

METHADONE MAINTENANCE

in New York City (A):

The Analyst's View

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Preface: How To Read This Case

The analysis presented here is an extremely abridged version of a general analysis of heroin policy in New York City. The analyst tried to consider the widest possible range of policies. He also tried to be as explicit as possible about the many assertions he had to make to recommend policy in such a complicated and uncertain field. He ended up with an 800-page doctoral dissertation. So that you may be as conscientious in studying this case as the analyst tried to be in writing the original analysis, we have omitted about 90% of the original text.

The original analysis had five major sections. The first section was an introduction which outlined the objectives of heroin policy, identified a number of policy instruments, and proposed a general mode of the problem. Much of this section is included as "Defining the Heroin Problem."

The second version of this section is included under the heading "Policies Toward Current Users." Methadone maintenance programs play a central role in this analysis.

The third section analyzed prevention policies, or policies towards "not-yet users." None of this appears in the case.

The fourth section considered a radical change in current heroin policy whether to abandon the prohibition of heroin use. None of this section appears in this case.

The fifth section summarized the recommendations from the other analyses. The recommendation for policies toward current users are included in the case.

We have tried to indicate in brackets wherever a reference is made in the text to a section you will not see. The text has deliberately not been made self-contained in order to remind you that this is not the complete analysis.

The analysis was written for people who were familiar with heroin abuse, and the efforts New York had taken to deal with it. Therefore, we have attached several appendices to give you enough expertise to understand the text. We strongly suggest that you start by reading Appendix A, which describes the major drug treatment organizations operating in New York City at the time. Appendix B presents the pharmacology of heroin, methadone, and the other narcotics. Appendix C describes the life of one kind of user on the street.

I. Defining the Heroin Problem

A. The Consequences of Heroin Use and Government Objectives

Heroin use appears to have significant adverse consequences, both for individuals who use heroin and for the rest of society. Table I lists the commonly alleged consequences and presents fragmentary evidence which suggests that the effects do occur and are associated with heroin use.

TABLE 1

ATTRIBUTES OF THE HEROIN PROBLEM

Attributes of the Heroin Problem		Indicators of the Problem in New York City		
Effects on Users	Health	Mortality	Mortality rate among users is approximately 1% per year; ¹	
		Morbidity	20-year-old user has the same life expectancy as a 50-year-old nonuser. ²	
		Intoxication	Nearly all tetanus cases are users; ² Nearly all users contract clinical or subclinical hepatitis. ² Roughly only 2 out of every 12 hours are spent being "straight"; ³ Many users abuse alcohol. ⁴	
	Dignity & Autonomy	Economic Independence	Average income for users in legitimate work is estimated at \$3,300; ⁵ 20-30% of users in New York City are on welfare; around 50-60% of users report borrowing from family as a source of money. ⁶	
		Conventional Responsibilities	Over 50% of cases of child abuse in New York City involve families of users; ²	
		Satisfaction with Life	1/3 of users never help out former wife or family. ⁷	
	Effects on Others	Crimes	Economic Loss to Victims	an estimated 1/4 to 1/2 billion dollars worth of property is stolen by heroin users in New York. ⁸
			Private Costs of Protection	1/3 of people in a ghetto neighborhood have purchased special locks and alarms for their homes. ⁹
			Fear & Anxiety	1/3 to 1/2 of people in a ghetto neighborhood walk only on certain streets; ⁹ 1/4 to 1/3 in the same area do not go out alone at night. ⁹
Contagion			Around 90% of heroin users received their first dose of heroin from another drug user. ¹⁰	
			Federal, state, and local governments spend a total of \$100-\$150 million on programs specifically directed at heroin users. ¹¹	
Public Resources		Special Services to Users	Roughly \$60 million are provided to heroin users through welfare. ¹²	
		Share of General Services	Roughly 20% of all felony and misdemeanor indictments are for narcotics crimes. ¹³	
		Value of Facilities to Others	People avoid using parks, recreational facilities, etc., because of a distaste for coming into contact with users.	
		Impact on Tax Base	Many wealthy citizens respond to a large population of users by migrating out of the city.	
Morale of Society		State of Civil Rights	Commitment procedures are widely attacked as threats to civil liberties but are also justified as major instruments of heroin policy. ¹⁴	
		Power of Organized Crime	Profits to organized crime from the sale of heroin are estimated at \$24 million. ⁸	
		Integrity of Law Enforcement	In enforcing narcotics laws, police are offered bribes of \$50-70,000. ¹⁵	
		Degree of Upward Mobility	"Users come from homes of better socioeconomic circumstances than do non-users." ¹⁶	
		Moral & Aesthetic Preferences		

Notes: Table 1

1. Alan Thalinger, "A Study of Deaths of Narcotic Users in New York City - 1969," Health Services Administration, N.Y. City Department of Health, Health Research Training Program, 1970.
2. Testimony of Michael M. Baden, U.S. Congress, House, Select Committee on crime: Drugs in Our Schools, 92nd Congress, 2nd Session, 1972.

For an argument that these health problems are not limited to heroin use in itself, see: John C. Ball and John C. Urbaitis, "Absence of Major Medical Complications Among Chronic Opiate Addicts," British Journal of Addiction. Vol. 65, (1970).

3. Ibid.
 4. Ibid.
 5. Vincent Dole, et. al., "Narcotic Blockage," Arch. Intern. Med., Vol. 118, (October, 1966) p. 305.
 6. John Langrod, "Secondary Drug Use Among Heroin Users," International Journal of Addiction, Vol. 5, No. 4, (December 1970).
 7. Leslie, Alan Craig. A Benefit/Cost Analysis of New York City's Heroin Addiction Problems and Programs - 1971. Teaching and Research Materials, Public Policy Program, Kennedy School of Government, Harvard University, 1972.
- The estimate is made by taking the distribution of occupations in a sample of addicts in ASA treatment programs, multiplying by the median U.S. income, and then adjusting for an assumed bias in the sample, higher wage rates in New York City, and a higher unemployment rate.
8. Brotman, Richard, Freedman, Alfred M., Continuities and Discontinuities in the Process of Patient Care for Narcotics Addicts. New York City: New York Medical College, 1965. p, 105.
 9. Michael M. Baden, op. cit. (note 3), p. 87.
 10. Brotman and Freedman, op. cit. , p. 114.

11. Mark H. Moore, Economics of Heroin Distribution, Teaching and Research Materials. Public Policy Program, Kennedy School of Government, Harvard University, 1971.

See also Max Singer, "Addict Crime: The Vitality of Mythical Numbers." Public Interest, No. 23, Spring, 1971.

12. Paula Klenman, Deborah S. David, "Protection against Crime in a Ghetto Community," Columbia University, July 1972, Table D-1
13. William H. McGlothlin et. al., Alternative Approaches to Opiate Addiction Control: Costs, Benefits and Potential. Bureau of Narcotics and Dangerous Drugs, I.S. Department of Justice, 1972. Appendix B, p. 10.
14. New York City Addiction Services Agency, Comprehensive Plan for the Control of Drug Abuse and Addiction. New York City, 1970. pp. 13-14.
15. This figure estimated from assuming 15,000 users on welfare, each receiving an average of \$4,000/year.
16. New York City Criminal Justice Co-ordinating Council, 1973 Criminal Justice Plan. New York City, 1973. pp. 6-9.
17. See generally:

Aronowitz, Dennis, "Civil Commitment of Narcotic Addicts." Columbia Law Review, Vol. 67, No. 3 (March, 1967).

Logan, Albert B., "May a Man be Punished Because He is Ill?" American Bar Association Journal, V. 52, (October, 1966).

"Due Process for the Narcotic Addict?: The New York Compulsory Commitment Procedures," N.Y. University Law Review, Vol 43, pp. 1172-1193.

"Civil Commitment of Narcotic Addicts." Yale Law Journal, Vol. 76:1160 (1967)

18. Mark H. Moore, Op. Cit. (note 11)
19. New York State Commission on Investigation, Narcotics Law Enforcement in New York City, New York City, 1972, pp. 138-139.
20. Chein, Isidor, et. al. The Road to H. New York City: Basic Books, 1964, pp. 126-127.

Note that it is not clear how much of these effects occur as a necessary consequence of heroin use itself. It may be that heroin users¹ would be unhealthy, poor, degraded, dangerous and costly to society even if they all stopped using tomorrow, or if they had all never used heroin at all.² It may also be that the only reason that heroin users behave so badly and suffer such intolerable conditions is that they are forced to purchase heroin in an illicit market. If heroin were legally available in inexpensive, sterile and predictable doses, the users' behavior and condition might improve dramatically.³

The general issue of what causes users to behave as they do will be encountered over and over again in this analysis. What is at stake in deciding this issue are presumptions about the efficacy of different policy instruments in improving the behavior and condition of users. If one judges that heroin use in itself determines much of the user's behavior and condition, then one recommends policies that are designed primarily to reduce heroin consumption. If one judges that it is present orientedness, alienation, or inequality that causes users to behave as they do, then one recommends policies designed to secure broad changes in the attitudes and capabilities of users or policies designed to restructure society. If one judges that it is only illicit heroin consumption that causes the users to behave as they do, then one recommends abandoning the current policy of prohibiting heroin use.⁴

We will not resolve this issue conclusively here. It is raised only to prevent misinterpretation of Table I. The assertion that the various effects are consequences of heroin use rather than simply descriptions of people who use heroin should for now be treated as a hypothesis, not as a conclusion. We will make no presumptions about the efficacy of the various policy instruments until we have had a chance to examine the behavior of users more closely.

In general, the government's objectives in dealing with the heroin problem should be to reduce these adverse consequences. More specifically, the government's objectives are: to improve the health of users; to enhance the dignity and autonomy of users; to reduce the crimes committed by users; to reduce the contagiousness of heroin use; to bolster the morale of the society; and to reduce the public resources absorbed by heroin users. These objectives and the more detailed attributes of Table I are the terms one should use in describing the state of the heroin problem and in evaluating the impact of specific policies and programs.

There is controversy about which of these objectives are the proper concern of government.⁵ There are many who feel that government should intervene in private decisions only to the extent that these private decisions have a harmful effect on others. They argue that government should be concerned only with the "external effects" of heroin use such as crime and contagion. Users may become diseased, may feel trapped in a life-style they do not like, may be dependent both psychologically and economically on family and friends, but there is no cause for government intervention. They should be free to choose their own roads to hell.

Others feel that the government may intervene in private decisions when the decisions have significant consequences which the decisionmaker is either unable to determine or incompetent to evaluate. In this view, the government may, through a "regulatory policy," deny heroin to children⁶ and others who do not fully understand the consequences of heroin use. However, if a "regulatory policy" fails to deny access, it is not clear whether the government is entitled to impose a "prohibition policy," which will not only deny access to children, but also infringe on the rights of those who are competent to decide to use heroin.

Still others feel that government has the obligation to motivate and help each of its citizens to enjoy a life that is consistent with current views of human dignity. In this conception of the public good, all citizens of a society are bound to be affected - indirectly but profoundly and permanently - if a significant number are permitted to go to hell in their own way. A society is therefore unworthy if it permits, or is indifferent to, any activity that renders its members inhuman or deprives them of their essential (or "natural") capacities to judge, choose and act.⁷ Those who hold this view would permit government intervention not only to reduce external effects, and to prevent heroin use among those not able to estimate the consequences, but also to enhance the dignity and autonomy of individual users.

If we strained to resolve this controversy, we might narrow the set of government objectives and simplify future analysis. However, I am not willing to decide on the appropriate set of government objectives until I see what the consequences of having a limited set of objectives are. In my view, defining the objectives of heroin policy should not be an abstract exercise. One should think in detail about concrete events which might be influenced by specific policy instruments; e.g., additional addicts dying; more people becoming users, users being subjected to harassment and arrest. Given that at this stage we are uncertain both about the precise effects of various policies and about the importance we should attach to the various effects, it seems best to let the effects presented in Table I remind us of what might be at stake in choosing (or having) any specific policy toward heroin use.

B. Policy Instruments to Affect the Heroin Problem

The policy instruments which the government might use to achieve the objectives of Table I are more numerous and diverse than one might think.

1. Differences in Scope

One of the most important differences among policy instruments is the relative breadth or narrowness of their scope. Some policies are designed to influence behavior only (or primarily) with respect to heroin consumption. Other policies are designed to influence a broader range of behavior. Similarly, some policies are designed to influence only those people who are currently using heroin. Other policies influence a much larger segment of the total population. Thus, we may define the scope of a policy in terms of:

- a. The range of behavior the policy is designed to influence; and
- b. The population group which the policy affects.

Table II presents a long list of policy instruments, and distinguishes among four groups of policies according to differences in their scope.

Table II
The Scope of Alternative Policy Instruments

	Policies Which Influence the Behavior of the General Society	Policies Which Influence the Behavior Only of People Already Using Heroin
Policies Which Influence a Broad Range of Behavior	<p>I</p> <ul style="list-style-type: none"> Macro Employment Policies Welfare Programs Public Health Programs Anti-Poverty Programs Job-Training Programs Prohibiting Discrimination in Hiring Juvenile Delinquency Programs Jails and Prisons 	<p>III</p> <ul style="list-style-type: none"> Therapeutic Communities Individual Psychotherapy Methadone Maintenance with Ancillary Services Probation and Parole NACC Rehabilitation Facilities Work Programs
Policies Which Influence Heroin Consumption Only	<p>II</p> <ul style="list-style-type: none"> Prohibition of all Sales and Use of Heroin Drug Education Programs Early Detection and Quarantine Programs Antagonist Immunization Programs 	<p>IV</p> <ul style="list-style-type: none"> Ambulatory Detoxification "Barebones" Methadone Maintenance

2. Policies Attacking "Symptoms" v. Policies Attacking "Causes"

Differences in scope are sometimes loosely characterized as the difference between policies attacking "symptoms" of the heroin problem, and those attacking "root causes." Presumably, policies attacking symptoms are those in Group IV of Table II. They are designed primarily to reduce heroin consumption and concentrate their efforts on those who currently use heroin. Policies attacking "causes" have broader scopes and are found primarily in Group I: They seek to influence more aspects of behavior than simply heroin consumption and generalize their influence to a larger portion of the total population.

The classification of policies as those attacking symptoms and those attacking causes carries a strong connotation that the former are cynical, impermanent, inefficient or otherwise undesirable, and that the latter are self-evidently superior.

There is a sound instinct in this classification and judgement. When one has defined the objectives of heroin policy as broadly as we have done, one might intuitively judge that restricting the scope of his efforts to reducing the heroin consumption of current users will simply not be enough to have a substantial impact on the problem. Too much of the user's adverse behavior and unhappy condition will remain despite reductions in heroin consumption. Too many people whose behavior we would like to influence such as siblings, parents, spouses and neighbors of users will remain out of reach. It seems possible that sole reliance on policies with narrow scopes will fail to achieve a broad and significant improvement in the behavior and condition of users.

However, sole reliance on policies with broader scopes (those in Group I) probably would also be a mistake for two reasons. First, these policies in general have had much weaker effects than were originally expected. Many of the great social programs of the 60's simply failed to improve the lives of those they were designed to serve. The time for great confidence in the magical effects of anti-discrimination laws, job training, and anti-poverty agencies has passed. Second, because users are separated from society by racial discrimination, discrimination against people with criminal records, and their own poor attitudes, health and skills, heroin users tend to be among the last aided by expansion in employment or extension of general social services.

However, programs with different scopes may complement each other. For instance, a user may be able to take a job created by expansionary fiscal policy only after his life has been stabilized in a methadone maintenance program.

3. A Note on Equity

Note that the programs in Group III raise a question of equity. Many of the rehabilitative techniques employed by these programs might help non-users as well as users. How can we justify excluding poor people who do not use heroin?

We can list a couple of grounds for restricting the programs to heroin users. First, if heroin users are in general worse off than other poor people, they may deserve special attention. Second, we may want to help only users on cost-benefit grounds, that is, if society (or certain deserving groups in society) would benefit more from an expenditure of resources to help heroin users than it would from an expenditure of those same resources to help poor people in general. This might be the case if heroin users commit more crimes than people who are merely poor, or if users especially victimize their poor neighbors. Or, users may go a long way toward rehabilitating themselves if we simply spend enough to relieve them of their compulsion to use heroin. Indeed, it seems very plausible that heroin users are worse off, more dangerous, and easier to help than ordinary poor people.

It is not important to resolve this issue now. It is important to keep this issue in mind. If heroin users are not worse off than the general population of poor people, and if they do not improve unusually dramatically in social programs, it may be difficult to justify restricting these programs.

4. The Scope of Prevention Programs

Each of the policy instruments in Group II is a prevention program: it is aimed at people not now using heroin and seeks to reduce the probability of heroin consumption. The problem with prevention programs is their very scope. One wants to concentrate the prevention programs on those who are the most vulnerable to heroin, but it is hard to distinguish these people from other members of the general population. Prevention efforts must therefore be diffused throughout the whole population. Immune groups will receive more attention than one would like, vulnerable groups, less.

5. Supervised Programs: Custody v. Treatment

The policy instruments in Groups III and IV all concentrate their effects on people who are currently using heroin, and achieve their effects by combinations of rehabilitative services and direct supervision of a user's behavior.

The important differences between the programs are not all captured by the distinctions of Table II. The programs differ with respect to the range of behavior they are designed to influence, and the extent of their direct supervision and rehabilitative services. For example, therapeutic communities offer extensive supervision and extensive rehabilitative services. Jails offer extensive supervision, but few rehabilitative services. Ambulatory detoxification programs offer little of either. Finally, the programs vary in the durability of the changes they secure in the behavior and condition of users. Virtually all programs can improve the users' behavior and condition while the users remain as participants under direct supervision. Few (perhaps none) can claim that these improvements persist for extended periods in the absence of some level of supervision.

A natural distinction which many draw among these supervised programs is between "treatment programs" and "custodial programs." There are several strong connotations associated with this classification. One is that "treatment programs" are more likely to secure broad, durable improvements in a user's life. "Custodial programs" can achieve either a broad or narrow influence, but their influence is assumed to last only as long as a user remains a participant and under direct supervision.

A second connotation is that "treatment programs" are primarily concerned with the individual user's health and dignity and only secondarily with protecting others in the society from the effects of his unfortunate situation. Consequently, they are assumed to provide extensive rehabilitative services and only minimal custody. "Custodial programs" are assumed to be primarily concerned with protecting society and only secondarily with the health and dignity of the individual user. Consequently, they are assumed to provide more control over the user's life and less rehabilitative service.

A third connotation is that while users voluntarily seek treatment programs, they must be coerced to enter custodial programs.

Again, there are sound observations and judgements captured by this natural distinction. However, the distinctions can also be misleading. A hasty classification of a program can lead one to assume that a program has characteristics which it does not in fact have, or to make these assumptions with more confidence than is merited. Table III presents a conventional classification of programs under the treatment and custodial categories, and then rearranges the programs with explicit attention paid to the following questions:

- a. How broad a change in behavior is achieved.
- b. How durable a change in behavior is achieved.
- c. Whether the major impact of the program is on the user's health and dignity or his effects on others in the society.
- d. The relative investment in rehabilitation services compared with guaranteeing custody, and
- e. Whether participation in the program is voluntary or compulsory.

While the judgements revealed in Table III are all debatable, the table suggests that the conventional classification of programs into treatment and custodial programs creates distinction among programs that may have roughly comparable effects, and blurs distinctions among programs which may be quite different.

The detailed analysis of these programs will be left to another section.⁸ It is sufficient here to note that these supervised programs can be easily distinguished from the general policies of Group I, and the prevention policies of Group II. Further, one should note that these programs directly compete with one another as alternative instruments for achieving direct influence over the behavior of individual users. This competition can be evaluated in terms of the range of behavior that is influenced, the durability of the influence, the relative emphasis on enhancing the dignity of users versus protecting society, the mix of custodial and rehabilitative functions, and the role of compulsion in securing participation from users.

C. A Simple Model of the Heroin Problem

1. The Need for a Model

The large number of objectives (Table I) and the diversity of policy instruments (Table III) complicate the design of heroin policy. There are too many things to take into account. Consequently, we need a model of the heroin problem which allows us to concentrate on small components of the problem without losing sight of how these components fit together to make the larger problem. Ideally this model would:

Table III

Similarities and Differences Among Supervised Programs

View When Attributes of Program are Explicitly Described

Conventional View	Supervised Program	Breadth & Durability* of Influence	Levels of Services & Supervision	Effects on Users v. Effects on Others	Willingness of Users to Volunteer
<u>Treatment Programs</u>					
1. ASA Therapeutic Communities	1. ASA Therapeutic Communities	Broad and Short	High Levels of Both	Long Effects on Both	Low
2. NACC Rehabilitation Facilities	2. NACC Rehabilitation Facilities	Moderately Broad and Short	Modest Services; High Supervision	Primarily Effects on Others	Low
3. Methadone Maintenance with Ancillary Services. **	3. Methadone Maintenance with Ancillary Services**	Moderate and Short	Modest Services; Modest Supervision	Moderate Effects on Both	High
4. Methadone Maintenance without Ancillary Services	4. Methadone Maintenance w/o Ancillary Services	Moderate and Short	Low Services; Modest Supervision	Moderate Effects on Both	?
5. Ambulatory Detoxification***	5. Ambulatory *** Detoxification	Very Narrow and Short	Low Levels of Both	Small Effects on Both	High
<u>Control Programs</u>					
1. Jails and Prisons	6. Jails and Prisons	Broad & Short	Low Services; High Supervision	Primarily Effects on Others	0
2. Probation	7. Probation	Broad & Moderate	Modest Services; High Supervision	Moderate Effects on Both	0
3. Parole	8. Parole	Broad & Moderate	Modest Services; High Supervision	Moderate Effects on Both	0

*Durability refers to period of time over which changes in behavior are maintained after direct supervision ceases.

**Such as psychological or job counselling

***i.e., medically supervised withdrawal from heroin

- a. Suggest simple terms for summarizing and comparing the effects of diverse policies;
- b. Identify the major, distinct components of the heroin problem that can be attacked by government intervention;
- c. Facilitate the sorting of policy instruments into subsets that attack the same component of the problem;
- d. Alert us to interdependence among attacks directed at different components; and
- e. Explicitly introduce the dynamics which cause the size and character of the problem to change over time.

We can construct a simplified but useful model from a few basic observations.

2. The Strategic Objectives of Heroin Policy: Reducing the Number and Improving the Behavior and Condition of Users

A heroin problem begins with a population of people who use heroin. It is largely their behavior and condition (e.g. committing crimes, recruiting new addicts, purchasing heroin from an organized criminal industry, loitering in parks, killing themselves with overdoses, starting fires in abandoned buildings, suffering withdrawal symptoms, begging money from friends and relatives, etc.) which generate the adverse consequences of heroin use. If heroin users did none of these things, there would be no heroin problem. If they did them less frequently, the problem would be improved.

The size of the heroin problem is also affected by the number of people who use heroin. If there were no heroin users, there would be no problem. If there were fewer users, the problem would be improved.

These basic observations imply that the strategic objectives of heroin policy are:

- a. to reduce the number of people who use heroin; and
- b. to improve the behavior and condition of those who are currently users.

Indeed, we should be able to summarize virtually all important effects of heroin policy in terms of changes in the number or changes in the behavior and condition of users. These are the simple terms which we need to summarize and compare the effects of widely divergent programs.

If our strategic objectives are to reduce the number and improve the behavior and condition of users, then the factors which determine the number of users and influence their behavior and condition should be the targets of government policy. To the extent that these factors can be manipulated by government instruments, they represent opportunities for successful government intervention. To the extent that these factors lie beyond the reach of policy instruments, they frustrate and constrain government efforts to improve the heroin problem.

3. Factors Determining the Number of Users

The factors which determines the number of users are the rates at which people become and cease being heroin users. One can think about these rates as flows into and out of the population of heroin users. The important flows out of the population include:

- a. The rate at which users voluntarily abstain from heroin use;
- b. The rate at which users die;
- c. The rate at which users participate (voluntarily or involuntarily) in various kind of supervised programs; and
- d. The rate at which users are "cured" by various kinds of government programs.

The important flows into the population of users include:

- a. The rate at which previously non-users become heroin users;
- b. The rate at which users abandon, escape, or are released from supervised programs; and
- c. The rate at which users who were "cured" or had voluntarily abstained relapse into heroin use.

Small changes in the relative sizes of these flows can lead to surprisingly large differences in the number of users that must be tolerated over the next 5-10 years. Consequently, each of these flows is an important target of government programs and policies.

In general, the government's objectives are to expand flows out of the population and reduce flows into the population. The obvious exception is that the government's objective is to reduce the rate at which users die. Deaths among users constitute a major cost of the heroin problem and signal the failure of government programs.

4. Factors Influencing the Behavior and Condition of Users

It is often assumed that the major factor influencing the behavior and condition of heroin users is their level of heroin consumption. Under this assumption, we would expect that users who suddenly stopped using heroin would enjoy better health, have more money to spend on rent and food, and would commit crimes less frequently. It is precisely this expectation that leads us to attribute the losses due to an addict's bad behavior to his use of heroin, rather than to other conditions of his life such as poverty, discrimination, or unequal opportunity. Clearly, it would be a mistake to ignore the effects of heroin use on a person's behavior. However, one should recognize that a heroin user's behavior and condition is greatly affected by other factors as well.

A second major factor influencing the behavior and condition of users are the habits, routines, skills and attitudes that shaped their lives before they became heroin users. While heroin use imposes a fairly rigid structure on a life compared with other occupations and hobbies, it does not completely transform it. Even among those who become desperately addicted, significant elements of their lives prior to addiction remain a part of their lives following addic-

tion. For the many users who avoid becoming deeply involved with heroin, the influence of their pre-addiction life on their post-addiction life is even stronger. Thus, much of a user's behavior is the continuation of the attitudes, skills, habits and routines that marked his life before he became a user. Presumably, this behavior will not change unless the attitudes, skills, habits and routines change.

A third major factor influencing the behavior and condition of users is the set of opportunities that are accessible to users. The conventional wisdom is that users are trapped by their heroin use, and that if only they could rid themselves of their addiction, they would enjoy much improved lives. However, it is possible that users enjoy significant discretion whether they remain heroin users, and that the reason they so often do is that the alternative careers and lives available to them are not more attractive. One would expect changes in the level of unemployment, changes in the extent to which users are discriminated against (either as addicts, ex-cons, or members of minority groups), and even changes in marital status to have some important effect on the behavior and condition of users. The extent to which users respond to changes in opportunities can be importantly influenced by their levels of heroin use and by their individual habits and skills. However, given any level of heroin consumption and any set of attitudes and skills, one would expect to see some changes in the behavior and condition of a user in response to changes in his set of opportunities.

A fourth factor influencing the behavior and condition of users is their participation in supervised programs. To some extent, these programs influence a user's behavior by changing factors we have already identified; i.e., by reducing a user's consumption of heroin; by altering the user's skills, attitudes and routines; and by enlarging the available set of opportunities. However, these programs also influence a user's behavior simply by achieving some level of supervision over a portion of a user's day. Consequently, even if a supervised program failed in all its efforts to change the other factors governing the behavior of individual users, it would probably secure some change in the individual's user's behavior simply by interrupting the user's daily routine.

A fifth factor which has a profound impact on the behavior and condition of users is the fact that the manufacture, distribution and possession of heroin are prohibited throughout the United States. This policy has obviously important effects on the welfare of users. First, users face high prices, unpredictable quality and irregular access in trying to buy heroin. The consequences of these difficult supply conditions include deaths, increased crimes, and significant reductions in the user's autonomy. Second, users are subjected to arrests, bear the stigma of those who are arrested, and are barred from many opportunities not to associate anonymously and by the desire of those who control the opportunities not to associate with criminals. While there is room for disagreement both about the precise effects of this policy and the desirability of the effects which might occur, there is no doubt whatsoever that this policy has a profound impact on the behavior and condition of users.

There are significant interdependencies among these factors influencing the behavior and condition of users. For example, supply conditions of heroin have an impact on the user's behavior only as long as he continues to consume some amount of heroin. If a program eliminated a user's consumption of heroin, the addition of a policy or program which improved supply conditions would have no additional impact on that user's behavior and condition. Two other examples of interaction have previously been suggested: the set of alternative life styles available to users is influenced by the user's level of heroin consumption, his individual skills and attitudes, and the policy of prohibiting heroin use; the influence of supervised programs derives partly from the success of those programs in changing the individual user's level of heroin consumption, his skill

and attitudes, and his set of opportunities. The extensive interaction among these factors implies that when a change occurs in a user's behavior and condition, it will be difficult to discover which of the factors has changed, or which changed first.

5. A Simple Diagram Illustrating the Targets of Government Action

We have identified the major factors determining the number of heroin users; e.g., the rate at which non-users become users; the rate at which users voluntarily abstain; the rate at which users die; the rate at which they participate in supervised programs; the rate at which they are cured; the rates at which they abandon, abscond or are released from supervised programs; and the rates at which users who had voluntarily abstained or been cured relapse into heroin use. In addition, we have identified the major factors influencing the behavior and condition of heroin users: e.g., their level of heroin consumption; their pre-addiction skills, attitudes and routines; the set of opportunities available to them; their participation in supervised programs; and the policy of prohibiting the sale and use of heroin. Figure I represents most of these factors in a simple diagram. We would like to depend on this diagram to organize our analysis of the heroin problem. Consequently, how the various factors are represented in this diagram (and which are not represented) deserves explicit discussion.

The factors determining the number of users (i.e., the flows in and out of the population of users) are straightforwardly represented by the arrows connecting the various states of the model. One can visualize the government's objectives as contracting the arrows into the population, and expanding the arrows out of the population (except deaths).

The factors influencing the behavior and condition of users are represented much less straightforwardly. Indeed, two of the major factors (e.g., the set of opportunities and the prohibition of heroin) are not explicitly represented at all.

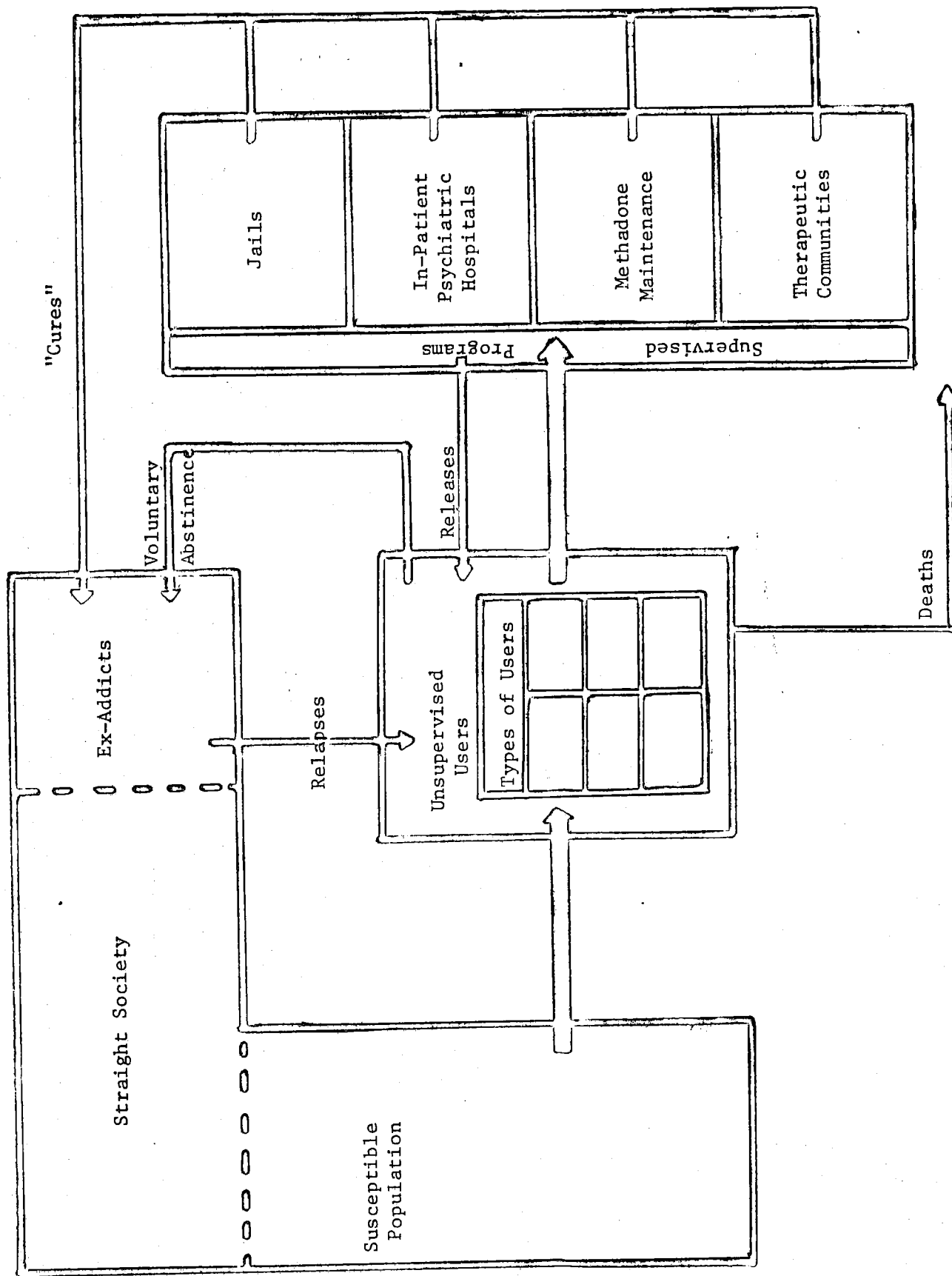
The influence of levels of heroin consumption and the pre-addiction life-style of users are captured by distinguishing different types of users . . . One can visualize the government's objective as increasing the proportion who have relatively good life styles . . .

The influence of supervised programs is captured by distinguishing between users on the street, and users who are participants in supervised programs. Different levels of supervision within kinds of supervised programs are suggested by the small boxes leading out of the supervised programs into the flow of users who are "cured". One can visualize the government's objectives in this area in terms of increasing the number of users in supervised programs, increasing the number of users who are supervised in the kinds of programs that are superior to other kinds of supervised programs, and exploiting the comparative advantages of programs in treating special types of users.

The influence of opportunities available to users is not explicitly represented in Figure I. This is dangerous to the extent that we are led to ignore or give too little attention to the possibility of improving the heroin problem through manipulations of this factor (i.e., by reducing unemployment, discrimination, unequal educational opportunities, etc.). However, we will examine the impact of policies which expand opportunities at two different places in the analysis . . .

Figure

A Dynamic Model of the Heroin Using Population



The influence of the prohibition policy is also not explicitly represented. Again there is some danger that this failure will lead us to ignore or give too little attention to the possible benefits of changing this policy. This danger is particularly grave because of the pervasive influence of this policy. The prohibition policy is not only a major factor influencing the behavior of users, but also has a fundamental impact on most of the important factors governing the number of users.

In order to give this policy the central role it deserves, we will analyze the impact of a radical change in this policy in a separate section. . . . This has the advantage of forcing us to make some assumption about whether this policy will be continued in order to get on with a reasonable analysis of the other major components of the problem.

Fortunately, this disadvantage is not too great. It is a good bet that the policy will be continued over the next 3-5 years regardless of its merits simply because of political factors. In addition, in the course of the analysis of the other components, we will be able to analyze the impact of marginal changes in this policy; e.g., changing the police strategies in enforcing the prohibition, offering different versions of tightly regulated heroin maintenance programs. Consequently, it is not too damaging to the analysis of the other components to assume that the prohibition policy will not be radically changed over the next few years.

Finally, we must be alert to interdependencies among the flows shown in the diagram. For instance, if we increase the number of "cures" by expanding supervised programs, we may be reducing the risk involved in experimenting with heroin, and thus increase the flow into the population of users.

6. The Relationship Between the Consequences of Heroin Use (Table I) and the Simple Model of the Heroin Using Population (Figure I)

Table I described a variety of effects which are ordinarily assumed to be adverse consequences of heroin use. It is these effects that ultimately matter to the society. Consequently, the variables suggested by this table are the terms in which we should ultimately evaluate the impact of policies to improve the heroin problem.

However, the variables that describe our ultimate objectives (e.g., the health of users, the dignity and autonomy of users, etc.) are not the variables that are the proximate targets of government policy instruments. Indeed, by suggesting that all of the effects that concern us are caused directly by heroin consumption, Table I implies that there is only one target of heroin policy--the level of heroin consumption. This section has suggested that there are many factors in addition to the level of heroin consumption that determines the ultimate magnitude of the heroin problem: e.g., the flows in and out of the population, and the factors other than heroin consumption that influence the behavior and condition of users. Identifying these other factors has the effect of broadening the array of opportunities for government intervention. In addition, this section has indicated the interdependence of the various targets. Thus, Figure I offers a strategic view of opportunities for attacking the heroin problem while Table I defines the terms in which we must ultimately evaluate the impact of specific strategies of policy instruments.

We will use the simple model to order the sequence in which we analyze diverse policy instruments to alert us to forgotten opportunities and important interdependencies that can be exploited, and to develop rough notions of how specific policy instruments can be packaged into concerted overall strategies. We will use the categories of Table I to guide the tailed accounts of the effects of specific programs and to evaluate the final choice among overall strategies.

Notes: Defining the Heroin Problem

1. Throughout this analysis I will generally depend on the words "heroin user" rather than "heroin addict." The reason is that I wish to signal clearly that the old stereotypes about how users behave as well as the previous beliefs about the physiology of heroin use are not accepted uncritically in this analysis. We will present evidence suggesting that the major assumptions which propped up the stereotype of how a heroin user behaved are mistaken. Moreover, we will propose a typology of users that includes eight (8) different types. [These sections omitted] One of those types is called an "addict." His behavior most closely resembles the behavior of the stereotypical addict. While we estimate that this type of use constitutes a substantial proportion of all users (around 30%), this type of user is still in a minority. Consequently, when speaking of the entire population of users, I will employ the word "user." When I speak of "addicts" I will mean this one type of user.
2. There is an important distinction here that should not be missed. One hypothesis is that heroin users are people who would have been unhealthy, degraded and dangerous even if they had never used heroin at all. This hypothesis clearly leads one to predict that the users' behavior would not dramatically change if they suddenly stopped using heroin. A second hypothesis is that if heroin users had never used heroin, they would now be in good condition. However, due to long periods of heroin use they have been stigmatized, made unhealthy, and became dangerous, and these aspects of their behavior and condition will not be changes simply by ceasing to use heroin. This second hypothesis is also consistent with the prediction that the users' behavior will not dramatically change if they stopped using heroin tomorrow. Both hypotheses generally support the notion that previous behavior has a greater influence on the behavior of users than current heroin consumption.

The important difference between the hypotheses is that they have much different implications for the value of preventing heroin use. The first hypothesis implies that preventing heroin use is not an important objective. The behavior and condition of a person who happens to be a user would have been the same even if he had never used heroin. If our objective is to improve his behavior and condition, it would not have done us any good to prevent him from using heroin. The second hypothesis implies that preventing heroin use is very important. The person who becomes a heroin user would have enjoyed an attractive life but for this introduction to heroin use. While it does little good for him to stop now, it would have been very good if he had never started.

I lean toward the second hypothesis. It seems clear to me that the long run effects of heroin use are extremely important. Opportunities are lost, attitudes change, legitimate skills become obsolete, health deteriorates, relations with family and friends become strained and unpleasant, etc.

In short, a person after eight years of use simply does not have the capabilities and opportunities he had prior to his use. Notice that one who believes that this second hypothesis is true can hold simultaneously to the position that preventing a person from starting to use heroin is important even if we can do nothing else for him, and that it does little

good simply to reduce the heroin consumption of people who have already used it for an extended period. This is a kind of "virginity principle" where it is very valuable to prevent initiation, but there is little that can be done to retrieve someone who is already a user.

Notice that many of the long-run effects of heroin use may be due to the prohibition policy. For instance, the policy brands users with criminal records. Further discussion of the effects of the prohibition policy is left to [an omitted section]. However, even if one attributes all of the bad effects of long-term heroin use to the prohibition policy, one should still try to prevent people from beginning heroin use, if one also believes that that policy will be continued.

3. This is the view of Lindesmith [1.3.1] and others. We will analyze the impact of legally prescribing heroin quite closely in Part IV. The general thrust of that discussion is that there is a reasonable chance that legal prescription would have very good effects, and a reasonable chance that it would have very bad effects. While the expected value of the policy may be large, the variance is large enough to motivate both additional experimentation and a continued reliance on policies which have possibly lower expected values, but also smaller variances.
4. Actually, one may blame the "prohibition policy" for most of the bad effects we presently attribute to heroin use (the bad health of users, crime, etc.), but still favor keeping the drug illegal. The apparent contradiction is resolved by realizing that legalization of heroin might have different kinds of costs (e.g., staggering numbers of people constantly intoxicated and unable to take care of themselves). One would recommend legalization of heroin only if one felt that that course entailed smaller costs than a policy of continued restriction. One might believe that the costs of tightening present restrictions might actually be smaller than the costs associated with lifting them. Either view seems reasonable; neither should be accepted a priori. Each should be subjected to the test of argument and evidence.
5. I am deeply indebted to Professor James Q. Wilson for emphasizing the importance of this controversy, for neatly delineating the sources of the controversy, for providing eloquent language to express the alternative views, and for persuading me that the third view (that society may have an obligation to enhance the quality of a citizen's life) is a reasonable view to have--particularly in the area of heroin addiction.

6. One way of looking at the rationale for intervening in the decision of children is to argue that a person aged 15 is not the same person at age 35. Viewed in this way, since the decisions and actions of one person (the person at age 15) have an important external effect on a different person (the same person at age 35), government intervention can be rationalized as a way of controlling the production of negative externalities. I am indebted to Richard Zeckhauser for pointing this out to me.
7. James Q. Wilson, Mark H. Moore, and I. David Wheat, "The Problem of Heroin," [1.1.11], p. 5.
8. The issue of how much of a user's behavior is determined or influenced by his heroin consumption has already been identified as an issue that will persistently intrude into the analysis. [An omitted section] will discuss intensively the behavior of users and factors influencing their behavior. Let me simply note here what is at stake in resolving this issue, and what we will say about it later in the paper.

As previously noted, what is at stake in resolving these issues are presumptions about the efficiency of various policy instruments in dealing with the heroin problem. If heroin consumption determines much of this bad behavior, then simply reducing heroin consumption through detoxification and methadone maintenance will be effective. If users' previous skills, attitudes and habits determine their behavior, then we may have to train them, remotivate them, and provide them with detailed daily routines through therapeutic communities and sheltered work. If the available set of opportunities determine their behavior, we may have to expand the set of opportunities through macro-employment policies, anti-discrimination efforts, and improved education. If the illicitness of heroin use determines much of the users' behavior, then we might decide to permit the legal prescription of heroin.

In [the omitted section], we will argue that among many users, heroin use is less important in determining their behavior than the junkie stereotype would lead one to believe. This places an upper bound on what can be accomplished with policy instruments which succeed only in reducing heroin consumption. However, even with this belief, it seems clear that compared to other ways of influencing a person's behavior, simply reducing heroin consumption is relatively effective and easy. This is more true for some types of users than others. Moreover, it is less certain than we would like. Consequently, there are strong reasons to begin experimenting with programs which have somewhat broader scopes in dealing with individual users. Still, there are lots of reasons to believe that we have been well served by policies directed primarily at reducing heroin consumption.

II. Policies toward Current Users

This section is concerned with the design of a policy toward current users. It ignores the problem of preventing new people from becoming users. And it ignores the possibility of abandoning the policy or prohibiting the sale and use of heroin. It restricts its attention to the effective use of the variety of supervised programs to improve the behavior and condition of current users.

A. A Stark Perspective

In designing a policy to improve the behavior and condition of current users it is useful to have a stark perspective in mind. A population exists that uses heroin, is in bad health, commits crimes, facilitates heroin use among others, and neglects their families. One would like to improve their behavior and condition. Consequently, one spends public money on programs which provide a variety of personal services to individual users such as food, shelter, psychotherapy, job counselling, and oral doses of methadone. Moreover, almost despite themselves, these programs achieve some level of effective supervision over the daily lives of the users. This supervision occurs simply because the user spends time under the direct supervision of the program and becomes subject to rules and expectations imposed by the program. One expects the combination of services and supervision to secure improvements in the behavior and condition of users.

The degree to which these programs can secure improvements in the behavior and condition of users depends on three general factors:

- a) The level and type of services and supervision provided by a particular kind of program;
- b) The type of user who participates, and
- c) The terms under which a user participates (i.e., whether he enters the program voluntarily or is compelled to enter; and his expected tenure in the program).

Consequently, the aggregate effect of a policy to supervise users depends on what types of users end up in what kinds of programs on what terms.

In general, one makes two important decision that determine which users end up in what kinds of programs on what terms. First, one decides on a portfolio of programs which supervise and treat users, such as methadone maintenance, therapeutic communities, in-patient psychiatric hospitals, jails, and probation programs. Second, one decides on a portfolio of programs and policies which establish the terms under which users may enter the first kind of program, such as civil commitment, criminal commitment, court referral, central referral units, and outreach activities of treatment programs. This second decision makes it more or less likely that particular types of users will enter various programs. Note that the effect of the second decision on what types of users enter various programs is probably much more important and less frequently analyzed than its effect on the terms under which users participate. In effect, the programs and policies which establish terms of participation select particular types of users to be included in programs.

Table IV presents a simple schematic diagram of the policy instruments one can manipulate. Different levels of investment in the programs, and different policies concerning eligibility and tenure will result in different types of users being in different kinds of programs in greater or lesser numbers for varying lengths of time. Table V characterizes the variety of policies involving portfolios of these programs that one could have for supervising users.

B. Defining the Desired Outcome:

The objective in deciding how to invest in these programs is to improve the heroin problem; i.e., change the state of the world described in Table 1 in the direction of: (1) improved health among users; (2) enhanced dignity and autonomy among users; (3) reduced crimes of violence and against property among the general population; (4) reduced spread of drug abuse; (5) reduced public expenditures on the heroin problem; and (6) enhanced morale in the society. In practice, for heroin-specific policies, this implies improving the behavior and condition of current heroin users.

Given this objective, the principle for evaluating the effect of a particular supervised program on an individual user is clear: one should compare the behavior and condition of the user both during and following participation in supervised programs with what his behavior and condition should have been over the same period if he had not participated in the program. In effect, one should measure over time the net improvement that occurs within the categories of Table I.

The principle for evaluating the impact of alternative policies for supervising users is also clear. The impact of an overall policy for supervising users is simply the sum of the net improvements in the behavior of individual users which are secured by the portfolio of supervised programs called for by that policy. Consequently, in evaluating alternative policies, one should compare the aggregate net improvements of a different set of users in a given portfolio of supervised programs with aggregate net improvements of a different set of users in a different portfolio of supervised programs. The fundamental policy problem is to choose the portfolio of programs for selecting and supervising current users that maximizes the aggregate net improvements given some constraint on the budget for these programs.

Note that the idea of "net improvement" differs from the idea of a "cure." The problems with the concept of a cure are the following.

First, a "cure" is typically defined in terms of absolute levels of achievement, (e.g., the user ceases to use heroin, does not abuse any other drug, gains legitimate employment, re-establishes his relations with his family, etc.). For some users this level of achievement represents a significant improvement in what his behavior would have been if he had not participated in a supervised program. In other words, for these users, the "net improvement" associated with a cure is large. For other users this level of achievement does not represent a significant gain. These users behaved moderately well even when uncontrolled and might have "cured" themselves soon regardless of their participation in supervised programs. The "net improvement" associated with a cure is small. It should be clear that a program or policy which cures one type of user should not be considered the equivalent of a program or policy which cures the other type of user.

In general, we prefer to cure "bad" users rather than "good" users simply because the cure of a bad user represents a larger reduction in crimes, contagion, bad health and poverty than the cure of a good user. Indeed, we prefer a net improvement in the behavior of a bad user that falls short of a "cure" to a smaller net improvement in the behavior of a good user that fully qualifies as a cure.

Second, cures are typically defined as "abstinence from heroin use," or in terms of a similarly narrow set of attributes. Table 1 indicates that there are many other aspects of a user's behavior that are of interest to us. Indeed, for many observers whether or not a user continues to use heroin is one of the least important effects of a supervised program. It is much more important to learn if the user stopped committing crimes, if he increased his economic independence, if he improved his relations with family and friends, and if he stopped proselytizing for heroin use among those non-addicted.

Third, the notion of a cure may lead one to ignore improvements which are maintained only as long as the user is a directly supervised participant in the program. This is strikingly inappropriate for two reasons.

First, heroin users "relapse" very frequently; the implication of these relapses is that any improvements which occur while the user is participating in the program will probably be a large proportion of the total improvements which occur. Moreover, it seems clear that many programs are able to enforce a minimum standard of behavior on users who are participants (i.e., whom the program directly supervises), and that this minimum standard represents a substantial net improvement in the average behavior of uncontrolled heroin users. Thus, in ignoring the improvements which are secured while the user is being directly supervised in a program, one may ignore the major contribution of many or all types of supervised programs.

Second, the "treatment regime" in many supervised programs is a very long one. Methadone maintenance may continue to treat users until they die (one hopes, of old age). Therapeutic communities seem to provide "discipline, support, and a continuing home" to the people who are supposed to have graduated. Parole and probation programs may involve treatment regimes of 2-5 years. The implications of these extended periods of supervision is that if one doesn't count the improvement secured while the user is a participant, one will wait a long time to observe any results, will fail to notice some important improvements in user's behavior which are maintained with the aid of continuing (though diminishing) supervision, and will not leave oneself much time to observe the durability of a cure.

For all of these reasons, cures do not adequately summarize the important effects and objectives of a policy to supervise users. It is more useful to think in terms of purchasing programs which combine effective supervision and personal services to users. In the short run, these programs secure improvements in their behavior and condition of users. Sometimes these improvements occur in many different categories of Table 1. Other times the effects occur in only a few categories. Sometimes the programs result in durable improvements which endure beyond the period of participation. Other times they do not. What is always of interest is the aggregate net improvement of users who participate in supervised programs, and how much we must pay to secure a certain level of improvements for a given length of time.

Instruments of a Policy to Supervise Users

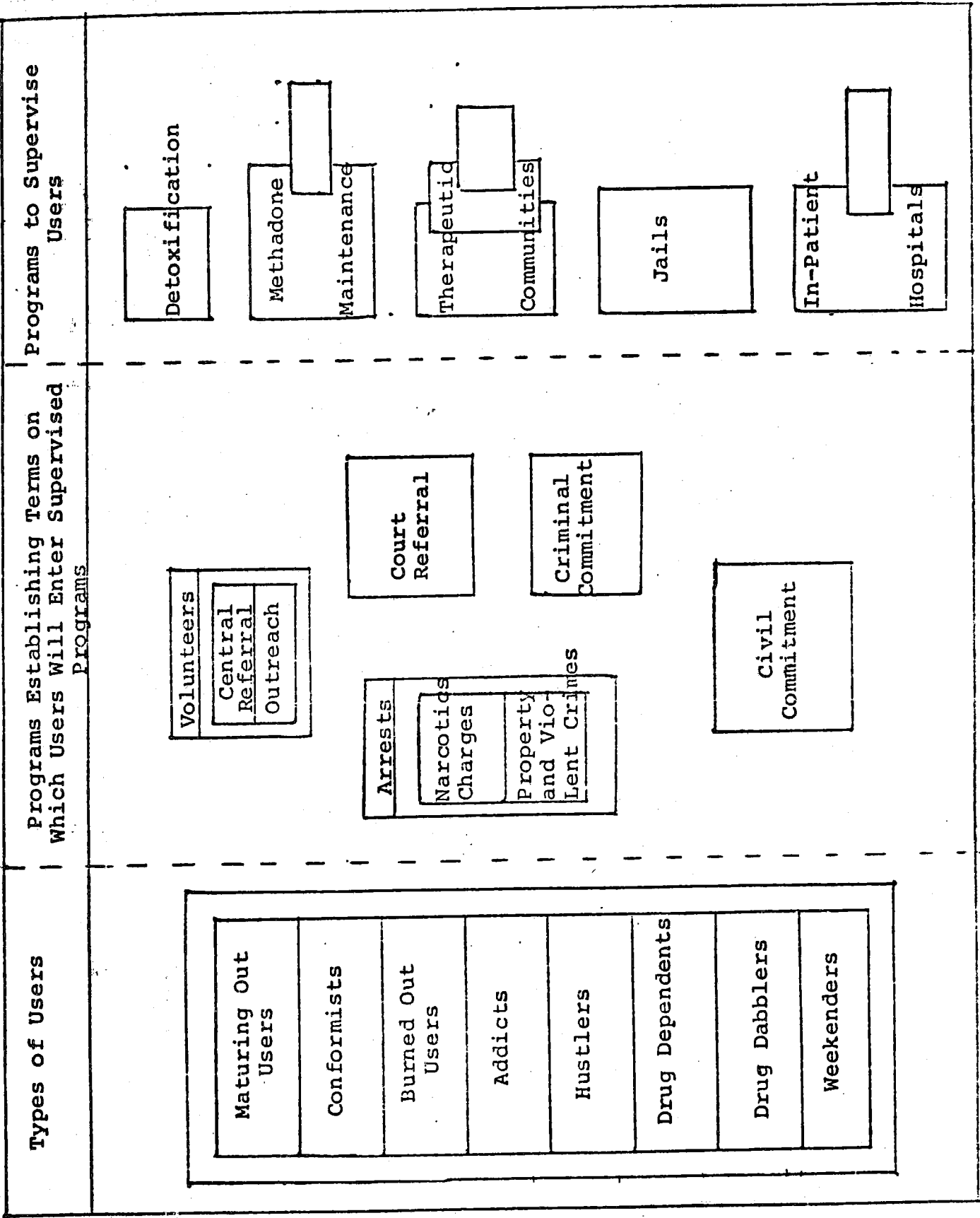


Table V

Alternative Policies for Supervising Users

	"Pure" Medical Approach	Medical Treatment With Persuasion and Compulsion				Diversion of Law Breakers to Therapeutic Facilities			"Pure" Law Enforcement Approach
		Aggressive Recruitment	Lures to Treatment	Civil Commitment	Court Referral	Differential Treatment of Narcotics Users	Criminal Commitment		
I. Programs for Selecting Users	Volunteers	Volunteers Central Referral Units Outreach Programs	Ambulatory Detoxification with Referral Heroin Maintenance with Referral	Civil Commitment	Arrests On Any Charge	Arrests On Any Charge	Arrests On Any Charge Criminal Commitment	Arrests on Any Charge	
II. Programs for Supervising Users	Methadone Detoxification Therapeutic Communities	Methadone Detoxification Therapeutic Communities	Methadone Detoxification Therapeutic Communities	Methadone Detoxification Therapeutic Communities In-Patient Hospitals	Methadone Detoxification Therapeutic Communities In-Patient Hospitals	Jails In-Patient Hospitals Detoxification Probation and Parole Early Enrollment in Methadone	Jails In-Patient Hospitals	Jails	

C. Policies Toward Current Users: 1969

In 1969, money is being spent in New York City on programs to supervise heroin users. Heroin users are volunteering for treatment in methadone programs and therapeutic communities. They are being committed to in-patient psychiatric hospitals through civil and criminal commitment programs. They are being arrested and jailed for property and violent crimes as well as narcotics offenses. Detoxification programs and court referral programs are on the drawing boards. Figure 2 describes the annual flow of heroin users into supervised programs, and the number of users in the programs at any given time. Table VI presents rough estimates of the costs of stimulating the flows and providing the supervised programs.

The policy described in these tables is not a policy that has been deliberately designed and executed. Indeed, no one in policymaking positions in New York City has ever assembled and looked at these data. Rather, the policy is the result of many different entrepreneurial efforts to do something about the drug problem. It is ironic that this motley collection of programs includes the remnants of several different "comprehensive" approaches to the problem.

Inspection of these tables yields several significant observations. First, it is surprising to discover the significance of arrests as a means for absorbing heroin users into supervised programs. Both in terms of money and in terms of numbers of users, arrests loom very large in the overall program.

Second, arrested users are not going anywhere. Most arrested users are going back to the street. Those who stay in supervised programs tend to end up in jail--a program that is extremely expensive and largely ineffective in improving the behavior and condition of users. While there are some ways of moving arrested heroin users into treatment, they are extremely small scale. Thus, the large investment in arrests seemed to be essentially wasted.

Third, the "voluntary sector" is small relative to the size of the problem. Moreover, it is heavily dominated by therapeutic communities.

Now, these policies can be altered by allocating budgets or changing procedures to expand or contract the flows. A decision about how to change the policy can be based partly on an analysis of the independent effects of the specific programs, and partly on an analysis of how all the instruments worked together. Such an analysis is offered in the next section.

Figure 2

Schematic Diagram of the Current Policy for Supervisory Users
(In Thousands Users)

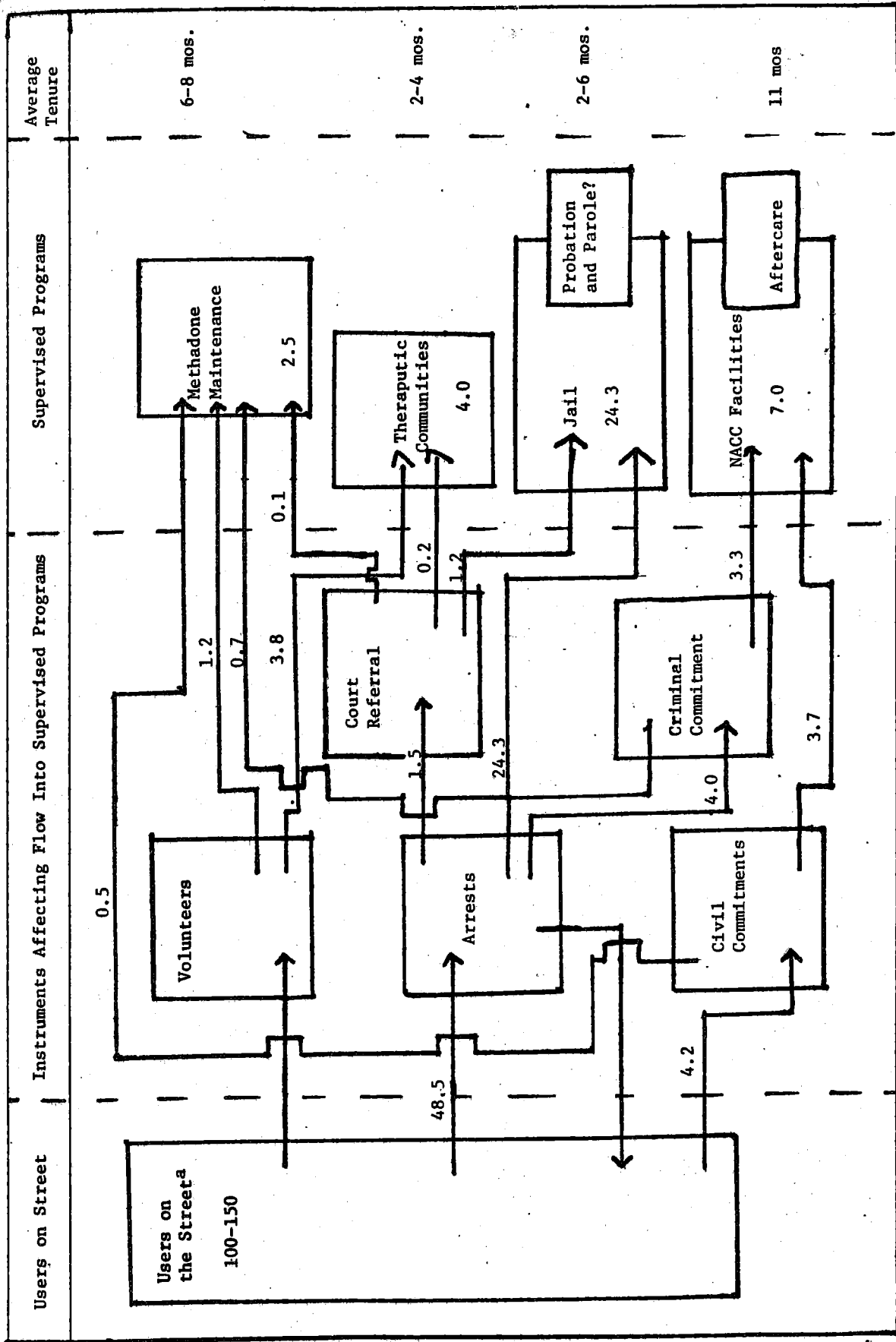


Table VI

Costs of Operating Programs to
Select and Supervise Users

Programs	Estimated Costs (in Millions of Dollars)
I. Policies to Select Users	
A. Arrests	119.6
B. Criminal commitment	4.6
C. Court referral	0.50
D. Civil commitment	4.6
II. Policies to Supervise Current Users	
A. Methadone Maintenance	7.0
B. Therapeutic Communities	16.0
C. Jails, Prisons and Probation	46.0
D. NACC Facilities	51.9

D. Independent Effects of Supervised Programs

This section will summarize what is known about the independent effects of supervised programs, both on the participants and on other members of society. We will examine each program's

- a. Ability to attract and hold users
- b. Effects on the health of users, defined by
 - i. Mortality
 - ii. Morbidity
 - iii. Intoxification
- c. Effects on the dignity and autonomy of users, defined by
 - i. Their economic independence
 - ii. Their ability to discharge conventional responsibilities
 - iii. Their own satisfaction with life
- d. Effects on non-participants
 - i. Crimes committed by users
 - ii. Contagion (that is, the spread of heroin use)
 - iii. Public resources
 - iv. Other effects
- e. Robustness (the range of users who succeed in the program)

1. Methadone Maintenance

a. Ability to Attract and Hold Users

There is impressive evidence that methadone maintenance attracts large numbers of heroin users. First, large numbers of heroin users will wait in lines to be admitted to the programs, even where there have been no recruitment efforts. New York's Beth Israel program has a waiting list with over 300 names. Second, a study has suggested that as many as 50% of jailed users¹ would enter a methadone program if offered immediate placement upon their release.*

Furthermore, users who enter methadone programs are much more likely to stay than those who enter other programs. The figure usually reported is the retention rate, or the percentage of all those who ever entered the program who are still participating. This measure of success is not entirely satisfactory, since it does not reveal how long participants have stayed, and thus overstates the success of programs that have expanded recently. In any case, reported retention rates vary from a low of 50%² to a high of 80%³ for New York City's Beth Israel program. As programs expand, their retention rates can probably be expected to fall somewhat, as less motivated users are induced to join.**

*165 inmates of New York City jails, all of whom had been in jail five times or more and none of whom had applied to a methadone program before, were interviewed and told about such a program. 115 (70%) applied to the program, and when 18 selected at random were offered placement, 12 (67%) accepted. This implied that 45 - 50% of all jailed users would have accepted placement. Furthermore, the twelve who accepted treatment behaved better when released than a control group which asked for treatment but did not receive it.

**It is possible that the kind of users who are especially likely to drop out are the kind we most want to supervise: those who are acting badly. This possibility has two important implications for our analysis.

First, the record of participants in a treatment program may improve, even if the program itself has no effect, simply because the users with the worst records have dropped out. Thus, one should not compare the users who enter treatment with those that remain after some period and attribute differences between the two groups to the program. Unfortunately, the best-known evaluations of methadone programs have depended on just this sort of comparison.⁴

Second, the program may bring about an especially large net improvement in the behavior of those "bad" users who do remain. If so, society will reap the greatest benefits from the program only if it compells these users to participate.

b. Effects on the Health of Users

i. Mortality. The mortality rate for users in methadone programs has remained close to 1% per year,⁵ roughly the same as for all heroin users in the city.⁶ Given that methadone patients tend to be somewhat older than users-in-general, the patient's mortality rate might be somewhat lower than it would be if they were not on methadone maintenance. However, the mortality rate is much higher than was expected and hoped for.

ii. Morbidity. Methadone maintenance patients are physically dependent and must take daily doses of the drug. Patients have complained about the usual narcotic side effects such as constipation and weight gain, but also of decreased libido, aches in the joints, and symptoms associated with withdrawal. There is increasing concern about the effects of methadone on pregnancies and the post-natal care of the child. As of yet, there is no evidence to show how widespread or serious these side effects are, although one might guess that they are no worse than those associated with heroin use.

Data are also lacking on the degree to which methadone patients suffer from other ailments. Since methadone can be taken orally, patients presumably can avoid hepatitis and other infections from unsterile needles. Furthermore, to the extent that methadone allows users to lead regular lives, they can take better care of themselves.

iii. Intoxication. Methadone differs from heroin not only in that it can be taken orally, but also in that its effects are felt over a longer period. Thus, while a heroin user will bounce between extreme intoxication and withdrawal several times a day, most users can avoid withdrawal by taking methadone once every twenty-four hours. Some observers say that methadone patients can function normally, while others claim that patients are exceptionally drowsy, apathetic, and dizzy.

It is not clear whether the use of methadone affects the consumption of other drugs. However, at least 15% of the patients in methadone programs continue to inject heroin intermittently, even though its euphoric effect is supposed to be blocked by the methadone.

c. Dignity and Autonomy of Users

i. Economic Independence. The greatest success of methadone maintenance programs is probably that they provide enough regularity and stability in a patient's life to allow him to gain and maintain legitimate employment. Figure 3 (see next page) shows the employment status of participants in the Beth Israel program. However, it is hard to interpret this table in terms of "net improvement." First, there is no correction for dropouts; since we suspect that the users who drop out are the least employable, we would expect

Figure 3

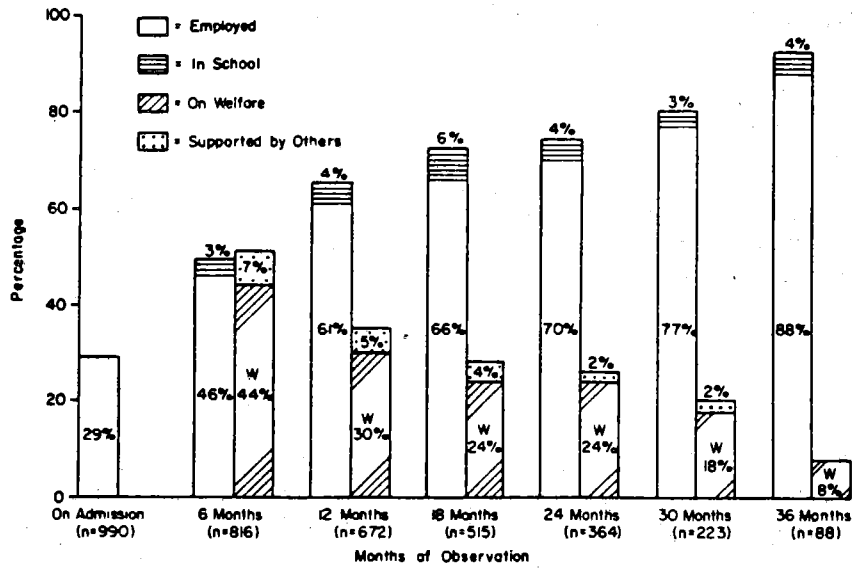


Fig. 3. Employment status and school attendance for 990 men in methadone maintenance program three months or longer as of August 31, 1969 by months of observation.

Source: Frances Gearing, Proceedings of the Second National Methadone Maintenance Conference

to see an increase in the proportions who are employed even if no additional users obtained jobs. Second, although we are told that these patients were "employed," we do not know the quality, duration, or regularity of the job.

Moreover, even if we assume that methadone programs have been successful in the past in securing jobs for their patients, they are likely to be much less successful as the program reaches a large scale. There are three reasons for this judgement:

- (a) As the program gets larger it will include less motivated and less skilled heroin users.
- (b) The pool of jobs to which methadone patients have easy access will dry up (e.g. hospital orderlies, assistants in methadone programs, etc.)
- (c) Methadone patients will face severe discrimination in labor markets as a result of their race, criminal record, poor employment history, and continued drug dependence.

ii. Ability to Discharge Conventional Responsibilities. Methadone patients need return to the treatment centers only daily or weekly to pick up their medicine. Otherwise, they are able to live their own lives. Insofar as methadone treatment permits them to hold down a job and spend time with their families, their abilities to discharge conventional responsibilities is increased.

iii. Satisfaction with Life. Psychological testing suggests that methadone patients experience more depression than normal, marked by "irritability, performance difficulties, and a negative outlook."⁸ Observers have also noted that methadone patients are not particularly happy.

However, it is difficult to know how much of these attitudes are due to methadone treatment itself. Some of their unhappiness may be perfectly justifiable; for example, they face real problems in convincing prospective employers that they are indeed fit to work.

In any case, they may be happier than they would be if they were still using heroin. Although some accounts have portrayed the addict's life as glamorous and exciting, many users come to find their lives degrading and unpleasant. On the other hand, it is certainly possible that methadone patients are less happy than they were during the best of their heroin-using days. What does seem clear is that the life of a typical methadone patient can hardly be described as rich and engaging.

d. Effects on Non-participants

i. Crimes Committed by Users. Most proponents of methadone would argue that it reduces the crimes committed by users. Figure 4 compares the participants in the Beth Israel program to other users who were merely detoxified and released, but who were selected to match the participants in age and ethnic group.

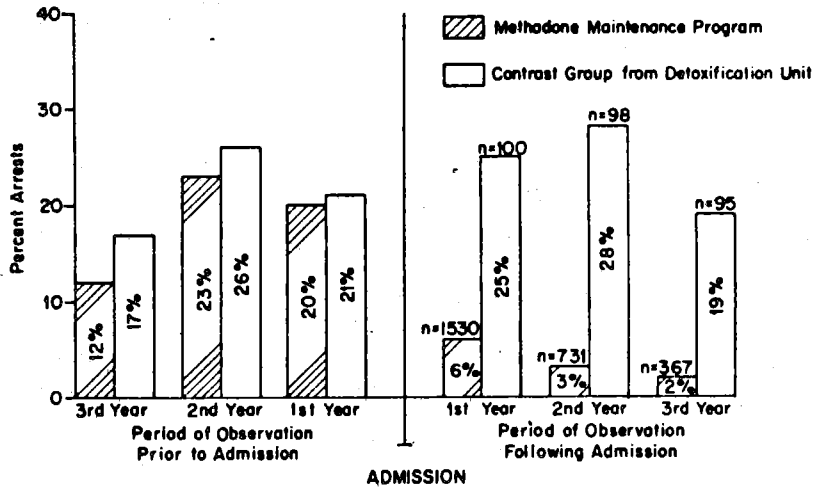


Fig. 4. Percentage distribution of arrests for 1530 men in methadone maintenance program three months or longer as of August 31, 1969 and contrast group by months of observation.

Source: Frances Gearing, Proceedings of the Second National Methadone Maintenance Conference

One must interpret these encouraging results with caution. First, arrests may or may not be an accurate reflection of criminal activity. One could observe a large reduction in the arrest rate without a real reduction in criminal activity if methadone patients restricted themselves to less risky crimes. Second, we want to know about the seriousness of the offenses as well as their number. Most people are primarily concerned by crimes of violence, and less concerned about property crimes. Finally, one cannot take the user's performance prior to treatment as a good indicator of what his performance would have been had he not been treated. That the user applied to a methadone program may indicate that he was ready to stop committing crimes anyway. Since the people treated in the detoxification center may not have applied to a methadone program, they are not a particularly appropriate control group.

ii. Effects on Contagion.⁹ Methadone maintenance programs probably do nothing to slow the spread of heroin use. There are two ways in which current users foster use by others, and methadone programs interfere with neither.

First, current users encourage non-using friends to try the drug. However, methadone programs mostly attract older users who are in the later stages of their "careers." They are probably not leading a life that would impress their non-using friends. Indeed, they may not have any non-using friends at all.

Second, users can act as brokers between inexperienced users and the regular distribution system for heroin. Methadone programs may attract the kinds of users who could act as brokers. However, one could easily be a methadone patient in good standing and an active broker simultaneously, since the program absorbs only a few hours of the user's day.

iii. Cost. A methadone maintenance program which offers a moderate amount of counseling and other services costs about \$2,000 to \$3,000 per patient-year. Note that the government may be obliged to pay for the treatment of each patient into the indefinite future, since it is not clear whether users can be withdrawn from methadone without their returning to heroin.

iv. Other Effects. First, methadone maintenance has resulted in the poisoning of several non-users. In 1969, ten people died from drinking overdoses of methadone. In some cases, patients did not take adequate precautions to keep their doses out of the hands of their children. In other cases, individuals on the street drank the drug for its euphoric effect.

Second, methadone maintenance programs may attract users who would otherwise voluntarily abstain from heroin use, since it is probably more pleasant to enter a methadone clinic than to enter withdrawal. Maintenance clinics seem to attract those older and more experienced users who are the most likely to abstain on their own.

2. Therapeutic Communities

a. Ability to Attract and Hold Users

It appears that therapeutic communities find it difficult to attract and hold users. There are no waiting lines for admission to the program.

The evidence on retention rates is both scanty and ambiguous. However, as many as 60-80 of the users who begin the program drop out by the end of the first year. Most, in the early months of treatment.*

The difficulty that these programs face in attracting and holding users should not be surprising. They are designed to be a severe test of a user's motivation for rehabilitation. The tests include laboring in menial chores, facing direct criticism from peers, and presenting public confessions.

b. Effects on the Health of Users

The only thing we know about the health of users in therapeutic communities is that their drug dependence is significantly reduced. Most who remain in residence become completely abstinent. One can speculate that abstinence reduces mortality, but there is no evidence on this point.

c. Dignity and Autonomy of Users

i. Economic Independence. Some residents have found employment, mostly in drug abuse services of some kind (e.g., members of the staff of therapeutic communities, drug counselors in schools.). If these are the only jobs these users are qualified or motivated to take, there is a sharp limit on how many can be employed. The supply of these jobs is no longer increasing very fast.

ii. Ability to Discharge Conventional Responsibilities, etc. Whether or not residents of therapeutic communities are able to enjoy conventional relationships and discharge conventional responsibilities is a matter of definition. Proponents argue that there is no other treatment program designed to reshape the character and attitudes of the users. However, residents of therapeutic communities become very dependent on their programs, which structure their activities. To some extent, this dependence isolates the users from the community at large and distorts relationships with those outside the program.

*The implications of these drop outs for our analysis are the same as for methadone drop-outs. First, one can not simply compare the population that entered treatment to those who remain in treatment and attribute the differences to the program. Second, if we wish to supervise users who "split", we will have to develop a different program to attract them, or use legal compulsion to hold them in.

iii. Satisfaction with Life. Finally, it seems clear that users come to enjoy enhanced self-esteem while participating in therapeutic communities. If they endure the menial chores, criticism and confessions, they are rewarded with high status and positions of power in the community.

d. Effects on Non-participants

i. Crimes Committed by Users. While under the direct supervision of the program, users appear to behave admirably. There is no evidence of what happens upon their release.

ii. Contagiousness of Users. Therapeutic communities probably do help to slow the spread of heroin use.

First, they probably reduce the number of users who induce their friends to try the drug, especially since the program appears to attract users who are younger and still in the early stages of their heroin use. These people probably have many non-using friends and may be leading relatively impressive lives. Moreover, people who succeed in the program are likely to be unusually articulate and charismatic. The program takes these users off the street for substantial periods of time and thus isolates them from their friends.

Second, some of the participants, now off the street, might have acted as "brokers" between inexperienced users and the regular heroin distribution system.

iii. Cost. Therapeutic communities have direct costs of about \$5,000 per patient-year.

As noted, it is unclear how many residents of therapeutic communities remain abstinent upon their release. It is possible that some users can leave the community successfully and thus require no direct expenditures afterwards. Direct costs will have to be born indefinitely for other users, however.

Even if only a few users benefit from these programs, it may be worth it to retain them. Because the drop-out rate is so high, many users can try the program even if there are only a few facilities. Although this kind of program may be the best one for only a few users, we may be able to reach most of them with a relatively small investment.

iv. Other Effects. There is another very important, although intangible, effect of therapeutic communities: the program holds out some hope of treating and rehabilitating users in a humane and effective way. Their few successes make us unwilling to abandon all heroin users. This has an important impact on the morale of society.

The Robustness of Therapeutic Communities

Because this program apparently succeeds only with users who are highly motivated, the program risks total collapse if users are compelled to enter.

However, it is possible that the program would succeed with the particular kinds of users who are hard to reach otherwise. For example, one observer has suggested that the program attracts sociopaths who are tough enough to take the discipline. We suspect that such users are behaving badly now and are not likely to get better soon by themselves. We know that the users who stay in therapeutic communities behave impressively. Thus, there is a chance that this kind of program may secure very dramatic net improvements in the behavior of these users. However, such suggestions are really no more than speculation.

* * * * *

[The sections on the other programs have been omitted. Jails and psychiatric hospitals provide high levels of supervision and low levels of personal services. There is no evidence that users remain abstinent upon their release. Jails cost \$5,000-6,000 per man-year. Psychiatric hospitals cost \$9,000-12,000 per man-year.

Probation and parole programs do show some promise of providing effective supervision. The cost about \$500 per man-year.]

E. Recommendations for an Improved Policy Toward Current Users

Given these estimates of the effects of the different policy instruments it seems likely that the policy toward current users could be improved by few specific actions.

First, methadone maintenance treatment facilities should be rapidly expanded.

Methadone maintenance appears to dominate all other forms of supervised programs in its ability to attract and retain users, its effects on the behavior and condition of users, and its cost. Moreover, it is relatively easy to administer. The required personnel, such as nurses and technicians, are generally accustomed to bureaucratic discipline.

Second, expenditures on therapeutic communities should be maintained at present levels; some present facilities should be used for experimental variants of the program.

Therapeutic communities have some significant disadvantages compared to methadone maintenance. They are less able to attract and retain users. Their effects on the behavior and condition of users is uncertain. They are fairly expensive and difficult to manage. However, it seems clear that they have produced striking results for some heroin users. Moreover, it should be possible

to experiment with some less demanding versions of these programs by turning some into half-way houses for heroin users. Consequently, the recommendation is to maintain the investment in therapeutic communities at existing levels, and utilize some of the existing capacity for experiments with half-way houses.

Third, the number of users supervised in jails and psychiatric hospitals should be reduced, and the freed funds used for experimentation with other programs.

Jails and inpatient psychiatric hospitals are almost certainly the least effective supervised programs. Their only virtue is that they can absorb any kind of user. It is likely that variants of therapeutic communities could be developed which would provide almost as much supervision as jails and psychiatric hospitals, and a superior mix of personal services. There is no reason to have to accept the poor services provided by such facilities in exchange for high levels of supervision. The recommendation is that the number of heroin users in these facilities should be reduced and funds transferred.

Fourth, arrests of users, especially for property and violent crime (as opposed to narcotics violations) should continue.

Arrests are important to heroin policy for two reasons. First, arrests have the indirect effect of encouraging users to volunteer for treatment. Expanding the involuntary sector will expand the voluntary sector. Second, arrests of users for property and violent crimes allow us to focus supervised programs on the users that are causing some of the biggest problems. However, arrest should be followed by better programs than jail.

II Notes: Policies Toward Current Users

1. Vincent P. Dole, et. al., "Methadone Treatment of Randomly Selected Criminal Addicts." New England Journal of Medicine, June 19, 1969.
2. New York Times, Oct. 28, 1969, p. 35.
3. Frances Gearing "Evaluation of the Methadone Maintenance Treatment Program." Columbia University School of Public Health and Administrative Medicine. New York State Narcotics Addiction Control Commission, 1969.
4. Gearing, op. cit. (note 3).
5. Michael M. Baden, "Investigation of Deaths of Narcotics Users in New York City-1969." Health Services Administration, New York City Dept. of Health, Health Research Training Program, 1970 (mimeographed)
6. Alan Thalinger, "A Study of Deaths of Narcotics Users in New York City-1969." Health Services Administration, New York City Dept. of Health, Health Research Training Program, 1970 (mimeographed).
7. Vincent P. Dole, Proceedings, 1st Methadone Conference
8. William F. Wieland and Steve S. Sola, "Depression in Opiate Addicts Measured by Objective Tests." Proceedings of the Third National Conference on Methadone Treatment, National Institute of Mental Health, Washington, D.C.: Government Printing Office, 1970.
9. See [an omitted section] of this analysis for a discussion of the mechanisms by which heroin use spreads.

III. An "Implementation Estimate" for the Policy of Expanding Methadone Maintenance

A. The Need for an Implementation Analysis

The general arguments in favor of expanding methadone maintenance are sufficiently powerful to raise this issue to the top of the agenda of heroin policy decisions. However, in themselves, they permit neither a very precise nor a very accurate estimate of the set of consequences that are likely to actually result from a policy decision to expand methadone maintenance.

Imprecision occurs simply because the analysis is done in terms of a very general conception of methadone maintenance programs. Included in the general conception are a variety of specific forms of the program. Since the specific forms can have widely varying results, there must be a great deal of variation in the possible outcomes of adopting a policy to expand methadone maintenance programs.

Inaccuracy in estimating the expected outcome results from the lack of any analysis of the political and bureaucratic factors which will affect the specific form of the program. A complicated political and bureaucratic process intervenes between the recommendation to expand methadone maintenance programs and the appearance of operating methadone maintenance clinics on the street. This process will significantly influence the scale and shape of the program. Unless the analyst has considered how this process will influence the shape of the program that actually emerges, he will incorrectly estimate the relative probabilities of different forms of the program emerging, and therefore incorrectly estimate the relative probabilities of different outcomes.

Consequently, if an analyst were to recommend an expansion of methadone maintenance programs solely on the basis of these general arguments, he would risk giving bad advice. He would recommend a program based on an imprecise and inaccurate estimate of the actual consequences of the program.

An improved estimate of the likely consequence of deciding to expand methadone maintenance rapidly can be made if one undertakes a serious "implementation analysis" of methadone maintenance. The specific steps in the analysis are the following:

- 1) Specification of the particular final actions of governmental units that are implied by the general idea of methadone maintenance programs.
- 2) An analysis of the sensitivity of different components of the outcome to different components of the final actions.
- 3) The identification of political and bureaucratic factors which will influence the final action of governmental units.
- 4) A prediction about how these factors will influence the likely outcome of the program.

In this section, such an analysis will be attempted.

B. The Specification of Important Final Actions

In specifying final government actions we are interested in the particular way in which functions logically implied by the description of the program will

be performed. Our attention is attracted particularly to those functions which are likely to have a decisive impact on the actual outcome of the program. Given our objective of maximizing aggregate net improvements in the behavior and condition of users, we should be concerned about functions which will determine either the number of people who can be admitted and treated in a given period, or the net improvements in health, dignity and autonomy, criminal activity and contagiousness that occur as a result of supervision.

Final actions that influence the number of people in methadone programs include:

- Recruitment efforts.
- Criteria for admitting people to the program.
- Criteria for expelling patients from the program.

It is obvious that each of these functions could be performed in a way that resulted in more or fewer users being enrolled in the program. If a large investment was made in recruiting, if eligibility standards were loose, and if nobody was expelled from the program, the program could get large very quickly. If all the opposite actions occurred, the program would grow slowly and reach an equilibrium size at a very small scale. Thus, one can achieve programs of widely varying sizes depending on how these final actions are performed.

Functions that have a relatively large impact on the net improvements of users include:

- The comprehensiveness and accuracy of the system for monitoring drug use by methadone patients
- The size of the doses of methadone prescribed
- The volume and types of personal services provided (e.g., psychological counselling, vocational counselling, housing and welfare assistance, legal aid)
- The extent to which broad aspects of a user's behavior and condition are monitored and sanctioned by the treatment programs.

If the drug use of methadone patients is not monitored, if doses are large, if few personal services are supplied, and no one in the program investigates the user's economic status, criminal activity, or association with non-users, then one set of results will occur. If users are observed closely in consuming methadone, provided with large amounts of ancillary services, and are closely observed with respect to drug abuse and employment, then another set of outcomes will occur. Depending on how one feels about the relative importance of avoiding contagion, increasing the economic independence of users, and not infringing on the user's civil liberties by giving them strong incentives to behave one way rather than another, one can adjust these final actions of the program to produce his preferred result.

Notice that there is an important interdependence between these two classes of final actions. If the program is attractive from the point of view of the users (e.g., it provides large amounts of methadone on a loose schedule, does not monitor their lives, and provides many ancillary services), the program will attract large numbers of users. If it is unattractive because it involves too close a scrutiny of the users' lives and too few personal benefits, it will necessarily have a smaller equilibrium size and require greater expenditures for recruitment. The relationship between the number of users that can be attracted and the net improvements that can be achieved is probably inverse. As one adjusts the final action to insure improved health, economic independence, and reduced crime and contagion, the program becomes less attractive to users. As one adjusts the final action to guarantee a large scale program and rapid expansion, the program becomes less effective in producing net improvements for individual users.

Table VII identifies several different forms of methadone maintenance in terms of differences in the particular way that these functions are performed. Given these differences, the questions become: 1) how are different components of the desired outcome affected by the different final actions; and 2) which final actions are politically and bureaucratically easy to achieve (therefore likely to occur), and which difficult (therefore unlikely to occur).

C. Sensitivity of the Outcome to Different Final Actions

In this section, we will gauge which final actions are likely to have particularly important effects on the different components of the outcome. Given the small amount of experience with the program, these estimates are speculative. However, the judgments are important to make in gauging the likely outcomes of alternative versions of methadone maintenance programs.

1. Final Actions Which Influence the Potential Scale of the Program Program and the Rate of Expansion

Probably the two most important actions influencing the potential scale of the program are the dose policy and the amount of supervision exercised by the program. If both are liberal, many users will be attracted--perhaps as many as 50-75% of the existing population. If both are conservative, relatively few will be attracted--perhaps as few as the 10-20%. Consequently, if one wants a large program (without spending for recruitment or taking arrested users), then one should seek a liberal dose policy and provide little supervision.

The second most important decision affecting the size of the program is whether or not to accept arrested users either before trial as a condition of bail, or post-trial as part of their sentence. Over 40,000 users are arrested each year in New York City. If one shuns this group, one cuts off a large pool of users. If one accepts it, this source alone could fill up a vastly expanded methadone program.

The third most important action is the eligibility determination. Note that the standards for admission are probably unimportant. Even if one takes an

Table VII

Variant Types of Methadone Programs

Type of Methadone Program	Final Actions Affecting Scale						Final Actions Affecting Net Improvement		
	Recruitment Efforts	Admission Criteria	Expulsion Criteria	Dose Policy	Personal Services	Level of Supervision			
I. Pilot, Experimental Methadone	None	Stringent, Careful Validation	Stringent	High Dose; Close Supervision	Many kinds; High Volume	Broad and Intensive			
II. Beth Israel Protocol	None	Stringent, Careful Validation	Moderate	High Dose; Close Supervision	Many kinds; Moderate Volume	Broad and Moderate			
III. Controlled Barebones Methadone	None	Stringent, Careful	Moderate	Low Dose; Close	Few; Low Volume	Broad and Moderate			
IV. Massive Barebones Methadone	Slight	Loose Criteria; Casual Validation	Loose	Low Dose; Moderate Supervision	Few; Low Volume	Broad and Moderate			
V. Massive Robust Methadone	Strong	Loose Criteria; Casual Validation	Moderate	High Dose;	Many kinds; High Volume	Broad and Intensive			

extreme view and excludes people who are not yet 25 and who have not been addicted for 4 years, a large minority of the using population will be eligible for treatment--many more users than there will be places. More important than the standards are the procedures used to decide whether or not a particular user is eligible. These procedures will decisively influence the speed with which the program can be expanded. If great pains are taken to verify an applicant's identity, age, history or addiction, and criminal record, admission will be slow. If fewer pains are taken, the procedures will be fast.

Thus, the potential scale of the program is sensitive to the dose policy and the degree of supervision. Deciding whether or not to admit arrested users can have a very large impact on the size of the program. The rate of expansion is sensitive to the procedures chosen to verify eligibility.

2. Major Factors Which Influence Net Improvements in the Areas of Health, Dignity and Autonomy, and Crime

In influencing the health, dignity and autonomy, and crimes committed by users, the most important final action is probably the provision of the oral doses of methadone. Simply giving addicts methadone provides enough stability and room in their lives to change their behavior if they so desire. The regular provision of methadone achieves most of what is important. One can do slightly better in enhancing the dignity and autonomy if he tends to give relatively small doses. However, these effects are small and uncertain compared with the large impact of simply providing oral doses of methadone.

Perhaps the second most important final action influencing the magnitude of net improvements is the program's supervision of a user's life. By monitoring the users' lives through urinalysis, requirements to report earnings, and interviews with counsellors and nurses; and by adjusting various privileges in treatment to the users' level of performance in the areas of drug abuse, crime, and employment, the program provides strong incentives for users to alter their behavior. In effect, these incentives fill the vacuum in the users' lives that results from no longer having their lives thoroughly disciplined by their heroin use. Even small incentives associated with this supervision could have a large impact on users' behavior.

A third final action which influences the magnitude of the net improvements in the areas of health, dignity and autonomy and crime is the recruitment process. Evidence suggests that there is an adverse selection problem; users who are not behaving badly now and/or are likely to get better by themselves in the future are the first to volunteer for treatment; users who are behaving badly now and who will continue to behave badly unless they get into the program tend to hang back. Consequently, if we make no effort to recruit the hard core, the available places will go to users who do not create the problems. We will simply subsidize the rehabilitation of people who would have rehabilitated themselves anyway. If we use aggressive recruiting, or take some patients who have recently been arrested, we can provide a larger share of the places in treatment to hard core users. While this may produce fewer "cures," the magnitude of the "net improvements" may well be greater.

Perhaps the least important final action influencing the dignity and autonomy of users is the provision of ancillary services. Few users make use of these services when they are available. The amount of such services is so small even in lavishly funded programs that common sense suggests that they are not likely to have much effect. Moreover, the tentative findings of experiments with different levels of these services indicate no significant differences between users receiving many such services and users receiving none. Thus, within the relevant range, it does not appear that increasing the level of ancillary services will increase the net improvements of users.

3. Final Actions Which Influence Contagion

The establishment of a methadone maintenance program can influence the rate at which heroin use spreads in three different ways. First, non-addicts might be admitted to the program. Second, current patients might distribute their doses of methadone to non-addicts. Third, if the program gets very large and the current supply system does not shrink, new users may face lower prices in the illicit market for heroin. Each of these effects can result in increased heroin use among people who have not previously used heroin.

Given this analysis, there are three characteristics of the final actions which have a major impact on the extent to which heroin use spreads. Probably the most important characteristic is scale. Not only does scale influence the price of illicit heroin to "not-yet users," but it also affects the total amount of illegally diverted methadone. If the program is very large, even small proportions of errors in admission, and small probabilities of diversion by current patients will result in large absolute quantities of drugs available to non-addicts.

A second important characteristic of the final action is the dose policy of the program. If patients are allowed to take home doses of methadone, then there is a greater potential for diversion than if they are forced to take their methadone on the premises of the clinic. If large doses are provided, then there is a greater potential for diversion than if small doses are provided. Consequently, if the program's dose policy is designed to be attractive to users, one must expect that it will have a greater impact on the spread of opiate use than if it is designed with small doses and a "no take-home" policy.

A third important characteristic of the final actions is the procedure used to determine eligibility. Given a set of eligibility standards (e.g., age, years of addiction, not enrolled in other programs, etc.), one must have a procedure which allows the intake personnel to decide whether a given individual is or is not eligible. It is often not easy to verify a patient's statements about his name, age, years of addiction, or status in other programs. Users may have several sets of identification, carefully culled from a large number of wallets stolen over several years. They can simulate signs of addiction, etc. Verification of a patient's statements will be time consuming and expensive. Consequently, intake personnel will make many Type I and Type II errors (i.e., admitting people who should be rejected and rejecting people who should be admitted). If they err on the side of Type I errors, there will be an increase in contagion.

- a. One can save a great deal of money by not investing in ancillary services. They are very expensive and add little to the net improvements of users.
- b. One need not invest in recruitment efforts to maintain a fast rate of expansion and achieve a large scale program. Relatively small changes in the character of the program will have a large impact on the number of users who apply.
- c. One faces a difficult trade-off between maintaining a fast rate of expansion and inhibiting the spread of heroin use. All the final actions which permit a fast rate of expansion (e.g., liberal dose policies, superficial eligibility determinations, etc.) also create a large potential for diversion. Moreover, a fast rate of expansion will result in a situation where users who remain in the illicit market for heroin will face low prices for heroin.
- d. One also faces a difficult trade-off between inhibiting the spread of opiate use and encouraging the rehabilitation of patients. Liberal dose policies are judged to be more "therapeutic" than stringent dose policies. But liberal dose policies create a slightly greater potential for diversion.
- e. One can reduce this trade-off between contagion, scale, and rehabilitation by spending money on more accurate eligibility determination, but this has only a marginal effect and is very expensive.
- f. One can also reduce the trade-off by increasing the level of supervision over users' lives. This may even have a beneficial impact on the behavior and condition of users. The problem is that such supervision is very expensive--both in resource terms and in the decreased attractiveness of the program to users.

D. Political and Bureaucratic Factors Influencing Character of Final Actions:

While an analyst might have preferences about how these final actions are performed, how they will actually be performed depends on the political and bureaucratic factors which influence the actors who will design and implement this program. One can identify several important factors which will affect the implementation of the program.

1. The pre-eminence of the Beth-Israel Program

One major factor is the pre-eminence of the Beth-Israel methadone maintenance program. Methadone maintenance is an extremely controversial program. It earned respect only through the cautious development of the program at Beth-Israel Hospital. That program followed a protocol which called for high doses, high levels of ancillary services, careful screening, and modest levels of supervision. Given the controversy about the program in general, and the success of this particular form, there is a strong incentive for all new programs to adhere closely to this particular protocol. Straying too far from orthodoxy invites bitter criticism. Staying within the orthodox approach provides the strong protection of demonstrated success.

The form of the Beth Israel program is likely to have an important effect on any new program for an additional reason. This program has monopolized all the professional knowledge about how to run a methadone program. If one wants experienced doctors and nurses, one has to get to Beth Israel to get them, or have people trained there. Once there, the personnel would become indoctrinated in the Beth Israel protocol.

Finally, it is likely that Beth Israel would have first refusal on any additional money for methadone, and might even be able to veto a program developed by others. Consequently, any large new program in methadone maintenance would either be operated by or informally approved by Beth Israel.

For all these reasons, it is likely that any new program would look very much like the Beth-Israel protocol. This would be costly in two important respects. First, the new program would probably be forced to buy large amounts of ancillary services. Second, the program would probably be cautious in expanding.

2. Clinic Costs and Community Opposition

A second important factor influencing the character of methadone maintenance programs is the reluctance of most communities to have a facility opened in their area. Methadone clinics quite naturally become places where many addicts can be found. Local residents fear the crime associated with addicts, the possibility that their children will easily be able to find heroin and methadone, and the violence and confusion that might come from the police using methadone clinics as a place where they can find fugitives or suspects whom they wish to arrest. Consequently, every community wants some other community to house the methadone clinics.

The major effect of this factor is to slow the development of methadone maintenance programs. Indeed, it is possible that this factor will put an absolute constraint on the potential size of the program.

3. Shortages of Necessary Resources

A third factor affecting the shape of a methadone maintenance program is a general shortage of basic resources such as doctors or nurses who are trained to operate methadone maintenance clinics. Moreover, it appears that the work is not regarded as intrinsically interesting or exciting. The treatment is fairly routine and uneventful. The patients tend to be unpleasant. Finally, the program is likely to be bound by civil service restrictions on wages and therefore will pay less than other jobs that doctors and nurses could hold. Consequently, it does not seem likely that a large supply of competent doctors and nurses will be forthcoming.

The urinalysis facilities are also likely to be an important constraint. Estimates indicate that the city would be able to test only 200 urine specimens/day. Private facilities are willing to do the tests at \$5.00 per test. But even at this high rate, their capacity is estimated at only 1,500/day. The

city could plan to expand its testing facilities, but such processes tend to be very slow. For example, it took the City several years to install equipment to expand their processing of blood tests for a lead poisoning program.

Thus, the rate of clinic openings is likely to be seriously constrained by a shortage of personnel and urinalysis facilities. One could keep the pressure on to expand rapidly, but only at the price of understaffed clinics without adequate testing facilities. Such an expansion would result in small net improvements, significant numbers of Type I errors (admitting people who were not eligible), and a great potential for diversion.

4. Elaborate Procedures for Leasing and Renovating Space

A fourth factor influencing the development of the program is the incredibly elaborate procedures necessary to lease and renovate space. The procedure is described in Figure 5. One should note the large number of clearances and the vague criterion by which the decisions are made. Again, the effect of this "red tape" would be to slow the development of the program to a turtle's pace, or to risk the political viability of the program.

5. Incentives of Program Managers

So far all the political and bureaucratic factors have militated against a rapid expansion of the program. This might lead one to think that the trade-offs between rapid expansion and inhibiting the spread of heroin addiction will be resolved in favor of inhibiting the spread of heroin addiction. This is true insofar as these major constraints will affect the aggregate size of the program.

However, there are two other factors influencing the impact of the program on the spread of heroin use -- the dose policies and the eligibility determination in the program. Due to these positions, individual program managers will have a decisive influence on these procedures despite general policy directives from the top. Moreover, for the most part, program managers will have a strong incentive to adjust these procedures in a way that is favorable to rapid expansion and inimical to controlling contagion. Program managers care about filling their slots quickly. Consequently, they will strain to make their program attractive by offering a liberal dose policy. In addition, they will be fairly loose in determining eligibility. Thus, while there may not be many clinics operating, those that are operating are likely to become important sources of diversion.

The program manages to have two other incentives that are inimical to the potential contribution of these methadone programs. First, because the administrators will tend to be M.D.'s, they will be strongly in favor of voluntary treatment and will resist any form of coercion. This means that they will resist any program which places addicts in treatment as a condition of bail release, probation, parole, or suspended sentence on ideological grounds. They will also resist an effort to increase the scope of the program's supervision of individual users.

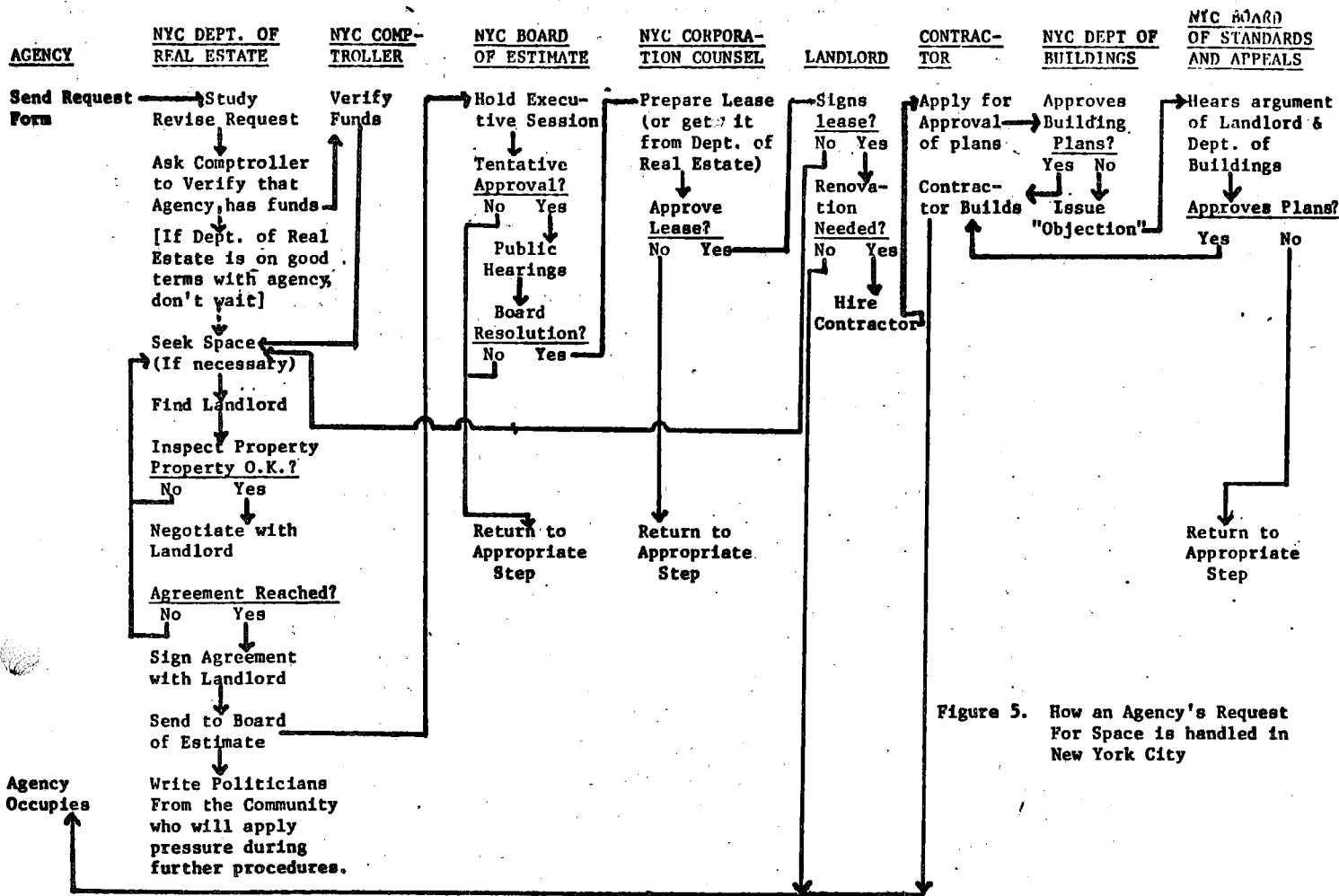


Figure 5. How an Agency's Request For Space is handled in New York City

Second, because the program will be evaluated in terms of the number of users "retained" and "cured" rather than the "aggregate net improvement" of users in treatment, they will have strong incentives to "cream" the best candidates from the group of applicants. Only people who look as though they are not problems now and are likely to get better in the future will be accepted. These incentives, taken together, imply that the program will not ensure large net improvements in the behavior of users. It will be concentrated on "good users" and will not dramatically change this behavior.

Thus, the program administrators are likely to: 1) focus their programs on the wrong population; and 2) operate the program in a way which neither secures large net improvements in the behavior and condition of users nor guards against significant diversion.

E. A Prediction About the Outcome of a Decision to Expand Methadone Maintenance

The analysis presented here leads to a prediction about the likely outcome of a policy decision to expand methadone maintenance that differs significantly from the sketch of its potential that was presented in Section II. Many factors operate to compromise the potential of the program. Given a policy decision to expand methadone maintenance rapidly, the likely result will be the following:

1. The program will expand at a slow rate and will hit absolute limits on its size at a small scale. This implies a failure to achieve potential economies of scale:

This prediction results from three factors: 1) community opposition to clinic sites; 2) elaborate procedures for leasing and renovating space; and 3) inadequate supplies of necessary resources.

2. The Program will not be focused on the correct population of users. Nor will it provide enough supervision to secure large net improvements. This implies that the average net benefits will be smaller than expected.

This prediction results from a consideration of the attitudes and incentives of the M.D.'s who will operate the program. They will take volunteers who are behaving well now. They will resist taking hard core users. They will also be reluctant to scrutinize their patients' behavior and condition closely.

3. The programs that do operate will create a significant potential for diversion:

This prediction results from noting that the program administrators will have strong incentives to fill their program quickly. As a result, they will establish relatively liberal dose policies and will err on the side of inclusion rather than exclusion in admitting patients.

4. The program will invest heavily in ancillary services which will have little impact on the behavior and condition of users.

This prediction results from observing the enormous power of the Beth-Israel program to influence other programs to adopt its protocol. Because this protocol

includes extensive ancillary services, the new program will have extensive ancillary services.

In sum, the program will be smaller, costlier, and less effective than it needs to be. While it is still worthwhile to recommend this policy, expectation about the success of this policy are much lower when these political and bureaucratic factors have been taken into account.

F. Will There be an Authoritative Decision to Expand Dramatically?

Each of the factors analyzed above influences the particular shape that the methadone program will take. These are important to notice and accommodate to. However, there is one factor which makes it unlikely that there will be any methadone program at all. That factor is the lack of any authoritative person who can commit himself to the program and provide the necessary resources.

Rockefeller has all but abandoned his commitment program and is pushing NACC to finance methadone programs. However, both he and NACC are tied to Dole and to Beth Israel programs. Dole has insistently refused to take chances with the program by expanding it too rapidly. Rockefeller and NACC are reluctant to trust anyone else.

Lindsay, also, is looking for a graceful way to establish a large methadone program. He has made a step in this direction by initiating ARTC, an experimental methadone program. However, he now appears hemmed in for two reasons. First, he seems to be bound to wait for the results of the experimental program before making a move. Second, ASA, which is supposed to be the City co-ordinator of city drug programs, is adamantly opposed to methadone. Any attempt to cram the program down their throats or invade their jurisdiction by giving the program to another agency will be vigorously opposed. The agency has no small amount of political power among ghetto communities, liberal councilmen, and liberal Congressmen. Consequently, vigorous opposition could easily take the form of demonstrations, angry public statements, etc.

Thus, there appears to be no one on the scene who is prepared to commit the necessary resources and take the responsibility for administering the program. Without such a person, the program will never get off the ground. With such a person, the program may leave the ground, but stands a reasonable chance of crashing shortly thereafter.

APPENDIX A

The Major Treatment Programs in New York City, 1969*

A. The New York State Narcotics Addiction Control Commission (NACC)

By far the largest drug treatment program in the nation was the one operated by the New York State Addiction Control Commission. The program was established in 1967 on the basis of a statute providing for the involuntary "civil commitment" of "addicts" to treatment centers. Since the state had few treatment facilities in 1967, as a first step NACC embarked on an extensive building program in order to house 4500 users in 26 new treatment centers. By 1969, NACC was spending \$46.6 million a year.¹ About 3,000 users lived in centers administered directly by NACC. Another 3,000 were treated in centers run by other agencies under contract with NACC.²

The NACC program was generally perceived to be a costly fiasco. The remote "treatment centers," built at great expense, were not terribly different from the jails to which users had been sent. Indeed, early in the program, inmates struck to protest bad food, and escape attempts continued to be frequent and frequently successful. The centers lacked recreational facilities. In April, 1969, the New York Times reported that group therapy was conducted by "counselors" who had no experience in or training for work with addicts. Many of the addicts were Spanish-speaking, but almost none of the counselors were. The article continued:

The seeming informality is really part of the design of the program, according to NACC Commissioner Pierce, who calls his approach interdisciplinary.

Mr. Pierce points out that even if he wanted to hire psychiatrists or psychologists for therapy work, the supply would not be sufficient.³

NACC claimed that 44.2% of those released had remained off drugs, but admitted it was not clear how many of those had been drug-free for more than a few weeks. A Times survey demonstrated that many judges, lawyers, addicts, and others affected by the program found it unsatisfactory.⁴ One of the gubernatorial candidates in 1969 charged that NACC had spent \$345 million in three years to "cure" 120 addicts.

*Most details on the workings of A.S.A. and the germination of A.R.T.C. were taken from a draft paper by Dianna Gordon.

¹The New York Times, 4/21/69, p.1 ff.

²Ibid., 9/29/68. p. 39

³Ibid., 4/21/69.

⁴Ibid.

B. Beth Israel's Methadone Maintenance Program

NACC's one claim to fame was that it was funding the pioneer methadone maintenance program at Beth Israel Hospital. In contrast to NACC's own civil commitment effort, this program was small, inexpensive and apparently successful.

The program began in 1964 during research by Doctors Vincent Dole and Marie Nyswander at the Rockefeller institute. They reported that heroin users lost their craving for the drug and could function normally if they drank daily doses of methadone, a synthetic narcotic. Methadone was itself addictive, but seemed not to make a user "high." Furthermore, a patient on a maintenance dose of methadone would feel no effect from all but enormous doses of heroin. The methadone itself cost 13¢ per dose.

Dole opened a clinic at the City's Manhattan General Hospital (which later became part of Beth Israel) and cautiously expanded the program. Meanwhile, he asked Beth Israel to set up an independent study to evaluate his program.⁵ The study, headed by Dr. Frances Rowe Gearing, confirmed Dole's claims of success. By March 1967, only 383 addicts were taking methadone, but they were an astonishing 90% of those that had ever entered the program.⁶ By October 1969, 2,325 patients were enrolled and the success rate was still an unequalled 80%.⁷ 91% of the patients had been arrested before entering the program; only 12% were arrested afterwards. Before entering the program, only 15% were employed, and 64% were receiving welfare, but after a year, these figures were 66% and 12% respectively.⁸

Addicts were eager to join the program. Although Dole rejected any applicant who had not been addicted for at least four years, several thousand people were on waiting lists for Beth Israel's program and a much smaller sister program at Bronx State Hospital.

Despite Dole's apparent success, methadone maintenance became the center of intense controversy. Methadone patients were still addicts, and some questioned whether feeding a habit was ethical. Efren Ramirez, head of the city's drug treatment agency, warned that methadone did nothing to solve an addict's underlying psychological problems, and that giving an addict the drug before he had tried drug-free therapy was morally wrong. A staffer at a drug-free therapeutic community compared methadone maintenance to switching an alcoholic from "scotch to bourbon."⁹ Some minority leaders charged that methadone was a cheap way of keeping addicts docile, and that the white power structure was unwilling to spend enough money for programs that would really "cure" addicts. Some even saw the program as genocidal.

⁵Brecher, Edward M., Licit and Illicit Drugs, Boston. Little, Brown and Company, 1972, p. 140.

⁶N.Y.T. 3/16/67, p. 57.

⁷Gearing, Frances R., "Successes and Failures in Methadone Maintenance Treatment of Heroin Addiction in New York City," Proceedings of the Third National Conference on Methadone Treatment, 1970, National Institute of Mental Health, p. 3.

⁸Brecher, Edward M., Op. Cit., p. 141.

⁹N.Y.T. Magazine, 10/15/67. p. 44ff.

Democratic City Council leaders, however, jumped onto the Methadone bandwagon in 1967, announcing that they would introduce a bill to establish a maintenance program at the jail on Riker's Island.¹⁰ The plan ran into immediate and stiff opposition. Ramirez said a maintenance program would be contrary to the drug-free approach his agency was trying there. Many doctors objected that starting a program in a jail was in effect forcing prisoners to accept medication, since participation in the program might help an addict gain parole. Dole himself urged caution and suggested a year-long pilot program for six or twelve addicts.¹¹

In 1967, Ramirez's opposition to maintenance forced Dole to seek money from NACC's commissioners, who complied and pressed Dole to expand. The number of patients participating rose from 750 in April 1968, to 2,325 in October 1969. As the civil commitment program faltered, Rockefeller and NACC urged Dole to expand even faster.

Dole was expanding as fast as he dared. He feared that any scandal would discredit the whole method of treatment in which he believed so deeply. He was also cautious in lending his approval to proposals for other programs, since he felt that it was not enough merely to dispense methadone to addicts:

The high rate of social productivity as defined by stable employment and reasonable behavior . . . cannot be attributed to the medication, which merely blocks drug hunger and narcotic drug effects. The fact that the majority of the patients have become productive citizens testifies, in part, to the devotion of the staff of the methadone program--physicians, nurses, older patients, counselors, and social workers.¹²

Every step of expansion was done cautiously. Dole's staff had to go through several weeks of on-the-job training. In addition, all patients were inducted through an expensive inpatient process which lasted one month.

C. The Addiction Services Agency's Therapeutic Communities Program

The Addiction Services Agency was virtually the personal creation of Dr. Efren Ramirez, a psychiatrist Lindsay had first appointed as the City's Coordinator of Addiction Programs in 1966. Shortly after taking Office in that year, the Mayor asked Nancy Hoving, a campaign aide and wife of his new Parks Commissioner, to visit Ramirez's clinic in Puerto Rico. She returned and recommended Ramirez highly.

¹⁰N.Y.T., 5/15/67. p. 49. The mayor, John Lindsay, was a Republican at the time. (He became a Democrat in August 1971.)

¹¹N.Y.T., 10/10/67, p. 37.

¹²Brecher, Op. Cit., p. 145-148.

Ramirez started with no budget or staff, and was expected merely to coordinate the efforts of private drug-treatment agencies that were receiving city funding. When these agencies resisted his rather particular views on therapy, he struck out on his own, and snatched a \$4.8 million O.E.O. grant after opening a few storefront treatment centers.¹³ In November 1967, Lindsay expanded Ramirez's office to make it a municipal agency.¹⁴

ASA's treatment program, based in existential psychiatry, was incompatible with drug maintenance programs, and gave little promise, in retrospect, of treating large numbers of addicts. Ramirez believed that addicts were people who had not taken responsibility for their own lives, and thus could not deal with reality in a constructive, socially acceptable way. Treatment consisted of a series of stages, each one presenting the addict with greater pressure to change, and more responsibility. After some time in an out-patient clinic and a day hospital, a patient entered a "therapeutic community" where he would live for about a year. Through encounters with program staff and fellow addicts, which lasted from two hours to three days, residents were forced to take stock of themselves, and admit that their use of drugs was an escape. Staff members were thus absolutely opposed to maintenance therapy. This opposition was especially fervent among the many counselors who were themselves ex-addicts, and felt that Ramirez's program had saved them.

Doctors, traditional psychologists, and spokesmen for the older voluntary agencies criticized ASA's programs as useless or impractical. It probably did not help the agency's public relations that the staff rather mystically referred to Ramirez's theories of treatment as "the concept."

Ramirez's highly enthusiastic staff seemed unable to work within the City's bureaucratic routines. Dismayed budget examiners found that ASA was giving yearly merit raises to half of its employees (the City-wide proportion was about 5%) and spending 28,000 dollars a year in encounter sessions for ASA's executives. Staff members contracted for storefront space without obtaining the approval of the Department of Real Estate. After a tussle, the Department of Personnel promulgated a new series of civil service categories tailored to fit the ex-addicts whom ASA wanted to hire as counselors. ASA then proposed candidates who could not qualify even for the new slots.

Ramirez quit in November 1968 because of internal agency squabbles, but left behind a staff fervently opposed to maintenance, and a treatment program costing 12 million dollars a year. Fourteen community centers were in contact with 7000 addicts, although only 700 of these seemed likely to enroll for further treatment. A 250 bed detoxification ward was in constant use. 600 addicts were full time residents in therapeutic communities, called "Phoenix Houses," and two half-way houses held 80 addicts who were re-entering society. Still, Ramirez estimated that there were 80,000 drug addicts in the city of whom only 2 per cent were receiving treatment. He estimated that a "full program" would cost 100 million dollars.¹⁵ But a city councilman called ASA's program a "fraud" and demanded an investigation, charging that not one addict had yet been cured.¹⁶

¹³ N.Y.T., July 7, 1967. p. 54.

¹⁴ N.Y.T., 11/27/67, p. 94.

¹⁵ N.Y.T., Nov. 20, 1968, p. 34.

¹⁶ N.Y.T., 12/11/68, p. 43.

Dealing with Drug Abuse

A Report to the Ford Foundation

FOREWORD BY MCGEORGE BUNDY

THE DRUG ABUSE SURVEY PROJECT

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STAFF PAPER 1

The Drugs and Their Effects

by James V. DeLong

DRUGS OF ABUSE

OPIATES

*The Drugs.*¹⁴ Opium is a natural substance derived from one variety of the poppy plant. It contains over twenty different alkaloids with varying properties, constituting 25 per cent of opium by weight. A few of these—primarily morphine and codeine—are medically useful.

In discussing opiate abuse, the specific drugs of concern are the following:

- *Morphine* is a natural alkaloid constituting 10 per cent by weight of the raw opium.
- *Heroin*. Because heroin is produced by chemical treatment of morphine with acetic acid, the technical name for it is diacetylmorphine. In terms of analgesic effect, heroin is a little over three times as potent as morphine—for example, it takes three milligrams of heroin to produce the same analgesic effect as 10 milligrams of morphine.

Although heroin is the principal opiate of abuse in the United States, most research has been done with the more readily available morphine. In the opinion of experts, such research is applicable to heroin if the dosage difference is considered, because heroin rapidly breaks down into morphine in the body. Thus, its subsequent pharmacological action is the same.

- *Methadone* is a synthetic opiate of approximately the same strength as morphine.
- *Meperidine* is another synthetic opiate that is about 10 to 20 per cent as potent as morphine. It is better known under its trade name, Demerol.

While all four drugs are analgesic, euphorogenic, and in many ways fungible, there are some differences among them, particularly in maximal effect and duration of action. Throughout this paper, morphine is the primary subject. Important differences in the characteristics of the other opiates are discussed where relevant.

Larry Bear, Ramirez's successor, continued ASA's official opposition to offering methadone treatment to addicts who had not first tried drug-free therapy. He urged that the new ARTC program try to wean addicts from Methadone. In February 1969, he testified before the city council against the prison methadone program,¹⁷ which passed over Lindsay's veto in August.

D. The Addiction Research and Treatment Corporation (ARTC)

During the summer of 1968, Mayor Lindsay decided that the city should start its own Methadone program. Dole's success was ever clearer, the city council was pushing its prison treatment bill, and Lindsay could expect that his Democratic opponent in the November 1969 Mayoral race would strongly support methadone maintenance. Furthermore, many minority leaders were voicing support for methadone. In August, an aide asked ASA and the City's Health Services Administration for suggestions. ASA, as always, opposed methadone treatment. HSA's Bernard Bucove thought that methadone was too experimental for a large program, and noted that Dr. Dole had said that Methadone treatment could be carried out by private physicians. Lindsay turned to a private foundation, the Vera Institute of Justice, to design the City's program.

In May 1969, Lindsay announced that former attorney General Katzenbach would head the new Addiction Research and Treatment Corporation (ARTC) in the Bedford-Stuyvesant section of Brooklyn. The body received 1.5 million dollars, mostly from the federal government, for the first year of a program which was supposed to treat 5,000 addicts in the next five years.¹⁸

ARTC differed markedly from the Dole-Nyswander methadone clinic. First, it was avowedly experimental; at its opening in October 1969, its director said the program would try

to prove whether it is the efficacy of the drug--methadone--alone, that makes a guy return to the mainstream, or a combination of that and the allied services.¹⁹

The program planned to wean addicts from methadone, although other clinics that had done so reported that addicts became rapidly re-addicted to heroin. Second, ARTC would offer a wider range of services, such as counseling, to participants than Dole's program had. Finally, ARTC planned to recruit minority staffers to gain community support.

Dole feared that ARTC's program would have a high per-patient cost and a high recidivism rate, which would jeopardize the reputation and funding of other methadone programs. He thus withdrew his support for the project, although he had cooperated with Vera's study.

¹⁷N.Y.T., 2/8/69, p. 32.

¹⁸N.Y.T., 4/30/69, p. 1.

¹⁹N.Y.T., 10/12/69, p. 44.

Appendix B (continued)

Nevertheless, several experts have stated that overdose and disease do not explain all addict deaths.²⁴ In many cases, the addict did not receive more heroin than he was used to or should have been able to take, given his pre-existing level of tolerance. It is possible that some people have a special sensitivity to heroin that takes the form of an idiosyncratic response to a single dose or that is analogous to an allergic reaction triggered by repeated use

The opiates vary in several ways affecting consumer preferences, abuse potential, and the ability of an addict to stabilize his dosage and lead a relatively normal existence. The major elements of variance are as follows:

- *Peak effect.* This is usually calculated as the maximum analgesic effect that can be obtained from a given dose of the drug as measured by the ability to relieve pain. Sometimes euphoric effect is measured directly through the observation of physical correlates of drug taking or through verbal responses to tests designed to determine the degree of euphoria. It is generally assumed, although not indisputably proved, that the peak of analgesic effect and the peak of euphoric effect are the same.
- *Duration of action.* This is a more diffuse concept, because it could mean the duration of relief of a given amount of pain or the duration of the peak effect. Generally, as used in the sources, it seems to mean the length of time after administration before the drug user begins to feel withdrawal symptoms. Sometimes, however, the phrase "duration of analgesic action" is used. The exact meaning of this term is not clear, since it would seem to depend on the level of pain to be relieved. Empirically, it seems to be about the same as the generally accepted "duration of action" to withdrawal.
- *Method of administration.* All opiates can be taken orally, subcutaneously (by injection under the skin), intravenously (by injection into the vein), intramuscularly (by injection into the muscle), or through the nasal passages. The effects will differ somewhat, depending on the method used. In addition, the effect of different methods of administration varies with the drugs. For example, when taken orally, methadone retains its efficacy more than morphine.
- *Potency and power.* The power of a drug is defined by the upper limit of the absolute effects it can produce. The potency of a drug relates to the dosage that is necessary to produce a given effect. Thus, heroin is not more powerful than morphine, because both can produce the same effects; but it is more potent, because it produces equivalent effects at lower doses.

Physical Effects and Toxicity. The exact method by which morphine blocks pain is unclear. It does not appear to block the transmission of the pain impulse through the nerves (as do local anesthetics), because sensation and feeling are not affected. For example, someone heavily dosed with morphine will still be able to feel a touch or other relatively slight sensations. In addition, experiments have shown that a patient, even after being given morphine as a pain reliever, can accurately determine the amount of pain he would be suffering without the drug. What seems to change is the relationship of the subject to the pain. Although he feels the pain and can tell how great it would be without the drug, he is not "bothered" by it. For these reasons, it is thought that the drug acts in the part of the brain that interprets the nerve message.¹⁸

For a nontolerant individual, morphine is highly toxic. A dose of 100 to 200 mg. would be sufficient to cause a fatal respiratory depression. This, like the analgesic effect, is a consequence of the effects of the drug on the CNS rather than on other parts of the nervous system—morphine reduces the responsiveness of brain-stem respiratory centers to concentrations of carbon dioxide.¹⁹

Tolerance to the respiratory effect increases rapidly, and no researcher has yet found an absolute limit to the quantity of morphine that can be taken by a tolerant individual without causing death. Some persons have been known to take as much as four grams of morphine without adverse effect.²⁰

No one has discovered long-term organic damage caused by morphine. In autopsy, neither gross nor microscopic examination of tissues shows evidence of such effects.²¹ Various studies have followed the medical history of addicts over a substantial period of time, and, according to one of the studies, "while there is ample evidence that the aberrant way of life followed by most heroin abusers has both acute and chronic medical consequences . . . there is insufficient scientific basis for maintaining that long-term use of opiates—in and of itself—is related to any major medical condition."²²

Addicts do, however, suffer from a variety of conditions ancillary to their general life-style and frequently die of viral hepatitis, bacterial infections, or other diseases. The death rate of the addict population is not known, but it is usually estimated as about 1.5 per cent to 2 per cent per year.²³ Malaria used to be common among addicts, until dope sellers began using quinine to cut heroin. Other deaths are often attributed to an overdose of heroin sufficient to cause respiratory depression. The possibility of an overdose is always present, because the quality of street heroin so varies that an addict may not know how much pure heroin he is getting in any purchase or even how much he is used to taking.

Viewed narrowly, potency might seem of little significance medically, because one could always give more of the less potent drug. Few drugs, however, are so specific that they have only one effect, and the differences in potency may not be uniform for all effects. For example, morphine is an analgesic producing a side effect of nausea. Heroin is a more potent analgesic, but this does not mean, necessarily, that it would be more potent in causing nausea.

As stated above, potency of an opiate is measured in terms of analgesic effects, and this is thought—and only thought—to equal euphoric effect. But, given the lack of knowledge about the mechanisms by which opiates work, it is not impossible that the various drugs affect different CNS centers in various ways, and that therefore qualitative variations occur in psychoactive experiences. Also, superpotent opiates, such as the thebaine derivatives, might have distinct effects that have not shown up in comparisons of existing drugs.

Although the basic facts about the opiates are not entirely clear, the following facts are known:²⁷

- *Morphine*, taken subcutaneously, has its peak effect in one-half to one hour. Its duration of analgesic action is four to six hours, and the decline from the peak is rapid. When it is taken intravenously, the peak effect is reached sooner and is somewhat greater. Morphine is effective when taken orally, but the peak effect is much lower—perhaps only 20 per cent to 30 per cent of the subcutaneous peak. The duration of action of oral morphine is at least twelve hours and may be as long as twenty-four.
- *Heroin* is generally thought to act about the same as morphine. Some animal experiments, however, indicate that heroin crosses the blood-brain barrier more quickly than morphine. If this is true for humans, its peak would come more rapidly than the morphine peak. Addicts sometimes cannot distinguish between heroin and morphine when they are injected subcutaneously; most are able to do so, however, when the drugs are taken intravenously.
- *Methadone*, taken subcutaneously, has a peak effect in three hours and a duration of analgesic action of about twelve hours. When methadone is taken orally, the peak is about 70 per cent as great and occurs after four hours. Duration of action after oral administration is around twenty-four hours, and the decline from the peak is slow. Intravenously injected methadone peaks almost immediately, and the duration of action is lessened accordingly.

- Subcutaneous *meperidine* has a duration of analgesic action of only two to four hours, and the peak is reached in less than an hour. With oral administration, the peak is about 50 per cent as high. Intravenous administration lessens the time needed to reach the peak effect. Addicted medical personnel, who have ready access to meperidine, tend to prefer that drug to the other opiates, possibly because of its fast action and relatively high potency when taken orally.

- The dosages of the different drugs required to produce the same peak effect when administered subcutaneously are: morphine—10 mg.; heroin—3 mg.; methadone—10 mg.; and meperidine—80 to 100 mg.

Addiction. Three aspects of opiate use are particularly important to an understanding of addiction and its consequences: (1) the nature of the euphoric psychoactive effect; (2) the development of tolerance to the drugs; and (3) the development of physical dependence, with physical withdrawal symptoms, when the drug is removed.

Psychoactive Effects. Opiates cause a mental clouding characterized by drowsiness, an inability to concentrate, lethargy, and reduced visual acuity. As was mentioned before, stabilized addicts may be hypocondriacal, withdrawn, bored with other people, and less motivated. Opiates, however, do not cause slurred speech or significant motor incoordination.²⁸ In some persons, they produce a very pleasant euphoria, but this reaction is not universal. Many people find that dysphoria, consisting of mild anxiety and fear, results instead and may be accompanied by such unpleasant effects as nausea and vomiting. Dysphoria is extremely common at first use, even among those who eventually become addicted; indeed, to attain euphoric effects at first may be an atypical response. In some subjects, the initial response is a desire to engage in increased activity.²⁹

Goldstein states:

It is well known . . . that most people react with extreme displeasure to an initial dose of an opiate narcotic, both nausea and dysphoria being common responses. It was once supposed that administration of opiates in legitimate medical practice might "create" addicts. There is no valid evidence of this claim, although it is true that the incidence of addiction is high in the health professions, where there is easy access to addicting drugs. It is quite obvious, however, that of the many millions of patients who receive morphine, an insignificantly small fraction ever seek to take the drug

again. Likewise, in the population as a whole, very few of those who could obtain morphine or heroin illegally, if they wished, become addicts.³⁰

Despite this, people start taking opiates because they like or expect to like the effect. It is not known whether those who become addicts have a different response to the initial use, experiencing some atypical internal metabolic change, or whether they simply have more persistence.

For those who find that they have an affinity for the drug, the euphoric effect is very powerful, although its exact nature is almost indescribable. This effect can be divided into two parts. The first part is the "rush"—the initial impact of the drug on the nervous system. This appears to occur only when the drug is taken intravenously, and not when it is taken orally or subcutaneously. Sexual images are frequently used to describe this effect: "It was like a huge orgasm"; "It was like coming from every pore." The second part is the follow-up sensation of being "high." Describing this is more difficult, however, for there is no common experience from which a pattern can be drawn. Basically, the effect appears to be that of an emotional analgesic, suppressing anxiety and care, although the analgesia is not a mere deadening of emotion. On the contrary, it can be a profoundly heightened sense of well-being. Whether everyone who persisted in opiate use would attain this euphoric state, or whether such a state is a selective reaction based on psychological factors, remains an unanswered question. There is no model of the addict personality as such that satisfactorily distinguishes between users and nonusers; nor is the psychic explanation the only one available. Some researchers believe that opiate addiction has a physiological basis, and that the attempt to find psychological variables is therefore pointless. The varying theories on this subject are discussed in the last part of this section.

Tolerance. A person can become accustomed to a drug's effects and thus require steadily larger doses to produce a constant effect. This phenomenon is common with many drugs in pharmacology, not just drugs of abuse. Tolerance is not the same as physical dependence and often occurs without it. It is an important aspect of opiate addiction, because the addict's need to take steadily larger doses to achieve a euphoric effect elevates the cost of his habit, causing increased criminal activity and presumably increasing any long-term toxic effects that may exist.

Tolerance does not always develop uniformly to all aspects of

a drug's action. For example, while tolerance in time develops to the sedative effects of barbiturates, the amount needed for a lethal dose remains constant. On the other hand, tolerance seems to develop to all the major effects of narcotics. It "is characterized by a shortened duration and decreased intensity of the analgesic, sedative, and other CNS depressant effects as well as by a marked elevation in the average lethal dose."³¹ As observed in the section on toxicity, limits on tolerance have not yet been determined.

In a study of drug addiction as a social problem, an important issue is the speed with which tolerance develops. If, for example, tolerance develops rapidly, then whenever an addict increases his dose for a few days—or possibly even for a day—he will become tolerant to the increased dose and must therefore maintain at least that level of habit from then on to avoid withdrawal symptoms. Experimental evidence indicates that tolerance does develop rapidly. Human subjects have been brought to a level of 500 mg. of morphine within ten days. Tolerance to morphine begins with the first dose administered and builds rapidly; tolerance to heroin lags for a few days, then follows the same course. In animal experiments, it has been found that a dog, when given morphine continuously for eight hours, will begin to recover from behavioral depression by the end of that time, indicating a rapid development of tolerance to a given concentration of morphine in the body.³³

Another important question is how long tolerance lasts after an individual has been abstinent for a time. Generally, it is believed that tolerance disappears when the drug taking stops. There are numerous street stories to the effect that addicts will voluntarily detoxify themselves to the point where their habit becomes such as to be economically supportable. Yet, in one classic experiment rats were found to retain substantial tolerance to morphine for almost a year after the last administration of the drug.³⁴

The final important aspect of tolerance is the phenomenon of cross-tolerance between drugs. Morphine, heroin, methadone, and meperidine are at least partial substitutes for one another, and tolerance to one confers tolerance to equipotent doses of the others.

Physical Dependence and Withdrawal. It makes some sense to blur the distinction between physical and psychological dependence when discussing drug abuse as a social problem.

This should not induce the belief, however, that there is no such thing as physical addiction or physical dependence. Clearly, an opiate user becomes physically dependent in the sense that abstinence will cause severe and well-documented physical symp-

Appendix B (continued)

toms. These include restlessness and drug craving, followed by yawning, lacrimation, runny nose, perspiration, fever, chills, vomiting, panting respiration, loss of appetite, insomnia, hypertension, general aches and pains, and loss of weight. The intensity can be "nearly unbearable" if the dosage is high enough.³⁶

Withdrawal from the various opiates has been studied scientifically. As a general rule, the intensity and duration of the withdrawal symptoms are related to the intensity and duration of the drug's action. Thus, morphine withdrawal starts within a few hours (four to ten, depending on the user's tolerance level), peaks rapidly (around the second day of abstinence), then declines sharply. Most of the obvious symptoms disappear within seven to ten days. Meperidine withdrawal reaches its peak in about twelve hours and lasts only four or five days. In some ways, however, its peak intensity is greater than that of morphine withdrawal. Withdrawal from methadone follows a slower course. No symptoms appear until about the third day. After this, they increase steadily until between the sixth and the ninth day, when they peak at a level less than two-thirds as intense as the peak for morphine withdrawal. Thereafter, they decline slowly, not disappearing until after about two weeks. The maximum intensity of methadone withdrawal is always tolerable, but its duration may be the factor that causes some addicts to regard the withdrawal from methadone as nastier than the withdrawal from morphine.³⁸

The disappearance of the gross symptoms does not mean, however, that the withdrawal is complete. Increasingly, researchers are finding some effects that persist for many weeks longer, and empirical observations show that the relapse vulnerability is greatest immediately after withdrawal. Dr. William Martin divides the abstinence syndrome into *early* and *protracted* abstinence. In human experiments, subjects were stabilized on 240 mg. of morphine, then withdrawn slowly over a period of three weeks. They showed the general withdrawal symptoms discussed above, although in milder degree than occurs after sudden withdrawal. The symptoms persisted to some extent for six to nine weeks. After this, the protracted abstinence syndrome emerged, characterized by minor physical differences that persisted through the twenty-sixth week of withdrawal. The clinical significance of this is not clear, for it has not been proved that protracted abstinence contributes to readiction. . . .

This points up the fact that tolerance to, and physical dependence on, a drug are not the same thing. The body can even develop a tolerance to drugs on which it does not become physiologically dependent. But tolerance is always present when physical dependence develops.

In the case of the opiates, the speed with which physical dependence develops seems to lag only slightly behind the speed of the development of tolerance. A patient receiving therapeutic doses of morphine for a week or two will not have recognizable withdrawal symptoms spontaneously after discontinuance, but these can be precipitated by an antagonist after only two or three days on morphine. By similar means, withdrawal has been caused in a dog after an eight-hour infusion of morphine. Goldstein believes that physical dependence is probably initiated with the first dose of the drug.⁴¹ At that stage, of course, withdrawal would be so mild as to be unnoticeable, but it seems possible that a single dose could create a craving for the drug, even though the physical genesis of this feeling would be unknown to the user.

As might be expected, there are no definitive explanations for the phenomenon of physical dependence. Its existence is simply defined by the presence or absence of withdrawal symptoms. . . .

METHADONE MAINTENANCE

A successful method of treating heroin addicts is to maintain them on daily doses of methadone. More detail about the programs using this technique is contained in Staff Paper 3.

The pharmacological basis of methadone maintenance has been covered in preceding sections, albeit implicitly. The significant characteristics are as follows:

- Methadone is a synthetic opiate. Its administration to a heroin addict will either prevent the withdrawal symptoms caused by abstinence from heroin or end them if they have already developed.
- Methadone and the other opiates exhibit cross-tolerance. A person tolerant to one of them is tolerant to equipotent doses of another.
- The action of oral methadone lasts about twenty-four hours. A methadone program can administer the drug once a day, rather than three or four times, as would be necessary if morphine or heroin were used.
- High doses of methadone (e.g., about 80 mg. or more) will prevent withdrawal, block the euphoric effect from an injection of heroin, and prevent the "drug hunger" (defined by Dr. Jerome Jaffe as "a felt sense of physical abnormality") felt by addicts who have become abstinent.
- Lower doses of methadone (e.g., 50 mg.) will prevent withdrawal and the drug hunger. They will not block the euphoric effect of an injection of heroin, although presumably some minimum quantity of heroin is required. The success rate for programs using low doses is approximately the same as the rate for those using high doses for addicts in treatment six months. Experts believe that blocking the euphoria is not so important as preventing the drug hunger.
- No significantly harmful side effects of methadone have been discovered.

The effects of methadone on the heroin addict have been described diagrammatically by Dr. Vincent Dole.⁴⁶

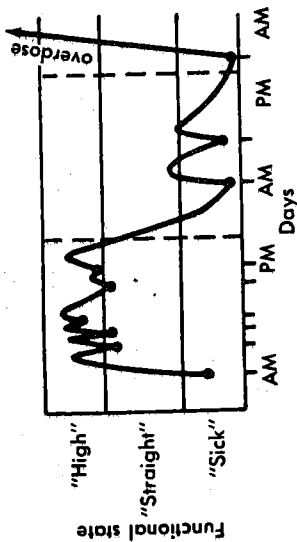


Fig. 1. Diagrammatic summary of the functional state of a typical "main-line" heroin user. Arrow shows the repetitive injection of heroin in certain dose, usually 10 to 30 mg but sometimes much more. Note that the addict is hardly ever in a state of normal function ("straight").

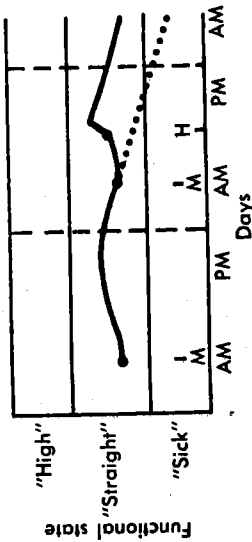


Fig. 2. Stabilization of the patient in a state of normal function by blockade treatment. A single, daily, oral dose of methadone prevents him from feeling symptoms of abstinence ("sick") or euphoria ("high"), even if he takes a shot of heroin. Dotted line indicates the course if methadone is omitted.

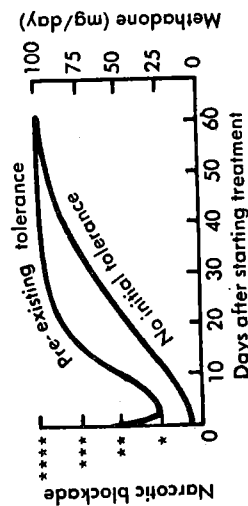


Fig. 3. The induction of narcotic tolerance by the gradual increase of methadone dosage. Two typical patients are shown: one starting with tolerance (from previous use of heroin) and the other with little or no tolerance (e.g., recently in hospital or jail). The right-hand ordinate shows the total daily dose of methadone (given in divided portions during the first months); the left-hand ordinate indicates the degree of narcotic blockade on an arbitrary scale (0 to ****).

APPENDIX C

Excerpts From:

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Taking Care of Business—
The Heroin User's Life
on the Street*

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INTRODUCTION

This report is a description of the life and activities of lower class heroin users in New York City in the context of their street environment. It is concerned exclusively with the heroin users living in slum areas who comprise at least 80% of the city's heroin-using population.

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It is often said that the use of heroin provides an escape for the user from his psychological problems and from the responsibilities of social and personal relationships—in short, an escape from life. Clinical descriptions of heroin addicts emphasize the passive, dependent, withdrawn, generally inadequate features of their personality structure and social adjustment. . . .

The description which follows of the activities of lower class heroin users in their adaptation to the social and economic institutions and practices connected with the use of heroin contradicts this widely held belief. Their behavior is anything but an escape from life. They are actively engaged in meaningful activities and relationships seven days a week. The brief moments of euphoria after each administration of a small amount of heroin constitute a small fraction of their daily lives. The rest of the time they are aggressively pursuing a career that is exacting, challenging, adventurous, and rewarding. They are always on the move and must be alert, flexible, and resourceful. The surest way to identify heroin users in a slum neighborhood is to observe the way people walk. The heroin user walks with a fast, purposeful stride, as if he is late for an important appointment—indeed, he is. He is hustling (robbing or stealing), trying to sell stolen goods, avoiding the police, looking for a heroin dealer with a good bag (the street retail unit of heroin), coming back from copping (buying heroin), looking for a safe place to take the drug, or looking for someone who beat (cheated) him—among other things. He is, in short, *taking care of business*, a phrase which is so common with heroin users that they use it in response to words of greeting, such as "how you doing?" and "what's happening?" *Taking care of biz* is the common abbreviation. *Ripping and running* is an older phrase which also refers to their busy lives. For them, if not for their middle and upper class counterparts (a small minority of opiate addicts), the quest for heroin is the quest for a meaningful life, not an escape from life. And the meaning does not lie, primarily, in the effects of the drug on their minds and bodies; it lies in the gratification of accomplishing a series of challenging, exciting tasks, every day of the week.

Much of the life of the heroin user on the street centers around the economic institutions of heroin distribution. Therefore, this report features a description of the marketing processes for heroin, from importation to street sales. The cost of heroin today is so high and the quality so poor that the street user must become totally involved in an economic career. . . .

The next major development in the history of heroin use in the city occurred in November, 1961, when there was a critical shortage of heroin. Known as a *panic*, this development, whatever its cause, had a profound effect on the course of heroin use in the city. The panic lasted only for a few weeks. During this time the demand for the meager supplies of heroin was so great that those who had supplies were able to double and triple their prices and further adulterate the quality, thus realizing sometimes as much as ten times their usual profit. By the time heroin became available again in good supply, the dealers had learned that inferior heroin at inflated prices could find a ready market. Since that time the cost of heroin on the street has continued to climb, through increased prices, further adulteration and *short counts* (misrepresentation of aggregate weight in a given unit). A few minor panics—about two a year—help bolster the market. Today an average heroin habit costs the user about \$20 a day, as compared to \$2 twenty years ago. This fact is responsible for a major social disorder in the city today. It has also had important effects on the personal, social, and family relationships of the heroin users themselves. There is no longer social cohesion among addicts. The competition and struggle necessary to support a habit has turned each one into an independent operator who looks out only for himself. Usually, addicts today will associate in pairs (partners), but only for practical purposes: in a criminal effort which requires two people (as when one acts as lookout while the other commits a burglary), to share in the price of a bag of heroin, to assist in case of an overdose of drugs, to share the use of one set of works (the paraphernalia used to inject heroin). There is no longer a subculture of addicts based on social cohesion and emotional identification, but rather a loose association of individuals and parallel couples. Heroin users commonly say, "I have no friends, only associates."

The economic pressures on heroin users today are so great that they prey on each other as well as on their families and on society at large. An addict with money or drugs in his possession runs a good risk of being *taken off* (robbed) by other addicts. An addict who has been robbed or cheated by another addict usually takes his loss philosophically, summed up by the expression, "that's the name of the game." Referring to a fellow addict who had cheated him, one victim said, "he beat me today, I'll beat him tomorrow." Another addict who specializes in robbing other addicts said, "I beat them every chance I

get, which is all the time." Sociability even among partners extends no farther than that suggested by the following excerpt: "You might be hanging out with a fellow for a long time, copping together and working as crime partners. You might beat him for a purpose. You might beat him because maybe you bought a bag together and you know it's not going to do both any good, so you beat him for it. But then you try to go and get some money and straighten him out; make it up to him." Another informant summed up the attitude between partners this way: "I'm looking out for myself—I might be sick tomorrow; anyway, he's got something working for him that I don't know about." Sometimes a distinction is made between a hustling partner and a crime partner (*crimey*), where it is suggested that the latter is more dependable; however as one informant put it, "there are larceny minded crimeys." The causes of these changes in the relationships of heroin users to each other, to family members, and to other members of the community are to be found in the economic practices of heroin distribution....

ECONOMIC CAREERS OF HEROIN USERS

The nature of the economic careers of heroin users on the street is epitomized in the following quote from a research informant: "I believe in work to a certain extent, if it benefits my profit; but I do believe there is more money made otherwise." Another informant, in referring to a fellow user, said: "He just got no heart to be pulling no scores. He can't steal, he don't know how to steal. You can't be an addict that way. I don't know how he's going to make it."

Virtually all heroin users in slum neighborhoods regularly commit crime in order to support their heroin use. In addition to the crimes involving violation of the narcotic laws which are described above, heroin users engage in almost all types of crime for gain, both against property and the person. Because of the greatly inflated price of heroin and because of its poor quality, it is impossible for a heroin user to support even a modest habit for less than \$20 a day. Since the typical street user is uneducated, unskilled, and often from a minority racial group, he cannot earn enough money in the legitimate labor market to finance his drug use; he must engage in criminal activity. It is a conservative estimate that heroin users in New York City steal \$1 million a day in money, goods and property. About 70% of the inmates in New York City Department of Correction institutions are heroin users whose crimes were directly or indirectly connected with their heroin use.

As with non-addict criminals, addict criminals tend to specialize in certain activities, depending upon their personalities, skills, and experience. One of the myths derived from the passivity stereotype of the heroin user is that the heroin user avoids crimes of violence, such as robbery, which involves personal confrontation. This no longer seems to be the case. A 1966 New York City Police Department study of the arrests of admitted narcotic (primarily heroin) addicts for selected felonies other than violations of narcotic laws, showed that 15.1% of the arrests were for robbery (New York City Police Department, 1966). This compared with 12.9% robbery arrests of all arrests (addict and non-addict) during the same year. Murder arrests among the addicts amounted to 1% of the selected felonies, as compared to 1.4% of all arrests in the same categories. The biggest differences between addict arrests and all arrests in the 17 felony categories selected for study were in the categories of burglary and felonious assault. Among the addicts, 40.9% were burglary arrests, compared to 19.7% of all arrests; felonious assault constituted 5.6% among the addicts, compared to 27.9% of all arrests. What these figures reveal is not that heroin users avoid crimes of violence as compared to non-addicts, but that they avoid crimes not involving financial gain, such as felonious assault. Where financial gain is involved, as in robbery, the risk of violence is taken by heroin users in a higher percentage of cases than with non-addicts. These statistics confirm the observations and opinions of street informants, both addict and non-addict. The high percentage of burglaries committed by heroin users is often cited as evidence that, in comparison with non-addict criminals, they prefer non-violent crime. What is overlooked here is that burglary, especially of residences, always involves the risk of personal confrontation and violence. Of the 1745 burglary arrests of admitted addicts in 1966, 975 (51%) were residence burglaries....