUMBER ARRESTED BY PERIODS FOR THE BROOKLYN, NEW YORK, TOTAL POPULATION, MALE AND FEMALE (N=477)

TYPE ARREST RATE AND SEVERITY	PERIOD BEFORE ADDICTION (N=737)		ADDICTION PERIOD (N=473)						YEAR AFTER PROGRAM ENTRY (N=473)							
			TOTAL PERIOD		YEAR BEFORE ENTRY				FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR	
					SECOND		FIRST									
	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.
ARREST RATE																
All Arrests-Total	.24	203	.53	407	.51	160	.82	222	.66	178	.52	150	.25	80	.12	42
All Arrests-Males	.27	180	.54	333	.47	127	.85	180	.67	146	.52	125	.26	63	.12	33
All Arrests-Females	.10	23	.48	74	.65	33	.73	42	.65	32	.52	25	.21	17	.13	9
Non-Drug Total	.24	190	.32	360	.30	102	.45	136	.38	124	.39	121	.20	67	.10	38
Non-Drug Males	.28	171	.31	293	.25	75	.43	105	.37	97	.38	100	.19	51	.09	29
Non-Drug Females	.08	19	.34	67	.52	27	.53	31	.45	27	.43	21	.20	16	.14	9
MEAN SEVERITY																
All Arrests-Total	135.8	203	264.7	407	105.6	160	135.9	222	124.3	178	105.2	150	55.8	80	28.8	42
All Arrests-Males	148.4	180	275.6	333	108.8	127	142.5	180	134.8	146	110.7	125	58.8	63	25.7	33
All Arrests-Females	85.6	23	219.0	74	191.7	33	108.4	42	81.8	32	82.3	25	43.9	17	40.8	9
Non-Drug Total	115.1	190	175.6	360	51.2	102	50.5	136	67.3	124	79.8	121	43.3	67	24.8	38
Non-Drug Males	129.3	171	181.7	293	47.9	75	48.5	105	71.2	97	81.3	100	44.2	51	20.6	29
Non-Drug Females	58.7	19	149.5	67	63.7	27	58.2	31	51.3	27	73.0	21	39.6	16	40.8	9

NOTE: Number ("NO.") represents only those patients involved in criminal activity (officially) in the period shown; the rate is based on the total number of patients in each period, as is the severity score.

TABLE 7

ARREST RATES, MEAN SEVERITY SCORES, AND NUMBER ARRESTED BY PERIODS FOR THE SANTA CLARA COUNTY, CALIFORNIA, TOTAL POPULATION, MALE AND FEMALE PATIENTS (N=277)

TYPE ARREST RATE AND MEAN SEVERITY	PERIOD BEFORE ADDICTION (N=243)		ADDICTION PERIOD (N=271)						YEAR AFTER PROGRAM ENTRY (N=271*)			
			TOTAL PERIOD		YEAR BEFORE ENTRY				FIRST YEAR		SECOND YEAR	
					SECOND		FIRST					
	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.
ARREST RATE												
All Arrests-Total	.41	101	3.28	231	1.22	137	1.23	150	1.55	156	1.14	161
All Arrests-Males	.47	90	3.81	195	1.28	117	1.31	131	1.60	135	1.15	131
All Arrests-Females	.11	11	.88	36	.94	20	.88	19	1.30	21	1.06	30
Non-Drug Total	.36	96	2.19	212	.87	115	.75	115	1.17	140	.90	145
Non-Drug Males	.42	86	2.56	183	.93	102	.81	103	1.25	124	.89	117
Non-Drug Females	.09	10	.47	29	.58	13	.48	12	.80	16	.96	28
MEAN SEVERITY												
All Arrests-Total	91.3	101	217.0	231	116.7	137	143.2	150	130.2	156	93.2	105
All Arrests-Males	102.6	90	220.2	195	118.5	117	153.2	131	134.2	135	96.1	89
All Arrests-Females	41.8	11	198.2	36	106.4	20	96.4	19	109.7	21	78.5	16
Non-Drug Total	79.9	96	148.3	212	73.2	115	87.6	115	98.5	140	65.6	88
Non-Drug Males	90.1	86	156.0	183	78.0	102	98.0	103	104.0	124	70.0	76
Non-Drug Females	34.9	10	111.1	29	50.5	13	40.0	12	72.4	16	45.5	12

NOTE: Number ("NO.") represents only those patients involved in criminal activity (officially) in the period shown: the rate is based on the total number of patients in each period, as is the severity score.

TABLE 8

ARREST RATES, MEAN SEVERITY SCORES, AND NUMBER ARRESTED BY PERIODS FOR THE BROOKLYN, NEW YORK, TOTAL POPULATION BY AGE GROUPS (N=477)

TYPE ARREST RATE AND MEAN SEVERITY	PERIOD BEFORE ADDICTION* (N=423)		ADDICTION PERIOD (N=450)						YEAR AFTER PROGRAM ENTRY (N=450)							
			TOTAL PERIOD		YEAR BEFORE ENTRY				FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR	
					SECOND		FIRST									
	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.
ARREST RATE																
All Arrests, 30+	.24	128	.47	256	.46	89	.71	121	.53	95	.42	79	.19	43	.11	26
All Arrests, 22-29	.27	69	.60	132	.57	60	.96	89	.81	75	.65	61	.33	31	.15	15
All Arrests, ≤ 21	.32	6	.60	19	.56	11	.87	12	.87	8	.87	10	.52	6	.04	1
Non-Drug, 30+	.17	128	.29	231	.27	55	.40	73	.27	74	.28	59	.14	35	.09	22
Non-Drug 22-29	.27	62	.33	112	.35	43	.53	55	.52	57	.52	53	.25	26	.13	15
Non-Drug, ≤ 21	.41	6	.41	17	.19	4	.62	8	.71	7	.91	9	.57	6	.05	1
MEAN SEVERITY																
All Arrests, 30+	134.8	128	264.3	198	93.7	89	108.3	121	111.6	95	85.4	79	44.1	43	27.8	26
All Arrests, 22-29	140.0	69	262.7	132	116.3	60	155.1	89	145.3	75	143.9	61	79.1	31	31.4	15
All Arrests, ≤ 21	117.4	6	248.4	19	169.3	11	124.4	12	87.9	8	124.4	10	57.0	6	4.7	1
Non-Drug, 30+	115.2	128	165.4	231	43.9	55	43.4	73	56.7	74	58.7	59	29.7	35	20.5	22
Non-Drug, 22-29	117.9	62	192.2	112	62.9	43	61.8	55	89.5	57	123.1	53	64.4	26	30.3	15
Non-Drug, ≤ 21	91.9	6	186.8	17	45.1	4	48.0	8	52.1	7	106.6	9	57.0	6	4.7	1

NOTE: Number ("NO.") represents only those patients involved in criminal activity (officially) in the period shown: the rate is based on the total number of patients in each period, as is the severity score.

TABLE 9

ARREST RATES, MEAN SEVERITY SCORES, AND NUMBER ARRESTED BY PERIODS FOR THE SANTA CLARA COUNTY, CALIFORNIA TOTAL POPULATION BY AGE GROUPS (N=277)

TYPE ARREST RATE AND MEAN SEVERITY	PERIOD BEFORE ADDICTION (N=243)		ADDICTION PERIOD (N=271)						YEAR AFTER PROGRAM ENTRY (N=271*)			
			TOTAL PERIOD		YEAR BEFORE ENRTY				FIRST YEAR		SECOND YEAR	
					SECOND		FIRST					
	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.
ARREST RATE												
All Arrests, 30+	.70	54	.97	90	.92	49	1.02	57	1.22	58	.99	59
All Arrests, 22-29	.28	39	1.37	107	1.49	65	1.29	67	1.43	68	1.25	76
All Arrests, ≤ 21	.20	8	12.74	34	1.17	23	1.25	26	2.12	30	1.08	26
Non-Drug, 30+	.66	52	1.08	89	.64	41	.64	45	.99	42	.78	53
Non-Drug, 22-29	.23	36	.91	96	1.05	56	.77	51	1.04	60	1.00	69
Non-Drug, ≤ 21	.18	8	8.48	27	.83	18	.73	19	1.58	28	.81	23
MEAN SEVERITY												
All Arrests, 30+	119.9	54	192.4	90	96.7	49	110.7	57	99.2	58	68.8	37
All Arrests, 22-29	70.2	39	234.2	107	135.7	65	151.7	67	131.2	68	34.5	45
All Arrests, ≤ 21	55.5	8	195.4	34	112.8	23	170.0	26	167.0	30	149.8	23
Non-Drug, 30+	115.3	53	133.7	89	55.6	41	54.6	45	66.5	52	50.9	30
Non-Drug, 22-29	50.7	39	159.2	96	86.0	56	88.2	51	93.1	60	63.7	39
Non-Drug, ≤ 21	50.3	8	119.8	27	64.6	18	107.6	19	144.3	28	116.6	19

NOTE: Number ("NO.") represents only those patients involved in criminal activity (officially) in the period shown; the rate is based on the total number of patients in each period.

TABLE 10

ARREST RATES, MEAN SEVERITY SCORES, AND NUMBER ARRESTED BY PERIODS FOR THE BROOKLYN, NEW YORK TOTAL POPULATION BY OFFENSE CATEGORIES
(N=477)

OFFENSE CATEGORIES	PERIOD BEFORE ADDICTION		ADDICTION PERIOD						YEAR AFTER PROGRAM ENTRY							
			TOTAL PERIOD		YEAR BEFORE ENTRY				FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR	
					SECOND		FIRST									
	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO	RATE	NO.	RATE	NO.
Drugs	.02	51	.21	343	.20	81	.37	130	.28	97	.13	51	.05	24	.02	7
Property	.06	81	.13	243	.09	34	.14	48	.12	42	.11	39	.05	19	.02	7
Forgery	*	4	.02	54	.03	12	.02	6	*	2	*	2	.01	3		0
Robbery	.01	20	.01	46	.02	8	.01	4	.02	9	.03	14	.03	9	.01	6
Assault	.03	55	.02	85	.02	7	.02	7	.05	22	.06	26	.04	18	.01	6
Prostitution	*	1	.03	35	.08	17	.07	20	.04	18	.02	8	*	1		0
Threshold	.02	30	.02	81	.02	9	.04	17	.04	16	.04	15	.01	4	.01	7
Violations	.10	110	.09	233	.05	26	.16	58	.11	44	.13	49	.06	23	.05	16
TOTAL RATE	.24		.53		.51		.83		.66		.52		.25		.12	
NON-DRUG RATE	.24		.32		.30		.45		.38		.39		.20		.10	
TOTAL SEVERITY	135.8		264.7		105.6		135.9		124.3		105.2		55.8		28.8	
NON-DRUG SEVERITY	115.1		175.6		51.2		50.5		67.3		79.8		43.3		24.8	

NOTE: Number ("NO.") represents only those patients involved in criminal activity (officially) in the period shown; the rate is based on the total number of patients in each group, as is the severity score.

*Less than .01; no rate is indicated by a "0" in the number column.

TABLE 11

ARREST RATES, MEAN SEVERITY SCORES, AND NUMBER ARRESTED BY PERIODS FOR THE TOTAL SANTA CLARA COUNTY, CALIFORNIA, POPULATION BY OFFENSE CATEGORIES (N=277)

OFFENSE CATEGORY	PERIOD BEFORE ADDICTION (N=243)		ADDICTION PERIOD (N=271)						YEAR AFTER PROGRAM ENTRY (N=271)			
			TOTAL PERIOD		YEAR BEFORE ENTRY				FIRST YEAR		SECOND YEAR	
					SECOND		FIRST					
	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.
Drugs	.04	36	1.10	195	.35	61	.48	88	.37	65	.24	48
Property	.10	41	.92	147	.32	56	.26	53	.38	59	.07	13
Forgery	*	5	.05	53	.04	11	.04	10	.05	8	.17	43
Robbery	.01	9	.02	46	.01	2	.01	2	.03	6	.02	4
Assault	.02	22	.05	58	.03	6	.06	11	.07	12	.23	58
Prostitution	*	2	*	4		0	*	1	.01	2		0
Threshold	*	3	.01	19	.01	3	.02	4	.02	5	*	1
Violations	.22	82	1.13	192	.47	82	.36	68	.62	97	.42	83
TOTAL RATE	.41		3.28		1.22		1.23		1.55		1.14	
NON-DRUG RATE	.36		2.19		.87		.75		1.17		.90	
TOTAL SEVERITY	91.3		217.0		116.7		143.2		130.2		93.2	
NON-DRUG SEVERITY	79.9		148.3		73.2		87.6		98.5		65.6	

NOTE: Number ("NO.") represents only those patients involved in criminal activity (officially) in the period shown; the rate is based on the total number of patients in each group, as is the severity score.
*Less than .01; no rate is indicated by a "0" in the number column.

addict may have reached drug crime peak prior to program entry. The point at which non-program influenced decline, or "natural" decline, stops and program intervention becomes a factor, cannot be determined without a control group population. One might assume an unassisted decline in criminal activity to at least the addiction level (total period), particularly if there was no longer a serious habit to support. Therefore, a decrease in criminal activity to the pre-addiction level was seen as the desired goal. In this sense, the ARTC program showed apparent success at the fourth year after program entry. (The pre-addiction level was not achieved for the total population, males or females, at the third year after program entry).

As with arrest rates, a similar pattern was found for severity scores, although their marked decline began in the third year after program entry.

It is, of course, possible that the decline in criminal activity as measured by arrests is a reflection of changes in police arrest policies regarding drug addicts rather than a result of the treatment program. The declining arrest rates appear to show the effects of both of these influences. Overall narcotic arrests decreased 39 percent from 1971 to 1972 due to changes in police policy.[1] This policy stated that narcotic arrests would be the primary concern of the Narcotics Division which would concentrate

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[1]Crime Analysis Division, New York City Police Department, "Statistical Report, Narcotics, New York City, 1972." p. 2. (Mimeo.)

its efforts on higher levels of drug activity, i.e., major dealers and distributors. This was coupled with an apparent feeling on the part of the patrolman that minimal levels of addiction would have to be tolerated and attempts made to refer known addicts to treatment programs in lieu of arrest. An analysis of total arrests, and those for drug and non-drug crimes, during the first, second and third year after program entry for those admitted in 1969 and also 1970 revealed evidence of this joint effect of policy change and program treatment. The yearly comparison of the experience of the 1969 compared to the 1970 sample shows a rate reduction in addition to that which might be attributed to the shift in police arrest policies. A similar comparison using crime severity scores led to the same conclusion.

Another complication with the comparisons across time is that more recent police records may not be complete. Analysis recently released by our Columbia University colleagues, Lukoff and Kleinman, suggests that the third year rates might increase by as much as one-third if we were able to recheck the records in another year or so. This would of course weaken the decline in crime shown in the data, even though rates for earlier periods would increase slightly also. Still such increases would not wipe out completely the downward trend that begins in the third year. The third year rates would end up somewhere between the pre-addiction rates and the rates for the total addiction period. The fourth year rates might be expected to increase by perhaps four-fifths. This would affect the overall pattern of trends similarly to the change in third year rates. This complication applies only to the arrest rates. Since the severity scores are averaged across

recorded arrests, randomly missing data does not systematically affect the mean severity scores.

Both arrest rates and severity scores were computed for the California population and are shown in Table 7. As indicated earlier, California patients differ from Brooklyn patients primarily in their cultural background. California patients were 50 percent Caucasian, 6 percent Black, and 43 percent Spanish (Mexican-American descent). Brooklyn patients were 13 percent Caucasian, 78 percent Black, and 8 percent Spanish (Puerto Rican descent). The Californians were younger -- 29 years as opposed to 33 years (Brooklyn) average age at entry, and had used drugs a shorter period of time -- 9 years as opposed to 12 years (Brooklyn) at entry. This was partially due to the fact that California patients could enter the program at 18, and the age of entry was 21 in Brooklyn. Just over half were married in each group and each had about the same proportion respecting a high school diploma.

The overall patterns of arrest rates and severity scores were very similar. However, arrest rates were much higher for the California population with their severity scores lower on the average. An examination of Tables 10 and 11 show that increased arrests for violations, property crimes, and drug offenses account for these differences. In other words, California addicts were arrested more times per year but for less severe types of crimes on the whole. Brooklyn addicts, on the other hand, were arrested less often, but when arrested it was for a more severe type of crime.

Examination of the rates in Table 7 show that the California population did not decline in criminal activity until the second year after program entry. No data was available after that period.

While the non-drug crimes do not show the persistence found for Brooklyn patients, they do not decline as much as the total rates, and the female population shows an increase in rate but not severity.

Tables 8 and 9 provide additional information on rates and severity based upon age groups. For the Brooklyn patients higher arrest rates belonged to the younger patients until the fourth year after entry. The severity scores showed, however, that older patients were somewhat more likely to be arrested for more severe crimes. The pattern was mixed, however. The rates for the Californians were similar, but greater severity was attributed largely to the younger patients. The effects of age will be examined in much more detail in a subsequent section of findings.

What remains is a brief discussion of each offense category for both populations, male and female. The rates cited are taken from Tables 10 and 11 and Appendix Tables E-1, E-2, E-3, and E-4. The following results should be qualified to take account of the possible lag in police recording mentioned earlier, though it is still not clear how this would vary for different offenses.

Drug Arrests. As indicated, this category of arrest rates shows the greatest fluctuation over time. Only for the female population was the decrease from the pre-addiction to the fourth year after entry significant, though this is an overly stringent and perhaps unrealistic standard. For the total population, males and females in both California and Brooklyn, the pre-entry "crisis" occurred in drug arrest rates -- all increases were significant at the .01 level or better for the pre-addiction period to the

Property Arrests. Property crimes were second in level of fluctuation over time. Decreases from the pre-addiction to the fourth year after entry were significant at the .001 level for the total population and for males -- not for the females, whose property crimes rate increased temporarily after program entry. This was true for both populations.

Forgery Arrests. While forgery arrest rates showed a significant increase for all groups in both populations from the pre-addiction to the addiction periods, there was movement back to the pre-addiction level prior to program entry. Forgery was not found often in any period.

Robbery Arrests. While this category of offense showed several participants over time, the arrest rates remained relatively low and very stable for both populations, and males and females.

Assault Arrests. This category of arrest rates accounted for the inability of female patients to return to the pre-addiction level for non-drug offenses. While not significant for the total population, male (Brooklyn) patients showed a significant reduction in assault rate for the pre-addiction period to the fourth year after program entry (.01 level of significance). The increase in assault rate for females was evident for both populations, although much more pronounced in the California population. Male California patients also showed an increase in their assault rate for the first to second year of treatment, as did Brooklyn males, although the

fourth year of treatment showed a decline for the latter group. The Brooklyn female assault rate remained somewhat stable throughout the fourth year after entry, although the numbers of women involved were very small. One can only speculate on the reasons for the persistence of assault arrests in female patients. It may be related to their decreasing rate of prostitution which possibly puts a strain on their relationships with the men in their lives.

Prostitution Arrests. This was almost entirely the province of the female patients, although arrests for pimping were found for Brooklyn males. No pimping arrests were found for the California population. Women decreased to the pre-addiction level since pre-addiction prostitution arrests were rarely found. In contrast to the drug offenses, the increase from pre-addiction to addiction rates was more pronounced for women in this category. While one questions whether addiction creates prostitutes, it certainly made them more subject to official arrest.

Threshold Arrests. This category remained relatively stable over time with a return to the pre-addiction level for both Brooklyn and California males and for the total populations.

Violation Arrests. For the total population and for males only there was a decreasein arrest rate which was significantly lower than the pre-addiction period (for Brooklyn). Violations remained somewhat persistent for females after the first year of treatment.

Conclusions. It is evident from the data on arrest rates and severity scores that these patients declined in their criminal activity subsequent to their entry into ARTC. The process was not immediate. It appeared to take more than two years for declines in criminal activity to appear in the data. The data

to be presented in the section following the data on precinct criminal activity will deal with the question of which patients were helped the most and which pre-treatment and post-program entry factors were involved. However, some precautions must be stated here. First, the population involved here was an average age of almost 33, with an addiction history spanning almost thirteen years on the average. Without a proper control group it is difficult to know how much of the decrease found here can be attributed to the effects of either methadone or any other aspect of ARTC treatment. In fact, about two-thirds of the individuals reported as "New Cases" to the Narcotics Register in 1970 were aged 25 or less. Is the program impacting on the population which may be less motivated to treatment and which may also be the most crime-prone? And secondly, perhaps it is appropriate to invest our resources in only those patients who are more motivated to treatment, if the above were the case. The following section may shed more light on the issue.

Precinct Crime Data. However difficult it is to determine the actual effect of a methadone maintenance program on the subsequent criminal conduct of patients, this is still a much easier task than assessing its effect on community crime rates. We have already noted the many hazards involved in accurately interpreting the effects on addicts of an ARTC type program the farther one is forced to depart from the classic experimental control research design. This difficulty in reaching trustworthy judgments is even greater in the case of community crime rates since there are so many other factors which may intervene to change these rates at the same time. For example, changes in police manpower, patrol procedures or reporting practices may make the crime rate rise or fall independent of the effects of

a methadone program. Community changes in employment opportunities, housing developments, population composition and mobility, etc. constitute only a few of the variables that must be taken into account in interpreting shifts in crime rates. The likelihood is very great that compensating changes will arise from these sources to obscure any actual effect of the treatment program on crime rates in the area, and even if the trend is down we cannot be very sure what caused it. Nevertheless, it is a common and natural question to ask whether any discernible connection between them can be found. Accordingly, we undertook an analysis of precinct crime rates in the ARTC catchment area to explore what might be learned about any such relationship.

ARTC is a community based treatment facility, with defined boundaries for its catchment area. Although these boundaries are officially defined according to city "health areas" it was not a difficult task to translate the catchment area into police precincts. For the most part, this area is made up of 10 precincts as shown by the map in Appendix D. The Fulton Street ARTC facility is centrally located on the boundary between the 79th and 77th precincts. As shown in Table 12 the "core precincts" (78, 88, 79, 77) have the bulk of the sample patient population and the numbers diminish markedly toward the outer-lying precincts. The dispersion indicated by the sample (N=404) should also be representative of the total ARTC population of about 1,500 patients treated in this period.

According to both the BCI and the self-report data, the overwhelming majority of the most recent criminal activity of the patients was centered in the Brooklyn community. We have gathered and examined data on criminal activity in the ten Brooklyn precincts

TABLE 12

CRIME RATES PER 10,000 POPULATION IN THE TEN ARTC SERVICED POLICE PRECINCTS

PRECINCTS	ARTC PATIENTS (N=414)	1968	1969	1970	1971	1972	1973	NET CHANGE 1968-1973
78	45	2023	1989 -1.7%	2193 +10.3%	2445 +11.5%	1873 -23.4%	1835 -2.1%	-9.3%
88	81	1794	2039 +13.7%	2232 +9.5%	2175 -2.3%	1711 -21.3%	1448 -15.4%	-19.3%
79	138	1211	1240 +2.4%	1149 -7.3%	1259 +8.8%	934 -21.8%	892 -4.5%	-26.3%
77	64	937	919 -1.9%	849 -7.6%	898 +5.8%	1378 +53.5%	1413 +2.5%	+50.8%
73	15	2141	2000 -6.6%	2195 +9.8%	1996 -1.1%	1510 -24.3%	1585 +5.0%	-26.0%
71	17	876	1018 +16.2%	1135 +11.5%	1170 +3.1%	864 -26.2%	842 -2.5%	-3.9%
84	14	3112	3155 +1.4%	3797 +20.3%	4303 +13.3%	4483 +4.2%	3937 -12.2%	+26.5%
76	9	979	898 -8.3%	1050 +16.9%	1255 +19.5%	984 -19.2%	999 +1.5%	+2.0
90	2	711	740 +4.1%	678 -8.4%	830 +22.4%	1224 +47.5%	1118 -8.7%	+57.2%
81	19	2384	2390 +.3%	2424 +1.4%	748 +13.4%	1628 -40.8%	1523 -6.4%	-26.1%
OVERALL RATE AND CHANGE		1399	1415 +1.1%	1486 +5.8%	1571 +5.7%	1370 -12.8%	1301 -5.8%	-7.0%

in the ARTC catchment area with the aid and cooperation of the Crime Analysis Bureau of the New York City Police Department.

Table 12 indicates the rate of all criminal complaints per 10,000 population in each of the ten precincts for each year between 1968 (the year prior to the opening of the ARTC facility) and 1973. This is not the number of charges or arrests, but the number of complaints to the police that are classifiable as crimes according to the New York penal code. This is considered to be a more sensitive index of the extent of criminal activity in an urban area than arrests or charges.

As indicated by the overall rates and percentage change over the preceding year in the bottom row of Table 12, the rates increased from 1968 to 1971 (the second full year of ARTC operations) and declined thereafter. The rising rates peaked in 1970 or 1971 for all of the core precincts, except 77, and non-core precincts, except 84 and 90. Precincts 77 and 90 showed higher rates in both 1972 and 1973, while precinct 84 peaked in 1972.

One may gain the impression from these figures that the ARTC drug treatment program has had a marked impact on criminal activity in the area it serves. However, a comparison of the core precincts with those which remained largely unserved shows that this was not the case. Table 13 shows the rank order of the precincts on the basis of reported crimes per 10,000 population for 1968 and 1973, and the six year average rate. In each of these rankings there appear to be distinct cut-off points which are remarkably similar.

TABLE 13

RANK ORDER OF PRECINCTS
BY CRIME RATE PER 10,000 POPULATION

1968	1973	Average
90 (711)	71 (842)	90 (884)
71 (876)	*79 (892)	71 (984)
*77 (937)	76 (999)	76 (1020)
76 (979)	90 (1118)	*77 (1066)
*79 (1211)	*77 (1413)	*79 (1114)
*88 (1794)	*88 (1448)	*88 (1900)
*78 (2023)	81 (1523)	73 (1905)
73 (2141)	71 (1585)	*78 (2060)
81 (2384)	*78 (1835)	81 (2183)
84 (3112)	84 (3937)	84 (3798)

*core precincts

**Years 1968, 69, 70, 71, 72, and 73.

For the 1968 ranking the "best" five precincts, 90, 71, 77, 76, and 79, range from 711 reported crimes per 10,000 population through 1211 per 10,000. The next four precincts cluster between 1794 and 2384 reported crimes per 10,000 population. Finally, there is the 84th precinct at 3112. The ranking according to the five year average produced almost a mirror image of the 1968 ranking since the "cut-off" points include the same precincts. The 1973 ranking is also very similar, the major difference being that there is a sharp break after the first four precincts, a fact which is accounted for by the increased crime trend in the 77th precinct in 1973.

The four core precincts do not show any major shift in rank order on the average over the six year period as one might expect if the program had a significant impact upon the community crime rate. Their relative rankings in crime rate per 10,000 population remained about the same. Improvement of the rank order of one precinct (79th) between 1968 and 1973 was offset by a lower rank order for precincts 77 and 78. The overall conclusion is that the crime rate improved slightly for the entire catchment area, not necessarily those areas where ARTC patients were located.

When ranked according to the percentage of improvement over the six year period in Table 14, a similarly mixed picture emerges. Six of the ten precincts show a decrease in reported crime, five of them (including three core precincts) greater than the overall average. Although the results in the 79th precinct are impressive -- from fifth to second in lowest crime rate between 1968-1973 with

an overall reduction of 26.3%, the 77th precinct, lying in equally close proximity to the clinic, dropped from third to fifth rank between 1968-1973 with an overall increase in crime of 50.8%, the second highest increase for the entire catchment area.

As shown in Table 15 there is apparently a high correlation between population size and population change for the period of 1960 and 1970. These rankings are very similar to those in Table 13 for crime rates per 10,000 population averaged over a six year period. Furthermore, five of the six precincts which show a decreased crime rate in Table 14 also show a decreasing population over the years preceding ARTC. The 79th precinct, which shows the greatest rate decrease was the most stable over this ten year period (.5% population decrease).

The police manpower allocations for the period 1969-1974 (Table 16) directly reflect the size of the crime problem. The average number of police per person for each of the ten precincts for the period 1968-1973 is closely correlated with the average crime rates per 10,000 population. That is, the highest crime precinct has the best police/population ration, for example, a ratio of one policeman for every 245 persons exists in the highest crime precinct (84th) while the lowest crime precinct (90th) has only one policeman for every 603 people. Especially notable are the trends in manpower allocation in both the 90th and the 77th precincts. In both cases there is a near doubling of the manpower effort beginning in 1972, which coincides with the dramatic rise in crime rates shown in Table 12.

TABLE 14

PRECINCT RANK BY PERCENT
IMPROVEMENT IN CRIME RATE
1961 to 1973

PRECINCT	RANK	PERCENT CHANGE
*79	1	-26.3
81	2	-26.1
73	3	-26.0
*88	4	-19.3
*78	5	-9.3
71	6	-3.9
OVERALL		-7.0
76	7	+2.0
84	8	+26.5
*77	9	+50.8
90	10	+57.2

*core precincts

TABLE 15

PRECINCT RANK BY 1970 POPULATION AND BY

POPULATION CHANGE FROM 1960 to 1970

PRECINCT	POPULATION 1970	PRECINCT	POPULATION CHANGE 1960-70
71	(166,906)	71	(+12.9%)
90	(128,387)	90	(+11.0%)
*77	(108,744)	*79	(-.5%)
*79	(108,083)	*88	(-6.8%)
73	(95,266)	76	(-10.6%)
76	(71,508)	*77	(-13.0%)
81	(65,717)	*78	(-15.6%)
*88	(63,682)	73	(-16.0%)
*78	(55,566)	84	(-17.6%)
84	(35,680)	81	(-32.0%)

*core precincts

In overview it cannot be said that the program has had a significant impact on the community crime rate as a whole. Between 1968 and 1973 the rank order precincts with regard to reported crime did not change dramatically. One core precinct which experienced a marked decrease in crime rate was balanced by another core precinct, which showed a major increase though both precincts were similar in overall population and proximity to the clinic. The overall reduction in crime must be considered a general trend not apparently associated with ARTC's presence since the reduction is made up, at least in equal part, by six precincts which are nominally within the catchment area, but in fact are located on the perimeter and contribute significantly fewer patients. The crime trends in the various precincts (with the exception of the 77th and 90th, one core and one perimeter precinct) seem to have been properly anticipated by the police in 1969 (while ARTC was just beginning operations) in their manpower allocations and there are no significant alterations in these allocations other than the two mentioned above.

Narcotic offenses which were included in the total crime data presented above, are worthy of separate analysis in evaluating the community impact of a methadone maintenance program. The early successes in patient-criminality reduction by methadone clinics is usually a reflection of a marked decrease in narcotic offenses. However, in analyzing the narcotic crime data from the catchment area precincts, it must be remembered that drug offense crime rate

TABLE 16

MANPOWER ALLOCATION IN BROOKLYN PRECINCTS - NUMBER OFFICERS EACH YEAR

Precinct	1969	1970	1971	1972	1973	Average 69-73	Police Pop.Ratio
84	226	272	269	253	233	212	1:245
81	243	272	269	253	233	212	1:259
78	202	228	214	190	155	183	1:275
88	212	223	218	218	199	217	1:298
73	269	300	286	343	313	310	1:315
79	262	293	275	278	239	255	1:402
76	167	175	164	150	119	144	1:461
77	157	185	170	319	299	311	1:479
71	254	294	282	316	290	305	1:585
90	149	171	166	298	282	299	1:603
	5/30/69	6/5/70	6/10/71	5/10/72	6/1/73	6/1/74	

statistics are especially sensitive to variations in the prevailing practices and policies of the local police. (For example, the Center's Police Study, summarized elsewhere in this report, indicates a substantial change in the police departmental policy, which the patrolmen were apparently aware of by 1972. Roughly stated, the new policy asserted that "Addicts are responsible for most crime in this area, therefore it is not necessary to concentrate on narcotic offenses to capture addicts"). This sensitivity to policy drifts seems to be particularly true of the narcotic crime data because most narcotic crime complaints are registered by the police.

Table 17 shows the number of narcotic related complaints per 10,000 population for the 10 precincts between 1968-1973 and the percent change from year to year. Tables 18 shows the rank order of precincts in 1968, 1973 and their six year averages, while Table 19 shows the rank order of the precincts according to their level of change across time.

In 1969, ARTC's first year of operation, narcotic crime rose 50% in the ten catchment area precincts. Narcotic complaints increased in each of the ten precincts ranging from 15.5% in the 73rd precinct to 100% in the 77th precinct. This dramatic increase probably reflects a police crackdown on narcotics rather than a sudden, massive increase in narcotic related activity. It must be remembered that this area had already been identified as a high-drug area, which fact coupled with the growing public concern over

TABLE 17

NUMBER OF NARCOTIC-RELATED COMPLAINTS PER 10,000 POPULATION

Precincts	1968	1969	1970	1971	1972	1973	
90	14	23 (+64.3%)	38 (+65.2%)	36 (-5.3%)	42 (+16.7%)	38 (-9.5%)	+171.4%
81	47	60 (+32.5%)	107 (+95.0%)	114 (+6.5%)	73 (-36.0%)	66 (-9.6%)	+40.4%
88	35	64 (+82.9%)	124 (+93.8)	91 (-26.6%)	72 (-20.9%)	52 (-27.8%)	+46.6%
79	30	55 (+83.3%)	83 (50.9%)	84 (+1.2%)	52 (-38.1%)	39 (-25.0%)	+30.0%
77	12	24 (+100.0%)	44 (+83.3%)	33 (-33.3%)	49 (+48.5%)	46 (-6.1%)	+283.3%
73	45	52 (+15.5%)	91 (+75.0%)	89 (-2.2%)	57 (-36.0%)	41 (-28.1%)	-8.9%
71	10	17 (+70.0%)	40 (+135.4%)	34 (-15.0%)	18 (-47.1%)	26 (+44.4%)	+160.0%
84	33	50 (51.5%)	71 (+42.0%)	65 (-8.4%)	47 (-27.7%)	52 (+106.0%)	+57.6%
78	56	84 (+50.0%)	134 (+59.5%)	97 (-27.6%)	52 (-86.5%)	56 (+7.7%)	No Change
76	32	58 (+81.3%)	81 (+39.7%)	56 (-30.9%)	38 (-32.1%)	41 (+7.9%)	+28.2%
Mean	28	42 (+50.0%)	72 (+71.4%)	62 (-13.9%)	46 (-25.8%)	42 (-8.7%)	+50.0%

TABLE 18

RANK ORDER OF PRECINCTS BY NARCOTIC CRIME RATE PER 10,000

1968		1973		Average	
71	(10)	71	(26)	71	(24)
77	(12)	90	(38)	77	(35)
		79	(39)		
90	(14)	76	(41)	90	(35)
79	(30)	73	(41)	76	(51)
76	(32)	66	(46)	84	(53)
84	(33)	84	(52)	79	(57)
88	(35)	88	(52)	73	(63)
81	(47)	81	(66)	81	(78)
78	(56			78	(80)

TABLE 19

NARCOTIC CRIME RATE
CHANGE ACROSS TIME
BY PRECINCTS
(1968-1973)

73	(-8.9%)
78	(no change)
76	(+28.0%)
79	(+30.0%)
81	(+40.4%)
88	(+48.6%)
84	(+57.6%)
71	(+16.0%)
90	(+171.4%)
77	(+283.3%)

drugs was responsible for the opening of a drug treatment facility (ARTC). Each of the four core precincts, 77, 78, 79, and 88 showed increases equal to or greater than the catchment area's overall 50% rise, increasing at rates of 100%, 50%, 83.3% and 82.9% respectively.

Narcotic-related criminal complaints swelled in 1970, up 71.4%, rising in all ten precincts. Again, this seems to be a further indication of a police departmental policy. Two of the four core precincts (77th and 88th) show greater increases than the overall catchment area. However, 1971 marked the beginning of a steady three year decline in the overall rate of narcotic related complaints. This is consistent with the change in police departmental policy already mentioned and discussed more fully elsewhere in this report. On the whole, narcotic crime was down 13.9% in the catchment area, with eight precincts showing a decrease and the other two showing slight increases. Three of the four core precincts (88th, 78th, 77th) showed declines above the average (26.6%, 27.6% and 33.3% respectively).

The downward trend increased in 1972 with an overall decline of 25.8%. Eight of the ten reporting precincts showed declines, while the two precincts which increased, the 90th and 77th also showed remarkable increases in their overall crime rate as shown in Table 12. 1973 continued the downward trend with an overall decrease of 8.7%. Only six of the ten precincts showed decreases but three of the four core precincts showed declining rates, two of which exceeded the overall decline.

In general, the rate of narcotic-related complaints between 1968-1973 was up 50 percent. However, as suggested earlier, this is apparently due, in large part, to the diligent police activity of 1969 and 1970. Only two of the ten reporting precincts matched or bettered their 1968 rates in 1973, and neither of those two precincts (73rd and 78th) were ranked particularly high in the 1973 rankings (see Table 18). It is, therefore, difficult to assess any impact, or lack of it, that ARTC might have had on narcotic offenses because of the system for recording drug offenses and the shift in police departmental policy.

(3) Characteristics Related to Program Outcome

As indicated in Chapter IV, one of the primary goals of the study was to determine if ARTC treatment led to decreases in criminal activity for some patients ("success") and not for others ("failure"). To determine those factors most likely to lead to such decreases, 82 background/demographic and program performance variables were used with five outcome variables in a multiple regression analysis. The results of this analysis are reported on here for males and females in the sample population of 477 patients.

Method. In order to find out those background and demographic and program performance variables most closely related to program success the stepwise multiple regression technique was used. This technique, which is a more powerful variation of multiple regression, allows for the choosing of independent variables which will provide the best prediction possible with the fewest independent variables. When 82 possible predictors of outcome, the independent variables, were used in the stepwise multiple regression technique with each of five outcome variables, 25 emerged in some way as significantly related to outcome. These variables are shown in Table 20 and are defined as follows:

Dependent Variables

1. Total Arrest Rate: This is the arrest rate for all official crimes at the third year after program entry.*

*While the third year crime rates are apparently biased downward by the lag in police recording, comparisons in this section are still valid if the effect of the lag is randomly distributed.

2. Drug Arrest Rate: This is the arrest rate for official drug crimes only at the third year after program entry.
3. Non-Drug Arrest Rate: This is the arrest rate for all official crimes other than drugs at the third year after program entry.
4. Total Severity Score: This is the mean severity score for all official crimes at the third year after program entry.
5. Non-Drug Severity Score: This is the mean severity score for all official crimes other than drugs at the third year after program entry.

Independent Variables

1. Ethnicity: Black, Spanish, or White.
2. Schooling Completed by Patient: Some College, High School, Grades 9 to 11, Eighth Grade, Less than 8th Grade (self-reported)
3. Activity Military Service: 24 months or more or less than 24 months (self-reported)
4. Marital Status is Single: Never married, re-married, separated, widowed, or divorced at entry (self-reported)
5. Living with Family at Entry: Living with family or relatives or spouse at entry (self-reported)

6. Living Alone at Entry: Patient reported living by himself at entry (self-reported)
7. Times Changed Residence: Number of times patient changed his residence in the two months prior to program entry (self-reported)
8. Been in mental hospital: Ever been in a mental hospital or psychiatric ward for any reason other than drug abuse (self-reported)
9. Time in Prison or Jail: All time spent in jail or prison (self-reported)
10. Legal Status at Entry: Probation, parole, awaiting trial, or other legal status or proceedings pending as opposed to none of these (self-reported)
11. Frequency of Heroin Use: From no use to daily use (self-reported)
12. Age First Daily Heroin: Age of the patient at first use of heroin or another opiate drug (self-reported)
13. Longest Drug Stop Period: The longest period of time the patient ever stopped using drugs "on his own" in the street (self-reported)
14. Number Times Stopped Drug Use: The number of times the patient ever stopped using drugs "on his own" in the street (self-reported)

15. Average Daily Cost of Habit: Average daily cost of drug habit for two months prior to program entry (self-reported)
16. Drug Rate Before Entry: The patient arrest rate in the year just prior to program entry (official arrest data)
17. Use of Hallucinogens: From no use to daily use (self-reported)
18. Number Daily Liquor (average): Average daily number of drinks of liquor (not beer or wine) (self-reported)
19. Use of Other Opiates: Not at all or some use (self-reported)
20. Use of Barbiturates: Not at all or some use (self-reported)
21. Non-Drug Severity Before Entry: The patient mean severity score in the year just prior to program entry (official arrest data used)
22. Age at Entry: The age of the patient upon program entry (self-reported - checked against official record)
23. Morphine Positives: The number of positive or dirty urines (morphine present) based upon the results of urine testing; a code for a dirty urine was given for a patient month only if there had been a minimum of two urine tests in that month for that patient.

24. Urine/Age of First Daily Heroin Use: A cross-product of morphine positives (#23, above) and the age of first daily heroin use (#12, above) (The effect of a cross-product term in a regression equation represents the statistical interaction of the two multiplied variables in relation to the dependent variable.)
25. Urine/Age at Entry: A cross-product of morphine positives and the age of program entry (#22, above)

Table 20 is arranged to show ten regression equations, one for each of the five dependent variables, separately for males and for females. The dependent variables are listed across the top of the table, and the independent variables are listed down the left side. Thus each column represents a regression equation for a dependent variable, showing the effects on that dependent variable of all the independent variables that had significant effects detected by the stepwise procedure. The numbers in the cells are regression coefficients representing the number of units increase in the dependent variable per unit increase in a particular independent variable, holding all the other independent variables constant. The asterisks represent statistical significance levels, one asterisk meaning significance at the .05 level, two asterisks meaning significance at the .01 level, and three asterisks meaning significance at the .001 level. At the foot of each column will be found the regression constant (the average value of the dependent variable

TABLE 20: REGRESSION COEFFICIENTS FOR DRUG, NON-DRUG AND TOTAL ARREST RATES AND TOTAL AND NON-DRUG SEVERITY SCORES USING KEY INDEPENDENT VARIABLES - MALES AND FEMALES AT THIRD YEAR AFTER ENTRY

VARIABLE	MALE PATIENTS				
	TOTAL ARREST RATE	DRUG ARREST RATE	NON-DRUG ARREST RATE	TOTAL SEVERITY SCORE	NON-DRU SEVERIT SCORE
ETHNICITY		.0552**			
SCHOOLING COMPLETED BY PATIENT					
MILITARY SERVICE (ACTIVE)					
MARITAL STATUS IS SINGLE	.1474			42.708**	
LIVING WITH FAMILY AT ENTRY					-33.213
LIVING ALONE AT ENTRY					
TIMES CHANGED RESIDENCE					
BEEN IN MENTAL HOSPITAL					
TIME IN PRISON OR JAIL					10.820
LEGAL STATUS AT ENTRY				48.379*	
FREQUENCY OF HEROIN USE				-32.581*	-35.016
AGE FIRST DAILY HEROIN USE	.0169		-.0141*		
LONGEST DRUG STOP PERIOD	.0541*		.0412*		
NUMBER TIMES STOPPED DRUG USE					
AVERAGE DAILY COST OF HABIT				.8101*	.650
DRUG RATE BEFORE ENTRY[1]					-19.367
USE OF HALLUCINOGENS		.4259*			
NUMBER DAILY LIQUOR (AVERAGE)		.0692*			
USE OF OTHER OPIATES	.3281*				
USE OF BARBITURATES					

[1] "Before Entry" refers to the year before program entry.

TABLE 20: CONTINUED (MALE PATIENTS)

VARIABLE	MALE PATIENTS				
	TOTAL ARREST RATE	DRUG ARREST RATE	NON-DRUG ARREST RATE	TOTAL SEVERITY SCORE	NON-DRU SEVERIT SCORE
NON-DRUG SEVERITY BEFORE ENTRY[1]			.0005*		
AGE AT ENTRY					-4.495*
- MORPHINE POSITIVES	.3636**	.0258*		18.882**	
- URINE/AGE FIRST DAILY HEROIN USE	.0131*				
- URINE/AGE AT ENTRY					
REGRESSION CONSTANT	-.907	-.580	.325	-5.224	249.70
MULTIPLE CORRELATION	.278***	.237*	.204**	.285***	.315
MULTIPLE R SQUARED	.077	.056	.042	.081	.099

[1]"Before Entry" refers to the year before program entry.

TABLE 20: CONTINUED (FEMALE PATIENTS)

VARIABLE	FEMALE PATIENTS				
	TOTAL ARREST RATE	DRUG ARREST RATE	NON-DRUG ARREST RATE	TOTAL SEVERITY SCORE	NON-DRU SEVERIT SCORE
ETHNICITY					
SCHOOLING COMPLETED BY PATIENT		.0276*			
MILITARY SERVICE (ACTIVE)				-114.253**	-128.056*
MARITAL STATUS IS SINGLE					
LIVING WITH FAMILY AT ENTRY					
LIVING ALONE AT ENTRY		.0556*			
TIMES CHANGED RESIDENCE	.1312*		.1282*		
BEEN IN MENTAL HOSPITAL	.3160*				
TIME IN PRISON OR JAIL	.0514*		.0497*		
LEGAL STATUS AT ENTRY					
FREQUENCY OF HEROIN USE					
AGE FIRST DAILY HEROIN USE					
LONGEST DRUG STOP PERIOD					
NUMBER TIMES STOPPED DRUG USE					15.759*
AVERAGE DAILY COST OF HABIT					
DRUG RATE BEFORE ENTRY[1]					
USE OF HALLUCINOGENS					
NUMBER DAILY LIQUOR (AVERAGE)					
USE OF OTHER OPIATES					
USE OF BARBITURATES					

[1]"Before Entry" refers to the year before program entry.

TABLE 20: CONTINUED (FEMALE PATIENTS)

VARIABLE	FEMALE PATIENTS				
	TOTAL ARREST RATE	DRUG ARREST RATE	NON-DRUG ARREST RATE	TOTAL SEVERITY SCORE	NON-DRUG SEVERITY SCORE
NON-DRUG SEVERITY BEFORE ENTRY[1]					
AGE AT ENTRY					
- MORPHINE POSITIVES	.1062*		.1177*		
- URINE/AGE FIRST DAILY HEROIN USE					
- URINE/AGE AT ENTRY				.7348*	
REGRESSION CONSTANT	-1.205	-.081	-.292	315.480	355.537
MULTIPLE CORRELATION	.487***	.321**	.388**	.370**	.382**
MULTIPLE R SQUARED	.237	.103	.150	.137	.146

[1]"Before Entry" refers to the year before program entry.

when all the independent variables are equal to zero), the multiple correlation coefficient, and the multiple correlation coefficient squared. The multiple correlation coefficient squared represents the proportion of variation in the dependent variable accounted for by variation in the independent variables, taken all together as predictors.

Some general observations are in order regarding the results of the application of the stepwise multiple regression technique to the data. First, an examination of Table 20 shows that there is no set of independent variables which gives a strong prediction of program success on criminal activity, for drug or non-drug arrest rates or severity scores, although females show better results than males. This is not an unusual finding for studies of this type, having been the case for Babst et al in their analysis of the Dole-Nyswander program data from New York City.[1] This should be kept in mind in interpreting the observations which follow.

An overall examination of the regression coefficients in Table 20 shows that for males drug-taking activity both pre-program and during treatment are the best predictors of continued criminal activity and more severe criminal activity. For females other background factors also appear as relevant to outcome. For males, prediction of a higher total arrest rate at three years after program

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[1]Dean V. Babst, Rosaline Ellis, James Schmeidler, "Testing Predictive Efficiency of Patient Classifications for Methadone Maintenance Clients," Bureau of Social Science Research, New York State Drug Abuse Control Commission, February, 1975, p. 8 (mimeo.)

entry depends most on a higher degree of dirty urines (morphine positives) while on the program. While this has little predictive value at program entry, it does emphasize the importance of a sound urine testing program and the importance of taking action where dirty urines are found -- i.e., intensifying treatment effort. The older the patients at first daily use of heroin, the less the direct relationship between dirty urines and arrest rates. Similarly, the more dirty urines, the greater the inverse relationship of age at first daily use of heroin and arrests. This can be seen from the negative coefficient of the cross-product of age of first daily use and positive morphines in program. The effects of age of first use and morphines on total arrests is a function of the following three terms, from column one of Table 20:

.0169(Age) + .3636(Morphine) - .0131(Product) which can be factored algebraically as follows to show the effect of age, as it varies with the degree of morphine positives:

.3636(Morphine) + [.0169 - .0131(Morphine)](Age)

And the effect of morphine positives, as it is conditioned by age can be shown as follows:

.0169(Age) + [.3636 - .0131(Age)](Morphine)

In both cases, it will be seen, the coefficient of the cross-product term indicates the magnitude of an adjustment that must be made in our estimate of the effect of one independent variable depending on the score of a patient on the other independent variable.

For the dependent variable of drug arrest rates, the white male population accounted for the most significant increases in drug arrest rates at the third year after program entry. However, the use of hallucinogens, high liquor intake, and morphine positives were significant components of the prediction equation. Apparently, white patients with high self-reported drug use and dirty urines are a group requiring special attention at ARTC, particularly if drug arrest rates are a concern. Of the three variables seen in Table 20, none emerged as most significant in examining non-drug arrest rates for males, although it is of interest that a higher age of first daily heroin use tends to lead to lower non-drug arrest rates. This is supportive of the notion that patients who start drug-taking older may have skills which enable them to work to support themselves both before and after program entry. Male total mean severity scores again show morphine positives to be a significant factor in reduced severity rates over time. Here marital status also emerged, with an indication that being single was predictive of a higher total severity score at the third year after entry, as also was not living with one's family at entry on non-drug severity. The category of "legal status" meant that having some legal involvement at entry is related to a higher severity score at the third year after entry. The relationship of high frequency of heroin use and high cost of

habit to high severity scores again underscored the importance of drug use history in predicting outcome. For non-drug severity scores frequency of heroin use was very significantly related to outcome, as was time spent in prison or jail. Most significant, however, is age at program entry. For every increase in age at program entry, the more likely it was that the non-drug severity score would be lower at the third year after program entry. This finding has important implications for the "maturing out" or "burning out" hypothesis in drug addiction, which will be discussed momentarily. In conclusion, however, an examination of the multiple correlations squared (R^2) for all male patients shows that none of the variables in relation to any of the five dependent variables were powerful predictors of reductions in criminal activity.

For the female population, the multiple correlations provide somewhat more hope for prediction of outcome, with as much as 24 percent of the variation in total arrest rate being explained by five independent variables. While they all contributed about equally to outcome, high barbiturate use was more likely to be associated with a higher arrest rate. Drug arrest rates for females were predicted entirely from non-drug related factors, however: schooling completed and living alone at program entry. The less well educated and the more likely the patient was to be living alone (with self only) at entry, the more likely it was that we

would find a higher drug arrest rate at the third year after entry. For female non-drug arrest rate reductions in morphine positives was most important, followed by a relationship between high residence changes in the two months before entry and more time in jail or prison and a higher non-drug arrest rate. For their total severity score and non-drug severity score the relationship with not having military service can be discounted since most women did not have military service. Morphine positives and being older at program entry showed mutually reinforcing relationships to higher total severity scores at three years after program entry; this again shows the need for constant urine testing and action on results. For the non-drug severity score the fewer times the female patient reported stopping drug use on the streets the higher her severity score at three years after program entry. For females, therefore, prior drug history was important in determining outcome on criminal activity. However, educational background, residence at entry and residential mobility are also significant factors in outcome. For the male population drug history was of more importance, although better family stability appeared to play some part in predicting successful outcome.

Other Factors in Patient Performance. It should be emphasized here that data on patient treatment had limited usefulness in the analysis of the data because several elements were not available for almost half of the 477 patients in the four year follow-up group.

Treatment data taken from program records was available for a larger number, and the reason for leaving the program was available for only 180 of the patients. Additional background data was available for a larger number, and the reason for leaving the program was available for almost all patients. While it was not found related to outcome, officially-recorded reasons for leaving the program are presented here for use in comparisons with other programs. They were as follows for 348 patients:

	Number	Percent
Voluntary Withdrawal	84	24.1
Lost Contact (disappeared)	73	21.0
Patient Death	38	10.9
Arrested	13	3.7
Treatment Completed	13	3.7
Rule Violation	12	3.4
Transfer	7	2.0
Other Reasons	108	31.0
	348	100.0

The proportion leaving by way of arrests was small compared to the California population where 40.6 percent of the dropouts were terminated because they were in jail or prison. Again, this is probably a function of the higher overall arrest rates in California. Withdrawals at the completion of treatment were lower in Brooklyn

than in the California population, where 16.5 percent left the program with staff approval (i.e., treatment completed). Patient deaths were abnormally high in the Brooklyn population -- of 463 California patients only five died while on the program (2 percent of the 254 who left the program).

- Official patient records were checked to assess the proportion of time they spent working after program entry. The numbers found to be working were very low and are shown in Table 21 for the 174 patients on whom these data were located.

TABLE 21

PROPORTION OF TIME WORKING WHILE ON PROGRAM FOR 174 ARTC PATIENTS

Proportion of Time Working	Number	Percent
Working Full Time	10	5.8
Working 1/2 time or more but not full time	20	11.5
Working less than 1/2 but not unemployed	42	24.1
Unemployed during treatment	102	58.6
TOTALS	174	100.0

Of these 174 patients shown in Table 21, 41.4 percent were employed at some level during the time they spent on the program. By com-

parison, using actual wages (reported to the government) the California population (428 patients) had between 30.1 and 39.9 percent of all patients earning some wages up to nine quarters (27 months) after program entry. If rehabilitation of drug addicts is supposed to be linked to employment, then most of the Brooklyn and California patients were working against great odds, since most were not employed, nor were those employed consistently employed. Moreover, for these groups of patients it appears that many reduced their criminal activity without finding stable employment.

How did these patients support themselves? What other types of support were linked to program success? For these 174 patients public assistance and illegal activity continued to be the primary methods of supporting themselves -- all 174 were found to be involved in both of these activities, even though a few worked. There was no relationship between these activities and outcome, i.e., giving public support did not tend to lessen criminal activity, and continued illegal activity did not lead to increased numbers of arrests after entry. The data taken from counselors' records strongly suggest a consistent life style which is relatively unaffected by the program. Decreases in official criminal activity appear to be more related to a decreased need for drugs (fewer dirty urines) and the money to purchase them after program entry. However, the need still exists to continue to support oneself even

after decreasing or discontinuing illegal drug activity. The need for drugs which must be obtained illegally during addiction probably raises the level of exposure to arrest for most of the patients, leading eventually to their need to take part in the methadone program. Once the patient has been reduced to his previous level of non-drug related criminal activity a life style of public assistance and illegal methods of support can be resumed with less exposure to arrest. Until higher levels of support are reached, whether through jobs or more public assistance, criminal activity will probably continue as a way of life for most of these individuals.

All counseling records available were searched for evidence of recommended treatment and the types of assistance patients actually received from the program. It was not clear whether all forms of assistance were recorded, although the consistency of methadone maintenance notations indicates that these records are valid. Table 22 shows the type of treatment recommended, the type received, and the general frequency of application.

TABLE 22

TYPES OF TREATMENT RECOMMENDED AND RECEIVED AT ARTC

TYPE OF TREATMENT	RECOMMENDED		RECEIVED		FREQUENCY
	Number	Percent	Number	%	
Methadone Maintenance	205	100.0	202	98.5	daily
Individual Counseling	193	94.1	202	98.5	weekly
Group Psychotherapy	40	19.5	32	15.6	weekly
Assistance in Job-finding	24	11.7	1	.5	--
Vocational Counseling	18	8.8	4	2.0	--

Sechrest: revised paragraph on pp. 125-126 on Gearing comparison 1-11-76

(start 5th line from bottom on p. 125)

The findings reported by Gearing for criminal activity were limited to patients who continued in treatment and were distributed into only two periods: before and after program entry. For those patients who continued in treatment only 15 percent ~~xxxx~~ were reported as arrested in the four years after program admission (654 patients). For the ARTC program 55 percent of all patients admitted were arrested within two years of program entry (509 of 926; see Table 23, p. 142). Gearing reported 6.5 percent arrested in the first year which declined to 1.4 percent arrested in the fourth year after entry. ARTC shows 37 percent arrests in the first year after entry and 9 percent arrested in the fourth year (based on the sample of 477 patients). ~~While overall decreases may~~ differences in ~~be accounted for~~ by the fact that all ARTC patients were included (not just retainees), the relative decrease to about one-fourth of criminal activity at the fourth year after entry was about the same. The reduction in criminal activity was as dramatic over time at ARTC, but it was not as great overall because the Gearing figures did not include all 1,230 patients admitted to the program.

Much of the difference between the two programs are likely to be accounted for by the fact that all ARTC patients were included rather than just retainees as in Gearing's figures, the relative decrease to about one-fourth of criminal activity at the fourth year after entry was about the same.

A category called "social relationships" was recommended for 106 patients, but the exact meaning was unclear and it was not recorded as having been done for more than one case. One referral out was recorded. From Table 22 it was clear that methadone maintenance and individual types of counseling were the primary forms of treatment at ARTC. Very little emphasis was placed on job-finding or the development of vocational skills for patients. This lack of emphasis was seen earlier in the small numbers of patients employed while on the program. One can only wonder if long-term reductions in criminal activity might be brought about by increased efforts in these areas. Or perhaps it was felt that this population of patients was beyond real help.

Comparisons of Findings With Other Studies. Where possible in reporting these findings, comparisons have been made with studies done on other programs. Since most programs have follow-up only to one or two years after program entry, however, it has been difficult to make direct comparisons against four years of follow-up. The only program which has had more than four years follow-up has been the Dole-Nyswander Methadone Maintenance and Treatment Program in New York City. The findings reported by Gearing for criminal activity were limited to patients who continued in treatment and were distributed into only two periods: before and after program entry. For those patients who continued in treatment only 15 percent were reported as arrested in the four years after program admission (654 patients). For the ARTC program 55 percent of all patients admitted were arrested within two years of program entry (509 of 926; see Table 23, p. 142). Gearing reported 6.5 percent arrested in the first year which declined to 1.4 percent arrested in the fourth year after entry. ARTC shows 37 percent arrested in the first year after entry and 9 percent arrested in the fourth year (based on the sample of 477 patients). While overall differences in rates between the two programs are

likely to be accounted for by the fact that all ARTC patients were included rather than just retainees as in Gearing figures, the relative decrease to about one-fourth of criminal activity at the fourth year after entry was about the same.

mission).[2] For the present program 91 percent of the 477 patients in the four-year follow-up group had not been arrested in their fourth year after program entry, although 178 or 37 percent had been arrested in their first year after entry. Gearing reported 6.5 percent arrested in the first year. Therefore, the reduction was as dramatic over time at ARTC but did not occur as quickly for the ARTC population as for the Dole-Nyswander population.

Similar to other programs which have achieved great successes in reducing criminal activity, the Dole-Nyswander population had an average age of 33 and an average of eight years of addiction. Moreover, the ethnic/racial distribution was 40 percent black, 40 percent white, and 20 percent of Spanish extraction. Screening factors, which were brought out after initial findings were reported for the Dole-Nyswander program, showed that some selection was involved in admitting patients.[3] This also could have contributed to the better initial results. Questions have been raised as to whether ARTC's treatment programs were of the same quality as those at the Methadone Maintenance and Treatment Programs evaluated by Gearing (i.e., proper dosage levels), or whether differing populations might account for the difference in results. For example, perhaps the Brooklyn ARTC population was a "more criminal" or "more economically depressed" group of patients.[4] There are no

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[2]Frances Rowe Gearing, "Methadone Maintenance Treatment Five Years Later -- Where Are They Now?" A.J.P.H. Supplement, 64 (December, 1974), p. 47.

[3]See Edward M. Brecher and the Editors of Consumer Reports, Licit and Illicit Drugs (Boston: Little, Brown and Company, 1972), p. 149.

[4]See James Vorenberg and Irving Lukoff, "Addiction, Crime, and the Criminal Justice System," Federal Probation (December, 1973), and the response reported in the March, 1974 Federal Probation.

clear answers to these types of questions, although both treatment techniques and population characteristics should be carefully analyzed in any such program comparisons. More importantly, overall reductions were achieved in both programs. The reasons for these reductions may go beyond differences in program philosophy and population differences, as has already been discussed. Before touching on this issue for a final time, however, some comparisons should be made with prediction studies. Such comparisons are difficult because the outcome or dependent variable in these studies was usually reduction in drug taking behavior or retention time -- not reduced criminal activity.

While the independent variables were not all the same and retention was the outcome variable, nevertheless, the California study found that:

> More serious criminal activity before program admission, coupled with less work or productive activity and an apparent higher level of alcohol and marijuana use, lead to program failure. The patient will probably leave the program, he will not be earning wages, and his criminal involvement will continue, probably at a higher level.[5]

The work of Babst et al with data on patients from the Dole-Nyswander program utilizes variables such as "age at onset" (of drug use) and "age at admission" and "other drugs" (multiple drug use), but their primary outcome variable was also patient retention, not reduced criminal activity. Very much in agreement with the California study, they found that the characteristic most related to

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[5]Dale K. Sechrest and Thomas E. Dunckley, "Criminal Activity, Wages Earned, and Drug Use After Two Years of Methadone Treatment," Addictive Diseases: An International Journal, 1 (1975), p. 511.

retention was the number of previous criminal convictions -- the more convictions prior to admission the lower the retention rate.[6] The second factor was job status at admission -- patients working at admission had higher retention rates. Generally, however, the predictive ability of the tests used was poorer than for most tests of this type, which was the case in the present predictive analysis. And direct comparisons could not be made because of the difference in the outcome variable(s) used. Reduction in criminal activity after program entry appears more related to drug history and drug use while on the program. There has always been a great deal of concern over the issue of age and addiction, particularly with respect to the "burning out" or "maturing out" hypothesis formulated by Winick.[7] This hypothesis has best been stated in the viewpoint by Ball and Snarr: "...that many addicts give up their dependence on drugs as a result of maturation, as a consequence of treatment, or through remission of the disease."[8] They cite Winick's conclusion that some two-thirds of the opiate addicts in the United States "mature out" of their addiction during their adult years. While this hypothesis requires rigorous testing, as has been done by Winick and others, the data for the present study are not appropriate for such tests. The individuals involved in the methadone treatment population have had their "natural cycle" of

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[6]Dean V. Babst, Rosalind Ellis, James Schmeidler, "Testing Predictive Efficiency of Patient Classifications for Methadone Maintenance Clients," Bureau of Social Science Research, New York State Drug Abuse Control Commission, February, 1975, p. 8. (mimeo.)

[7]Charles Winick, "Maturing Out of Narcotic Addiction," Bulletin on Narcotics (January - March, 1962).

[8]John C. Ball and Richard W. Snarr, "A Test of the Maturation Hypothesis with Respect to Opiate Addiction," Bull. on Narcotics, 21 (Oct. - Dec., 1969), p. 9.

addiction interrupted by treatment -- they have not necessarily come to the close of their period of addiction. The individuals studied later by Winick were cases on record with the Federal Bureau of Narcotics, ranging in age from 18 to 76 at cessation of use, who had been free of the symptoms of drug use for five years.[9] This is the traditional medical criterion for recovery from a chronic disease.

In the present study we included in the stepwise regression analysis the variables age at addiction, age at program entry, and the cross-product of these two age variables. If all three variables, the two ages and their cross-product, had emerged in our results as having significant effects, the effect of age of addiction would have been most reasonably interpreted as having to do with the interruption of life cycle development -- i.e., interference of addiction with education, getting job skills and connections into the job market, forming relationships, marriage, etc. The age of entry effect would have been most reasonably interpreted as having to do with whether an addict had simply gotten too old to be an addict. The cross-product of the two ages would in its effect represent the interaction of the two ages, most particularly such things as the effect of length of addiction, independent of when addiction began or ended. In fact the two age variables emerged

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[9]Charles Winick, "The Life Cycle of the Narcotic Addict and of Addiction," Bulletin on Narcotics, 16 (January - March, 1964), p.3.

in a few of the equations, but the cross-product of the two age variables emerged in none of the equations. This means that there is no maturing out effect explaining differences among patients at ARTC beyond what can be accounted for simply by age, and even the effect of age is far from pervasive across all outcome criteria. Thus for some outcome criteria, total arrests and non-drug arrests, age of addiction has some importance, and for another outcome criterion, non-drug severity, age at entry has some importance. But for none of the criteria do the two ages simultaneously, or their cross-product, appear to be important. Thus length of addiction, sometimes thought of as critical in the burning out phenomenon appears unimportant, and the critical effect of age is limited to how old one was when heroin use interrupted development of community ties (themselves shown to be important in the regression analysis) or how old one was when one sought treatment.

This limited effect of age and the lack of any effect of the interaction of the ages, such as length of addiction, must be interpreted with caution. The finding refers to differences among ARTC patients. It says nothing about any comparison between ARTC patients and the general addict population, or about other contrasts among the general addict population. It is possible that in those larger comparisons both ages and their cross-product would appear in the regression equations, reflecting a full panorama of

age and maturing out effects.

In fact it appears to be the case that an individual must have a minimum number of years as an addict before a conclusion to that life style represents a likely possibility. A cross-tabulation of age of first illegal drug use and age at program admission shows that 76.2 percent of the patients entering the program after age 25 (167) started at 16 or younger, and that 57.8 percent of the patients entering the program after age 35 (26) started use at age 25 or older, with the majority of these (88%) entering after age 40. In their study of drug use in 235 young Negro men taken from a normal population, Robins and Murphy found a strong relationship between age at onset of drug use and continued drug use:

> ...the earlier drug use begins, the greater the risk of going on to heroin (p 0.02) or amphetamines (p 0.01), the greater the variety of drugs eventually used (p 0.001), and the greater the risk of addiction or regular use (p 0.01).

And,

> ...boys who had police or juvenile court records before age 17 in the present study were significantly more frequently (p 0.02) drug users than were nondelinquents.[10]

But they found a very high remission rate when their heroin addicts reached their early thirties, using Federal Bureau of Narcotics files and interview data. It is suggested here that this high remission rate has contributed to the apparent success of ARTC patients.

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[10] Lee N. Robins and George E. Murphy, "Drug Use in a Normal Population of Young Negro Men," A.J.P.H., 57 (September, 1967), pp. 1589, 1591.

The reader is reminded that the mean age of the ARTC program patient was 32.7 years of age. This was also very close to the mean age for the California population, which showed success in criminal activity reductions (average age 29.4), and the MMTP population. Similar findings exist for patients treated at St. Luke's Hospital methadone clinic (New York City) from March, 1966, to January 1, 1972. The St. Luke's patient population was only 41.1 percent black, with 28.8 percent Hispanic and 30.3 percent white, taken from the upper West Side of Manhattan. Their daily narcotic use had begun at age 20.5, an average of 13.3 years prior to program admission (21.3 and 11.8 for the Brooklyn population). After 2.1 years of treatment on the average (only five treated less than 9 months), these 269 individuals showed marked reductions in criminal activity, similar to but greater than those found for the Brooklyn population.[11]

But, as discussed in the section on overall program impact, if success can be achieved with a population of an average age of 30 to 33, can similar success be achieved with younger addicts? There is some evidence to suggest that this may not be the case. In a study of 160 heroin addicts with criminal records in a methadone maintenance and detoxification program in Atlanta, Georgia, it was not the case. These addicts were about 23.9 years of age with an

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[11]Paul C. Cushman, "Relationship Between Narcotic Addiction and Crime," Federal Probation, 38 (Sept., 1974).

average 12.9 months of addiction prior to coming to the program; 59 percent were black and 41 percent white. The follow-up period was brief, but the findings indicated:

> We find little evidence of reduction in criminal activity addicts while in treatment. In comparing the pre-treatment year with the year of treatment, our data actually show increases in theft charges, arrests, and convictions, although these are not statistically significant. After leaving treatment, non-drug misdemeanor charges are significantly increased over in-treatment levels, but no significant changes are present for more serious charges, arrest, or convictions.[12]

Alexander and McCaslin went on to point out that their results differed from those found in other major studies, pointing out that most of them treated older patients with longer addiction histories. They felt that their poorer results may have been due to the type of treatment administered (mixed maintenance-detoxification approach) or that other techniques were not as good as other programs. It is suggested here that this may not be the case, and that the age of the population being dealt with may have a great deal to do with the success or failure of the method being used. Winick suggests that the earlier drug addiction starts the longer it will continue, citing 8.6 years as the average length of addiction. He indicates that the typical user will begin to "drift away from drug use" in his mid-30's when the need for an "ingroup," "something to do," and a release for sexual and aggressive pressures has been reduced.[13]

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[12]Michael Alexander and Catherine McCaslin, "Criminality in Heroin Addicts Before, During, and After Methadone Treatment," A.J.P.H., Supplement, 64 (December, 1974), p. 54.

[13]Charles Winick, "Epidemiology of Narcotics Use," in Daniel M. Wilner and Gene G. Kassebaum, Narcotics (McGraw-Hill Book Co., 1965), p. 8.

(4) Self Reported Criminal Justice System Involvement

As indicated earlier, since its inception ARTC has admitted over 1,500 addicts into treatment, the majority coming from the Bedford-Stuyvesant/Fort Greene areas of Brooklyn. (The program began operation in Harlem in 1972). This part of the findings concerns the self-reported criminal activity of 361 ARTC patients who were entrants from the Bedford-Stuyvesant/Fort Green area during the years of 1969, 1971 and part of 1972. They are individuals who were questioned intensively by trained interviewers about their criminal behavior and their contacts with criminal justice system agencies. The purpose of these interviews was to determine the extent and kind of criminal activity actually engaged in by street addicts in treatment in order to discern patterns across the pre-addiction, addiction, and during after program entry periods. A further goal was to assess the quality of their interaction with criminal justice system agencies -- the police and courts in particular -- a task which has also been undertaken in two separate studies in the ARTC service area. These studies are summarized later in this Chapter.

Since a more detailed report has been completed on this aspect of the study, it will be summarized here.— Due to the manner in which the Criminal Evaluation Questionnaire (CREQ), the primary data collection tool, was administered, the 361 sample patients

—"Self-Reported Criminal Justice System Involvement for 361 ARTC Drug Program Patients," Center for Criminal Justice, Harvard Law School, November, 1974 (Xerox).

were not comparable in all respects to the patients in the total population. Appendix B contains a full discussion of this lack of comparability, which was due to proportional over-selection of patients who were retained on the program. The most important consequence of over-selection of retainees was that the sampled patients did not have as severe charge rates as the total population. Early dropouts generally were found to be more involved in criminal activity. Therefore, the results of the Criminal Evaluation Questionnaire, which was designed specifically to evaluate patient self-reported criminal activity (among other things), tended to underestimate the levels of criminal activity found for the total population. However, as detailed in Appendix B, the 361 sample patients were not significantly older or addicted over a longer period of time than the 991 patients in the total population. Nor did they differ significantly on 114 of the 117 variables on which they were compared. However, sample patients showed significantly fewer attempts to stop heroin use prior to program entry, and after entry they received significantly greater dosages of methadone while producing fewer "dirty" urines (positive tests for morphine).

On the Criminal Evaluation Questionnaire patients responded to a series of questions about their criminal behavior before they were addicted (pre-addiction period), during their addiction, and after they had entered the program. In addition to questions about the type and frequency of their criminal activities, patients were asked to report on their contacts with criminal justice system agencies -- primarily the police and the courts. Almost ninety

percent of the 361 patients reported an arrest or formal charge at some time in their lives (a nearly exact correlation with the official data), and two-thirds indicated that the police had treated them "unfairly" at some time, with "physical abuse" being the largest complaint. When confronted with the issue of addiction, about half of those arrested admitted their addiction to the police; the blatancy of the symptoms and a desire for treatment were the two most prevalent reasons given. Of those who denied their addiction, the majority said they had no reason to tell the police. Equally, about half of these patients had been identified as addicts by the courts at some time in their lives, and many indicated that they had been so identified on more than one occasion. At program entry most patients had no current formal involvement with the criminal justice system (73%), although some were awaiting trial or had a warrant outstanding (14%), and a small group reported being on probation or parole (8%).

Almost all of the patients reported their last arrest before program entry as having occurred in New York state (98%), while the majority of these occurred in Brooklyn (88%). Eighty-five percent took place between 1966 and 1971. Nearly half of these arrests resulted in conviction, and nearly half of the convictions resulted in incarceration. Only a very few of these patients were referred to a drug program as a result of their arrest or conviction (9%). Two-thirds of these patients reported that they were represented by a legal aid service.

Regarding their convictions, thirty-eight percent of these patients said that on at least one occasion they had pled guilty to a charge of which they were innocent; the reason almost always (90%) being to receive a lighter sentence. Over half said they had at one time or another pled guilty to a lesser charge, while two-thirds reported to have pled guilty to the original charge on at least one occasion.

In comparing patient responses on their sources of financial support across the pre-addiction and addiction periods, it was found that illegitimate earnings and use of public assistance increased up to program entry, and that legitimate earnings correspondingly decreased. Most criminal activity occurred in department stores, private homes or apartments, variety stores, and large grocery stores (in that order), reflecting the high incidence of stealing and boosting in the population generally.

Comparisons of the frequency of criminal activity were made across the three periods (including after program entry). These comparisons primarily involved the extent to which the onset of addiction produced the kind of illegal activity which would increase earnings and decrease the chance of arrest. Since the heroin habit is very expensive, it can be assumed that earnings from illegal activities must increase in the addiction period and that higher arrest risk and greater dollar yield activities must of necessity be pursued. Furthermore, effective treatment should diminish the need for these higher and more risky earnings, even

though other less risky illegal activities, such as those engaged in before addiction by over half the population (see section on crime and addiction below), might persist simply as a means to economic survival. Was this the case with these patients? And did the illegal activity acquired to support addiction persist in the treatment period?

For this population of addicts it was found that becoming addicted generally led to more risky and less productive criminal activity, i.e., participation in crimes which they said held a greater chance of arrest and provided less dollar gain than those pursued in the pre-addiction period. This was the reverse of what was expected. After program entry patients tended to return to lower overall risk offenses. However, it proved generally the case that even though the actual number of convictions dropped after program entry, convictions were more likely to occur. And, while mean arrests and convictions rose in the addiction period, the percentage of those stating they were "never arrested or convicted" for crimes committed showed a decrease, signifying that these patients were becoming more subject to arrests and convictions as they pursued their illegal activities.

Another interesting finding was that the illegal activities most closely associated with addiction were more prevalent in the post program entry period, such as pushing drugs, carrying drugs and works, and forging prescriptions, although the actual frequency of all illegal activities declined markedly. In sum, it appears

to be the case that addiction reduces the efficiency of criminal activity. Addicts turn to offenses which they have indicated yield fewer dollars and lead to greater possibilities for arrest than those pursued prior to addiction. Their illegal activities turn more directly to those things which will yield them drugs. These activities persist after program entry even though the actual number of illegal activities declines sharply.

(5) Crime and Addiction

In the study of addiction there has been considerable concern over the question of which came first -- crime or addiction? A summary of several studies of the relationship between crime and addiction by Greenberg and Adler gives the varying percentages of incarcerated and/or "in treatment" addicts who committed crimes prior to their addiction.[1] They emphasize the importance of considering the population under study in drawing conclusions about which comes first. This precaution applies to the present findings for the two methadone patient populations being studied. They cite early studies (1920's and 30's) where populations were found which were "all addicted" prior to treatment or "all not addicted" prior to treatment. Starting in the 1950's the percentages became more equivocal:

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[1]Stephanie W. Greenberg and Freda Adler, "Crime and Addiction: An Empirical Analysis of the Literature, 1920-1973" (Section on Drug and Alcohol Abuse, Medical College of Pennsylvania, undated).

> ...Abrams found that among almost three hundred incarcerated addicts, largely black, those who became addicted prior to 1952 had for the most part not been arrested prior to the addiction; for those addicted in 1952 or after, the relationship was reversed. The well-known work done by Isador Chein in the middle 1950's of narcotics use among adolescent males in New York supports Abrams' findings. He estimated that three-quarters of the heroin users that he found via court and hospital records had been delinquent prior to drug use.[2]

They cite evidence from studies done in the 1960's which supports the contention that crime precedes addiction, provided the year of addiction was after 1950. O'Donnell found that 53 percent of the addicts he studied who had been addicted after 1950 had been arrested prior to addiction. They conclude that "The majority of the other studies carried out in the 1960's present a similar conclusion -- that criminal behavior as measured by arrest records, court convictions, or self-reports generally occurs prior to heroin dependency," and that "the weight of the evidence collected in the 1960's, although not conclusive, strongly suggests that crime precedes addiction and that heroin use is an expression of general criminal involvement."[3] For the 1970's Greenberg and Adler cite three studies which indicate that about half of the individuals involved in treatment programs are involved in criminal activity prior to their drug use. The findings reported here generally support this conclusion.

Both the Brooklyn and the California populations were included in the present analysis. Almost 90 percent of both populations were

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[2]Ibid., p.3; see Abrams, Arnold, et al, "Psychosocial Aspects of Addiction," Amer. J. of Pub. Health, 58 (1968), pp. 2142-2155, and Chein, Isador and Eva Rosenfeld, "Juvenile Narcotics Use," J. of Law and Contemp. Prob., 22 (1957), pp. 52-68.

[3]Ibid., pp. 3, 5.

addicted after 1950. This analysis is somewhat unique in that the pre-addiction, addiction, and the post-treatment periods can be considered in examining the crime and addiction problem. The analysis has been presented in two major parts: the first part shows eight patterns of criminal involvement based on these three periods, and the second part looks at the types of criminal activity being committed by the different groups.

Since the California population did not have four years of follow-up, the entire two year follow-up population of 926 Brooklyn patients were included in the analysis (65 were excluded because they had no pre-addiction period, i.e., they were addicted prior to age 16 and no arrest data was available prior to that age). The Brooklyn data is shown in Table 23. All possible combinations of arrest patterns are shown for the three periods. If the patient had committed at least one official criminal act in a period, he was placed in the "crime" group. "Crime groups" have been generally ordered from "A" -- the best, to "H" -- the worst, based on combined criminal activity across periods. While the validity of official records, such as those supplied by the New York Police Department BCI, can be questioned, it will be seen that groups A and B have no criminal activity prior to program entry and they make up 10.9 percent of the total population. This means 89.1 percent of all patients were arrested at some time in their adult lives. On the NIMH admissions form, 88.5 percent of all program entrants reported an arrest at some time in their lives.

TABLE 23

CRIMINAL ACTIVITY BY "CRIME" GROUPS, FOR BROOKLYN PATIENTS

GROUP	EVIDENCE OF CRIMINAL ACTIVITY BY PERIOD			ADULT ARRESTS (16+ yrs. old)					
				FEMALES (COLUMN 1)		MALES (COLUMN 2)		TOTAL (COLUMN 3)	
	PRE-ADDICTION	ADDICTION	ENTRY	N	%	N	%	N	%
A	none	none	none	29	16.5	39	5.2	68	7.3
B	none	none	crimes	12	6.8	21	2.8	33	3.6
C	none	crimes	none	40	22.7	123	16.4	163	17.6
D	none	crimes	crimes	40	22.7	184	24.5	224	24.2
E	crimes	none	none	4	2.3	20	2.7	24	2.3
F	crimes	crimes	none	20	11.4	142	18.9	162	17.5
G	crimes	none	crimes	5	2.8	21	2.8	26	2.8
H	crimes	crimes	crimes	26	14.8	200	26.7	226	24.7
TOTALS				176	100.0	750	100.0	926	100.0

Therefore, it appears that the BCI records and the self-reported criminal activity show a high level of agreement at program entry.

Further examination of Table 23 shows that 7.3 percent of the population has had no official involvement with the law (column 3, group A), and that females have had less involvement in criminal activity generally (column 1, group A).

Groups B, C, and D represent patients who committed no officially recorded crimes prior to becoming addicted doing so only after addiction. These 420 patients are 45.4 percent of the total population, and 33 of them (3.6% of the 420) committed crimes only after coming on the ARTC program. (As seen earlier in VI-2, Table 6, 46.2 percent of the sample population -- 203 of 439 -- were committing crimes prior to entry). Therefore, we may say that 47.3 percent of all Brooklyn ARTC admissions were officially involved in adult criminal activity prior to their heroin addiction, and that 45.4 percent were not involved in adult criminal activity (16 or over) prior to their addiction; 7.3 percent had no official criminal involvement in all three periods. If adjusted to include only the 840 patients in groups B through H who were ever involved in criminal activity in the population (excluding the 68 patients in group A), we may say that 50 percent of all Brooklyn ARTC admissions who ever committed a crime were officially involved in adult criminal activity prior to their heroin addiction.

The most important comparison in Table 23 is the proportion of patients who were officially involved in criminal activity before pro-

gram entry and had none subsequent to entry -- groups C, E, and F. These 349 patients make up 37.4 percent of the total population. Considering that 88.5 percent of the population had (self) reported an arrest at some time in their lives at program entry, and that only 59 patients (groups B, G), or 6.4 percent, move from no criminal activity in the addiction period to criminal activity after entry, this percentage speaks well for the program. However, reductions in criminal activity are not as impressive overall as is often indicated for programs utilizing methadone maintenance. Of 926 patients, 450 (groups D, H), or 48.6 percent, are engaged in criminal activity both during addiction and after program entry. Group H shows no let-up in criminal activity across the three periods. If one wished to select a target group for purposes of developing a greater program impact, group D appears to be the most likely group, since they had no pre-addiction criminal activity. However, there would be no way to separate them from group C at program entry unless relevant background identifiers could be developed.

The percentage in each "crime" group for the California population is shown in Table 24. Table 25 is a comparison of both populations. While almost half of the Brooklyn population was involved in adult criminal activity prior to addiction (47.3%), 41.5 percent of the California population was involved before addiction. There was less criminal activity by the Californians prior to addiction but much more consistent involvement after addiction. Once identified as an addict, the California patient was either committing more crime or coming under greater police surveillance. The rates shown earlier by type of of-

TABLE 24

CRIMINAL ACTIVITY BY "CRIME" GROUPS FOR CALIFORNIA PATIENTS

GROUP	EVIDENCE OF CRIMINAL ACTIVITY BY PERIOD			ADULT ARRESTS (16+ yrs. old)					
	PRE-ADDICTION	ADDICTION	AFTER ENTRY	FEMALES (COLUMN 1)		MALES (COLUMN 2)		TOTAL (COLUMN 3)	
				N	%	N	%	N	%
A	none	none	none	7	15.5	10	5.1	17	7.0
B	none	none	crimes	3	6.7	9	4.5	12	4.9
C	none	crimes	none	3	6.7	12	6.1	15	6.2
D	none	crimes	crimes	21	46.7	77	38.9	98	40.3
E	crimes	none	none	0	--	0	--	0	--
F	crimes	crimes	none	0	--	13	6.6	13	5.3
G	crimes	none	crimes	0	--	6	3.0	6	2.5
H	crimes	crimes	crimes	11	24.4	71	35.9	82	33.7
TOTALS				45	100.0	198	100.0	243	100.0

TABLE 25

COMBINATIONS OF "CRIME" GROUPS DERIVED FROM

TABLES 1 AND 2

TYPE OF GROUPING	BROOKLYN (percent)	CALIFORNIA (percent)
Never had official criminal activity (A)	7.3	7.0
No criminal activity prior to program entry (A + B)	10.9	11.9
No official crimes prior to addiction (B + C + D)[1]	45.4	51.4
Official crimes prior to addiction (E, F, G, H)	47.3	41.5
No official crimes prior to addiction, including those in Group "A" with no crime ever (A + B + C + D)	52.7	58.4
Criminal activity before entry, none after (C + E + F)	37.4	11.5
No criminal activity during addiction, some after entry (B + G)	6.4	7.4
Criminal activity during addiction and after entry (D + H)	48.9	74.0
Criminal activity in all three periods (H)	24.7	33.7

[1]Group "A" not included

N.A. = Not Available

fense suggest that greater police surveillance in California was the case.

Comparison of males and females by "crime" groups (Tables 23 and 25) show that the males were more consistently criminal across all three periods. Women were less likely to be officially involved in criminal activity prior to their addiction. This was consistent for both the Brooklyn and California populations, and it is most marked at the extremes: group A in both populations shows a much higher proportion of women (three times more) never being arrested, and group H in both populations shows a much higher proportion of men (almost twice as many) with arrests in all three periods. This is shown in Table 26 for all patients with official crimes prior to addiction.

TABLE 26

PERCENT OF MALES AND FEMALES IN BROOKLYN AND CALIFORNIA POPULATIONS WITH OFFICIAL CRIMES PRIOR TO ADDICTION

SEX	BROOKLYN	CALIFORNIA
MALES	51.1% (473)*	45.5% (90)
FEMALES	31.3% (55)	24.4% (11)

*Number

The development of "crime" groups such as these requires a brief examination of the kinds of crimes involved for each group. For example, does the consistently criminal group, Group H, show a high rate of property crimes indicative of a criminal life style? Does the group which becomes officially criminal after addiction only participate mostly in drug crimes only?

These data which are shown in part in Tables 27, 28, and 29, were difficult to examine since there were no arrests in at least one of the periods for six of the eight groups (none at all for group A), and these periods varied for each group. The consistently criminal Group H and patients in Group D (no official crimes in the pre-addiction period but crimes in both addiction and after entry periods) showed the most involvement in property crimes and forgery, as expected. Group F (pre-addiction and addiction crimes only) also fell into this category to some extent. Patients with these patterns of criminal activity (D, F, H) also showed the highest rates across all three periods.

Does the group which becomes officially criminal only after addiction participate mostly in drug crimes only? These patients are found in Groups B, C, and D. Their overall rate patterns for <u>drug crimes</u> did not differ markedly from those patients who were officially recognized prior to their addiction, as seen in Table 27, except for the unusually high rate for Group F in the California population. A tendency did exist for the "crime after addiction" groups to be less involved in drug offenses prior to program entry and more involved

TABLE 27

DRUG RATES FOR BROOKLYN AND
CALIFORNIA POPULATIONS BY PERIODS

GROUP/POPULATION	TIME PERIOD							
	Pre-Addiction		Addiction		1 Year After		2 Years After	
	N	Rate	N	Rate	N	Rate	N	Rate
GROUP B (None/None/Crime)								
BROOKLYN (33)	--		--		5	.50	1	.10
CALIFORNIA (12)	--		--		6	.65	2	.12
GROUP C (none/Crime/None)								
BROOKLYN (163)	--		59	.20	--		--	
CALIFORNIA (15)	--		18	.37	--		--	
GROUP D (None/Crime/Crime)								
BROOKLYN (224)	--		100	.21	41	.49	23	.21
CALIFORNIA (98)			92	.46	30	.43	27	.34
GROUP F (Crime/Crime/None)								
BROOKLYN (162)	11	.03	61	.29	--		--	
CALIFORNIA (13)								
GROUP G (Crime/None/Crime)								
BROOKLYN (26)	5	.07	--		1	.17	1	.08
CALIFORNIA (6)	3	.21	--		1	.33	2	.67
GROUP H (Crime/Crime/Crime)								
BROOKLYN (226)	34	.05	97	.29	43	.47	24	.25
CALIFORNIA (82)	27	.09	74	.60	28	.49	.7	.24

TABLE 28

PROPERTY RATES FOR BROOKLYN AND
CALIFORNIA POPULATIONS BY PERIODS

	TIME PERIOD							
	Pre-Addiction		Addiction		1 Year After		2 Years After	
	N	Rate	N	Rate	N	Rate	N	Rate
GROUP B (None/None/Crime)								
BROOKLYN (33)	--		--		0		1	.10
CALIFORNIA (12)	--		--		3	.29	0	
GROUP C (None/Crime/None)								
BROOKLYN (163)	--		40	.12	--		--	
CALIFORNIA (15)	--		14	.20	--		--	
GROUP D (None/Crime/Crime)								
BROOKLYN (224)	--		73	.17	15	.15	16	.17
CALIFORNIA (98)	--		75	.30	29	.44	10	.10
GROUP F (Crime/Crime/None)								
BROOKLYN (162)	27	.15	37	.14	--		--	
CALIFORNIA (13)	3	.04	8	14.22	--		--	
GROUP G (Crime/None/Crime)								
BROOKLYN (26)	2	.02	--		1	.17	2	.17
CALIFORNIA (6)	0		--		0		0	
GROUP H (Crime/Crime/Crime)								
BROOKLYN (226)	51	.13	74	.17	22	.26	18	.22
CALIFORNIA (82)	38	.29	49	.31	27	.57	3	.07

TABLE 29

ASSAULT RATES FOR BROOKLYN AND
CALIFORNIA POPULATIONS BY PERIODS

	TIME PERIOD							
	Pre-Addiction		Addiction		1 Year After		2 Years After	
GROUP B (None/None/Crime)	N	Rate	N	Rate	N	Rate	N	Rate
BROOKLYN (33)	--		--		0		1	.10
CALIFORNIA (12)	--		--		1	.06	7	.47
GROUP C (None/Crime/None)								
BROOKLYN (163)	--		10	.01	--		--	
CALIFORNIA (15)	--		6	.03	--		--	
GROUP D (None/Crime/Crime)								
BROOKLYN (224)	--		32	.03	8	.07	11	.10
CALIFORNIA (98)	--		19	.03	5	.04	29	.26
GROUP F (Crime/Crime/None)								
BROOKLYN (162)	14	.05	15	.04	--		--	
CALIFORNIA (13)	2	.06	2	.02	--		--	
GROUP G (Crime/None/Crime)								
BROOKLYN (26)	6	.08	--		2	.17	0	
CALIFORNIA (6)	1	.03	--		1	.33	1	.17
GROUP H (Crime/Crime/Crime)								
BROOKLYN (226)	35	.07	19	.02	10	.08	13	.11
CALIFORNIA (82)	19	.06	31	.10	5	.12	21	.27

after entry than the "crime before addiction" groups. With the exception of the unusually high Group F/ California rate in the addiction period, the "crime after addiction" groups did not differ much from the "crime before addiction" groups on property crimes, as shown in Table 28. We see again, however, the tendency for Groups D and H to be very similar in having high rates overall. This became even more marked in examining the assault crime rates shown in Table 29. Of the four groups involved in crime after program entry, three showed rate increases for both Brooklyn and California populations. Groups D and H again showed the most consistent increases in assaultive types of behavior. More interesting, however, was the finding that the greatest rate increases after program entry were for those two groups -- B and D -- where there was no recorded criminal activity prior to addiction. No explanation for this was evident, although these may be younger groups of patients with a greater potential for assaultive criminal activity.

Summary. Somewhat less than half of both the Brooklyn and Santa Clara County, California, patient populations were officially involved in criminal activity prior to becoming addicted. About seven percent of both populations were never involved in criminal activity. Therefore, 45.4 percent of the Brooklyn population and 51.4 percent of the California population had no official crimes to addiction (as adults), and 52.7 percent and 58.4 percent, respectively, had no adult criminal activity before addiction if those (7.3 percent Brooklyn and 7 percent California) patients who never had any criminal

activity officially recorded are included. Males showed consistently higher levels of criminal activity than females. Since almost all of these patients (about 90%) were addicted after 1950 in both populations the findings agree very much with those of O'Donnell and the conclusions reached by Greenberg and Adler. An examination of the various "crime groups" developed indicated that those patients who were involved in criminal activity during all three periods and those involved in the addiction and after entry periods only were the most criminally involved groups of patients overall. It was also found that patients who began their criminal activity after addiction did not concentrate exclusively on drug crimes in relation to other patients.

(6) Police and Court Studies

The findings include two studies which were done independently of the evaluation of patient performance. These were the study of interaction between addicts and police patrolmen, and a study of addict disposition in a Brooklyn court.

The Police Study. This study was done in early 1973 and has been published in the Journal of Police Science and Administration, Fall 1974 (Volume 2). The paper is entitled "Patrolmen and Addicts: A Study of Police Perception and Police-Citizen Interaction," and was completed by Robert B. Coates and Alden D. Miller of the Harvard Center. The following represents a summary of that paper (some portions verbatim), with added material taken from later study findings and official data.

The police study was designed to document the extent of interaction between patrol officers and addicts, with particular regard to differential handling of addicts as opposed to other offenders. This was done by direct observation of the police by two law students and one graduate student (political science) who rode in police cars 17 hours a week for 12 weeks. Informal interviewing and a structured questionnaire were also used to gather information on the extent of drug-related crime in the community, perceptions of addicts, assessments of community-based drug programs (ARTC in particular), and special problems officers faced in dealing with addicts. Police officers studied were from one precinct located in the ARTC catchment area.

"Only patrolmen were studied because the major interest of the study focused on attitudes and behavior of the officer who would most likely encounter addicts on the street and who works daily within the precinct." While many officers were observed on duty, particularly those closest to the ARTC clinic, sixty (60) completed structured interviews (82% of one 24-hour shift). Of the forty-eight (48) who gave background data, three-fourths were white and almost half had been with the department over six years (ten percent of this group more than 16 years). Eighty percent (80%) had worked in the specific study precinct three years or more (18% of this group eleven or more years).

Results were presented in five parts. The first dealt with the amount and kind of actual interaction found between police and addicts. Both observation and questionnaire data supported the finding that "interaction with addicts and arrests of addicts constitute a small proportion of all police-citizen interaction," constituting 12 percent of all observed encounters. Police were not seen as spending an inordinate amount of time dealing with addicts, nor did these encounters differ from those found for other types of offenders.

Several questions were asked of the patrolmen to gain their impressions of heroin-related crime in the community. Most officers, particularly white officers, believed that addict income was obtained from illegal sources. Attitudes were evenly divided on the issue of whether addiction produces criminal activity. This division of opinion

is supported in the findings presented earlier in this report, since something less than half (45.4%) of all the ARTC patients studied had no officially-recorded criminal activity as adults prior to becoming addicted. Of those responding to the question, 42 percent of the patrolmen indicated that the people would not steal if it were not for the drug habit. Officers indicated those crimes which they felt addicts committed. Their responses generally agree with those found in the study of self-reported addict criminal activity discussed earlier in this report. However, fewer addicts self-reported prostitution or muggings during addiction than was indicated by the officers' responses. The taking of bets, numbers, or policy was also practiced to a greater extent in the pre-addiction and post program entry periods than perceived by the officers. Carrying drugs or works was the primary crime during addiction and was not mentioned by the officers. While the Columbia University survey of community residents found that 43 percent of all respondents reported "knowing an individual who used heroin," these patrolmen perceived fewer addicts in the community. Seventy-nine (79) percent of the patrolmen, however, indicated that over half of the total community crime was committed by heroin addicts (14%, less than half; 7%, didn't know). According to the Crime Analysis Division of the New York City Police Department, 27.7% percent of the felony narcotic arrestees in 1972 admitted to being drug users (3,165 of 11,431) while 30.9 percent of misdemeanor narcotic arrestees were admitted users (4,235 of

13,726).[1] For these admitted users, the report states:

> More felony crimes against property were committed by admitted narcotic users than felony crimes against the person. In 1972, 12.8 percent of those arrested for selected felonies against property were admitted users, as against 4.8 percent arrested for felony crimes against the person. Comparable figures for 1971 were 15.5 percent for selected felonies against property and 4.4 percent against the person.[2]

These figures indicate a lower incidence of serious criminal activity on the part of addicts than found in questionnaire responses. Informal interviewing yielded results as high as 75 to 90 percent of all crimes being committed by addicts. Generally the white officers estimated higher than black officers.

The third set of findings dealt with police perceptions of addicts. They are summarized in the Coates and Miller paper as follows:

> . . .it would appear that the general profile of heroin addicts perceived by police is one characterized by a somewhat confused "free will" understanding of the nature of man. [They] are perceived as basically weak people who would become involved in addiction even if they had had better job opportunities. They are often enticed into heroin addiction by pushers who introduce them to marijuana or other soft drugs. But, these officers feel, in spite of the weakness of the addicts, if the addicts really wanted to be cured, they could be. Many of these officers believe the addicts simply do not want to be cured. (page 314)

A more important finding, however, was that the threat of arrest was not regarded as a viable means for reducing the use or sale of heroin, with 92 percent of these police patrolmen stating that the desire to use heroin would not be stopped through threat of arrest.

The fourth set of findings dealt with the police perception of

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[1] New York City Police Department, Crime Analysis Division, "Statistical Report, Narcotics, New York City, 1972," p. 6, (mimeo.)

[2] Ibid, p. 8

community drug programs:

> When asked in the questionnaire about how they felt about methadone for treating heroin addicts, 58 percent of the officers indicated that they were opposed, 25 percent said that "it depends," 13 percent were in favor, and 3 percent responded "don't know." White officers (64%) were more likely to be opposed than black officers (42%). (page 316)

As to whether people on methadone are better able to hold jobs, 44 percent of the officers said yes, although black officers were much more likely to respond positively than white officers (83% versus 31%, respectively). A surprise finding was that about as many officers supported some form of heroin maintenance as supported methadone maintenance. Informal interviewing led to four categories of response as to how heroin addicts should be handled -- the hard line (isolation from community), long-time rehabilitation (four to five year hospitalization), heroin maintenance, and a small group for controlled heroin usage through legalization.

Findings similar to the above and also involving comparisons with results obtained from probation and parole officers, district attorney and public defender staff, and judges can be found in the Final Report of the Santa Clara County (California) methadone evaluation. The officers involved were narcotic law enforcement only:

> When asked about the heroin addict's commitment to treatment, criminal justice system personnel indicated a healthy level of skepticism about the commitment of the addict population to the concept of methadone treatment. . .They appear to be saying that while the program is a good thing and has potential as a treatment tool, the individual "addict-turned-patient" must make the final determination of his success or failure.[3]

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[3]Final Report, Social Evaluation and Impact Study of Santa Clara County Methadone Treatment and Rehabilitation Program (American Justice Institute, July, 1973), p. 55.

The fifth and final set of findings dealt with the patrolmen's assessment of ARTC. Forty-eight percent of the forty officers responding simply indicated "negative" when asked to describe the effects of the program; 3 percent indicated positive effects:

> Informal interviewing showed that the police generally view the Center as being ineffective for 95 percent of the people going there for treatment and antithetical to law enforcement goals because it increases crime, drug traffic, and the level of harassment and disturbance in the community. (page 317)

Black and white officers differed little in their response to this question. Officers viewed the Center as a congregating point for addicts which they felt caused problems for both community residents and the police. Although limited to narcotic law enforcement officers, the Santa Clara County evaluation clearly supports the negative view of methadone programs taken by the Brooklyn law enforcement officers. Courts and corrections personnel take a more positive view.[4]

In addition to the above findings these patrolmen were asked several questions about the procedures they used and the problems they encountered in policing addicts. About 40 percent said other officers would refer addicts to ARTC if the offenses were minor. Forty-one percent felt that the courts preferred referral to arrest. Unique policing problems were those of handling addicts experiencing a high, and that of listening to their many problems. Since addict

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[3] Ibid., pp. 47-48.

arrests were not as high as expected based on the attitudes found, it was determined that police were constrained from making large numbers of arrests by the police command structure and the courts. Also, shifts in Department policy had taken much of the responsibility for addict arrests away from the patrolman and placed them in the hands of the Narcotics Division, which concentrates on higher levels of drug activity. The results of these factors are summarized in the paper:

> It would seem, in the end, that the combination of police perceptions and actions, actions by the court, and actions by ARTC, have created an environment in which at least minimum levels of heroin addiction are tolerated. The result is a de facto treatment philosophy for handling addicts, and conscious or unconscious diversion of a large number of addicts from the formal criminal justice system. (page 321)

The Court Study. The study of the King's County (Brooklyn) Criminal Court was conducted largely in the Summer of 1973 under the supervision of D. Lloyd Macdonald of the Center.[5] It utilized structured interviews employing open-ended questions. These interviews were given by two second-year law students at Harvard Law School and included interviews with 13 Assistant District Attorneys, 10 lawyers from the Legal Aid Society and 11 Criminal Court judges. In addition, the questionnaire was administered to the then-current ARTC trial lawyer, a former ARTC lawyer and a private attorney having a substantial practice in the Brooklyn Criminal Court. Five subject matter

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[5] D. Lloyd Macdonald, "Justice in Brooklyn: The Disposition of Addict and Non-Addict Defendants in the King's County Criminal Court," (Center for Criminal Justice, Harvard Law School, April, 1974).

areas were covered: Attitudes (to addict defendants, non-addict defendants, treatment programs, etc.), preparation for decision (e.g., sources of information), court proceedings (bail decisions, hearings, etc.), plea negotiation and disposition. In addition to these structured interviews, unstructured interviews were done with the treatment and administrative staff of ARTC as well as with various court personnel. The findings of these interviews were supported by observation and examination of records in the ARTC Legal Department and the King's County Criminal Court.

A summary of some of the findings of the study has been published in the Harvard Law School Bulletin of June, 1974, entitled "A View from Brooklyn: Problems in Criminal Court Policy." The major findings are taken from the full report as follows:

1. As a result of the Brooklyn Criminal Court's structure and the attitudes of its major official participants, addicts are dealt with as a special category of defendants. Disposition to community treatment is seen as more appropriate than for the non-addicted defendant. The ready availability of community treatment programs, varying from in-patient abstinence programs to walk-in methadone clinics, encourages this pattern.
2. ARTC provides criminal defense services which are viewed as part of and responsive to the larger treatment program. The ARTC legal staff has enthusiastically pressed the "defense of addiction" through which their clients' addiction is argued to fundamentally mitigate their culpability. As judged by the numbers

of clients returning from court without jail terms, the Legal Department appears to have been quite successful in its lawyering efforts.

3. The plea bargain is the basic form of disposition in the Brooklyn Criminal Court. Although there is considerable variation from courtroom to courtroom, several features were consistently noted:
   a. Prosecutors, defense lawyers and judges participate in the bargaining process.
   b. The prosecutor exercises the greatest influence over disposition outcomes.
   c. A defendant's prior record, the nature of the current offense and the defendant's social history are the factors to which case outcome is most directly related.
   d. A defendant's being addicted makes prosecutors and judges more amenable to community treatment and less inclined to a jail disposition. However, this posture of greater leniency does not hold when the crime charged involves violence against another person or a property offense of great seriousness.
4. Our data confirm as substantially accurate the perception of local police officers, reported in an earlier Center paper, that arrested addict offenders emerge from court with only modest consequences. We found a very large percentage of addict defendants having their cases simply dismissed or placed in community treat-

ment programs. However, we also found that adjournments and dismissals are common in non-addict cases.

5. There is widespread ignorance of ARTC among the judges, prosecutors and defenders within the court.

CHAPTER VII

OBSERVATIONS AND RECOMMENDATIONS OF THE PRINCIPAL RESEARCH INVESTIGATOR

What is the potential for the future of drug treatment programs of the ARTC type? First, the Addiction Research and Treatment Program was created not only to provide treatment for drug addicts but also to produce reductions in criminal activity in the Bedford-Stuyvesant/Fort Greene area of Brooklyn. As pointed out in Chapter III, the primary goal in establishing the program was to reduce drug use and in this way to effect the crime problem in that area of Brooklyn. As one might expect, these longer range goals had to be translated by program staff into specific programs which would have an impact on individuals, and these objectives were of a more immediate nature: they focused on the "treatment" of the addiction through methadone maintenance (stabilization of habit) and the rebuilding of an alternative life style consisting of work, satisfying family interaction, improved relationships with others, community involvement, and the like. In early 1974, for example, ARTC staff were evaluating the merits of a new proposal for treating the entire family unit as the following staff report indicates:

> It is understood that treatment does not proceed in a vacuum. Treatment offered for part of a day to the surfaced personality is not treatment of a total person. Patients return to homes and families presenting them with additional

> problems and stress situations. This "scene" often negates or hampers the further development of the patient's progress. The source of stress, as well as the patient's manifestations, requires our attention. It has been proposed that ARTC therefore respond to family crisis and offer assistance to the whole family unit.

It was assumed treatment of these types, which follow accepted social work procedures, would in turn lead to total abstinence from drugs and to crime reduction and also to "improvements" in other types of social behavior deemed "asocial" or disruptive to society. As the present study demonstrates, however, the effects of the reductions in the criminal activity of patients which are achieved are difficult to detect in the official rates for crime in the community as a whole. In addition while the ARTC treatment strategy works for some addicts, it did not reach a significant proportion of the individuals who might account for the largest reductions in criminal activity in the community over the long term -- the younger addict.

The suggestions offered here are not intended as a criticism of the ARTC effort or the California program or the many others which have shown reductions in criminal activity and improvements in patient behavior as a result of program efforts. These suggestions address the issue of how the process might be improved using methods which already exist, but using them more effectively in a comprehensive program. They involve the two basic aspects of all drug programs: outreach and assistance. Most of the early

methadone programs were so swamped with applicants that they had little need or time to consider effective outreach programs. Most of the applicants to these programs were older addicts with longer addiction histories who, it is maintained from the present study, were more amenable to program intervention. In order to be effective in reducing criminal activity, future programs must be able to reach younger populations of addicts, and once brought into programs these addicts must be retained and given proper assistance.

The method of outreach which may be most effective in bringing younger addicts into programs is that developed in Chicago by Hughes and his associates. Their initial concern was with the community lag in response to major heroin epidemics. They did an historical study of a heroin epidemic among Chicago youth which peaked in 1949. While they found the decline in the epidemic due largely to the decreased quality and increased cost of heroin, they were most concerned with the one year lag in community reaction:

> The epidemic was already on the decline for at least a year before the community mobilized to control it through punitive legislation, a special narcotics court, and expansion of narcotics enforcement personnel. This failure to respond effectively during the early stages of disease spread may be a characteristic feature of heroin epidemics, and should be considered in the design of addiction control programs.[3]

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[3] Patrick H. Hughes, Noel W. Barker, Gail Crawford, and Jerome H. Jaffe, "The Natural History of a Heroin Epidemic," Am. J. of Pub. Health, 62 (July, 1972), p. 1000.

In a subsequent paper, Hughes and associates described the outcome of a project which contained a localized heroin epidemic in Chicago in 1971 using conventional community treatment methods.[2] A detailed presentation of the epidemiological approach was made at the Fourth National Conference on Methadone Treatment in which Hughes and associates described how the epidemiologic field team worked in neighborhood distribution sites -- called "heroin copping areas" -- to bring addicts into a methadone treatment program.[3] His conclusions bear repetition:

> We offered methadone treatment to representative samples of street addicts in black, Mexican and Puerto Rican neighborhoods. . . .
>
> A favorable response to outreach by three-quarters of the street addict population available to the field team was obtained across three copping areas with different ethnic make-ups. . . .
>
> If we wish to advocate a voluntary treatment system as the preferred control mechanism for the majority of urban heroin addicts, we must improve this system to attract the 20 or 30 percent who will reject treatment, and we must reduce drop out rates among those who enter treatment. First, we can make it easier for the addict to obtain treatment by reducing frustrations involved in admission procedures, by establishing facilities in the addict's own neighborhood with milieus that appeal to the unique characteristics of the populations involved. The search must also continue for longer acting maintenance and blocking agents which have high patient acceptability.[4]

Some problems are cited by Hughes and his associates in the use of the method, such as the instability of local heroin distribution

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[2] Patrick H. Hughes, Edward Senay, and Richard Parker, "The Medical Management of a Heroin Epidemic," Arch. Gen. Psychiat., 27 (Nov., 1972), pp. 585-591.

[3] Patrick H. Hughes, Clinton R. Sanders, Eric Schaps, "The Impact of Medical Intervention in Three Heroin Copping Areas," Fourth National Conference on Methadone Treatment, Proceedings, January 8-10, 1972, pp. 81-83.

[4] Ibid., p. 83.

systems, but they feel that "epidemiologic field teams may soon become key program elements in comprehensive addiction control programs."[5] If drug treatment, and more specifically methadone treatment, is to become a significant factor in crime reduction in a community, it seems essential that such outreach techniques be implemented in conjunction with any program which is developed.

The epidemiologic approach lends itself well to the voluntary nature of methadone programs. There are those who espouse more direct methods which rely on some level of addict coercion to enter treatment programs. This is particularly true in the criminal justice field where coercion to treatment has often been found under the guise of rehabilitation. At present the "TASC" Program -- Treatment Alternatives to Street Crime -- is in operation in several major U.S. cities. It is sponsored by the Federal Government primarily through the Law Enforcement Assistance Administration. The basic problem stated by TASC officials is that "A major portion of property crime in America is committed by drug dependent persons. . . .Experience has shown that most drug dependent persons, when released on bail, after arrest, incarceration, or a brief period of confinement, will eventually resume their drug-

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[5] Ibid.; for more detail on the validity and utility of the epidemiologic approach to studying heroin use as it compares to the study of communicable diseases the reader is referred to Mark H. Greene, "An Epidemiologic Assessment of Heroin Use," A.J.P.H., 64 (December, 1974), pp. 1-10.

taking behavior, again commit crimes and eventually will be re-arrested.[6]

It is not clear, however, that the basic assumption is valid, namely that a majority of property crime is committed by addicts. The police data from New York City show that in 1972 12.8 percent of those arrested for selected felonies against property were admitted drug users.[7] An unpublished study from the Chicago Police Department which was directed specifically to the question of addict-related crime was done twice because the results of the first compilation "appeared to be in conflict with general impressions gleaned from newspaper accounts of criminally involved narcotic offenders in the rest of the nation." For auto theft, narcotic involvement was found for 13.7 and 11.4 percent of adult arrestees (first and second compilation, respectively), for burglary, 13.7 and 12.4 percent, for robbery, 17 and 19 percent, and homicide/sex/aggravated battery, 6.7 and 6.5 percent. These figures were in close agreement with those for New York. Indeed, the New York City police figures show that the largest categories of arrest for drug addicts are for drug offenses (e.g., 27.7 percent of admitted users arrested for felony and 30.9 percent for misdemeanor dangerous drug offenses). Therefore, while their initial assumption

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[6] TASC, Treatment Alternatives to Street Crime, a Function of the Special Action Office for Drug Abuse Prevention, Law Enforcement Assistance Administration, National Institute of Mental Health, informational handout, undated (received, 1974)

[7] Crime Analysis Division, New York City Police Department, op. cit., p. 8.

lacks support, it is true that addicts are deeply involved in the criminal justice apparatus.

The TASC report then states that:

> Experience has shown that while large numbers of drug dependent persons are currently seeking treatment, many others do not seek treatment until a crisis develops. Arrests often create a situation of crisis which make drug dependent persons more willing to consider treatment. This occurs in part because of the hope it will reduce the penalty, but also because of the recognition of the self-destructive character of their drug-using behavior.[8]

At that moment, they continue, treatment will be seen as something of value to the addict rather than simply as a deprivation of their drug. And they go on to say that "If drug dependent persons are treated for their dependency, they will no longer be able to claim that their compulsion for drugs caused them to commit crime.[9]

There is no evidence from the present study to deny the assumption that this type of approach will work, since almost all ARTC patients were volunteers from the streets, although it would be naive not to acknowledge that many ARTC "volunteers" were motivated by law enforcement pressures. TASC figures on outcome may show success under these conditions, even where direct pressure has been exerted to enter treatment. The effect on younger addicts who are not being reached well in purely voluntary programs will be most important in interpreting their success. However, it

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[8] TASC, op. cit.

[9] TASC, op. cit.

is suggested that waiting for an arrest to occur before taking action is not as efficient as the epidemiologic approach which attempts to interrupt the pattern of spread of the heroin problem among susceptible persons by early identification and treatment. Surely it is reasonable to assume that the earlier the problem is identified the more likely it is that new cases will not be generated and that those involved can be helped.[10] An added benefit would be that of reducing the demand for heroin and other illegal drugs in an area, thus reducing profit from drug sales.

Coupled with an epidemiological approach and law enforcement efforts, however, there must be an effective program for the treatment of addicts. It is questionable, for instance, that programs such as ARTC or the Santa Clara County (California) programs could presently handle the total rehabilitation task which might be involved with the use of greater outreach procedures. Average patient costs per year range from $1,200 to $2,000, and as seen in the ARTC program these amounts do not provide many services which might lead to what TASC refers to as the goal of assisting drug dependent persons to become self-sufficient, healthy and law-abiding citizens. The addition of meaningful job skill development programs might easily double this figure per patient, and such pro-

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[10] See Law Enforcement Assistance Administration, National Institute of Law Enforcement and Criminal Justice, Methadone Treatment Manual (June, 1973), p. 4.

grams would be much more necessary with many younger addicts who have never developed job skills.

For the future of drug treatment programs, based on the ARTC experience, the Santa Clara County, California, experience and the findings of other studies of both methadone and non-maintenance type programs, three major program requirements are recommended. First, the epidemiologic outreach model described by Hughes, Greene, and others should be a part of any such program. Second, the administration of the program must be sound and the program must be committed to a continuous, long-term effort. One-year or two-year solutions are simply not effective. And third, the range of services provided must be both administratively integrated and broadened even to include morphine maintenance for short periods of time.

The treatment of heroin addiction takes time. It cannot be accomplished in two years for the majority of addicted individuals. Aggressive behavior, major and minor law violations, and drug violations continue. Alcohol abuse may increase, as shown in the California study. Furthermore, reductions in community criminal activity as a result of program activity will not be found until epidemiologic methods are applied to stop the production of new addicts in the community. Next, programs for treatment must be attractive, having something to offer in return for stopping drug

abuse and criminal activity. In order for programs to be effective they must be long term. As stated in the conclusions to the California study:

> It is conceivable that the administrative structure, finding, medical orientation, and research emphasis placed on methadone treatment have contributed in large measure to the success of the technique to this point in time. The patients know that their program will be there a long time to help them in a long and painful process. Now is the time to begin the enrichment of programs to meet these long-term needs.[11]

The Santa Clara County program was part of a county mental health department, and as such was provided with an administrative structure from its beginning. Competent administrators were in charge. Tested budgeting techniques were available. Staffing patterns were easy to modify for such a program, and competent personnel were found within the agency who already were familiar with existing administrative procedures. A new organization, such as ARTC, has to build these structures from scratch using grant money, often referred to as "soft" money since it is only available for a limited period of time. The independence achieved by a separately funded and operated organization is often touted as important because it frees the program from political interference. This does not appear to have been the case with ARTC, a program which has been the subject of considerable controversy. For some states, perhaps more than others, the ideal structure is to place the pro-

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[11] Dale K. Sechrest and Thomas E. Dunckley, "Criminal Activity, Wages Earned, and Drug Use After Two Years of Methadone Treatment, Addictive Diseases: An International Journal, 1 (1975), p. 511.

gram in an existing setting and use grant money to supplement the basic budget. The basic budget would come from local taxes and would require greater community support. This provides sounder structure and staffing, and it increases the likelihood of program longevity once the program has become part of a long-term organizational structure. Also, as the program begins to reduce the numbers of addicted persons in the community, staff can be shifted to other duties thus reducing the tendency for them to get a "vested interest" in the continuance of the program.

Finally, the range of services provided by these programs must be expanded, but only after all services for addicts have been integrated into one administrative structure. Non-maintenance or "drug-free" programs should be operated alongside maintenance programs. A central screening mechanism should be developed in each community for the initial processing of identified addicts, whether they come from the criminal justice system or are volunteers. A decision should be made as to the proper treatment for them. This treatment need not be static or of one kind only. Too often methadone maintenance is the "only shop in town" for the addict, leading to a static approach. Perhaps after appropriate screening the addict could even be given morphine maintenance for a brief period, then moved to a therapeutic community, and then given close supervision and support in the community. The goal at all times would be on developing the patient's ability to manage his life and

develop a life style over time which would allow him to become self-sufficient, healthy, and law-abiding.

At this point in time we are faced with some choices. We can continue to work with those individual addicts who volunteer for our programs, whether by free choice or some form of law enforcement pressure. In doing so we will continue to find that they are the older, more motivated addicts who are ready to try something -- anything. As Vaillant has stated:

> The natural history of addiction -- like that of adolescence -- is that the likelihood of recovery improves with time. In that sense, narcotic addiction differs from most mental illness; but, unlike the adolescent, the addict does not mature spontaneously. The addict needs help both in achieving independence via employment and in discovering means of instinctual satisfaction that are alternative to solitary gratification.[12]

If we chose to continue as we have, we can forget about producing significant reductions in community criminal activity (i.e., the fabled "impact") and work with whom we can. The money will probably be well spent in assisting these individuals in developing a life style which will be at least non-damaging to society, even if they become welfare recipients or find marginal employment. On the other hand, using existing techniques, such as the epidemiologic field approach, and existing administrative structures in the application of an integrated use of a broad range of services in a

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[12] George E. Vaillant, "The Natural History of Narcotic Drug Addiction," Sem. in Psychiat., 2 (November, 1970), p. 497

given community, it may be possible to cope with large-scale heroin epidemics now and in the future. This would reduce the frustration inherent in treating addicts who have lost a great part of their lives to addiction by getting to them earlier in their lives, and in the long run it should impact directly on the illegal drug market.

APPENDIX A

FREQUENCY DISTRIBUTION OF VIOLATIONS OF NEW YORK PENAL CODE BY OFFENSE AND SEVERITY

OFFENSE #	OFFENSE - NAME	SEVERITY	FREQUENCY
15.99	Public Intoxication	V	88
55.10	Traffic Violation	V	57
70.40	Violation of Parole		209
75.05			1
110.00	Attempt (any)	Range:A/F-B/M	2
110.05	Attempt (any)		30
110.15	Attempt (any)		1
110.99	Attempt (any)		1
111.11	Removal of a Dead Body		1
116.54			1
125.45	Abortion - 1	D/F	1
130.20	Sexual Misconduct	A/M	2
130.38	Consensual Sodomy	B/M	36
130.40	Sodomy - 3	E/F	1
130.99	**Sexual Misconduct (any)	Range:B/F-B/M	77
155.20	Larceny - Scalping	V	7
165.05	Unauthorized use of motor vehicle	A/M	43
170.60	Unlawfully using slvgs - 1	E/F	5
170.65	Forgery of Vehicle I.D. #	E/F	1
170.70	Illegal possession of license plates	E/F	3
175.25	Tampering with public records 1	D/F	3
177.99			1
180.00	Sports bribe		1
190.25	Criminal Impersonation	A/M	9
195.05	Obstructing Gov't Admin'tion	A/M	47
195.10	Refusing to aid a police officer	B/M	1
200.05			1
200.51			1
210.05			5
210.40	Perjury (oral)	E/F	3
210.45	Perjury (written)	E/F	1
215.05	Bribe receiving by witness	D/F	1
205.00	*Escape (any)	Range:A/M-D/F	1
205.05	Escape - 3	A/M	5
205.10	Escape - 2	E/F	6
205.30	Resisting arrest	A/M	131
205.35	Bail Jumping - 2	A/M	3

OFFENSE #	OFFENSE NAME	SEVERITY	FREQUENCY
205.50	Hindering prosecution (any)	A/M-D/F	1
205.60	Hindering prosecution - 2	E/F	2
205.99	*Avoiding arrest/prosecution (any)	Range:A/M-D/F	4
225.00	Gambling (policy)	V	25
225.05	Promotion of gambling - 2	A/M	88
225.10	Promotion of gambling - 1	E/F	26
225.15	Possession of gambling records - 2	A/M	63
225.20	Possession of gambling records - 1	E/F	3
225.30	Possession of gambling devices	A/M	1
225.35	Gambling (phoning numbers)		1
225.40	Gambling, Lottery		1
225.99	*Gambling offense (any	A/M,E/F	16
235.05	Obscenity	A/M	3
235.21	Discriminating indecent material to minors	E/F	2
235.99	*Obscenity (any)	Range:A/M-D/F	1
240.06	Riot - 1	E/F	5
240.10	Unlawful assembly	B/M	12
240.20	Disorderly conduct	V	617
240.24	Harrassment	V	97
240.30	Harrassment (aggravated)	A/M	42
240.35	Loitering	V	554
240.40	Public intoxication	V	40
240.45	Criminal nuisance	B/M	5
240.99	*Offenses against public order (any)	Range:V-E/F	218
245.00	Public lewdness	B/M	1
245.05	Offensive exhibitions	V	1
246.35			1
260.00	Abandonment of child	E/F	3
260.05	Non-support of child	A/M	9
260.10	Endangering the welfare of a child	A/M	16
270.00	Possession of fireworks	V	5
290.20			1
304.30			1
375.07			1

(APPENDIX A cont)

OFFENSE #	OFFENSE - NAME	SEVERITY	FREQUENCY
401.00	Unregistered motor vehicle		12
401.60			1
405.00	Violation of firework permit	V	1
472.00			1
500.00	Juvenile delinquence		119
501.00	Unlicensed operator		29
503.00			7
504.00			2
505.00			2
700.00	Military desertion		6
700.10	AWOL		16
700.99	*Unspecified military		29
800.00	Sanitary code violation	V	26
709.91			1
900.00	Vagrancy	V	72
950.00			11
	DRUG OFFENSES		
220.00	*Dangerous drug offenses (any)	Range:B/M-B/F	50
220.05	Possession of dangerous drugs - 4	A/M	1477
220.10	Possession of dangerous drugs - 3	E/F	59
220.15	Possession of dangerous drugs - 2	D/F	359
220.20	Possession of dangerous drugs - 1	C/F	56
220.30	Selling dangerous drugs - 3	D/F	57
220.35	Selling dangerous drugs - 2	C/F	232
220.40	Selling dangerous drugs - 1	B/F	15
220.45	Possession hypodermic instruments	A/M	919
220.09	Criminal possession of dangerous drugs - 5	C/F	1
220.99	*Unspecified drug offenses	Range: A/M-B-F	587
220.33	Possession, controlled substance		2
220.50	Criminally using drug paraphernalia - 2	A/M	8
220.55	Criminally using drug paraphernalia - 1	D/F	1
220.25	Possession, drugs in auto		6

(APPENDIX A cont)

OFFENSE #	OFFENSE - NAME	SEVERITY	FREQUENCY
	PROSTITUTION		
230.00	Prostitution	V	234
230.20	Promoting prostitution - 3	A/M	12
230.25	Promoting prostitution - 2	D/F	4
230.99	*Prostitution offense (any)	Range:V-B/F	1
	PROPERTY		
140.25	Burglary - 2	C/F	137
140.30	Burglary - 1	B/F	28
140.99	**Unspecified burglary-related	Range:V-B/F	521
155.05	*Larceny - unspecified	Range:A/M-C/F	27
155.25	Petit larceny	A/M	754
155.30	Grand larceny - 3	E/F	220
155.35	Grand larceny - 2	D/F	108
155.40	Grand larceny - 1	C/F	26
155.50			1
155.90			1
155.99	*Larceny (any)	Range:A/M-C/F	445
165.00	Misapplication of property	A/M	2
165.12			1
165.15	Theft of services	A/M	35
165.25	Jostling (pickpocketing)	A/M	74
165.30	Fraudulent accosting (con game)	A/M	5
165.40	Criminal possession of stolen property - 3	A/M	253
165.45	Criminal possession of stolen property - 2	E/F	150
165.50	Criminal possession of stolen property - 1	D/F	29
165.55	Criminal use of credit cards		1
165.65	Accomplice to possession of stolen property		2
165.99	*Some misapplication of prpty	Range:A/M-D/F	60
600.00	Theft of mail		6
	ROBBERY		
160.00	*Robbery (unspecified)	Range:D/F-B/F	2
160.05	Robbery - 3	D/F	29
160.10	Robbery - 2	C/F	114
160.15	Robbery - 1	B/F	142

(APPENDIX A cont)

OFFENSE #	OFFENSE - NAME	SEVERITY	FREQUENCY
160.99	*Robbery (any)	Range:D/F-B/F	155
	ASSAULT		
120.00	Assault - 3	A/M	139
120.05	Assault - 2	D/F	203
120.10	Assault - 1	C/F	109
120.15	Menacing	B/M	40
120.20	Reckless endangerment - 2	A/M	9
120.25	Reckless endangerment - 1	D/F	35
120.35	Promoting a suicide attempt	B/F	1
120.65			1
120.99	*Assault (unspecified)	Range:B/M-B/F	319
125.00	Homicide (any)	Range:E/F-A/F	1
125.15	Manslaughter - 2	C/F	2
125.20	Manslaughter - 1	B/F	4
125.25	Murder	A/F	29
125.99	*Homicide (unspecified)	Range:E/F-A/F	2
130.25	Rape - 3	E/F	22
130.30	Rape - 2	D/F	9
130.35	Rape - 1	B/F	15
130.50	Sodomy - 1	B/F	1
130.65	Sexual abuse - 1	D/F	3
135.05	Unlawful imprisonment - 2	A/M	1
135.20	Kidnapping - 2	B/F	2
139.09			1
135.99	*Unspecified coercion offenses	Range:A/M-B/F	3
	FORGERY		
170.05	Forgery - 3	A/M	10
170.10	Forgery - 2	D/F	178
170.15	Forgery - 1	C/F	12
170.20	Possession of forged instrument - 3	A/M	4
170.25	Possession of forged instrument - 2	D/F	34
170.30	Possession of forged instrument - 1	C/F	2
170.26			1
170.35	Unspecified forgery	Range:A/M-C/F	1

OFFENSE #	OFFENSE - NAME	SEVERITY	FREQUENCY
	THRESHOLD CRIMES		
105.00	Conspiracy - 3	B/M	3
105.10	Conspiracy - 2	D/F	2
105.15	Conspiracy - 1	C/F	1
105.99	*Conspiracy (any)	Range:B/M-C/F	3
115.99	*Criminal facilitation (any)	Range:A/M-C/F	1
140.05	Criminal trespass - 3	V	32
140.10	Criminal trespass - 2	B/M	52
140.15	Criminal trespass - 1	A/M	23
140.35	Possession of burglary tools	A/M	405
150.10	Arson - 2	C/F	5
150.99	*Arson (unspecified)	Range:E/F-B/F	8
170.40	Possession of forgery devices	D/F	4
240.36	Loitering to use drugs	B/M	124
265.05	Possession of weapons	A/M	413
265.10	Mfg./transportation of weapons	D/F	6
265.20	Not carrying weapons permit	V	2
265.35	Prohibited use of weapons		7
265.99	*Unspecified weapons offense	Range:V-A/M	3

NOTE: There are 23 unclassified offenses, with a total of 45 charges. Of these 23 offenses, 18 of them have a single charge.

KEY TO SEVERITY SCALE FOR NEW YORK CITY OFFENSE CODES:

V = Violations
B/M = "B" Misdemeanor (least serious non-violation offense)
A/M = "A" Misdemeanor
E/F = "E" Felony
D/F = "D" Felony
C/F = "C" Felony
B/F = "B" Felony
A/F = "A" Felony (most serious offense)

*These offenses are subject to further revision within the category it is now placed in, pending discovery of the particular offense degree. The severity column will note the range of the various degrees.

**These offenses are subject to further reclassification both within and without the category it is now placed in, pending discovery of the particular offense degree. They are currently classified according to the category containing the bulk of such offenses where the degree is known.

APPENDIX B

CHARACTERISTICS OF SELF REPORT SAMPLE AND TOTAL POPULATION

In addition to comparing the sample of 361 patients with the total population of 990 patients on charge rates, these populations were carefully compared using background and demographic variable obtained in admission interviews and recorded on the NIMH Admissions Form. Additionally, comparisons were made using data on dosages and urine tests. Demographic and background information was grouped into six categories: (1) General information, (2) education and employment, (3) stability of life style, (4) parental/home background, (5) criminal history, and (6) drug history and treatment.

We computed means for 32 variables and did statistical tests between and within groups, the latter being based on retention time; 85 additional variables were used for comparison purposes utilizing distribution-free statistical tests. Since retention has frequently emerged as the critical differentiating factor in the comparison of patients on their criminal activity, sample and population were distributed into retention groups as follows for these comparisons: <u>early dropouts</u> -- patients leaving the program before completing twelve months, <u>late dropouts</u> -- patients leaving the program between twelve months and less than twenty-four months or more months on the program. (Patients were first inspected using six month retention cohorts before deciding to group them into twelve month groups.)

Two types of comparisons were then possible. First, between sample and population to see if they were significantly different in their overall mean score or in the overall distribution (if the variable was not continuous). This can be seen in Appendix B-1 which compares age as between population and sample. There is no significant difference between population and sample based on the mean ages of 31.2 for the total population and 31.9 for the sample. We then examined the differences between sample and population for each retention cohort and also found no significant differences in mean age between sample and population for the early dropouts, late dropouts, and the retainees.* Next, we looked at differences within sample and population based on the retention cohorts to see if there were significant differences between them. For mean age, there were significant differences between retention cohorts, and they were the same for both population and sample: retainees are significantly older (34.9) than early dropouts or late dropouts. This difference will be shown to be important in comparisons which use the number of years a patient has been involved in a particular activity (e.g., married people who are older can be married longer).

General Demographic. Age has been discussed above. No significant differences appeared between or within population and sample by sex classification. The sample tends to have more blacks in the

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*t-test or approximation where variances were unequal.

APPENDIX B-1

AGE AND AGE DISPERSION AT PROGRAM ENTRY BY RETENTION SUB-GROUPS FOR TOTAL POPULATION AND SAMPLE

RETENTION	TOTAL POPULATION		SAMPLE POPULATION	
	MEAN AGE	DISPERSION*	MEAN AGE	DISPERSION*
Early dropouts (1-11 months)	29.6	22.5-26.7	28.3	21.6-35.0
Late dropouts (12-23 months)	30.4	23.0-37.8	31.1	23.2-39.0
Retainees (24+ months)	34.9	26.5-43.3	34.9	26.3-43.5
TOTAL POPULATION	31.2	23.4-39.0	31.9.	23.6-40.2

*Based on the standard deviation above and below mean; if distribution is normal includes about 2/3 of the population.

early dropout group (80.3%) as compared to the population (74.2%), but the difference was not significant (X^2 test). There are no significant differences between population and sample in the proportion having experienced mental hospitalization (less than 7%). There are no differences between population and sample in mean months of military service, but for the total population the difference between early dropouts (7.7 months) and retainees (9.6 months) is significant, and this is not the case for the sample.

Education/Health/Employment. About one-third of the patients in both populations have a high school diploma, and no significant differences were apparent for retention groups. This was true for the average number of school years completed (10.5, total, and 10.7, sample), and for the proportion who claimed special training, qualifications, or licenses for work (about 40%).

While no differences were apparent between populations on the numbers who were seen by the program counselor as having a physical illness or disability, comparisons within populations by retention showed that early dropouts in the total population were significantly more likely to be seen as having a disability than those in the sample. The fact of addiction led to a very high proportion -- over 96% -- seen as having "noticeable signs of physical illness or disability" in both populations.

There were no differences between populations in the number of months patients ever held a job, i.e., the longest time on any job ever held, the average time being about 3 years (35 months). As expected, the retainees tended to show more time on the job held for the longest period.

Patient's self-reported occupation before addiction, since addiction, and at program entry do not differ between populations, and differences within retention sub-groups are not marked. The most striking shift for both total and sample populations is across the three periods. Before addiction 5.2 percent of the total population reported no occupation; 7.8 percent had none during addiction, and 74.3 percent reported no present occupation at program entry.* These figures reinforce the results obtained when patients were asked how much they were employed in the twelve months prior to program admission, a period in which they had to be addicted to meet program requirements. As indicated in earlier reports, only 8.1 percent of the population had worked for the full twelve months prior to program entry (6.7% in the sample). Over half (55.9%) indicated no employment whatever during that period (58.1% in sample), with the remaining 36 percent working part time during that period (35.2% in sample). For those who did work full time, they averaged only 2.8 months of work in the twelve months prior to program entry (2.6, sample), which was not significantly

*Approximately the same for the sample population.

different between populations or within retention sub-groups. This employment problem became particularly acute in the two months prior to program entry. There were no significant differences between sample and population in the number of days worked, averaging only 10.2 for the population and 9.6 for the sample. The money earned by those who worked averaged $99 and $108 for population and sample, respectively, an insignificant difference. While the dollars earned did not favor retainees, the number of days worked in the two months prior to entry significantly favored retainees over early dropouts, but not late dropouts.

Stability. This category groups background variables which indicate some degree of stability within patient life style. Being married is often considered such an indicator, particularly where more than one dependent is involved. While retainees have a higher average number of marriages which would indicate more stability, there is a clear relationship to the fact that retainees are five years older, on the average, than both early and late dropouts, and therefore they have simply had more time to experience marital instability. This conclusion is substantiated by a comparison of average age at first marriage, which is 21.2 years for total and 21.4 years for sample populations (difference not significant). Also, differences within retention subgroups were not

significant for year of first marriage. Unfortunately, there was no data on length of marriages. For the mean number of dependents, there were no significant differences between population (.67) and sample (.7). Nor were there marked differences within retention cohorts, although retainees did show a larger number of dependents. However, this was again seen as a function of their advanced ages.

Perhaps most revealing for stability were the patient's source of support. The differences between population and sample were not significant, although there was a tendency for the sampled patients to depend more on public assistance than on legitimate work. Within retention cohorts, however, there was a significant tendency for retainees to be more involved in legitimate jobs and in receiving public assistance than they were in illegal activity. Both early and late dropouts were more involved in criminal activity as a source of support.

A significant number of residence changes can also be regarded an indicator of instability. There were no significant differences between populations on the mean number of residential changes in the two months prior to program entry (.18, population; .19, sample). About 86 percent of both populations had not changed their residence during that period. Within retention cohorts, however, the early (.17) and late dropouts (.21) were significantly more likely to have made residence changes than retainees (.09). Two thirds of

both populations lived in an apartment or single family dwelling for two months prior to program entry, followed by a rooming or boarding house (10-12%). Within retention cohorts there was a significant tendency for early dropouts to have spent their two months prior to entry, in jail or prison. Therefore, considering source of support prior to program entry, number of residential changes, and place of residence prior to entry, the retainees appeared to be a much more stable group of patients in both sample and population, although there were no significant differences between sample and population.

No significant differences existed between population and sample regarding with whom the patient was living at program entry; 39.4 percent of the population (43.4% sample) reported living with family or relatives at entry, and 21.7 percent (21.7% sample) reported living alone. Eighteen percent of the population (17% sample) reported living with their spouse at entry. While not significant, there was more of a tendency for retainees (over early dropouts) in each population to be living with family, relatives, or spouse at entry (61.7 for retainees; 50.2%, early dropouts), while early dropouts were much more inclined to state "other" (3.4%, retainees, 10.6%, early dropouts). Late dropouts tended to be more like retainees in this respect. Almost 90 percent of the patients in both population and sample indicated that they had

been "living with the same persons" two months before entry and those who said that they hadn't been living with the same person, were more likely to be early and late dropouts. About 87 percent of both groups reported no one using drugs in the residence where they lived, and there were no significant differences within retention groups.

Parental Background. There were no differences between sample and population re. mothers' or fathers' background (ethnic-racial), with the percentages very closely resembling those for the patient population. The black patients were more likely to come from a racially or ethnically mixed background, although the differences were not great. Patients with mothers born in the United States were significantly more likely to be early dropouts; this is not the case for birthplace of the father. The higher incidence of second-generation addiction has been discussed by Lukoff and Brook, and probably explains this finding.[1]

About 92 percent of both populations report English as the primary language spoken at home, with most of the remainder speaking Spanish as the primary or secondary language. English is the primary language in the neighborhood of about 95 percent of total and sample populations. Language spoken has no relationship to retention.

Present religion does not vary from population to sample nor is it related to retention; 86 percent of both populations indicate

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[1] Irving F. Lukoff and Judith Brook. "A Sociocultural Exploration of Reported Heroin Use." Columbia University, April, 1974, page 8.

that they are not "an active member of any religious faith." There is no relationship between this and retention.

With regard to the status of the patient's parents until he was twelve years old, there were no differences between sample or population. About 56 percent of all patients, in both populations report being raised by both parents until age twelve. The next largest category is patients raised by their mother after a separation (19%) or the death of the father (7%). The remaining 18 percent of the population were raised in a variety of circumstances, mostly involving the mother, grandmother, or relatives. For the few who were raised in an orphanage (14), this proved unrelated to retention. In subsequent reports various combinations of this variable will be assessed against outcome on the program.

There was no relationship between years of school completed by mother (10.1) and by father (9.5) within retention cohorts, or between population and sample on this factor. However, there was a relationship between fathers' occupation and program retention. The patients who indicated that their father was "semiskilled" or "unskilled" appeared to be retained significantly better than those who indicated that their father was skilled ($X^2=7.44$, $p < .01$, $df=1$). (These three occupations comprised 65.8 percent of all occupations given.) There is no explanation of this difference, and the same relationship did not exist for the patients' own "before addiction" occupation.

Criminal History. The total population has slightly more patients who were declared juvenile delinquents (23.6%, total; 20.9%, sample), but these differences were not significant, nor was this factor related to retention.

The mean age for first arrest did not differ significantly between population and sample -- 19.8 years, population; 20.1 years, sample. The population did show a significant relationship between mean age of first arrest for early dropouts (19.1 years) and retainees (20.6) ($t=2.78$, $p < .01$, $df=439$). This difference may be again a reflection of the advanced age of retainees. However, many of the retainees were first arrested in the 1950's before the age of arrest began a general decline in the 1960's.[2]

There were no differences between sample and population on legal status at entry; yet, an examination of the total population shows that retention is related to legal status. Patients with no probation, parole, court date pending, or other legal status or proceedings pending at entry were significantly more likely to be retained ($X^2=19.1$, $p < .001$, $df=1$). In terms of percentages, 81.5 percent of the retainees had no such status at entry and 63.5 percent of the early dropouts had no legal status at that time. Since the largest category of legal status is "awaiting trial," many of the early dropouts may have gone to jail or prison as a reason for leaving the program within one year of entry. Verification

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[2] Uniform Crime Reports, Federal Bureau of Investigation (Washington, D.C.), for the years 1957, 1961, 1963, 1965, 1966, 1967, 1968, 1969, 1970, 1972.

of this will be made when data on reasons for leaving the program are received.

The mean number of times ever arrested up to program entry does not differ significantly between population (6.3 times) and sample (6.4 times), or within each population by retention cohorts. There is a tendency, however, for retainees in both populations to have more arrests, which again may be a reflection of their advanced age and hence a longer period of exposure to the risk of arrest. This also appeared to be the case for the mean number of convictions up to program entry. While with regard to convictions there were no significant differences between population (3.6) or sample (3.8), there were significant differences based on retention, with retainees (4.3) having significantly more convictions than early (3.3) or late (3.4) dropouts. When computed as an index of the number of years of age per conviction, these differences persisted. This index shows, for example, that early dropouts have a conviction on the average of every 9 years of their lives (29.6 ÷ 3.3), as compared to 8.9 years for late dropouts and 8.1 for retainees. It is possible, however, that even though retainees were experiencing more convictions this may be a function of the changing nature of the courts and the conviction process. Many of the older members of this largely black, ghetto population may have experienced arrests and convictions in an era when civil and criminal rights were not being emphasized to the extent that they

were for the younger early program dropouts. Similar differences do not exist for the number of years of age per arrest, although this may not be as subject to intervention by civil rights or legal advocacy groups.

The mean number of months in jail or prison (self-reported) at program entry show no significant differences between population (34.8) and sample (35.1). For the total population, patients had spent 9.3 percent of their lives in jail or prison, or 20.4 percent of their lives from ages 18 to 31.2, the average age of the population. For the sample the figures were 9.2 and 19.6 percent respectively (average age, 31.9). Within retention cohorts there was a tendency for early dropouts to have done more time, in spite of their fewer numbers of convictions. These differences were not significant. However, this finding does not support the thesis that older patients may be "maturing out" of crime due to the amount of time they have served; it appears more likely that maturing out is related to absolute numbers of convictions.

Drug History and Treatment. No differences exist between population and sample in the reasons given for starting to use drugs. Over half (53-55%) indicated the "main reason" was a "friend's influence." The rest of the responses ranged from "kicks" (13%) and "medical" (2%) to just "other" reasons (32%). As for the age of first illegal drug use (17.4 years), age of first use of heroin

(20.0 years), and age of first daily heroin use (21.3 years), there were no differences between the means for sample and population in all three categories. Within retention cohorts the retainees started drug abuse at a significantly older age than early or late dropouts, which is probably a function of age and the lesser amounts of drugs available in the period of their early adult years, the late 1950's.

There were no important differences between population and sample on the types of drugs used illegally or legally. There was a significant relationship between population (and sample) early dropouts and retainees in their reported frequency of heroin use at entry (X^2=11.7, $p < .001$, df=1); 91 percent of early dropouts reported daily heroin use at entry and 79.3 percent of retainees reported daily use. No other category of drug abuse showed significant differences within retention cohorts with respect to frequency of use. However, the reported mean daily cost of their habit did not differ significantly between early dropouts ($51) and retainees ($46), and there were no significant differences between population ($52) and sample ($49) on this variable.

The longest period of time a patient ever stopped using drugs "on his own" in the street was very brief on the average, rarely lasting for over three months at one time. There were no significant differences between population (20.3 days) and sample (20.1 days) on the mean number of days. Within retention cohorts, however, the

retainees had a significantly longer stop period (29 days) than either early dropouts (19.2 days) or late dropouts (16.1 days). There were no significant differences within retention cohorts based on the number of times the patient stopped using drugs "on his own" in the street. However, on this variable there was a significant difference between population and sample, with mean time stopped of 3.2 and 2.8, respectively. The sample patients, therefore (most specifically the late dropouts), showed less of a tendency to stop heroin use, even though there was no difference in the longest period of time stopped. Using program data on dosage and urine tests, moreover, the sample patients also had received significantly higher dosages of methadone (55.8 mgs., sample; 52.0 mgs., total population), and had significantly fewer morphine positives ("dirty" urines) during their program participation (1.61, sample; 1.76, total population). For dosage, these differences were largely within the retention cohort of early dropouts (53.6 mgs.), and for morphine positives differences were attributed largely to late dropouts (1.39 average positives).

Therefore, when examining the data from the Criminal Evaluation Questionnaire, we must remember that it is data on a population which is not significantly older or addicted over a longer term than the total population. But, the CREQ sample population patients were those who were more likely to be retained (slightly more being

on public assistance at program entry) and those who had been involved in less criminal activity both before and after program entry based on official charges, than patients in the total population. Such patients have made significantly fewer attempts to stop heroin use prior to program entry, and after entry they received significantly greater dosages of methadone and showed fewer "dirty" urines.

APPENDIX C-1

DEMOGRAPHIC CHARACTERISTICS OF THE ARTC CATCHMENT AREA

	TOTAL POPULATION = 149,920*						PATIENT POPULATION = 991					
	MALES (62,284) (41.5%)		FEMALES (87,636) (58.5%)		TOTALS (100%)		MALES (804) (81.1%)		FEMALES (187) (18.9%)		TOTALS	
Ethnicity	Number	% Total Population	Number	% Total Population	Number	%	N	% Total Pop.	N	% Total Pop.	N	%
Blacks	47,368	31.6%	69,887	46.6%	117,255	78.2%	630	63.6%	139	14%	769	77%
White	4,070	2.7%	3,857	2.6%	7,927	5.3%	72	7.3%	20	2%	92	9%
Spanish speaking	9,257	6.2%	12,908	8.6%	22,165	14.8%	100	10.1%	24	2.4%	124	12%
Others	1,589	1.1%	984	.6%	2,573	1.7%	2	.2%	4	.4%	6	

*Based on population aged 22-44

APPENDIX C-2

EDUCATIONAL ATTAINMENT BY CULTURAL BACKGROUND

EDUCATION	COMMUNITY (age 25+) N = 226,548				PATIENT POPULATION N = 983*			
	Black	Spanish	White	Total	Black	Spanish	White	Total
Years Completed	173,779	27,298	25,471	226,548	767	124	92	983
Grades 1-8	136,597 78.6%	14,249 52.2%	17,297 67.9%	168,143 74.2%	737 96.1%	106 85.5%	90 97.8%	933 94.9%
1-3 years of high school	116,070 66.8%	10,209 37.4%	13,417 52.7%	139,696 61.7%	712 92.8%	95 76.6%	83 90.2%	890 90.5%
High school graduate	65,449 37.7%	3,253 11.9%	7,478 29.4%	76,180 33.6%	251 32.7%	20 16.1%	27 29.3%	298 30.3%
1-3 years of college	12,240 7%	531 2%	2,322 9.1%	15,093 6.7%	33 4.3%	0	2 2.2%	35 3.6%
College graduate	3,944 2.3%	155 .6%	1,278 5%	5,377 2.4%	1 .1%	0	0	1 .1%

*No patients currently enrolled in school: does not include 6 "others".

**For the school year 1970-71, 76.2% of all 17-year olds had graduated from high school (National Center for Educational Statistics, U.S. Department of Health, Education and Welfare).

APPENDIX C-3

EDUCATIONAL ATTAINMENT BY SEX

EDUCATION	COMMUNITY N = 226,548			PATIENT POPULATION N = 989		
YEARS COMPLETED	Males 95,620	Females 130,928	Total 226,548	Males 802	Females 187	Total 989
Grades 1-8	72,176 75.5%	95,967 73.3%	168,143 74.2%	767 95.6%	169 90.4%	936 94.6%
1-3 years of high school	60,849 63.6%	78,847 60.2%	139,696 61.7%	734 91.5%	158 84.5%	892 90.2%
High school graduate	34,968 36.6%	41,212 31.5%	76,180 33.6%	249 31%	50 26.7%	299 30.2%
1-3 years of college	8,809 9.2%	6,284 4.8%	15,093 6.7%	35 4.4%	2 1.1%	37 3.7%
College graduate	3,615 3.8%	1,762 1.3%	5,377 2.4%	1 .1%	0 0	1 .1%

APPENDIX C-4

EMPLOYMENT DURING LAST 12 MONTHS (BY ETHNICITY) MALES

COMMUNITY 61,324 (age 22-44)				PATIENTS (793)*		
Employed by weeks	Black 47,998	White 13,326	Total 61,324	Black 621	White 172	Total 793
50-52	35,108 73.1%	8,725 65.5%	43,833 71.5%	55 8.9%	15 8.7%	70 8.8%
40-49	2,919 6.1%	1,036 7.8%	3,955 6.4%	30 4.8%	4 2.3%	34 4.3%
27-39	1,898 4.0%	1,264 9.5%	3,162 5.2%	43 6.9%	17 9.9%	60 7.6%
14-26	1,902 4.0%	495 3.7%	2,397 3.9%	71 11.4%	27 15.7%	98 12.4%
1-13	1,379 2.9%	392 2.9%	1,771 2.9%	100 16.1%	27 15.7%	127 16%
Unemployed (no weeks)**	4,784 10%	1,417 10.6%	6,201 10.1%	322 51.9%	82 47.7%	404 50.9%

*Done only by blacks/whites to conform to Census data
**The percentage unemployed in the United States in 1970 was 4.9%. and 5.9% in 1971 (U.S.

APPENDIX C-5

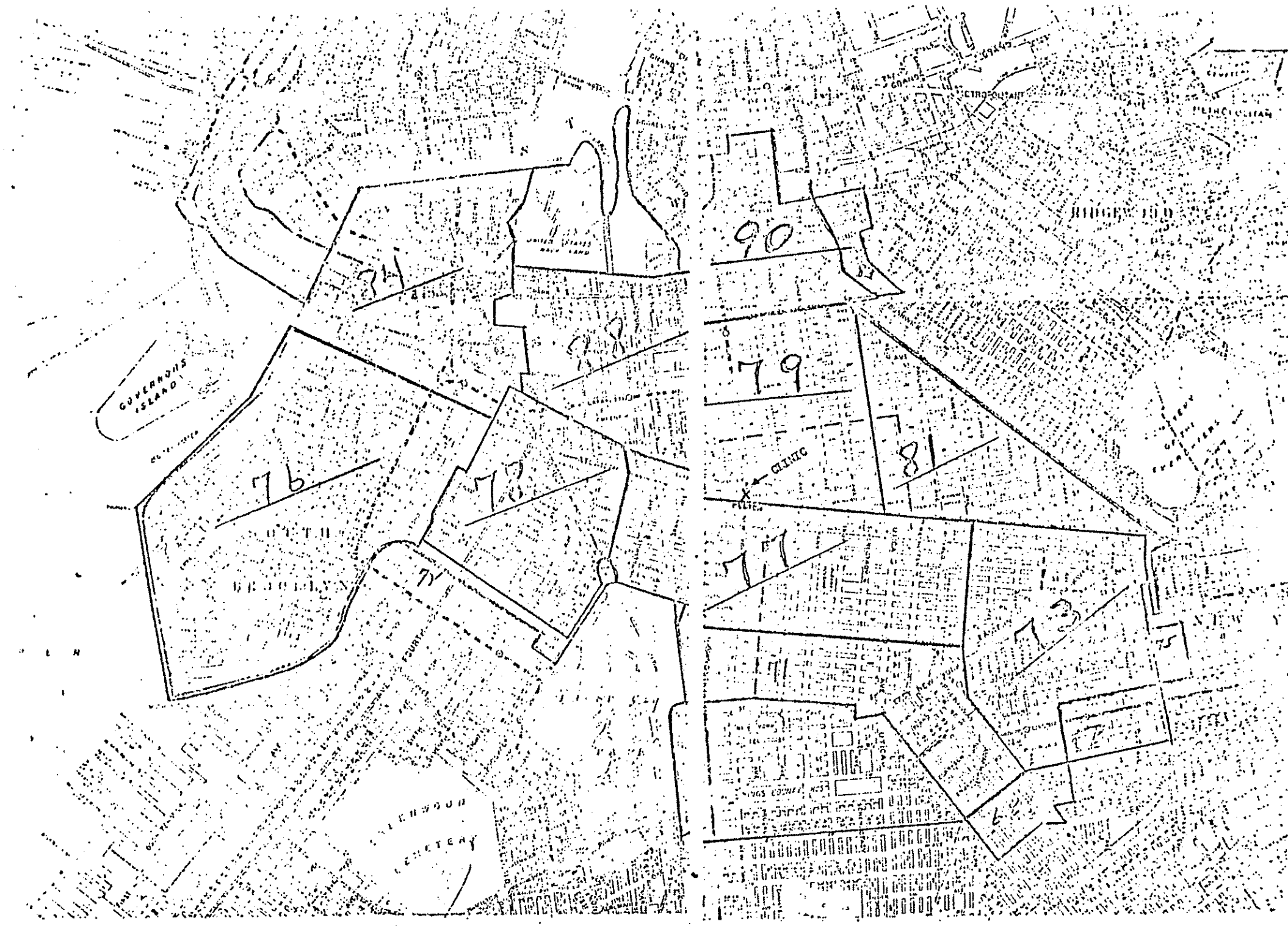
MAJOR OCCUPATION OF EMPLOYED (MALES)

COMMUNITY (aged 22-44)		PATIENT POPULATION (N=804)		
Kind of work	50,733	Occupation before drug problem* (771)	Since drugs N=746**	Current N=231***
Professional, Business/ Managerial	5,578 11%	26 3.4%	25 3.4%	9 3.9%
Sales/ Clerical	9,391 18.5%	156 20.2%	153 20.5%	30 13%
Skilled manual	7,479 14.7%	127 16.5%	124 16.6%	46 19.9%
Semi-skilled	15,961 31.5%	253 32.8%	241 32.3%	64 27.7%
Unskilled	12,321 24.3%	209 27.1%	203 27.2%	82 35.5%

* 33 reported no jobs before drug problem

** 58 reported no jobs since

*** 573 reported no jobs (71.3%)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FOURTH
BROOKLYN
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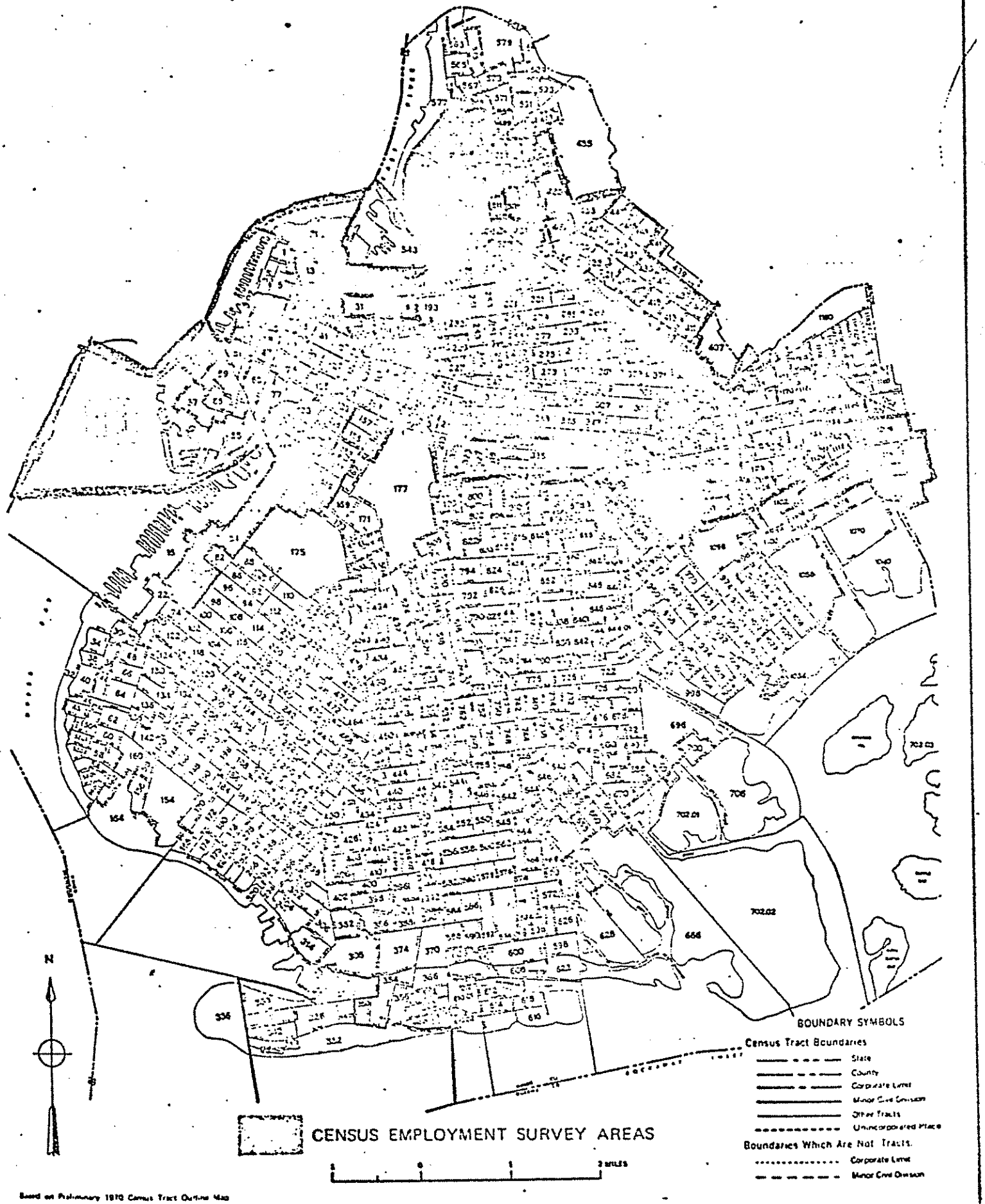
Protion of Burough Including Census Employment Survey Areas



U. S. DEPARTMENT OF COMMERCE

BUREAU OF THE CENSUS

APPENDIX E-1

ARREST RATES, MEAN SEVERITY SCORES, AND NUMBER ARRESTED BY PERIODS FOR THE BROOKLYN, NEW YORK, MALE PATIENT POPULATION BY OFFENSE CATEGORIES (N=381)

OFFENSE CATEGORIES	PERIOD BEFORE ADDICTION (N=		ADDICTION PERIOD						YEAR AFTER PROGRAM ENTRY							
			TOTAL PERIOD		YEAR BEFORE ENTRY				FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR	
					SECOND		FIRST									
	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.
Drugs	.02	40	.23	285	.22	71	.41	116	.30	83	.13	42	.07	23	.02	7
Property	.07	78	.15	212	.10	29	.16	41	.13	38	.10	30	.04	13	.02	6
Forgery		0	.01	36	.02	9	.02	6	.01	2	.01	2	.01	2		0
Robbery	.01	19	.01	42	.02	8	.01	4	.02	8	.03	12	.04	8	.01	4
Assault	.03	51	.03	77	.02	6	.02	6	.05	19	.06	22	.04	16	.01	3
Prostitution		0	*	3		0	*	1	.01	2	*	1	*	1		0
Threshold	.02	29	.02	78	.02	9	.05	17	.04	14	.04	12	.01	4	.02	6
Violations	.12	99	.09	195	.06	22	.18	49	.11	33	.14	43	.05	16	.04	13
TOTAL RATE	.27		.54		.46		.85		.61		.51		.26		.12	
NON-DRUG RATE	.28		.31		.25		.43		.37		.38		.19		.09	
TOTAL SEVERITY	148.4		275.6		108.8		142.5		134.8		110.7		58.8		25.7	
NON-DRUG SEVERITY	129.3		181.7		47.9		48.5		71.2		81.3		44.2		20.6	

NOTE: Number (NO.") represents only those patients involved in criminal activity (officially) in the period shown; the rate is based on the total number of patients in each group, as is the severity score.

* Less than .01; no rate is indicated by a "0" in the number column.

APPENDIX E-2

ARREST RATES, MEAN SEVERITY SCORES, AND NUMBER ARRESTED BY PERIODS FOR THE BROOKLYN, NEW YORK FEMALE POPULATION BY OFFENSE CATEGORIES (N=96)

OFFENSE CATEGORY	PERIOD BEFORE ADDICTION		ADDICTION PERIOD						YEAR AFTER PROGRAM ENTRY							
			TOTAL PERIOD		YEAR BEFORE ENTRY				FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR	
					SECOND		FIRST									
	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.
Drugs	.03	11	.14	58	.13	10	.20	14	.20	14	.10	9	.01	1		0
Property	.01	3	.08	31	.05	5	.08	7	.06	4	.15	9	.07	6	.01	1
Forgery	.02	4	.05	18	.03	3		0		0		0	.01	1		0
Robbery	*	1	.01	4		0		0	.01	1	.02	2	.01	1	.02	2
Assault	.01	4	.01	8	.01	1	.01	1	.03	3	.04	4	.02	2	.03	3
Prostitution	*	1	.12	32	.39	17	.33	19	.18	16	.10	7		0		0
Threshold	*	1	*	3		0		0	.03	2	.04	3		0	.01	1
Violations	.03	11	.08	38	.04	4	.10	9	.14	11	.07	6	.08	7	.06	3
TOTAL RATE	.10		.48		.65		.72		.65		.52		.20		.13	
NON-DRUG RATE	.08		.34		.52		.53		.45		.43		.20		.14	
TOTAL SEVERITY	85.6		219.0		91.7		108.4		81.8		82.3		43.9		40.8	
NON-DRUG SEVERITY	58.7		149.5		63.7		58.2		51.3		73.0		39.6		40.8	

NOTE: Number ("NO.") represents only those patients involved in criminal activity (official) in the period shown; the rate is based on the total number of patients in each group, as is the severity rate.

* Less than .01; no rate is indicated by a "0" in the number column.

ARREST RATES, MEAN SEVERITY SCORES, AND NUMBER ARRESTED BY PERIODS FOR THE SANTA CLARA COUNTY, CALIFORNIA, MALE PATIENT POPULATION BY OFFENSE CATEGORIES

OFFENSE CATEGORY	PERIOD BEFORE ADDICTION (N=198)		ADDICTION PERIOD (N=221)						YEAR AFTER PROGRAM ENTRY (N=221)			
			TOTAL PERIOD		YEAR BEFORE ENTRY				FIRST YEAR		SECOND YEAR	
					SECOND		FIRST					
	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.
Drugs	.05	33	1.25	165	.35	49	.50	74	.34	52	.27	44
Property	.12	39	1.10	130	.34	51	.30	50	.42	54	.08	13
Forgery	*	4	.05	44	.04	9	.04	8	.05	7	.15	30
Robbery	.02	9	.03	42	*	1	.01	2	.04	6	.02	4
Assault	.03	22	.06	55	.03	6	.07	11	.07	10	.21	44
Prostitution		0		0		0		0		0		0
Threshold	*	3	.01	18	.01	2	.03	4	.02	5	.01	1
Violations	.25	74	1.32	167	.51	75	.37	58	.65	86	.42	68
TOTAL RATE	.47		2.82		1.28		1.32		1.59		1.16	
NON-DRUG RATE	.42		2.56		.93		.81		1.25		.89	
TOTAL SEVERITY	102.6		220.2		118.5		153.2		134.2		96.1	
NON-DRUG SEVERITY	70.1		156.0		78.0		98.0		103.9		69.9	

NOTE: Number ("NO.") represents only those patients involved in criminal activity (officially) in the period shown; the rate is based on the total number of patients in each group, as is the severity score.

* Less than .01; no rate is indicated by a "0" in the number column.

ARREST RATES, MEAN SEVERITY SCORES, AND NUMBER ARRESTED BY PERIODS FOR THE SANTA CLARA COUNTY, CALIFORNIA, FEMALE PATIENT POPULATION BY OFFENSE CATEGORIES

OFFENSE CATEGORY	PERIOD BEFORE ADDICTION		ADDICTION PERIOD (N=50)						YEAR AFTER PROGRAM ENTRY (N=50)			
			TOTAL PERIOD		YEAR BEFORE ENTRY				FIRST YEAR		SECOND YEAR	
					SECOND		FIRST					
	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.	RATE	NO.
Drugs	.02	3	.41	30	.36	12	.40	14	.50	13	.10	4
Property	.01	2	.11	17	.20	5	.06	3	.18	5		0
Forgery	*	1	.06	9	.06	2	.06	2	.04	1	.26	13
Robbery		0	.01	4	.02	1		0		0		0
Assault		0	.01	3		0		0	.06	2	.28	14
Prostitution	.01	2	.01	4		0	.02	1	.04	2		0
Threshold		0	*	1	.02	1		0		0		0
Violations	.06	8	.27	25	.28	7	.34	10	.48	11	.42	15
TOTAL RATE	.10		.88		.94		.88		1.30		1.06	
NON-DRUG RATE	.09		.47		.58		.48		.80		.96	
TOTAL SEVERITY	41.8		198.2		106.4		96.4		109.7		78.5	
NON-DRUG SEVERITY	34.9		111.1		50.5		40.0		72.4		45.5	

NOTE: Number ("NO.") represents only those patients involved in criminal activity (officially) in the period shown; the rate is based on the total number of patients in each group, as is the severity score.

* Less than .01; no rate is indicated by a "0" in the number column.