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**An
Annotated
Bibliography
of Recent
Empirical
Research in
Methadone
Treatment
Programs**



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An Annotated Bibliography of Recent Empirical Research in Methadone Treatment Programs

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration

National Institute on Drug Abuse
Division of Applied Research
Community Research Branch
5600 Fishers Lane
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The Community Research Branch publishes reports and monographs that are designed to share findings from Branch-sponsored studies having relevance for service delivery and program development. These will include state-of-the-art papers, innovative service delivery models found effective with different client populations, and research studies with significance for clinical programming.

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FOREWORD

Methadone treatment, initiated in 1963 through the pioneering work of Drs. Vincent Dole and Marie Nyswander, has become a staple of drug abuse treatment. The efficacy of comprehensive treatment involving the administration of methadone has long since been established. In addition, methadone treatment can now be seen as significant to our efforts to contain the spread of AIDS to i.v. drug users and from i.v. drug users to the members of their communities (Ball et. al., 1988; Hubbard et. al., 1988). In this context, we want to make available recent information that has been accumulated that can facilitate further the delivery of effective methadone treatment. Thus, this annotated bibliography, compiled by the Research Triangle Institute, was constructed to permit the still more effective use of methadone maintenance programs to help combat the spread of HIV among intravenous drug users. At a time when treatment providers and the research community are becoming increasingly concerned with strategies of AIDS prevention, we are confident that this document will shed additional light on one important initiative which - where properly implemented - has proven capacity for limiting AIDS risk.

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I. INTRODUCTION

The Research Triangle Institute (RTI) has prepared this annotated bibliography for the National Institute on Drug Abuse in conjunction with a series of controlled trials of enhanced counseling in community-based methadone programs.¹ The goal of this project is to increase the capability of methadone maintenance programs to reduce intravenous drug use and consequently the spread of the human immunodeficiency virus (HIV) among intravenous drug users (IVDUs) and their sexual partners. The RTI project is one of several being conducted under NIDA's National AIDS Demonstration Research (NADR) initiative.

The literature on methadone treatment programs is diverse. In just one of several electronic search services, there are over 13,000 articles on drug/substance abuse, almost 4,000 of which deal with methadone. This bibliography is, therefore, not intended to be exhaustive but is designed to give project staff quick access to the most relevant and recent literature, particularly the literature on empirical treatment outcome and epidemiological research. Particular attention has been paid to: studies published since the last comprehensive review (Cooper et al., 1983);² studies that are pertinent to the enhanced counseling regimen being evaluated in the randomly controlled trials; studies about HIV/AIDS prevalence and prevention of HIV transmission among IVDUs; and studies related to increasing the treatment capacity of methadone maintenance programs. Although we are interested in methadone maintenance programs, most existing programs actually combine elements of detoxification, methadone to abstinence, and long term maintenance.

Although there have been several recent bibliographies on AIDS, they have not covered methadone maintenance research well. The bibliographies by NOVA^{3 4} came closest but are neither extensive enough nor cross-referenced. For the purposes of our study, they also focus too much attention on newspaper articles and recent publications. Other bibliographies are even less applicable. The recent AIDS bibliography put out by the National Library of Medicine⁵ has no headings under drug abuse, drug treatment, intravenous drug use, methadone, LAAM, heroin, or

1/Fairbank, J.A., Bonito, A.J., Dennis, M.L., & Rachai, J.V. (1989). Increasing the capability of methadone maintenance programs: Randomly controlled trials of enhanced methadone maintenance counseling (Tech. Rep., NIDA Contract No. 271-88-8230). Research Triangle Park, NC: Research Triangle Institute.

2/Cooper, J.R., Altman, F., Brown, B.S., & Czechowicz, D. (Eds.). (1983). Research on the treatment of narcotic addiction: State of the art (Treatment Monograph Series, DHHS Publication No. ADM 87-1281). Rockville, MD: National Institute on Drug Abuse.

3/NOVA. (1989). AIDS prevention among female sexual partners of intravenous drug users: Annotated bibliography for project staff and clients (Issue #2). Bethesda, MD: NOVA Research Co., 4720 Montgomery Lane, Suite #210.

4/NOVA. (1989). AIDS and prostitution. AIDS prevention among female sexual partners of intravenous drug users: Annotated bibliography (Issue #3). Bethesda, MD: NOVA Research Co., 4720 Montgomery Lane, Suite #210.

5/Abrams, E.J. (1989). AIDS bibliography. 2(1-2). Bethesda, MD: National Library of Medicine, National Institutes of Health.

other related terms. Under the heading "transmission", only one of 23 references deals with intravenous drugs--and that is only a recent letter from Des Jarlais and Friedman.⁶ This is particularly disturbing given recent CDC estimates⁷ that IV drug users accounted directly for 33% of the new AIDS cases in 1988 and indirectly for 70.2% of the heterosexual uses perinatal transmission of HIV. There is clearly a need for a bibliography focused on methadone treatment program research and applied program evaluations that incorporates both the lessons from the past and the developments of the last ten years.

The first version of this document was based primarily on electronic searches, snowballing, and RTI's library of technical documents and unpublished reports. It is being mailed to several key researchers in the area to identify omission and to develop a select list of additional literature reviews, chapters, and books to be included. These additional entries will be combined with an updated electronic search to develop a revised bibliography in 1990.

A. ORGANIZATION AND HOW TO USE THE BIBLIOGRAPHY

The entries are presented in five chapters, each dealing with a different aspect of methadone maintenance. This chapter provides an overview of the annotated bibliography's organization, methodology, and entries. Chapter II includes relevant methodological studies and literature reviews. Chapter III looks at studies on the treatment entry characteristics of clients. It includes sections on general client characteristics, psychopathology, and HIV/AIDS prevalence/prevention. Chapter IV looks at the use of methadone in drug abuse treatment. It includes sections with studies on the physiological effects of methadone, the effect of various dosage regimens (including placebos), and the effects of withdrawing (abstaining) from methadone. Chapter V addresses the support services and ancillary treatment available in conjunction with methadone maintenance. It includes sections on studies of counseling, vocational services, social support, behavior modification, cocaine abuse/treatment, alcohol abuse/treatment, multiple drug abuse, and relapse prevention. Chapter VI looks at empirical comparisons of methadone maintenance with other types of drug treatment. It includes two sections of studies, one comparing it with: alternative treatment modalities and the other comparing it with alternative drug therapies.

Within each area we have specified several key areas of substantive interest. Section I-C briefly reviews the scope of each chapter and highlights some of the integral works. Within each of the key substantive areas, the entries are arranged alphabetically by author. For each entry we have provided:

- The full reference;
- a 100-300 word abstract; and
- a series of key words.

The citations for published works give enough detail to request them through a library. The unpublished documents are available from RTI or the original authors. The abstracts are taken from

6/Des Jarlais, D.C., & Friedman, S.R. (1988). Needlesharing among IVDUs at risk for AIDS [Letter to the editor]. *American Journal of Public Health*, 78(11), 1498.

7/Centers for Disease Control. (1989). Update: Acquired immunodeficiency syndrome associated with intravenous drug use--United States, 1988. *Morbidity and Mortality Weekly Report*, 38(10), 165-170.

either article abstracts or the introduction and/or conclusions of books, chapters, or reports. The keywords for each of the research entries (Sections III-VI), address the following topics: key topic addressed in a document, subtopics addressed, standardized instruments used, therapeutic drugs used in treatment, treatment modalities examined, drugs of abuse, research designs, subject sample types, treatment settings, and geographic locations of the programs studied. The keywords for each of these categories are given in the following section.

The entries are cross-referenced by references and keywords in a reference index and a subject index respectively. Note that a given article may have been classified using several keywords. There are, for instance, several articles that look at the physiological effects of methadone in the section on alternative drugs. Literature review and methodological entries have been consolidated into Section II because they often span several issues. To get the complete list of the entries on any given topic, therefore, it is best to consult the subject index.

Each entry has been labeled with a four digit number. The first number gives the chapter. The second number gives the section. The remaining two are alphabetically sequential by author. These numbers have been used to individually index each entry.

B. METHODOLOGY, SCOPE, AND CODING SCHEME

The references presented here were generated in three ways: electronic searches, snowballing from cited references, and review of the drug abuse and treatment library at RTI (which includes an extensive collection of technical reports and unpublished documents). The references in this document include articles, chapters, books, NIDA monographs, technical reports, and unpublished papers that deal with either some aspect of methadone maintenance programs (e.g., clients, treatment, outcomes, alternatives) or a pertinent research issue (e.g., methodological issues, literature reviews). It does not include articles from popular magazines or newspapers. Thus, the focus is recent empirical research that has been conducted in the last 8-10 years.

Electronic searches were conducted during the spring and summer of 1988 using MEDLINE, which indexes medical journals and selective articles from several sources; MENTAL HEALTH ABSTRACTS, which indexes psychiatric journals and selective articles from several sources; and PSYCH ABSTRACTS, which indexes psychology journals, evaluation journals, and selective articles from several sources. The references provided by the first and the latter two services overlapped by less than 15%. We first searched each service for a reference or abstract that included one of several substantive strings. These terms appear in brackets below.

- {methadone maintenance}
- {methadone} and {evaluation} or {research} or {outcome} or {effect}
- {methadone} and {drug free} or {therapeutic community}
- {methadone} and {therapeutic use} or {treatment}
- {methadone} and {dosage}
- {methadone} and {pharmacology} or {adverse effects}

The problem with such string searches is that they only look at the title and a 100-150 word abstract. They are also very sensitive to word tense (e.g., therapeutic communities would not be found using therapeutic community) and to how a concept is labeled (e.g., retention, attrition, tenure). We

therefore decided to conduct a second set of searches using the names of several authors who had published related works but who appeared to be underrepresented in the first search.

Abstracts were obtained for all of the references obtained in these searches. They were reviewed by professional staff to determine whether or not they dealt with methadone maintenance programs. Articles that did were obtained either from RTI's library or through interlibrary loan.

Electronic searches do not cover all of the journals and, in general, do not cover technical reports and unpublished papers. The list was therefore supplemented by checking the references of the articles that were obtained and by reviewing RTI's extensive collection of technical reports and unpublished papers. This collection was developed as part of the Treatment Outcome Prospective Study (TOPS) which was conducted with over 4,000 drug treatment clients in 17 different clinics (Hubbard et al., 1989). While conducting TOPS and during the subsequent analyses, which are still ongoing, RTI has collected technical documents and unpublished papers on drug abuse treatment (only some of which deal with methadone maintenance).

As previously noted, we are reporting the full reference for each article, a 100-300 word abstract, and keywords. Each entry was drafted by a research assistant and then reviewed by a senior researcher. The abstracts are largely complete or edited versions of the author's abstract, summary, or conclusion. The most common change was to include additional findings or statistical information from the document.

The order of the keywords was standardized to make them easier to use. The keywords themselves provide information that is often omitted from the abstracts (e.g., methodological design, treatment setting). They expand the coding scheme used by Austin et al. (1979)⁸ (i.e., drugs, sample, [topical] subjects, location, and methodology) in the last extensive cataloging of the drug research literature. The entries have been coded in ten areas.

- **Key Characteristic:** One or more of the 18 areas covered in the subsections of this annotated bibliography.
- **Subtopics:** The substantive and methodological topics that are the focus of an entry.
- **Standardized Instruments:** Any standardized instruments that were used.
- **Therapeutic Drugs:** The drugs that were used in an attempt to control drug use.
- **Treatment Modality:** The modality(ies) in which the research took place.
- **Abused Drugs:** The drugs of abuse that were the focus of an entry.
- **Research Design:** The methodological design underlying the results reported in an entry.
- **Subject Sample:** The type(s) of people used in the research.

8/Austin, G.A., Macari, M.A., & Lettieri, D.J. (1979). Guide to the drug research literature (Research Issues 27). Rockville, MD: National Institute on Drug Abuse.

- **Research Setting:** The type of physical location and organization of the treatment modality in which services were delivered.
- **Geographic Location:** The city, state, region, and/or country in which the research took place.

The individual keywords were used to reflect the breadth of various entries and to allow the reader multiple pathways to an individual entry. When in doubt, the coding errored in favor of inclusion. The keywords below are the basis for the subject index at the end of this document.

Table 1 shows the keywords corresponding to the subsections that have been used as key characteristics to organize this document. Several articles spanned more than one area. Although they have been listed in a single section, all applicable keywords have been listed and cross-referenced. Note that sections III-VI include only entries from empirical research. Entries that synthesize or review research and/or policy are listed as literature reviews. Entries that focus on methodological aspects of what was done are similarly listed as methodological.

Table 1. Key Characteristic Keywords

Abstinence (from methadone)
 Alcohol abuse treatment (in methadone maintenance)
 Alternative drugs
 Alternative treatment
 Behavior modification
 Client characteristics
 Cocaine abuse treatment (in methadone maintenance)
 Counseling
 Dosage
 HIV/AIDS
 Literature review
 Multiple drug abuse
 Methodological
 Physiological effects
 Psychopathology
 Relapse prevention (and aftercare)
 Social support
 Vocational services (vocational training)

Tables 2 and 3 show the keywords for the subtopics and instruments respectively. The subtopics are the issues that were the focus of an entry. The instrument keywords are for standardized instruments that were used in the research and that are one of the focuses of an entry. Although most studies collected data on several outcome measure and sometimes used standardized instruments only those that were one of the major subtopics of an entry were coded.

Table 2. Subtopic Keywords

Acupuncture	Instruments
AIDS-related complex (ARC)	Interrater reliability
Attitudes	Marathon (counseling) groups
Aversive therapies	Mortality
Behavior change	Multiple abuse treatment
Behavioral problems	Needle exchange
Benefit-cost	Needle sharing
Chemical dependency	Outcome measures
Civil commitment	Parole
Classical conditioning	Peer counseling
Criminality	Peer reference groups
Coercion	Personality
Cognitive-behavioral psychotherapy	Placebo
Community characteristics	Pregnancy
Contingency contracting	Prevention (of HIV transmission)
Contingency management	Program evaluation
Demographics	(Psychological) symptoms
Detoxification policy	Psychotherapy
Dosage schedules	RDC (Research Diagnostic Criteria)
Economic costs	Research design
Employment	Retention
Ex-addict paraprofessional (counselors)	Self-regulation (of dosage)
Family counseling	Self-reports
Family functioning	Social costs
Family therapy	Sponsor requirement
Feedback	Supplemental dosage
Free needles	Survival analysis
Group counseling	Take-home privileges
Hair analysis	Time-related trends
HIV counseling	Token economies
HTLV-III/LAV	Treatment outcome
Income	Treatment process
Individual counseling	Urine monitoring
Infant development	Vocational education
Instruction manual	Withdrawal

Table 3. Standardized Instrument Keywords

ARCI (Addiction Research Center Inventory)	MAST (Michigan Alcohol Screening Test)
ASI (Addiction Severity Index)	MMPI (Minnesota Multiphasic Personality Inventory)
BDI (Beck Depression Inventory)	MPI (Mansley Personality Inventory)
CGI (Classical Global Impression Scale)	POMS (Profile of Mood State)
DSM-III (Diagnostic and Statistical Manual III)	Pyp
EPPS (Edward Professional Preference Schedule)	RDC (Research Diagnostic Criteria)
GAS (Global Assessment Scale)	SADS-L (Schizophrenia and Affective Disorders - Lifetime interview)
HAM-D (Hamilton Rating Scale for Depression)	SAS (Social Adjustment Scale)
ICL (Interpersonal Check List)	

Table 4 shows the keywords for the therapeutic drugs used in treatment. The most common drugs are listed individually. Antagonists and psychotropic drugs are listed only categorically. Note that cocaine and heroin are listed because several articles examine their use in treatment.

Table 4. Therapeutic Drug Keywords

Antagonists	LAAM (l-alpha acetylmethadol, methadyl acetate)
Baclofen	Methadone (hydrochloride, Dolophine)
Clonidine	Naltrexone
Cocaine treatment	Naloxone
Cyclazocine	Propoxyphene (napsylate, Darvon-N)
Desipramine (Norpramin, Pertofrane)	Psychotropic drugs
Heroin treatment	

Table 5 shows the treatment modality keywords. It includes both the common modalities and several experimental modalities that are the subject of some entries. Programs were labeled as substance abuse programs only when they could not be labeled as one of the other modalities. This term was avoided because it is often used in the literature to refer to several modalities. Note that we have listed the treatment modalities separately from the research setting (see Table 9). Although the two are related, they represent different programmatic dimensions.

Table 5. Treatment Modality Keywords

Cocaine detoxification	Narcotics Anonymous
Detoxification	Propoxyphene maintenance
Drug free	Religious (programs)
Heroin maintenance	Self-help
(Methadone) Maintenance	Substance abuse (or chemical dependency programs)
Naltrexone maintenance	Therapeutic community

Table 6 shows the keywords for the drugs of abuse. Only the drugs that were the focus of an entry are listed. If the entry referred to opiates/opioids, the words "heroin" and "other narcotics" were used. We have used the term narcotics because the terms opiates and opioids are inconsistently used in the literature. Although NIDA has defined opiates as the natural derivatives of opium and opioids as the synthetic drugs manufactured to resemble the opium alkaloids,⁹ some researchers use either term in reference to all opiate or opiate-like narcotics.

Table 6. Abused Drug Keywords

Alcohol	Heroin
Amphetamines	Nonnarcotics
Benzodiazepine	Other narcotics (opiates, opioids, opium)
Cocaine	

Table 7 shows the keywords for the research design of the research described in the entry. Again, the keywords listed are for the primary design. Obviously a randomized experiment includes some description. The term "descriptive" design, however, would not be used with it unless the article also provided detailed descriptions of the program, treatment, or clients. The pretest-posttest method is not a quasi-experimental design and is used only in describing research on a single group with no comparison groups.

Table 7. Research Design

(Box-Jenkins Interrupted) Time series	Laboratory research
Case study	Literature review
Choice procedure	Nonequivalent comparison groups (workhorse design)
Correlational (observational, design)	Pretest-posttest
Correlational within subjects	Randomized experiment
Descriptive (design)	Randomized experiment double blind
Functional (switching, design)	Workshop proceedings
Instruction manual	

⁹Nelson, J.E., Pearson, H.W., Sayers, M., & Glynn, T.J. (1982). Guide to drug abuse research terminology (Research Issues 26). Rockville, MD: National Institute on Drug Abuse.

Table 8 shows the keywords for the special characteristics of the subject sample upon which the research was based. Ethnicity and gender are not cited unless they are the focus, such as a study of female drug users. Often multiple articles are written on a single subject sample (e.g. DARP, TOPS, TRISEP). These samples are labeled when they could be identified. Note that a distinction is made between subjects recruited after they became treatment clients (listed by modality) and those recruited while they were untreated i.v. drug users.

Table 8. Subject Sample Keywords

Adolescents	I.V. drug users (not always in treatment)
African Americans	(Methadone) Maintenance clients
AIDS cases	Naltrexone maintenance clients
Alcoholics	NAPIS (National Alcoholism Program Information System)
CAP (Civil Addict Program)	Nonaddicts
CMHCS (Connecticut Mental Health Center Study)	Nonpsychotics
Cocaine detoxification clients	Parolees
CODAP (Client Oriented Data Acquisition Process)	Pregnant women
Counselors	Prisoners
DARP (Drug Abuse Reporting Program)	Program administrators
Detoxification clients	Psychiatric clients
Drug free (program) clients	Rehabilitation clients
Epileptics	Sexual partners (of i.v. drug users)
Employed i.v. drug users (not always in treatment)	Substance abuse (or chemical dependency) clients
Ex-addicts	Therapeutic community clients
Heterosexuals	TOPS (Treatment Outcome Prospective Study)
Hispanics	TRISEP (Tri-State Ethnographic Project)
Homeless persons	Veterans
Homosexuals	Women

Table 9 shows the keywords for the research setting. Several modalities deliver treatment in various settings. We have therefore coded the settings separately. It was not always possible to ascertain the setting in which the research took place.

Table 9. Research Setting

Community-based clinic	Private clinic
General (medical) practice	Residential
Inpatient (hospital based)	Street
Outpatient (hospital based)	Vocational rehabilitation center
Prison	Veterans' facility

Table 10 shows the geographic locations in which the research took place. Some studies only reported the state or region. Because the DARP and TOPS samples came from programs in so many different locations, we have not listed them in the individual entry keywords. Each entry is, however, cross-referenced under the appropriate cities/states. Although all of the DARP cities have been listed for DARP-related research, most entries deal with subsets of only 18 or 34 programs spread out over these cities. Unfortunately, none of the entries or the more extensive books on DARP findings clearly identify which programs/cities/states are in a particular subset. Because we prefer to bias the index in favor of inclusion we have, therefore, cross-referenced each DARP entry to every DARP city.

Many of the entries represent the final article in a series of reports on the same topic or one of several versions disseminated to different audiences. Rather than duplicate these entries, we have listed the others as related research. The main entry is either the most recent or most widely accessible. Wherever possible, we have also referenced any detailed technical reports.

Because there are so many different ways to categorize the literature, or even a single article, we have cross-referenced the entries by number in reference and subject indexes. The subject index is based on the keywords following each abstract. Both are followed by the relevant four digit entry number.

Table 10. Geographic Location

DARP cities: (Subsets of 18 or 34 programs from Albuquerque, Atlanta, Baltimore, Boston, Bridgeport, Chicago, Cincinnati, Cleveland, Cranston, Detroit, District of Columbia, Eagleville, Fayetteville, Fort Lauderdale, Grand Blanc, Hartford, Indianapolis, Jacksonville, Jersey City, Kansas City, Los Angeles, Louisville, Marlboro, Miami, Newark, New Bedford, New Haven, New Orleans, New York City, Philadelphia, Phoenix, Pittsburgh, Saint Louis, San Antonio, San Diego, San Fernando, San Francisco, San Juan, Seattle)

TOPS cities: (41 programs from Chicago, Des Moines, Detroit, Miami, New Orleans, New York City, Philadelphia, Portland, San Francisco)

Alabama	Hong Kong	Ohio
Albuquerque	Houston	Orange (County)
Amsterdam	Illinois	Oregon
Arizona	Indiana	Palo Alto
Atlanta	Indianapolis	Pennsylvania
Baltimore	Iowa	Philadelphia
Beckenham	Italy	Phoenix
Boston	Jacksonville	Pittsburgh
Bridgeport	Jersey City	Portland
California	Kansas City	Princeton
Canada	Kentucky	Puerto Rico
Chester	Kowloon	Rhode Island
Chicago	London	Riverside (County)
Cincinnati	Los Angeles	Sacramento
Cleveland	Louisiana	Saint Louis
Coatesville	Louisville	San Antonio
Connecticut	Marlboro	San Bernardino
Cranston	Maryland	San Diego
Dallas	Massachusetts	San Fernando
Davis	Miami	San Francisco
Des Moines	Michigan	San Juan
Detroit	Midwest	Santa Clara (County)
District of Columbia	Minnesota	Scotland
Eagleville	Missouri	Seattle
East	Montreal	South
Eden Prairie	Netherlands	Southeast
Edinburgh	Newark	Suffolk (County)
England	New Bedford	Sweden
Fayetteville	New Haven	Texas
Florence	New Jersey	Tucson
Florida	New Mexico	Uppsala
Fort Lauderdale	New Orleans	Vancouver
Fort Worth	New York	Washington (State)
France	New York City	West Covina
Georgia	North Carolina	White Plains
Grand Blanc	North Dakota	Worcester
Hartford	Northeast	
Hawaii	Oahu	

C. OVERVIEW OF ENTRIES

This section provides a brief overview of the kinds of research found in each of the five remaining chapters and their 18 subsections. In addition to discussing what is in each section, it will also identify places where there are several related entries.

Chapter II includes relevant methodological studies and literature reviews. One section contains entries that deal with methodological issues such as urine monitoring, the reliability of self-reports, various analytical methods, common instruments, outcome measures, and research designs. Although some studies were independent, many were produced in conjunction with other substantive studies.

The literature review section of Chapter II includes both traditional reviews and more selective topics. Most entries deal with several issues and draw on research from other areas. There are several literature reviews on each of the key characteristics for the remaining chapters. This section also includes descriptions of several key reference documents. These documents can be identified quickly in the subject index by looking for numbers that begin with 22 (Chapter II, section 2). Some journal articles included both an extensive literature review and empirical findings. They have been listed in the appropriate substantive sections but cross-referenced as literature reviews.

Chapter III examines studies on the treatment entry characteristics of clients. It includes section on general characteristics, psychopathology, and HIV/AIDS prevalence/prevention. The first section looks at the general characteristics of clients entering methadone programs. In addition to demographics, these studies look at drug history, employment, income, income sources, criminality, and treatment history. Some go a step further and try to estimate the costs to society of not providing treatment to this group of people. The remaining two sections concern two major subsets of client characteristics that have been studied more thoroughly.

The section on psychopathology addresses both the prevalence of psychological problems among methadone maintenance clients and how to treat them. The entries address issues such as: how to assess psychopathology; the reliability and validity of standardized instruments; and the impact of using psychotropic drugs in conjunction with methadone. Section V-A includes related entries on counseling and the use of psychotherapy.

The section on HIV/AIDS includes entries which address the prevalence of the HIV, how to contain its spread, and the impact of AIDS on methadone clients and programs. Although much of the research is exploratory, this is an important area because I.V. drug users are the fastest growing segment of the infected population. These issues are also addressed further in Chapter V.

Chapter IV looks at methadone in drug abuse treatment. It includes sections with studies on the physiological effects of methadone, the effect of various dosage regimens (including placebos), and the effects of withdrawing (abstaining) from methadone. The entries on physiological effects address the effects of withdrawing from narcotics, the effects of methadone on the body; the effects of methadone on other physiological problems, such as schizophrenia; the effects of methadone on pregnant women; and methods for minimizing the physiological effects.

The entries on dosage look at the relative effectiveness of dosage schedules and levels; the impact of client self-regulation; the impact of making dosage contingent on being drug free; dosage preferences; and take home privileges. They also include double-blind studies of methadone and placebos.

The third section addresses attempts to withdraw from methadone, either completely or to another drug. It addresses many of the same issues as the dosage entries but with the goal of being methadone free being more immediate. Section IV-B further addresses the use of other drugs as alternatives to methadone.

Chapter V addresses the basic counseling component of methadone programs. It also examines the other support services and ancillary treatment available in conjunction with the program. It includes sections with studies on counseling, vocational services, social support, behavior modification, cocaine abuse/treatment, alcohol abuse/treatment, multiple drug abuse, and relapse prevention. The counseling section includes entries about the relative effectiveness of different types of counseling and psychotherapy, such as: group counseling, individual counseling, peer group counseling, psychotherapy, cognitive-behavioral psychotherapy, and family therapy. Additional entries on family therapy are included in section V-C on social support. It also includes entries addressing the length of these effects and the impact of counselor training. There are also several good literature reviews on the topic.

The second section includes entries about services designed to help clients get jobs. These include, employment workshops, referrals, vocational training, basic education, and employment services. There are also some literature reviews of research in programs other than methadone maintenance but there has been far less research in this area than in the preceding decade.

The third section includes entries about several different methods that have been used to provide clients with more social support. These include: self-help groups, peer groups, sponsors, and family participation. Entries in this section also address the impact of peer reference groups on client behavior.

The fourth section includes entries that have incorporated the principals of behavior modification into the treatment process. These applications include: contingency management of dosage; token economies; the impact of legal coercion; contingency contracting; and biofeedback. Additional entries on behavior modification are included in Section V-G on multiple drug abuse treatment.

As previously noted, concurrent cocaine abuse is a major problem in both methadone maintenance and the fight against AIDS. Although little research has been conducted directly with methadone maintenance clients, these entries have been presented in a separate section that looks at both the prevalence of the problem and its treatment.

The sixth section reviews articles on the prevalence and treatment of alcohol abuse in methadone maintenance. It includes the application of both self help and pharmacological approaches. Several reviews of the extensive literature on alcohol abuse treatment are also included in section II-B.

The seventh section reviews research on the increasingly more common type of client who abuses multiple drugs. The drugs abused by this client often reflect availability, and the behaviors appear to be more complicated to treat. These entries address both the prevalence of the problem and approaches for treating it. Several strategies employing behavior modification appear to reduce other types of drug abuse.

The eighth and final section addresses what to do with clients who appear to have stabilized and who seem to require less intensive services. These entries address programs that deal with aftercare or relapse prevention.

Chapter VI looks at empirical comparisons of methadone maintenance with alternative types of drug treatment. It includes sections with studies comparing methadone maintenance with alternative treatment modalities and with alternative treatment drugs. The alternative treatment section includes both the large well known studies (e.g., TOPS, DARP, CMHCS) and several smaller studies. The latter include several studies conducted in other countries where the legal regulation of methadone is different. Many of these entries compare the medical, social, and economic merits of the different treatment approaches.

The second section looks at other drugs that have been used in treating narcotic addiction. Some drugs are used for maintenance; others are used for detoxification or to reduce the side effects of withdrawal. Most prominent of these alternatives are LAAM, clonidine, propoxyphene (Darvon-N), and naltrexone. A few studies, however, have also looked at the use of heroin and cocaine in detoxification and maintenance.

As previously noted, all of the entries are also cross-referenced in two indexes that follow the main document. The first lists all of the references (for both entries and related research) and their four digit entry numbers. The second lists all of the keywords in section I-B, in alphabetical order, and the entries to which they apply.

II. RESEARCH ISSUES AND REVIEWS

A. METHODOLOGICAL ISSUES

- 2101 Anglin, M.D., & Fisher, D.G. (1987). Survival analysis in drug program evaluation. Part II. Partitioning treatment effects. International Journal of the Addictions, 22, 377-387.

Survivorship analysis is applied to both a summative process (during treatment) and a summative outcome (after discharge) evaluation comparing data obtained from 297 admissions to multiple-site methadone maintenance programs in three California counties. Measures included rates of retention, incarceration, addiction, crime, dealing, and loss of employment. In order to take full advantage of the multiple outcome measures that were used, a method for within-subject simultaneous consideration of all outcome measures is presented. This method is an adaptation of the Friedman nonparametric analysis of variance and a Bonferroni post hoc comparison of the mean ranks.

Keywords: Methodological, survival analysis, retention, treatment outcome, criminality, employment, multiple drug abuse, methadone, maintenance clients, community-based clinic, Los Angeles, San Bernardino, Orange, California.

Related research: Fisher, D.G., & Anglin, M.D. (1987). Survival analysis in drug program evaluation. Part I: Overall program effectiveness. International Journal of the Addictions, 22, 115-134.

- 2102 Bale, R.N., Van Stone, W.W., Engelsing, T.M., Zarcone, V.P., Jr., & Kuldau, J.M. (1981). The validity of self-reported heroin use. International Journal of the Addictions, 16(8), 1387-1398.

During a 2-year follow-up interview, 272 male veteran heroin addicts reported their recent heroin use and provided a urine sample. Eighty-four percent of those reporting no heroin use in the 3 months preceding the interview, and 78% of those declaring no use in the previous week had urines found negative for opiates. The subjective impressions of the interviewers were useful in predicting the veracity of the self-reports. Subjects who had been in longer-term treatment, especially therapeutic communities, were more likely to report heroin use truthfully.

Keywords: Methodological, self-reports, urine monitoring, methadone, maintenance, therapeutic community, heroin, other narcotics, correlational within subjects, maintenance clients, therapeutic community clients, veterans, community-based clinic, residential, veterans' facility, Palo Alto, California.

- 2103 Baumgartner, W.A., Hill, V.A., & Bland, W.H. (In press). Hair analyses for drugs of abuse. Journal of Forensic Sciences.

Hair analysis for drugs of abuse by radioimmunoassay and GC/MS is an effective means for identifying drug users. Hair can be collected under close supervision without embarrassment and is not subject to evasive maneuvers (false negatives) such as temporary abstinence,

excessive fluid intake, substitution, and adulteration of specimens. Hair analysis has a wide window of detection, which ranges from months to years, and provides information concerning the severity and pattern of an individual's drug use. Hair analysis is also not subject to evidential false positives e.g., those due to poppy seed ingestion, spiking of drinks or food, mix-up or contamination of specimens. In part these problems can be avoided because hair analysis can always be repeated with a newly collected specimen. The results of animal experiments and of various clinical, forensic, and criminal justice applications are described.

Keywords: Methodological, hair analysis, urine monitoring, criminality, heroin, other narcotics, nonnarcotics, benzodiazepine, cocaine, laboratory research.

Related research: Baumgartner, A.M., Jones, P.F., Baumgartner, W.A., & Black, C.T. (1979). Radioimmunoassay of hair for determining opiate-abuse histories. Journal of Nuclear Medicine, 20(7), 749-752.

Baumgartner, A.M., Jones, P.F., Black, C.T., & Bland, W.H. (1982). Radioimmunoassay of cocaine in hair. Journal of Nuclear Medicine, 23(9), 790-792.

Baumgartner, W.A. (1987, May 20). Hair analysis for drugs of abuse: Solving the problems of urinalysis. Testimony before the Subcommittee on Human Resources, Committee on Post Office and Civil Service, United States House of Representatives, Washington, DC.

- 2104 Ben-Yehuda, N. (1981). Success and failure in rehabilitation: The case of methadone maintenance. American Journal of Community Psychology, 9(1), 83-107.

This research addresses itself to two problematic aspects of methadone maintenance: definition and measure of success of methadone rehabilitation programs and the location and prediction of those features which characterize patients successfully rehabilitated by such programs. For the first time, this research used a differentiated criterion to evaluate success, utilizing five different measures for its evaluation: consumption of methadone, consumption of illicit drugs, group therapy attendance, crime rate, and employment patterns. At the same time, we have theoretically and empirically established that two distinct types of patients exist: the future-oriented and the past-oriented. This time orientation remains constant throughout the patient's stay on the program. Future-oriented patients met with a significantly greater degree of success in the program than past-oriented patients.

Keywords: Methodological, outcome measures, attitudes, treatment outcome, methadone, maintenance, heroin, other narcotics, nonnarcotics, correlational, maintenance clients, private clinic, Chicago, Illinois.

- 2105 Bloch, H.I., Eills, R.D., & Spielman, C.R. (1977). Use of employment criteria for measuring the effectiveness of methadone maintenance programs. International Journal of the Addictions, 12(1), 161-172.

If employment is to be considered a criteria of success in the treatments of drug abuse, it is necessary to obtain an understanding of the differences in results produced by various measures of employment and the implications of each for evaluating program effectiveness. This article compares three measures by which to analyze chronological employment data for the same cohort of clients across the same time period. It discusses the merits and limitations

of these measures as evaluation tools. The findings derive from a study of male clients who were maintained for 2 or more years without interruption in a methadone maintenance program.

Keywords: Methodological, outcome measures, employment, methadone, maintenance, correlational, literature review, methadone clients, New York.

- 2106 Bray, R.M., Schlenger, W.E., Craddock, S.G., Hubbard, R.L., & Rachal, J.V. (1982). Treatment Outcome Prospective Study. Approaches to the assessment of drug use in the Treatment Outcome Prospective Study. Research Triangle Park, NC: Research Triangle Institute.

This report addresses the development of measures of drug use for the TOPS research and, more generally, studies of drug treatment clients. Data are drawn primarily from the intake interview of the 1979 Cohort with some cross validation provided by comparable data from the 1980 Cohort. In this report we carefully consider a number of issues central to the development of useful measures of drug use: (1) Quantification (interval or ordinal scales) versus classification (categories or patterns) of drug use involvement; (2) Single measures of drug use (such as heroin) versus Indices of multiple drug use involvement; (3) Clinical versus analytic utility as a basis for development of measures. These issues are discussed more fully in the concluding section of Chapter II and are considered in the development and evaluation of the various measures of drug use. Chapter II provides a background for the study by reviewing the literature on the measurement of drug use and the identification of the types and usefulness of measures employed in prior studies. Chapter III describes the methodology of the TOPS research, providing details about the nature of respondents, programs, and instruments used to obtain comprehensive information on drug use patterns. Chapters IV and V discuss approaches to measurement of drug involvement in TOPS. Chapter IV compares and contrasts a variety of quantitative measures, and Chapter V examines drug use patterns and typologies. Chapter VI provides a summary and some conclusions regarding the measures that show the greatest promise. Specific measures are recommended for use in subsequent analyses of the TOPS data and in future research on drug treatment clients and similar populations with intensive drug use.

Keywords: Methodological, urine monitoring, self-reports, alternative treatment, treatment outcome, multiple drug abuse, methadone, maintenance, detoxification, drug free, therapeutic community, heroin, other narcotics, nonnarcotics, alcohol, amphetamines, cocaine, correlational, descriptive, TOPS, maintenance clients, detoxification clients, drug free clients, therapeutic community clients, outpatient, residential, community-based clinic, TOPS clients.

- 2107 Curtis, J.L., & Miké, V. (1978). Methadone maintenance: Measuring treatment outcomes. New York State Journal of Medicine, 78(14), 2177-2182.

During a four-month evaluation period, a clinic staff made a series of progress evaluations of the social rehabilitation status of their 189 methadone maintenance patients. At the end of this period the total staff, that is, counselors, nurses, and physicians, jointly concluded that 35, 18 percent, of the patients should be rated as definitely clinically improving; 94, 50 percent, as Standing Still or stabilized; and 60, or 32 percent, as Worsening in terms of treatment outcome. Improving patients significantly differed in specific behavior; more were employed, and fewer were continuing to have problems with opiates, other drugs, or alcohol. All counselors initially overestimated their own success rates, and there was a significant variation

among counselors with respect to the final rating of their patients by the combined staff. A composite clinical team judgment appears to provide the best protection against unsound treatment planning, practice, and evaluation. Favorable social rehabilitation, examined in terms of data from screening interviews at the beginning of the average of two years of treatment at the clinic, was associated with more education, younger age, and shorter history of opiate use.

Keywords: Methodological, outcome measures, methadone, interrater reliability, treatment outcome, maintenance, alcohol, heroin, other narcotics, correlational, methadone clients, outpatient, New York City, New York.

- 2108 Dole, V.P., Nyswander, M.E., Des Jarlais, D.C., & Joseph, H. (1982). Performance-based rating of methadone maintenance programs. New England Journal of Medicine, 306, 169-172.

This review argues for using a performance rating system which looks at benefits to the client, and not guideline compliance to assess the successfulness of methadone maintenance programs. Programs should primarily be concerned with stopping the use of heroin and other narcotics. There is no fundamental problem in measuring the achievement of this goal between programs. Performance-based ratings allow programs to retain their individuality while insuring improved outcome. The guideline approach on the other hand does not encourage program flexibility.

Keywords: Methodological, treatment outcome, program evaluation, retention, methadone, maintenance, heroin, other narcotics, literature review, maintenance clients.

- 2109 Dole, V.P., & Singer, B. (1979). On the evaluation of treatments for narcotics addiction. Journal of Drug Issues, 9(2), 205-211.

This study is concerned with the domain of applicability of randomized clinical trials. For evaluation of well-defined treatments of acute diseases over limited periods of time, the randomized trial technique is unquestionably the best. However, in the field of chronic diseases (as illustrated by drug addiction) the physician's responsibility extends over period of years, and his judgements involve consideration of many contingent factors which vary in the course of the disease. In this domain, randomized clinical trials, however ambitious in design, give only partial guidance. Observational data therefore must be used if treatment is to be optimized for individual patients. Two randomized trials in the treatment of narcotics addiction--one testing methadone and the other naltrexone--are reviewed, with comments on their conclusions and limitations.

Keywords: Methodological, research design, randomized experiment, methadone, naltrexone, case study, Hong Kong.

- 2110 Faltz, B.G. (1988). Counseling substance abuse clients infected with human immunodeficiency virus. Journal of Psychoactive Drugs, 20, 217-221.

Several barriers to effective dual treatment of substance abuse and AIDS-related diagnoses have been detailed in this article, and some practical strategies to improve the response of

treatment providers in caring for this difficult population of patients have been offered. While there are many problems associated with the dual diagnoses of substance abuse and AIDS, health care providers and substance abuse treatment professionals can intervene effectively by first recognizing how their own values and anxieties impact on treatment approaches. Next, they can accept substance abuse as a problem that can be treated and the diagnosis of AIDS as one issue of many that needs to be addressed. Finally, they can stay informed about community resources to help them make accurate assessments and to develop effective treatment strategies.

Keywords: Methodological, HIV counseling, HIV/AIDS, treatment process, literature review, I.V. drug users.

- 2111 Goldstein, A., Horns, W.H., & Hansteen, R.W. (1977). Is on-site urine testing of therapeutic value in a methadone treatment program? International Journal of the Addictions, 12(6), 717-728.

Patients in a methadone maintenance clinic were randomly assigned to two groups: one to have urine tests on-site (by the EMIT system) with immediate feedback of results to patients and staff; the other to have urine specimens sent away to an offsite laboratory for testing by thin-layer chromatography. Although other advantages might justify the adoption of on-site testing in methadone programs, the method appeared to have little or no therapeutic advantage over customary off-site testing. There were negligibly small differences between the groups with respect to illicit drug use.

Keywords: Methodological, urine monitoring, methadone, maintenance, heroin, other narcotics, nonnarcotics, randomized experiment, maintenance clients, community-based clinic, Santa Clara, California.

- 2112 Graham-Bufus, S., Allen, R.H., & Gordon, J.R. (1984). Evaluation of a methadone rehabilitation program. Psychological Reports, 55(1), 99-106.

The present single-case study was initiated to determine whether our methadone maintenance program was of service to patients and community. Criteria used to make this determination were drug involvement, criminal activity, employment status, dependence on the welfare system, and health status. 25 randomly selected patients who had been in methadone maintenance for 6 months or longer were compared to 25 randomly selected patients who had not become engaged in methadone treatment. The results indicated that patients in the methadone maintenance program decreased their use of illicit drugs, decreased criminal activities, and increased self-support. No change was found between groups in welfare and health status.

Keywords: Methodological, program evaluation, treatment outcome, heroin, other narcotics, client characteristics, alternative treatment, methadone, maintenance, drug free, nonequivalent comparison groups, outpatient, Houston, Texas.

- 2113 Guess, L., & Tuchfeld, B. (1977). Manual for drug abuse treatment program self-evaluation (Treatment Program Monograph, DHEW Publication No. ADM 79-421). Washington, DC: U.S. Government Printing Office.

This manual is designed to serve program administrators, counselors, and others interested in learning how to examine the effectiveness of a drug treatment program in achieving its goals. The manual is meant to be used by persons with varying levels of skill in evaluation with varying levels of skill in evaluation analysis--from the most elementary to the fairly sophisticated. The manual is partitioned roughly on the basis of familiarity with the evaluation process and skill in using evaluation techniques. Chapter I discusses the rationale for evaluation, answers some questions often asked about evaluation, and discusses the role of program staff. Chapter II emphasizes the importance and functions of goals, objectives, and criterion measures in the evaluation process and describes the procedures for linking program goals with values obtained from measures of the clients' techniques for routinizing evaluation, and limitations of the self-evaluation process are discussed in Chapter III. Chapter IV provides an introduction to the measures and the methods for computing them. It is essential that you read and understand this section, particularly the differences between individual and group measures and the limitations and advantages of the measures. Chapter V contains instructions on how to compute the measures and brief discussions of what the measures may indicate about a program's functioning. Some limitations of each of the measures are also discussed. Chapter VI provides instructions on how to construct subgroups and cohorts. Chapter VII, the final chapter, introduces trends and their importance in program evaluation.

Keywords: Methodological, program evaluation, alternative treatment, treatment outcome, CODAP, DARP, instruction manual.

- 2114 Hall, S.M. (1984). Clinical trials in drug treatment: Methodology. In F.M. Tims & J.P. Ludford (Eds.), Drug abuse treatment evaluation: Strategies, progress, and prospects (Research Monograph 51, pp. 88-105). Rockville, MD: National Institute on Drug Abuse.

In this review factors important in evaluating clinical trials are named and discussed. They are experimental design and treatment design. Studies comparing modalities, studies which evaluated psychotherapies, and studies of vocational rehabilitation intervention are described and their strengths and weaknesses reported.

Keywords: Methodological, research design, randomized experiment, treatment outcome, alternative treatment, counseling, psychotherapy, vocational services, literature review.

- 2115 Harlow, L.L., & Anglin, M.D. (1984). Time series design to evaluate effectiveness of methadone maintenance intervention. Journal of Drug Education, 14, 53-72.

The Box-Jenkins interrupted time series design is suggested for use in evaluating the effects of social program intervention. This paper presents an example of a specific application to methadone maintenance treatment intervention or chronic heroin addicts. Using time series analysis, the present evaluation found that entry into methadone maintenance was followed by: (1) a decrease in daily heroin use, (2) a slight increase in daily marijuana use, and (3) an increase in regular employment.

Keywords: Methodological, program evaluation, treatment outcome, employment, time-related trends, methadone, maintenance, heroin, nonnarcotics, time series, methadone clients, community-based clinic, California.

- 2116 Jaffe, J.H., Kanzler, M., Brady, R., & Friedman, L. (1981). Methodology for assessing agents that suppress methadone withdrawal: A study of baclofen. In L.S. Harris (Ed.), Problems of drug dependence, 1981 (Research Monograph 41, pp. 269-275). Rockville, MD: National Institute on Drug Abuse.

The results of a pilot study to assess the effects of baclofen are reported. In a sample of 11 male addicts some signs and symptoms of mild methadone withdrawal were alleviated by baclofen. Because the observations were limited to 40 hours, it is difficult to know how severe the withdrawal symptoms might have been over a longer observation period.

Keywords: Abstinence, methadone, baclofen, withdrawal, maintenance, heroin, other narcotics, randomized experiment, maintenance clients, community-based clinic, New York City, New York.

- 2117 Joe, G.W., & others. (1987). Factors in treatment process in methadone maintenance. Unpublished manuscript, Texas A&M University, College Station.

The purpose of the present study was to examine a framework which would be useful in the study of the treatment process of methadone maintenance treatments. It attempted to determine what variables in the different components of the framework might have effects on during treatment outcomes as operationalized by positive urines. Although many of the variables in the components were found to be related to during the treatment outcomes, significant interactions between programs were found which means that the treatment environment is of great importance in the study of treatment process and that particular treatment events such as dosage levels of methadone, take-home privileges (contract monitoring), urinalyses (monitoring), and types of services cannot be considered as factors in the treatment process independent of other treatment environment factors. The results of the present study give particular importance to this idea of treatment factors interactions.

Keywords: Methodological, treatment process, methadone, maintenance, correlational, maintenance clients, TOPS.

- 2118 Klein, D.F. (1977). Evaluation methodology. International Journal of the Addictions, 12(7), 837-849.

The results of several large methadone maintenance programs are reviewed and the outcome measures used are analyzed. Criteria measures were often vague and sometimes not defined. Many studies base their findings on unverified patient self-reports because costs for more reliable and systematic data collection are prohibitive. Available data does not allow for resolution of the pro- or antimethadone maintenance views for treatment of heroin addiction.

Keywords: Methodological, literature review, treatment outcome, methadone, maintenance, research design, self-reports.

- 2119 Kosten, T.R., Rounsaville, B.J., & Kleber, H.D. (1988). Concurrent validity of the Addiction Severity Index. Journal of Nervous and Mental Disease, 171, 606-610.

The concurrent validity of the Addiction Severity Index (ASI), a new scale for assessing a range of clinical dimensions in drug and alcohol abusers, was evaluated in 204 opiate addicts applying for treatment. This study is the first independent validation study of this measure. The ASI subscales were found to have good concurrent validity with self-report measures in the areas of psychological problems, social adjustment problems, legal problems, and employment problems ($r=.55$ to $.39$). Drug abuse problems showed limited concurrent validity and medical problems were not concurrently assessed in our study. Addicts with psychiatric diagnoses beyond opiate abuse were effectively identified by the ASI, and depressed addicts were particularly well screened with a sensitivity of 89 percent and a specificity of 67 percent. A cluster analysis demonstrated that the six ASI scales could be used to discriminate depressed addicts, antisocial addicts, and addicts without psychiatric disorders. Thus, the ASI was demonstrated to be a potentially important evaluation instrument for opiate addicts.

Keywords: Methodological, client characteristics, psychopathology, ASI, RDC, GAS, BDI, SADS-L, MAST, SAS, MPI, heroin, other narcotics, correlational, CMHCS, CODAP, alcoholics, maintenance clients, therapeutic community clients, outpatient, residential, New Haven, Connecticut.

- 2120 LaPorte, D.J., McLellan, A.T., Erdien, F.R., & Parente, R.J. (1981). Treatment outcome as a function of follow-up difficulty in substance abusers. Journal of Consulting and Clinical Psychology, 49, 112-119.

A sample of 150 consecutive male veteran alcoholic and drug addict admissions to inpatient treatment at a Veterans Administration Medical Center was chosen to determine if subjects who were more difficult to follow up also had poorer posttreatment outcomes. Of the original sample, 144 subjects were successfully followed up 6 months from the date of admission, for an overall completion rate of 96%. Of that total, 2 were found to be deceased, leaving complete and valid information for 142 (95%). Subjects were grouped according to the number of attempts necessary to complete follow-up. Comparisons on 18 measures indicated essentially no difference in the outcome status of subjects harder to follow up than those more easily contacted. Subsequent analyses of the alcoholic and drug addict samples individually yielded similar results. Further analyses indicated that the results obtained were not a function of the length of time spent in treatment nor the length of time between treatment discharge and follow-up. The results are discussed in light of their importance in the interpretation of follow-up evaluations.

Keywords: Methodological, outcome measures, treatment outcome, therapeutic community, alcohol, heroin, other narcotics, nonnarcotics, correlational, veterans, therapeutic community clients, veterans' facility, residential, inpatient, Coatesville, Pennsylvania.

- 2121 Magura, S., Goldsmith, D.S., Casriel, C., Goldstein, P.J., & Lipton, D.S. (1987). The validity of methadone clients' self-reported drug use. International Journal of the Addictions, 22, 727-749.

Drug use self-reports were compared with urinalysis for 248 clients in four methadone treatment programs. The validity of self-reporting based on urinalysis as a criterion depended on the type of drug examined. Opiate reporting was least valid, while benzodiazepine and cocaine reporting were moderately and highly valid, respectively. EMIT^R urinalysis was far more useful as a criterion of validity than TLC urinalysis. Self-reports helped identify drug

users who were missed by urinalysis because of the latter's limited detection period, but urinalysis in turn detected an equal number of drug users missed by the interviews. The age of clients and the type of interviewer directly affected the rate of underreporting. Some respondents systematically denied disvalued behaviors (i.e., drug use and criminality), leading to a spurious correlation between behaviors. This has important implications for future research. Five variables were associated with underreporting of drug use: clinic where enrolled, type of interviewer (professionals more underreporting than paraprofessionals), client's age (over 30), number of medication pickup days (five or less), and denial of current criminal activities.

Keywords: Methodological, self-reports, multiple drug abuse, urine monitoring, research design, methadone, maintenance, heroin, other narcotics, benzodiazepine, cocaine, correlational, maintenance clients, community-based clinic, New York City, New York.

- 2122 McGlothlin, W.H., Anglin, M.D., & Wilson, B.D. (1977). A follow-up of admissions to the California Civil Addict Program. American Journal of Drug and Alcohol Abuse, 4(2), 179-199.

A follow-up interview study of early admissions to the California Civil Addict Program found that those continuing in the program performed substantially better during the commitment period than did a comparable group discharged shortly after admission. To a lesser extent, the program also appeared to have had some impact subsequent to discharge. Those program discharges defined as successes tended to do relatively well until the time of the interview. Comparisons under the strict (pre-1970) and more lenient regimens showed roughly comparable behavior, but the availability of methadone maintenance was also a significant factor in reducing heroin use during the latter period.

Keywords: Methodological, CAP, methadone, maintenance, heroin, other narcotics, nonequivalent comparison groups, civil commitment, treatment outcome, California.

- 2123 McLellan, A.T., O'Brien, C.P., Kron, R., Alterman, A.I., & Druley, K.A. (1980). Matching substance abuse patients to appropriate treatments: A conceptual and methodological approach. Drug and Alcohol Dependence, 5, 189-195.

The paper describes a non-intrusive, computer assisted, program evaluation design for matching sub-types of substance abuse patients to appropriate treatment programs in any multi-modal treatment network. The design incorporates the methodological advantages of an experimental paradigm without the administrative and clinical problems of random patient assignment, and untreated control groups. The specific objectives of this design are: (1) The development of a generalizable evaluation process to efficiently match patients with programs. (2) An overall increase in treatment success through improvement of treatment assignment procedures. (3) A general improvement in cost-effectiveness through reductions in patient drop-out, recidivism, and treatment overlap.

Keywords: Methodological, research design, ASI, treatment outcome.

- 2124 Ottomanelli, G.A. (1977). MMPI and Pyp prediction compared to base rate prediction of six-month behavioral outcome for methadone patients. British Journal of Addiction, 72, 177-186.

Discriminant functions, using the scales of the Minnesota Multiphasic Personality Inventory (MMPI) and the Pyp, a scale measuring psychopathy, were compared with base rate estimates in predicting six-month outcome for 106 methadone patients. Employment, arrest, and attrition were the behavioral categories used for group assignment in the discriminant analysis. The discriminant functions accurately classified 50 percent of the employed and not arrested group, 57 percent of the unemployed and not arrested group, 29 percent of the unemployed and arrested group, and 50 percent of the discharged group. Consideration was given to the utility of the MMPI and Pyp scales as compared to base rate predictions for each of the group classifications.

Keywords: Methodological, treatment outcome, outcome measures, MMPI, Pyp, methadone, maintenance, heroin, other narcotics, correlational, maintenance clients, outpatient, New York.

- 2125 Sells, S.B., & Simpson, D.D. (1980). The case for drug abuse treatment effectiveness, based on the DARP research program. British Journal of Addiction, 75, 117-131.

The Drug Abuse Reporting Programme (DARP) is a large-scale evaluation project focused on the effectiveness of drug abuse treatment, based on almost 44,000 clients admitted to 52 treatment centres located throughout the United States and in Puerto Rico between June 1969 and March 1973. The present paper summarizes research on post-DARP follow-up data (representing up to six years after DARP) for a sample of 3,131 persons admitted to treatment during 1969 to 1972. Treatments and outpatient detoxification programmes (DT); a comparison group of intake only (IO) clients with no DARP treatment was also followed up. The data shown in general that three treatments, MM, TC, and DF, led to favourable results--MM and TC for heroin and other opioid addicts, and DF for non-addicts (users of opioids less-than-daily, usually in conjunction with other non-opioid drugs and users of non-opioids only).

Keywords: Methodological, program evaluation, treatment outcome, alternative treatment, methadone, maintenance, therapeutic community, drug free, detoxification, heroin, other narcotics, nonnarcotics, correlational, DARP, maintenance clients, detoxification clients, therapeutic community clients, drug free clients, outpatient, residential, community-based clinic, DARP cities.

- 2126 Yapalater, A.R., McInts, J., & Yapalater, L. (1978). Voluntary methadone treatment clinic. New York State Journal of Medicine, 78, 45-48.

This article summarizes data collected in a two-year evaluation study conducted in 1975 at Psychiatric Services Center's Methadone treatment clinic. The purpose of this study was to assess the extent to which the methadone clinic is succeeding in the realization of its goals. Emphasis on psychotherapy and rehabilitation has resulted in a significantly higher rate of success. Almost one third of the treatment cases surveyed achieved a totally drug-free methadone-free status. Also presented are descriptions of the methods used and the underlying theory motivating the approaches and procedures.

Keywords: Methodological, program evaluation, treatment outcome, methadone, maintenance, descriptive, maintenance clients, community-based clinic, White Plains, New York.

B. LITERATURE REVIEWS

- 2201 Anglin, M.D., & McGlothlin, W.H. (1985). Methadone maintenance in California: A decade's experience. In L. Brill & C. Winick (Eds.), The yearbook of substance use and abuse (Vol. 3, pp. 219-280). New York: Human Sciences Press.

The often contradictory literature assessing methadone maintenance is reviewed. Most commentators based their remarks on nationwide policies and data obtained from evaluations of East Coast programs or nationwide samples. The extent of heroin addiction in California, the role of methadone maintenance in the state's overall strategy for intervention, a brief history of program growth and policy development, and the specific results of several studies evaluating the effectiveness of methadone maintenance in reducing heroin use and the associated income-generating crime and in increasing employment, family responsibility, and other socially productive behaviors are presented. Finally, the changes now occurring in state and county policies, especially in regard to funding, and the possible alternative outcomes of these changes are discussed.

Keywords: Literature review, civil commitment, treatment outcome, methadone, maintenance, heroin, time series, nonequivalent comparison groups, California.

Related research: Anglin, M.D., & McGlothlin, W.H. (1984). Outcome of narcotic addict treatment in California. In F. M. Tims & J. P. Ludford (Eds.), Drug abuse treatment evaluation: Strategies, progress, and prospects (Research Monograph 51, pp. 106-128). Rockville, MD: National Institute on Drug Abuse.

- 2202 Austin, G.A., Macari, M.A., & Lettieri, D.J. (1979). Guide to the drug research literature (Research Issues 27). Rockville, MD: National Institute on Drug Abuse.

This Guide to the Drug Research Literature is designed to serve the diverse information needs of the audience of drug researchers. It can be used both as a cumulative index to the 27 volumes of the NIDA Research Issues Series and as a general guide to some of the most significant writings in the field. Special care has been taken to make the Guide an independent information resource. It contains over 1,300 indexed references, the great majority of which are to literature that has been abstracted in the 17 Reference Volumes in the series. These lengthy abstracts summarize in detail the purpose, methodology, findings, and conclusions of each study. The literature largely consists of empirical research studies published in English since 1960, as well as some significant theoretical discussions and literature reviews. The Guide also contains references to the data collection instruments included in the Drug Abuse Instrument Handbook (volume 12) and to the specially prepared original discussions in the other Resource Handbooks in the series. These Resource Handbooks vary considerably in their topics and contents, but each addresses virtually unexplored areas which have received little attention from the research world. The main topics covered in relation to drug use are employment, sex, attitudes and attitude change, family and peer influences, pregnancy, death, addict lifestyles, adolescent drug use, personality and psychological variables, criminal behavior, the criminal justice system and law enforcement, driving, minority drug use, international drug use, cocaine and amphetamine use, research designs and aides, and drug history.

Keywords: Literature review, employment, attitudes, social support, peer reference groups, pregnancy, methodological, instruments, physiological effects, multiple drug abuse, cocaine abuse treatment, alcohol abuse treatment, behavior modification, social costs, program evaluation, research design, counseling, detoxification, dosage, alternative treatment, psychopathology, aftercare, relapse prevention, social support, vocational services, vocational training, client characteristics, methadone, LAAM, desipramine, maintenance, heroin, cocaine, alcohol, other narcotics, amphetamines, nonnarcotics.

- 2203 Ausubel, D.P. (1983). Methadone maintenance treatment: The other side of the coin. International Journal of the Addictions, 18, 851-62.

The psychopharmacological rationale and clinical effectiveness of the methadone maintenance treatment program was subjected to critical theoretical and methodological analysis. It was concluded (1) that the MMTP constitutes and perpetuates an immature coping mechanism; i.e., "subliminal euphoria"--pervasive pharmacological shielding of addicts from the inevitable discomforts attending adaptation to the real world; (2) that it does not satisfy so-called tissue craving for florid euphoria because most "stabilized" clients actively seek and obtain same from heroin, methadone itself, and/or other potentially euphorogenic drugs; (3) that the source of this craving resides in the addict's personality rather than in his tissues; (4) that official evaluation studies of the MMTP grossly exaggerate its clinical effectiveness; and (5) that the MMTP has inadvertently created incomparably more primary methadone addicts than it has cured heroin addicts.

Keywords: Literature review, abstinence, physiological research, psychopathology, treatment outcome, methadone, maintenance, heroin, other narcotics.

- 2204 Barnes, D.M. (1988). Breaking the cycle of addiction. Science, 241, 1029-1030.

Faced with this intractable cycle of drug-taking behavior, those who treat cocaine addicts have been handicapped because until recently no one knew whether one method of treatment was any more effective than another. Now, physicians who are testing various methods in clinical trials are coming to believe that a combination of drug therapy, behavioral therapy, and psychotherapy is most likely to be effective. As yet, however, they are still in the early stages of evaluating these and other components of a more comprehensive treatment program. The emerging treatment strategies represent a radical departure from the conventional wisdom that a person's addiction to cocaine was purely a psychological problem. People have used cocaine since the late 1800s, but not until 7 or 8 years ago did researchers recognize that it is a powerfully addictive drug. The delay helps to explain why efforts to identify specific programs for treatment of cocaine addiction are still in their infancy.

Keywords: Literature review, cocaine abuse treatment, counseling, psychotherapy, behavior modification, alternative drugs, desipramine, relapse prevention, behavior change, cocaine.

- 2205 Battjes, R.J., & Pickens, R.W. (Eds.). (1988). Needle sharing among Intravenous drug abusers: National and International perspectives (Research Monograph 80). Rockville, MD: National Institute on Drug Abuse.

Transmission of the AIDS virus--human immunodeficiency virus (HIV)--among intravenous drug abusers most often occurs when they share drug injection equipment. Small amounts of contaminated blood left in needles or syringes can carry the virus from person to person. Almost all intravenous drug users sometimes share their "works," for reasons that include convenience, friendship, and ritual. In some cities in the United States, rates of HIV infection among intravenous drug users are already high. In many others, still in relatively early stages of the AIDS epidemic, a window of opportunity exists to prevent catastrophe. How can the risks from sharing injection equipment, commonplace among intravenous drug users, be reduced? How can individuals who are often hard to reach and unresponsive to "authority" be made aware of the danger and motivated to change long-established behaviors? To review existing research and program experience in dealing with these questions, NIDA convened more than 40 experts for a 2-day meeting in May 1987. They came from across the United States and from England, The Netherlands, and Italy, from governments, universities, treatment facilities, and professional associations. Participants described a wide variety of programs and policies which have been implemented in U.S. cities and in Western Europe. They spoke from diverse perspectives and expressed differing views. This monograph, summarizing the presentations at the meeting, is both informative and thought-provoking. It can provide a valuable basis for further discussion about the challenging problem of stopping the spread of AIDS through "needle sharing."

Keywords: Literature review, needle sharing, HIV/AIDS, attitudes, behavior change, methodological, instruments, social costs, research design, alternative treatment, client characteristics, methadone, maintenance, heroin, cocaine, alcohol, other narcotics, nonnarcotics, San Francisco, New York, Chicago, England, France, Scotland, Italy, Amsterdam,

- 2206 Becker, M., & Joseph, J. (1988). AIDS and behavioral change to reduce risk: A review. American Journal of Public Health, 78(4), 394-410.

Published reports describing behavioral changes in response to the threat of AIDS (acquired immunodeficiency syndrome) are reviewed. These studies demonstrate rapid, profound, but expectably incomplete alterations in the behavior of both homosexual/bisexual males and intravenous drug users. This is true in the highest risk metropolitan areas such as New York City and in areas with lower AIDS incidence. Risk reduction is occurring more frequently through the modification of sexual or drug-use behavior than through its elimination. In contrast to aggregate data, longitudinal descriptions of individual behavior demonstrate considerable instability or recidivism. Behavioral change in the potentially vulnerable heterosexual adolescent and young adult populations is less common, as is risk reduction among urban minorities. Reports of AIDS-related knowledge and attitudes generally parallel the pattern of behavioral changes. Nonetheless, few studies investigate the relationship of knowledge and attitudes to risk reduction. Future studies should provide much-needed information about the determinants as well as the magnitude of behavioral changes required to reduce the further spread of AIDS.

Keywords: Literature review, HIV/AIDS, treatment outcome, I.V. drug users, homosexuals, behavior change.

- 2207 Blaine, J., & Renault, P. (Eds.). (1976). Rx: 3x/week LAAM alternative to methadone (Research Monograph 8). Rockville, MD: National Institute on Drug Abuse.

This monograph is a biomedical review and assessment of LAAM (Levo-alpha acetylmethadol), a new treatment drug for heroin addiction now undergoing large scale clinical trials, following several years' intensive research and development under the auspices of the National Institute on Drug Abuse (NIDA) and its predecessor, the Special Action Office for Drug Abuse Prevention (SAODAP).

Keywords: Literature review, alternative drugs, LAAM, methadone, maintenance, detoxification, treatment outcome.

- 2208 Brewington, V., Arella, R., Deren, S., & Randell, J. (1987). **Obstacles to the utilization of vocational services: An analysis of the literature.** International Journal of the Addictions, 22, 1091-1118.

While employment has been linked to positive clinical outcomes with drug abusers, research suggests that many treatment programs do not emphasize vocational services and under utilize vocational resources. This article summarizes potential client-, program-, and societal-level obstacles to vocational rehabilitation service delivery identified in past studies with both substance abusers and other related client groups. Obstacles identified for related groups are integrated with issues relevant to drug treatment clients. This analysis is based on literature published over the last 20 years.

Keywords: Literature review, vocational services, vocational training, employment, psychopathology, client characteristics, coercion, civil commitment, criminality, treatment outcome, methadone clients, therapeutic community clients, detoxification clients, drug free clients, TOPS, DARP.

- 2209 Bridge, T.P., Mirsky, A.F., & Goodwin, F.K. (Eds.). (1988). **Psychological, neuropsychiatric, and substance abuse aspects of AIDS [Special Issue].** Advances In Biochemical Psychopharmacology, 44.

Responding to the changing perception of the relationship of human immunodeficiency virus (HIV) infection to the CNS manifestations of AIDS, the fields of neuroscience, neuropsychology, and substance abuse research are now critical components to the fight against AIDS. HIV is transferred early in the course of the infection to the brain, probably by a macrophage-mediated mechanism. Once present in the CNS, HIV renders the brain a reservoir for constant reinfection of cells susceptible to HIV. Put simply, any treatment for HIV infection must be effective to the brain. Compelling evidence also documents the immensely disabling symptomatology associated with the direct infection of the brain by HIV. Hence the research areas represented in these chapters offer the hope of perhaps the most important treatment for AIDS, that is, in the brain. The chapters in this volume span relevant research areas from the molecular to the psychosocial, emphasizing traditional and recently developed research approaches to the most important public health challenge of the last half of the 20th century. These articles are of vital interest to those researchers studying the immune, virologic, and CNS-mediated mechanisms of HIV infection. It is exactly these areas that will contribute to the identification, development, and integration of CNS specific treatments for AIDS and mechanisms for the behaviorally oriented prevention of HIV transmission.

Keywords: Literature review, HIV/AIDS, physiological effects, psychopathology, behavior modification, classical conditioning, symptoms, behavior change, client characteristics, methadone, naltrexone, maintenance, heroin, other narcotics, nonnarcotics.

- 2210 Catalano, R.F., Hawkins, J.D., & Miller, J. (1988, December). Evaluation of adolescent drug abuse treatment services and assessment of risks for relapse. Unpublished manuscript, University of Washington, Social Development Research Group, Seattle.

From limited information provided in several of the drug treatment studies reviewed here adolescent relapse rates posttreatment are high ranging from 35% to 85%. These rates of relapse are based on the results of a few studies using widely varying followup periods and methods of data collection. However, these rates are consonant with those that characterize the adult treatment system. As described in this report, studies evaluating adolescent treatment have shown some success in reducing drug use during treatment, however maintaining these gains after treatment has been more difficult. Indeed, few carefully controlled studies have demonstrated the superiority of any particular therapeutic approach in maintaining abstinence after treatment.

Keywords: Literature review, relapse prevention, alternative treatment, program evaluation, treatment outcome, outcome measures, adolescents, DARP, TOPS.

Related research: Catalano, R.F., Howard, M.O., Hawkins, J.D., & Wells, E.A. (1988). Relapse in the addictions: Rates, determinants, and promising prevention strategies. Unpublished manuscript, University of Washington, Center for Social Welfare Research, School of Social Work, Seattle.

- 2211 Desmond, D.P. (1979). Effectiveness of psychotherapeutic counseling in methadone maintenance. Drug and Alcohol Dependence, 4, 439-447.

Therapeutic counseling has been widely advocated with methadone maintenance, but its effectiveness has not been demonstrated. A review of the literature revealed a dearth of scientific investigations comparing treatment outcomes with and without counseling services. The few studies which have been reported seem to suggest that counseling does not significantly change treatment outcomes as measured by the usual indications of illicit drug use, arrests, employment, and retention in the program. These studies suffered from a number of methodological flaws, however, including failure to adhere to research design, small sample size, poorly matched control groups, inadequate outcome criteria, and absence of post-treatment follow-up. Previous investigators have been nearly unanimous in calling for further studies of this issue. Since the cost of counseling services represents a major portion of treatment program budgets, there is an urgent need to document the effectiveness of these services with definitive studies.

Keywords: Literature review, counseling, psychotherapy, research design, methadone, maintenance.

- 2212 Francis, D.P., & Chin, J. (1987). The prevention of acquired immunodeficiency syndrome in the United States. Journal of the American Medical Association, 257(10), 1357-1366.

Human immunodeficiency virus (HIV) is one of the most virulent infectious agents ever encountered. This virus, estimated to kill up to a half of those infected, has spread to more than 1 million Americans. There is no safe and effective treatment. Nor is there a vaccine. From our understanding of HIV transmission, further spread of the virus can be stopped by the use of various techniques. The 5~combined use of education-motivation-skill building, serologic screening, and contact tracing/notification could eliminate or substantially reduce transmission. To accomplish this reduction an immense concerted effort by physicians, public health practitioners, business, and community organizations is required to get across the simple prevention messages. Those messages are: (1) Any sexual intercourse (outside of mutually monogamous or HIV antibody-negative relationships) must be protected with a condom. (2) Do not share unsterile needles or syringes. (3) All women who may have been exposed should seek HIV-antibody testing before becoming pregnant and, if positive, avoid pregnancy. Only through a concerted, vigorous, and substained prevention program that deals frankly with this problem with those individuals at risk be reached and motivated to take personal responsibility to protect themselves. Without such an effort, acquired immunodeficiency syndrome will continue to kill ever-increasing numbers of Americans.

Keywords: Literature review, HIV/AIDS, I.V. drug users, homosexuals, pregnant women.

- 2213 Friedland, G.H., & Klein, R.S. (1987). Transmission of the human Immunodeficiency virus. New England Journal of Medicine, 317, 1125-1134.

The accumulated data strongly support the conclusion that transmission of HIV occurs only through blood, sexual activity, and perinatal events. Nevertheless, the fear of transmission by other routes may continue to increase with the anticipated increase in the number of cases of AIDS over the next few years. An unrealistic requirement for absolute certainty about the lack of transmission by other routes persists, despite the knowledge that it is not scientifically possible to prove that an event cannot occur. It remains difficult to believe that a virus that is spreading rapidly and may cause a cruel, frightening, and fatal disease is not highly contagious and easily transmitted. The available data indicate that HIV transmission is not highly efficient in a single or a few exposures, unless one receives a very large inoculum. The widespread dissemination of HIV is more likely the result of multiple, repeated exposures over time by routes of transmission that are strongly related to personal and cultural patterns of behavior--particularly, sexual activity and the use of drugs. Isolated transmission events should be placed in full perspective by examining the results of population-based studies that provide rates of risk. It is from these studies that rational approaches and public policy should be developed. Although we are confronted by a public health problem of potentially catastrophic dimensions, it is essential to appreciate that unwarranted fears of HIV transmission have compounded the suffering of young men, women, and children infected with HIV and have blunted an appropriate societal response aimed at reduction of transmission. Creative solutions to the problem of transmission by routes that have already been demonstrated and in populations at highest risk for acquisition are our greatest need.

Keywords: Literature review, HIV/AIDS, I.V. drug users, homosexuals, pregnant women.

- 2214 Gardner, S.E. (Ed.). (1981). Drug and alcohol abuse: Implications for treatment (Treatment Research Monograph Series, DHHS Publication No. ADM 87-958). Rockville, MD: National Institute on Drug Abuse.

This report focuses on the treatment of individuals abusing multiple drugs. It includes chapters on seven topics: The effects of combined alcohol/drug abuse on human behavior (Cohen); Current patterns of psychoactive drug use: Some epidemiologic observations (Seigal); methadone maintenance and alcohol use (Stimmel); the role and significance of alcohol and sedative use in the multisubstance abuser; an investigation of two patient samples (Judd et al.); crime and alternative patterns of substance abuse (Inciardi); alcohol and illicit drug use (Simpson & Lloyd); characteristics of combined opiate and alcohol abusers (Chambers).

Keywords: Literature review, alcohol abuse treatment, multiple drug abuse, alternative treatment, criminality, methadone, maintenance, heroin, alcohol, cocaine, amphetamines, other narcotics, nonnarcotics, CODAP, NAPIS.

- 2215 Gawln, F.H., & Ellinwood, E.H., Jr. (1988). Cocaine and other stimulants: Action, abuse, and treatment. New England Journal of Medicine, 318(18), 1173-1182.

This review attempts a reasoned psychiatric appraisal of the prototypical abused psychomotor stimulants, cocaine and the amphetamines. We review the historical and epidemiologic features of the recent upsurge in cocaine abuse, summarize clinical psychiatric observations about stimulant abuse and emerging treatment approaches, and describe new perceptions of the biologic nature of stimulant addiction. Because emergency medical treatment of stimulant overdose and medical complications of cocaine and amphetamine abuse have been reviewed recently, we have excluded these topics.

Keywords: Literature review, cocaine abuse treatment, psychopathology, physiological effects, abstinence, withdrawal, treatment process, relapse prevention, cocaine, amphetamines.

- 2216 General Accounting Office. (1988). AIDS education: Reaching populations at higher risk. Report to the Chairman, Committee on Governmental Affairs, U.S. Senate (GAO/PEMD-88-35). Galtersburg, MD: U.S. General Accounting Office.

To organize the applicable lessons, GAO derived a health-education model that covers the selection of media most likely to reach populations at risk, the provision of skills for reducing risk, and other components. We used this model as a framework for describing some of the AIDS education campaigns currently underway. Because these campaigns have only recently begun, it was not possible to evaluate their overall effects or the relative importance of campaign components. There are two recommendations in the report. The first, directed to the Secretary of the Department of Health and Human Services (HHS), calls for the collection of data by which the relative effectiveness of campaign components can be assessed. The second, directed to the Congress, suggests that, if AIDS legislation now pending is passed, such legislation should require HHS to report on its progress in assessing the effectiveness of various campaign components.

Keywords: Literature review, HIV/AIDS, needle sharing, I.V. drug users, homosexuals.

- 2217 Gropper, B.A. (1989, February). Drug detection through hair analysis. Law Enforcement Technology.

The techniques of hair analysis are essentially the same as those of radioimmunoassay or urine and offer the same general detection sensitivity. Because hair analysis involves additional steps, however, it is inherently more time consuming and more costly per test. But detecting a probationer's abstention or drug usage over a prolonged period, for example, may require only periodic sampling--testing hair every month or two rather than conducting much more frequent urine tests. The result may be not only greater reliability but reduced expense for long-term monitoring.

Keywords: Literature review, methodological, hair analysis, criminality, urine monitoring.

Related research: Gropper, B.A. (1989). NIJ holds world's first workshop on hair analysis for drug abuse. Press release, National Institute of Justice, District of Columbia.

- 2218 Gunne, L.M. (1983). The case of the Swedish methadone maintenance treatment programme. Drug and Alcohol Dependence, 11, 99-103.

This paper reviews the status of methadone maintenance treatment in Sweden. Methadone maintenance has been successful in Sweden, however, a struggle for power between opposing treatment advocates has resulted in the elimination of the well-functioning program. Heroin addiction is increasing in Sweden. The present drug treatment system is inadequate for dealing with heroin addicts. Much of the knowledge necessary for running a successful methadone program will be lost if methadone treatment is not reinstated soon.

Keywords: Literature review, alternative treatment, methadone, maintenance, amphetamines, heroin, other narcotics, case study, maintenance clients, Sweden.

- 2219 Hall, S.M. (1984). The abstinence phobias: Links between substance abuse and anxiety. International Journal of the Addictions, 19(6), 613-631.

This paper presents a new model to explain the observed relationship between anxiety and substance abuse. Specifically, the concept of "abstinence phobias," common across psychoactive substances, is developed. The evidence needed to support this concept is outlined, and relevant data from studies of opiate, alcohol, and tobacco dependences are reviewed. Parallel data obtained from the treatment of obesity are discussed. It is concluded that the abstinence phobia merits further study; clinical implications are also considered.

Keywords: Literature review, abstinence, psychopathology, methadone, maintenance, detoxification, heroin, other narcotics, alcohol, I.V. drug users.

- 2220 Hawkins, J.D. (1981). The ecology of methadone maintenance: Implications of community characteristics for treatment and outcome (Grant No. H81DA02071-01S1). Seattle: University of Washington, School of Social Work and Center for Law and Justice.

This paper reviews the current available evidence regarding the relationships between community context and methadone treatment program outcomes, and suggests directions for future program and research efforts in this relatively ignored area. It investigated five views of community as possible contributors to methadone maintenance program outcomes, but found little direct research on any of these views. Almost all of the research which was available suggests the possible importance of the community context in influencing client outcomes. In the few cases in which the relationship between community context and client outcome has been assessed, there was evidence that community variables did influence outcomes. It should therefore be productive to pursue a program of research on the relationship between the ecology of drug abuse treatment and client outcomes.

Keywords: Literature review, community characteristics, client characteristics, methadone, maintenance, heroin, other narcotics, treatment outcome.

- 2221 Jaffe, J.H. (1986). Evaluating drug abuse treatment: A comment on the state of the art. In F.M. Tims & L.P. Ludford (Eds.), Drug abuse treatment evaluation: Strategies, progress, and prospects (Research Monograph 51, pp. 13-29). Rockville, MD: National Institute on Drug Abuse.

In this review two topics are addressed, "What do we know about the effectiveness of drug abuse treatment?" and "Where do we go from here?" After 20 years of research, we can reasonably predict how various client characteristics will influence outcome and can make some general statements about the value of various social interventions. Over the past 5 years the major achievements in predicting treatment outcome are our greater reliance on multivariate analysis and improved measurement techniques especially in the area of psychopathology. In addition to the attention now being given to psychopathology, recent advances also include an appreciation of the importance of monitoring behavior over time and the need to measure outcome along several dimensions. Future advances might focus upon gaining insights into the relationship of psychological problems severity and treatment outcome, the role of genetic vulnerability, the process of gradual improvement, and non-opioid addictions.

Keywords: Literature review, treatment outcome, psychopathology, multiple drug abuse, heroin, other narcotics, nonnarcotics.

- 2222 King, R. (1974). The American system: Legal sanctions to repress drug abuse. In J.A. Inciardi & C.D. Chambers (Eds.), Drugs and the criminal justice system. Beverly Hills, CA: Sage.

This chapter traces the evolution of U.S. policy towards narcotics since its inception in the Philippine territories in the 1800s. It reviews: the major legislative initiatives, significant court cases, federal policy, treatment efforts, national commissions and federal administration. These events are placed in the context of both local and world history and politics. Particular attention is given to the implementation and interpretation of the Harrison Narcotics act of 1914 and the evolution and demise of the Bureau of Narcotics under Anslinger. Finally, it reviews the overwhelming objections to controlling drugs with legal sanctions by professional groups such as the American Medical Association and the American Bar Association.

Keywords: Literature review, detoxification policy, civil commitment, coercion, criminality, treatment outcome, attitudes, alcohol, cocaine, heroin, other narcotics, nonnarcotics.

- 2223 Kleber, H.D. (1982). The Interaction of a treatment program using opiates for mental illness and an addiction treatment program. Annals of the New York Academy of Sciences, 398, 173-177.

While there is evidence, historical, clinical, and experimental, suggesting that opiate-type drugs have an ameliorating effect on psychotic symptoms, the case is far from clear for there are contrary findings indicating no such effect. Since it has been noted by Voltaire that "a long dispute means both parties are wrong," it may very well be that, whatever effect there is, is not a clear-cut one. A number of variables, including the particular symptomatology of the patient, the duration of his illness, the dose of the drug, and the duration it is given, may all be related to outcome. This paper will not concern itself with the rightness or wrongness of the proposition that opiates do affect schizophrenic or other symptoms. Instead, I will assume that there is some effect and that it is large enough to justify, in some cases at least, the use of opiate-type drugs to treat psychiatric syndromes. In such cases, what would be the best way of administering the drug to achieve optimal results both in terms of the patient and of the larger society? This paper will look at some of the options and the problems associated with each. The important complications that exist in thinking about the use of these drugs outside of the treatment of narcotic addiction are the current legal status of opiates, and the existence of a large group of individuals who obtain such drugs illicitly. The great monetary value placed on illicit supplies of the drug because of the above factors means that a system that simply makes quantities of the drug available as needed to patients on a take-out or prescriptive basis may create problems elsewhere in society.

Keywords: Literature review, psychopathology, methadone, LAAM, maintenance.

- 2224 Kleber, H.D. (1984). Is there a need for 'professional psychotherapy' in methadone programs? Journal of Substance Abuse Treatment, 1, 73-76.

The role of "professional psychotherapy" in methadone programs has been unclear because of its expense as compared to counseling, shortage of trained, experienced personnel, and confusion in the literature as to its efficacy. This research capsule reviews some recent studies pertaining to this and some of the methodological difficulties in arriving at a clear answer. Psychotherapy so far appears most helpful for patients with a defined psychiatric diagnosis in addition to their drug diagnosis. In addition, benefits appear to be greater if patients are treated early in their treatment program.

Keywords: Literature review, counseling, psychotherapy, methadone, maintenance, heroin, other narcotics.

- 2225 Kleber, H.D. (1987). Treatment of narcotic addicts. Psychiatric Medicine, 3, 389-418.

The key principles upon which various effective methods of drug abuse treatment are based are described in this review. These methods included detoxification, methadone maintenance, narcotic antagonists, therapeutic community, psychiatric inpatient programs, outpatient drug-

free treatment, behavioral approaches, multimodality programs, and religious oriented programs.

Keywords: Literature review, alternative treatment, detoxification, maintenance, antagonists, therapeutic community, inpatient, outpatient, behavior modification, religious.

- 2226 Kleber, H.D., & Riordan, C.E. (1982). The treatment of narcotic withdrawal: A historical review. Journal of Clinical Psychiatry, **43**, 30-34.

The history of narcotic withdrawal treatment is filled with "cures" enthusiastically received and then quietly dropped when they turned out to be either ineffective, dangerous, or both. Methods reviewed include the Towns-Lambert belladonna treatment, sodium thiocyanate, bromide sleep treatment, Narcosan, insulin, autogenous serum, ECT, hibernation, methadone, phenothiazines, propranolol, propoxyphene, acupuncture, vitamin C, and the naloxone flush. There is need to be aware of the psychologic as well as physical aspects of withdrawal. Better detoxification techniques would help patients who are ready to discontinue the use of methadone as well as those who want to start naltrexone treatment.

Keywords: Literature review, abstinence, withdrawal, alternative treatment, acupuncture, alternative drugs, propoxyphene, naltrexone, methadone, detoxification, maintenance.

- 2227 Kosten, T.R., & Kleber, H.D. (1984). Strategies to improve compliance with narcotic antagonists. American Journal of Drug and Alcohol Abuse, **10**, 249-266.

The pharmacologic promise of naltrexone has not been matched by therapeutic usefulness. Plagued by difficulties in the induction period and very high dropout, the drug remains limited to a very small segment of the opiate-addicted population. Some programs have managed, however, to substantially improve on these problems and such strategies will be discussed. The paper will look at the different problems raised during the high dropout periods of induction, the first month of stabilization, and the later stages of maintenance. It will then focus on methods to deal with these problems. Strategies examined will include among others individual and group counseling, family and couples' therapy, and contingency contracting. Strengths and weaknesses of each of these both from our own 7 years of experience and in the literature will be examined.

Keywords: Literature review, alternative drugs, naltrexone, methadone, maintenance, treatment outcome, individual counseling, group counseling, family counseling, contingency contracting, retention.

- 2228 Kosten, T.R., & Rounsaville, B.J. (1986). Psychopathology In opioid addicts. Psychiatric Clinics of North America, **9**, 515-532.

While the psychodynamic and empirical literature acknowledges that psychopathology is common in opiate addicts, it fails to provide a structure in which to offer targeted psychiatric services to drug abusers. In the past treatment of substance abusers has not focused upon psychiatric disorders. This limitation could be attributed to the lack of instruments for making accurate psychiatric diagnoses. Two new systems, the Research Diagnostic Criteria and the DSM-III, were used to assess psychiatric disorders in a sample of 533 opioid addicts. Rates of

current and past psychopathology were high among this group of addicts. The majority of the psychiatric disorders among the addicts were depressive disorders, antisocial personality, and alcoholism. Depressed addicts were compared to other addicts and found to have more severe medical, employment, legal, family-social, psychological, and substance abuse problems.

Keywords: Literature review, psychopathology, methadone, maintenance, heroin, other narcotics, correlational, I.V. drug users, methadone clients, DSM-III, treatment outcome, employment, community-based clinic, residential, New Haven, Connecticut.

- 2229 Kozel, N.J., & Adams, E.H. (Eds.). (1985). Cocaine use in America: Epidemiologic and clinical perspectives (Research Monograph 61). Rockville, MD: National Institute on Drug Abuse.

Over the past 10 years, cocaine, which has been characterized as powerfully addictive, has evolved from a relatively minor problem into a major public health threat. In the early 1970s, evidence on the reinforcing potential of cocaine suggested that if the use of the drug became widespread major social and public health problems could ensue. Fortunately, NIDA has epidemiologic surveys and surveillance systems in place which enabled it to monitor the prevalence of drug use, cocaine-related emergency room cases, and treatment admissions. These efforts have documented dramatic increases in the use of cocaine in the general adult and high school populations of the United States. As the use of cocaine increased, parallel increases in emergency room visits, overdose deaths, and clinical problems reflected by increased treatment admissions were noted. Although the prevalence of cocaine use in the general population appears to have leveled off since 1979, the adverse consequences have continued to increase dramatically. Several explanations, including increased combination drug use, a shift to more dangerous routes of administration, and the lag time from first use to entry into treatment have been offered to explain this phenomenon. There is evidence to suggest that each of these explanations may in fact contribute to the increased negative consequences associated with cocaine. Yet, as much as we know about the epidemiology of cocaine use, many questions remain. It is unknown, for example, whether the increasing number of freebase users seen by clinicians reflects an increase in the numbers of people smoking freebase or a reflection of the increased risk of this route of administration. While our surveys have given us good estimates of the number of people who have experienced problems due to their drug use. In contrast, clinicians often see the problem users but may not collect sufficient drug histories so that risk may be assessed and have no contact with users who are not experiencing problems. The dialogue between epidemiologists and clinicians at the technical review on which this monograph is based increased the awareness of these issues and the benefits to be derived from increased interaction between epidemiologists and clinicians. One result of the technical review was the inclusion of a problem measurement section in the 1985 National Household Survey on Drug Use. Another is the publication of this monograph which represents an important contribution to our understanding of cocaine use and abuse.

Keywords: Literature review, cocaine abuse treatment, client characteristics, physiological effects, dosage, alternative treatment, cocaine, heroin, alcohol, amphetamines, other narcotics, nonnarcotics.

- 2230 Leukefeld, C.G., & Tims, F.M. (1986). Relapse and recovery: Some directions for research practice. In F.M. Tims & C.G. Leukefeld (Eds.), Relapse and recovery in drug abuse (Research Monograph 72, pp. 185-197). Rockville, MD: National Institute on Drug Abuse.

The addiction treatment field is maturing. Studies can now be cited which indicate that drug abuse treatments are effective and produce desired behavioral change. But these studies also point to a high rate of relapse. Indeed, they tend to support the concept of addiction as a "chronic relapsing disease." Growing out of these studies are other findings showing that differential prognoses appear to be a function of such variables as time in treatment, commitment to seek change, and associated kinds (and severity) of psychopathology. There are also abundant data showing that drug abusers commonly experience multiple treatments. Given these and related findings, a major problem confronting treatment is the bringing about and maintenance of positive behavioral change--preventing relapse. Consideration of relapse from either theoretical or clinical practice perspectives encounters both philosophical and theoretical dilemmas. What is the clinical significance of reverting to "controlled" use or a shift to a substance not thought to be as pernicious as the one(s) for which treatment was provided? At what point is relapse considered to have occurred?

Keywords: Literature review, relapse prevention, methodological, program evaluation, research design, treatment process, treatment outcome, retention, behavior change.

- 2231 Mann, A.R., & Felt, M.D. (1982-83). An analysis of federal narcotic detoxification policy: Implications for rehabilitation. American Journal of Drug and Alcohol Abuse, 9, 289-299.

The current federal narcotic detoxification policy, limiting such treatment to 21 days, is analyzed with respect to its impact on the success rate for complete withdrawal. Data are drawn from an historical review of American Medical Association statements on narcotic addiction and a review of empirical data on short- and long-term detoxification. The 3-week limit is shown to interfere with achieving successful detoxification rates, although it continues to guide federal detoxification policy. Empirical evidence supports long-term detoxification that recognizes other factors as also having a therapeutic effect. It is time to revise the current federal policy to more accurately reflect the progress made in long-term care.

Keywords: Literature review, detoxification policy, methadone, detoxification.

- 2232 McLellan, A.T., & Childress, A.R. (1985). Aversive therapies for substance abuse: Do they work? Journal of Substance Abuse Treatment, 2, 187-191.

More than two decades of research in the use of aversive behavioral interventions for the treatment of drug and alcohol abuse is reviewed. This survey covers only the areas of conditioned aversive states (using chemical or electrical stimuli) and extinction/desensitization. While many of these treatment interventions hold promise, none has been fully explored with properly controlled group studies. Suggestions are offered which may aid in the evaluation of behavioral interventions for substance abuse and increase the clinical impact of this work.

Keywords: Literature review, aversive therapies, alternative drugs, heroin, other narcotics, alcohol, treatment outcome.

- 2233 Miller, W.R. (1985). Motivation for treatment: A review with special emphasis on alcoholism. Psychological Bulletin, 98, 84-107.

Motivation is often regarded as a client attribute related to maladaptive defense mechanisms, and it is used to explain unfavorable treatment outcome. This article provides an integrative review of research relating motivational variables and interventions to treatment entry, compliance, and outcome; special focus is on alcoholism and other addictive behaviors. Empirical evidence is considered regarding motivational interventions including advice, feedback, goal setting, role playing, modeling, contingencies, continuity of care, voluntary choice, and modification of behavior attractiveness. Beyond these specific interventions, nonspecific aspects of motivation are reviewed including client characteristics (distress, self-esteem, locus of control, severity, conceptual level), environmental variables, and therapist characteristics (hostility, expectancy, empathy). A dynamic conceptualization of treatment motivation is proposed as an alternative to a trait model.

Keywords: Literature review, alcohol abuse treatment, behavior modification, counseling, group counseling, coercion, contingency management, self-regulation, behavior change, client characteristics, treatment process, treatment outcome, alcoholics.

- 2234 Millman, R.B. (1988). Evaluation and clinical management of cocaine abusers. Journal of Clinical Psychiatry, 49 (2) (Suppl.), 27-33.

The development of an individualized treatment program for cocaine abusers requires a comprehensive assessment of the psychobiological, social, and pharmacological elements that determined the drug abuse behavior as well as those elements that resulted from the behavior. A working knowledge of the "disease model" of chemical dependency, as well as other relevant models, is mandatory. Although the existing outcome data are insufficient, there is a large array of possible treatment options and facilities; the clinician should attempt to match the patient with the program based on relevant clinical and anecdotal information. Clinicians should be familiar with the ethos and procedures of the "12-Step programs"; they are often a critical element in treatment.

Keywords: Literature review, cocaine abuse treatment, relapse prevention, counseling, psychotherapy, HIV/AIDS, treatment process, alternative drugs, psychotropic drugs, desipramine, withdrawal, drug free, detoxification.

- 2235 Mulkern, V., & Spence, R. (1984). Illicit drug use among homeless persons: A review of the literature. Unpublished manuscript, Human Services Research Institute, Boston, MA.

The purpose of this report is to identify and review recent literature examining drug use among homeless persons. The report summarizes and assesses the available information, identifies gaps in the knowledge base, and recommends directions for further research and data collection. More specifically, the following goals were established: (1) to derive estimates or ranges of estimates from the available data regarding the size of the drug using homeless population, (2) to identify, based on available data, the demographic, psychiatric, and health related characteristics of homeless persons who use illicit drugs, and, (3) to distinguish, whenever possible, between findings that pertain to homeless persons with differing levels or types of drug related problems. It includes an annotated bibliography for 8 key studies.

Keywords: Literature review, client characteristics, psychopathology, multiple drug abuse.

- 2236 National Institute on Drug Abuse. (1989). Proceedings of the regional research workshops, February-April, 1989, of the National AIDS Demonstration Research (NADR) Project, Rockville, MD.

Beginning on February 22 and ending on April 5, 1989, The National Institute on Drug Abuse (NIDA), in coordination with the National Data Coordination and Evaluation Center, NOVA Research, convened staff of the National AIDS Demonstration Research (NADR) programs in five regional research workshops. It was noted that, for the evaluations to be meaningful, each grantee must clearly establish, early in the process, what is being evaluated. The integrity of the intervention must be maintained throughout the process of evaluation. If an intervention continues to change it cannot be evaluated. In guaranteeing the consistency of service delivery, programs must consider the effect of different outreach workers and intervention counselors. What is being done to assure that services are delivered in the same way? How well do programs guarantee the differences between the standard and enhanced interventions and avoid cross-contamination by the service providers themselves? The importance of capturing the "noise" in the system was also emphasized. Evaluators need to document, to the best of their ability, other possible influences on participants. Clients will be getting information about HIV infection and AIDS prevention from a number of different sources so it is important to document, define, and, where possible, control for the "noise." Although it will not be possible to control for all of the "noise," investigators need to devise appropriate strategies to assess it and to do what is possible.

Keywords: Literature review, HIV/AIDS, client characteristics, treatment outcome, methodological, program evaluation, outcome measures.

- 2237 Newman, R.G. In collaboration with Gates, M.S. (1977). Methadone treatment In narcotic addiction: Program management, findings, and prospects for the future. New York: Academic Press.

This book provides a comprehensive account of the history, policies, management, and experiences of the New York City Methadone Maintenance and Ambulatory Detoxification Programs from 1970-1975. These were two of the largest treatment programs in existence and had over 80,000 admissions during this period. Part one presents the rationale for maintenance and detoxification treatment and reviews several issues involved in implementing and operating actual programs. Part two analyzes data from the programs and presents both client characteristics and treatment outcomes. The book also includes description of the People v. Newman, a case establishing the confidentiality of drug treatment records.

Keywords: Literature review, client characteristics, detoxification policy, dosage, psychotherapy, treatment outcome, relapse prevention, retention, methadone, maintenance, detoxification, descriptive, correlational, maintenance clients, detoxification clients, community-based clinics, outpatient, New York City, New York.

Related research: New York vs. Newman (cert. denied sub. nom.) 414 U.S. 1163, 93 S. Ct. 927, 39 L. Ed. 2d 116 (1974).

People v. Newman, 32 NY 2d 379,345, N.Y.S. 2d 502, 298 N.E. 2d 651 (1973).

- 2238 O'Brien, C.P., Ehrman, R.N., & Ternes, J.W. (1983). Classical conditioning in opiate dependence. In L.S. Harris (Ed.), Problems of drug dependence, 1983 (Research Monograph 49, pp. 35-46). Rockville, MD: National Institute on Drug Abuse.

Opioid use provides an excellent opportunity for classical conditioning. The opioid drug is a Pavlovian unconditioned stimulus (US) which is reliably and consistently followed by an unconditioned response (UCR) which involves several different systems. Whether in animals or in humans, drug administration usually involves a set of complex procedures and several sensory systems, which can function as a conditioning stimulus (CS). Repeated drug use can produce conditioned effects. The CS initially acquires the power to elicit a conditional response (CR) which resembles the UCR. In an opioid-dependent individual another possible conditioning situation can occur. As the last dose of drug is metabolized a withdrawal syndrome occurs and in this instance environmental stimuli or rituals may be paired with the withdrawal symptoms. After repeated pairings, the CS alone may acquire the ability to evoke a conditioned response which resembles withdrawal effects. Despite vastly improved addiction treatment programs in the 1980's we still have no available treatment modality which directly deals with the conditioning aspects of addiction. Part of the problem relates to the confusion about which type of conditioned effects to treat, conditioned opioid-like effects, or conditioned withdrawal-like effects. Additionally there is confusion about which systems to measure: analgesia, temperature, salivation, or euphoria. This paper describes three categories of opioid-conditioned phenomena: conditioned opioid-like effects, conditioned withdrawal-like effects, and conditioned tolerance.

Keywords: Literature review, behavior modification, abstinence, withdrawal, heroin, other narcotics.

- 2239 O'Brien, C.P., Woody, G.E., & McLellan, A.T. (1983). Modern treatment of substance abuse. Drug and Alcohol Dependence, 11, 95-97.

Reasons for the negative perception of substance abuse treatment are discussed. Unrealistic treatment goals, the failure to recognize the existence and complexity of client problems, and lack of recognition of the conceptual and methodological differences among treatment programs are reasons for treatment failures. Competing therapies are also responsible for treatment failure. Research has shown that clients respond differently to different therapies and therapy combinations. Frequently proponents of one type of therapy are unwilling to recognize the efficacy of competing therapies for their clients. Accurate diagnosis and matching the client with appropriate treatment assures success in the future.

Keywords: Literature review, client characteristics, alternative treatment, alternative drugs, treatment outcome, attitudes, psychopathology, antagonist, methadone, LAAM, maintenance, psychotherapy, criminality, employment.

- 2240 O'Brien, C.P., Woody, G.E., & McLellan, A.T. (1984). Psychiatric disorders in opioid-dependent patients. Journal of Clinical Psychiatry, 45, 9-13.

An examination of substance abusers in contemporary practice reveals a high frequency of psychiatric disorders. In some cases, these probably represent preexisting conditions, but in others the disorder may be initiated or aggravated by the biologic and social consequences of substance abuse. The severity of a patient's psychiatric disorder is predictive of response to

substance abuse treatment. A high proportion of affective disorders has been found among opioid-dependent patients; these are responsive to psychotherapy and to antidepressant treatment with doxepin. Careful psychiatric diagnosis in the management of substance abuse can discriminate those patients who are likely to require psychotherapy or psychoactive medication from those who may do well with standard drug counseling alone.

Keywords: Literature review, psychopathology, counseling, psychotherapy, heroin, other narcotics, treatment outcome.

- 2241 **Peyrot, M. (1985). Narcotics anonymous: Its history, structure, & approach. International Journal of the Addictions, 20, 1509-1522.**

Although Narcotics Anonymous (NA) is the oldest and largest self-help group for the support of drug abusers, it has received little study. This paper provides an overview of the history, structure, philosophy, and activities of the NA fellowship based on interviews with members, a survey of the NA literature, and observation at a residential therapeutic community employing the NA approach. The latter data provide a means of analyzing the relationship between NA and those implementing its program. Suggestions for research are advanced in recognition of Narcotics Anonymous as both underground social movement and major treatment modality for drug abusers.

Keywords: Literature review, alternative treatment, Narcotics Anonymous, therapeutic community.

- 2242 **Preston, K.L., & Bigelow, G.E. (1985). Pharmacological advances in addiction treatment. International Journal of the Addictions, 20, 845-867.**

In the past 20 years significant advances in the pharmacological treatment of opioid dependence have been made, and research in this area is continuing. Therapeutic applications and current research in the use of pharmacological agents in maintenance therapy, treatment with narcotic antagonists, and narcotic detoxification are discussed. In addition, an overview is presented of recent developments in opioid pharmacology and of recently developed novel pharmacological agents which may prove useful in the future treatment and/or prevention of opioid dependence.

Keywords: Literature review, alternative drugs, physiological effects, antagonists, cyclazocine, clonidine, LAAM, methadone, naltrexone, detoxification, maintenance, heroin, other narcotics, nonnarcotics.

- 2243 **Rachin, R.L., Watters, J.K., Stall, R., & Case P. (Eds.). (1989). Intravenous drug use and AIDS [Special Issue]. Journal of Drug Issues, 19(1).**

The behaviors which transmit HIV infection are intensely private and beyond the effective regulatory reach of governments. Therefore, until an effective treatment or vaccine is found for HIV infection, inducing individual voluntary change is our only means of preventing AIDS. This fact places enormous responsibility on intravenous drug users to change not only the way that they use drugs but also their sexual practices. Beyond using health education messages to try to motivate intravenous drug users to lower their risk, specific prevention measures are

highly controversial. Debate regarding which are likely to be the most effective prevention strategies continues among drug treatment, health education, and prevention research specialists. This lack of unanimity and resources has left policy makers interested in preventing the spread of HIV infection among intravenous drug users standing on uncertain ground. In the meantime, HIV continues to spread among intravenous drug users, and through them, to other members of society. The central goal of this special issue is to draw together recent thought covering a range of issues pertinent to the HIV epidemic among intravenous drug users. Included are papers dealing with epidemiology and workable policy and program alternatives for the prevention of AIDS.

Keywords: Literature review, HIV/AIDS, I.V. drug users, pregnancy, homosexuals, multiple drug abuse, behavior modification, behavior change, alternative treatment, client characteristics, methadone, maintenance, heroin, other narcotics, nonnarcotics.

- 2244 Renner, J.A., Jr. (1983-84). **Methadone maintenance: Past, present, & future.** Advances In Alcohol and Substance Abuse In Women and Children, 3(1-2), 75-90.

Since first developed by Dole and Nyswander, there have been significant changes in the clinical use of methadone, based on evaluation of the initial programs and a better understanding of the psychology and pharmacology of addictive behavior. Treatment has evolved from Dole's original concept that methadone "blockaded" the euphoric effect of heroin to current usage which reflects a greater appreciation of methadone's ability to prevent the development of withdrawal symptoms and to moderate intense affective states. The successes and limitations of methadone maintenance are best appreciated in comparison with alternative treatment modalities including therapeutic communities and detoxification. Program administrators face unique pressures because of the need to resolve the often contradictory goals of patients, staff, community groups, law enforcement officials, government regulators, and funding agents. The evolution of effective treatment models has been greatly impaired by these pressures. Clinicians must become more effective leaders in helping to resolve these problems and to help formulate more rational drug abuse treatment policy.

Keywords: Literature review, methadone, alternative treatment, drug free, detoxification, maintenance, heroin, other narcotics, treatment outcome.

- 2245 Research Triangle Institute. (1987). Selected TOPS publications, presentations, and reports. An unpublished bibliography, Research Triangle Institute, Research Triangle Park, NC.

A bibliography of works based on the Treatment Outcome Prospective Study (TOPS) conducted from 1979 through 1985. It contains references to 18 published articles, 15 monograph chapters, 18 manuals, 24 technical reports, and 29 conference presentations that had been produced by March of 1987. Several articles have come out since, and a major initiative to compare theoretical drug treatment models using the TOPS data are just getting underway now.

Keywords: Literature review, alternative treatment, treatment outcome, TOPS, client characteristics, methodological, instruments, multiple drug abuse, cocaine abuse treatment, alcohol abuse treatment, social costs, program evaluation, psychopathology, vocational

services, vocational training, methadone, detoxification, maintenance, therapeutic community, drug free, heroin, cocaine, alcohol, other narcotics, amphetamines, nonnarcotics TOPS cities.

- 2246 Rounsaville, B.J., & Kleber, H.D. (1985). Psychotherapy/counseling for opiate addicts: Strategies for uses in different treatment settings. International Journal of the Addictions, 20, 869-896.

The authors review evidence from outcome studies of psychotherapy for opiate addicts and make recommendations regarding the use of psychotherapy on the basis of the findings. The place of psychotherapy is evaluated for three types of treatment settings: outpatient drug-free treatment, narcotic antagonist treatment, and methadone maintenance. The heterogeneity of opiate addicts is emphasized, as is the need for multidimensional assessment of clients in order to maximize the effectiveness of psychotherapies offered. In each of the treatment settings evaluated, psychotherapy appears to be most promising for a subgroup of those seen. For outpatient drug-free treatment, psychotherapy appears to be most useful for the new client with no treatment history, the successful client graduating from a more intensive program, the client who has temporarily relapsed, and the client leaving jail or a hospital. In a narcotic antagonist program, psychotherapy appears to be most useful for clients entering the program from illicit heroin use and not for those switching from methadone maintenance to a narcotic antagonist program. Moreover, in the maintenance phase of the program, preliminary evidence suggests the value of family therapy for aiding treatment retention. Regarding psychotherapy in the context of a methadone maintenance program, it appears to be best reserved for those addicts who present to treatment with relatively severe levels of psychiatric symptoms.

Keywords: Literature review, counseling, psychotherapy, treatment outcome, client characteristics, psychopathology, antagonist, methadone, maintenance, detoxification, drug free.

- 2247 Schilling, R.F., Schinke, S.P., Nichols, S.E., Zayas, L.H., Miller, S.O., Orlandi, M.A., & Botvin, G.J. (1989). Developing strategies for AIDS prevention research with black and Hispanic drug users. Public Health Reports, 104, 2-11.

More than 8 of 10 intravenous drug users infected with the human immunodeficiency virus (HIV) are black or Hispanic. Recognizing the sociocultural factors affect HIV transmission, public health officials have called for interventions designed for ethnic-racial minority groups. Considered in this paper are the nature and extent of AIDS among ethnic-racial minorities and the cultural aspects of drug use and sexual behavior related to HIV transmission. That drug users and their associates are practicing safer needle use is evident; that they are changing their sexual behavior is less so. Calling for rapid advances in knowledge and expanded efforts in intervention, Federal agencies have instituted numerous programs to support innovative research and demonstration projects in ethnic-racial minority communities. Needed are studies that (a) describe the phenomena of drug use and sexual behavior among ethnic-racial minority populations, (b) establish the efficacy of culturally specific AIDS prevention strategies in drug treatment and community settings, and (c) demonstrate new ways of recruiting, treating, and reducing relapse among drug users.

Keywords: Literature review, HIV/AIDS, client characteristics, I.V. drug users, African Americans, Hispanics.

- 2248 Schuster, C.R. (1988). Intravenous drug use and AIDS prevention. Public Health Reports, 103, 261-266.

Research programs of the National Institute on Drug Abuse take a broad approach to investigating the problems of intervention in intravenous drug use and its relation to the AIDS epidemic. Current prevention strategies are directed to reducing the rates of infection and the progression among the infected to clinical symptoms. Programs tests alternative prevention models and focus on the epidemiology of the problem and on basic studies of specific high-risk behaviors. Ultimately, the problem requires community involvement to encourage behaviors which will reduce exposure on the part of drug users, their sexual partners, and their children.

Keywords: Literature review, HIV/AIDS, treatment outcome, client characteristics, I.V. drug users.

- 2249 Segal, M. (1985-86). Overview of drugs used in treating drug-induced dependence: A treatise interrelating existing hypotheses in order to attain maximal therapeutic benefits. International Journal of the Addictions, 20, 1693-1706.

Despite the fact that we do not yet completely understand the physiology of physical dependence, many treatment modalities are available. In this overview, an attempt is made to discuss available treatments and mechanisms to possibly attain a better understanding of the complex interactions that occur between systems. An attempt is also made to understand interrelations between drug misuse and mental disorders as one aspect of the treatment process--the ultimate goal being more efficacious and safer therapy.

Keywords: Literature review, alternative drugs, physiological effects, heroin, methadone, antagonists, clonidine, naltrexone, naloxone, psychotropic drugs.

- 2250 Sells, S.B. (1977). Methadone maintenance in perspective. Journal of Drug Issues, 7, 13-22.

After ten years since its introduction by Dole and Nyswander methadone maintenance remains a controversial treatment for opiate addiction. In a historically oriented examination of the sources of controversy, changes over time, and evaluation evidence, the present status of methadone maintenance treatment reflects the influence of a complex mixture of pressures and counterpressures in the political, economic, social, law enforcement, and medical domains. Both social control aspects, representing official concern with "the addiction problem," and medical-rehabilitational aspects are merged in the system that makes methadone available as an experimental drug for maintenance treatment. Evaluation results show that this treatment has overall been highly effective and that in cost benefit terms, even if it were structured to include all of the staff and rehabilitation services required for optimal results, it would still compare favorably with residential, inpatient, and comparable outpatient treatments.

Keywords: Literature review, treatment outcome, benefit-cost, alternative treatment, methadone, maintenance, DARP, maintenance clients.

- 2251 Sells, S.B., & Simpson, D.D. (1976). Effectiveness of drug abuse treatment: Vol. 5. Evaluation of treatment outcomes for the 1972-1973 admission cohort. Cambridge, MA: Ballinger.

This book is the fifth in the series of research volumes based on the nationally oriented Drug Abuse Reporting Program (DARP) on evaluation of treatment for drug abuse by the staff of the Institute of Behavioral Research (IBR). The first two volumes presented studies on treatment evaluation, epidemiology, and related topics for DARP Cohort 1, which included over 11,000 admissions during 1969 to 1971. Volumes III and IV included a second series of similar studies for nearly 16,000 Cohort 2 admissions, in 1971-1972. Cohort 3, the subject of the present volume, consisted of close to 16,000 admissions in 1972-1973. In all of the studies reported, patients were tracked for up to one year following admission. The six studies included in this volume reflect the continuation of research designs described in detail in earlier volumes, but with modifications and innovations that represent advances in the technology of evaluation research. The substantive contributions provide important information on the effectiveness of treatment for large and diverse samples of patients in nine treatment types (representing four major modalities of treatment) at forty-six treatment centers throughout the United States. The last study (Part VI) describes further research on treatment classification checklists that can be used to classify treatment programs in the field. A manual for use of these checklists is reproduced in Part VII.

Keywords: Literature review, alternative treatment, client characteristics, treatment outcome retention, employment, multiple drug abuse, methodological, program evaluation, drug free, methadone, maintenance, therapeutic community, DARP cities.

Related research: Sells, S.B. (1974). Effectiveness of drug abuse treatment: Vol. 1. Evaluation of treatments. Cambridge, MA: Ballinger.

Sells, S.B. (1974). Effectiveness of drug abuse treatment: Vol. 2. Research on patients, treatments, and outcomes. Cambridge, MA: Ballinger.

Sells, S.B., & Simpson, D.D. (1976). Effectiveness of drug abuse treatment: Vol. 3. Further studies of of drug users, treatment typologies, and assessment of outcome during treatment in the DARP. Cambridge, MA: Ballinger.

Sells, S.B., & Simpson, D.D. (1976). Effectiveness of drug abuse treatment: Vol. 4. Evaluation of treatment outcomes for the 1971-1972 admission cohort. Cambridge, MA: Ballinger.

- 2252 Senay, E.C. (1985). Methadone maintenance treatment. International Journal of the Addictions, 20, 803-821.

This paper reviews the world literature on methadone. Methadone has been used in hundreds of thousands of patients, in disparate social, economic, cultural, and geographic situations; it has been evaluated in scores of studies. The large majority of evaluations demonstrate that opioid use, criminality, and general health status are affected positively in many addicts. Smaller gains in job and family functions are noted. Alcoholism and multiple drug use complicate treatment for some addicts. Despite the positive data, public opinion remains negative about this treatment. The use of methadone in withdrawal from opioid dependence and in pregnancy complicated by opioid dependence is discussed.

Keywords: Literature review, methadone, maintenance, treatment outcome, methadone clients, pregnant women, alcohol, heroin, other narcotics, multiple drug abuse, attitudes, criminality, employment, psychopathology, physiological research.

- 2253 Sorensen, J.L., Deltch, D.A., & Acampora, A. (1984). Treatment collaboration of methadone maintenance programs and therapeutic communities. American Journal of Drug and Alcohol Abuse, 10, 347-359.

Although they developed from different backgrounds, therapeutic communities and methadone maintenance programs became major treatments of heroin abuse in the 1970s. Research published in the last 5 years demonstrates that therapeutic communities are associated with long-lasting improvements in functioning for the few drug abusers who stay in treatment at least 3 months. A principal limitation of this modality is that few patients remain in treatment long enough to acquire the changed values that produce long-lasting effects. Research on methadone maintenance continues to show that this treatment produces immediate decreases in criminality and drug abuse; however, patients who taper off of maintenance are prone to relapse. The aspects of treatment that appear to prevent relapse include minimizing withdrawal symptoms during tapering and providing support during and after completing maintenance. The strengths of these two treatment modalities can be combined to enable narcotic addicts to taper off to methadone maintenance in a therapeutic community and remain drug-free. Several other clinical, administrative, and research collaborations could be beneficial, pooling the medical/technical expertise of maintenance programs with the intensity of therapeutic community treatment.

Keywords: Literature review, relapse prevention, aftercare, abstinence, alternative treatment, withdrawal, methadone, maintenance, therapeutic community, maintenance clients, therapeutic community clients, community-based clinic, residential, New York City, New York, San Francisco, California.

- 2254 Szara, S. I. (Ed.). (1986). Neurobiology of behavioral control in drug abuse (Research Monograph 74). Rockville, MD: National Institute on Drug Abuse.

Advances in complex research fields are frequently driven by new technologies developed within the field, or in a neighboring field, to which the connections are not immediately obvious. Drug abuse is a complex problem with significant social, psychological, and biomedical components, and researchers are constantly pressed to develop new and better methodologies for prevention and treatment of drug abuse. The idea for this review evolved from a research retreat held 8 years ago, during which hypotheses on the demand side of the etiology of drug abuse in general were discussed and specific questions on drug action on the brain, that might only be effectively studied through the application of advanced technologies, were first explored. Now that these advanced technologies are realities and it is possible to visualize specific neurochemical entities, such as opiate, dopamine, serotonin, and other receptors, in the living human brain, the time is ripe for an examination of their potential for advancing our understanding of the neurobiology of behavioral control in the drug-abusing population. This research monograph is a summary of discussions of invited experts who participated in a 2-day Technical Review meeting held at the National Institutes of Health campus in Bethesda, Maryland, on October 3-4, 1985.

Keywords: Literature review, physiological effects, psychopathology, behavior modification, contingency management, behavior change, methodological, instruments, alternative treatment, client characteristics, methadone, naltrexone, maintenance, heroin, other narcotics, nonnarcotics.

- 2255 Tims, F.M., & Ludford, J.P. (Eds.). (1984). Drug abuse treatment evaluation: Strategies, progress, and prospects (Research Monograph 51). Rockville, MD: National Institute on Drug Abuse.

The Research Analysis and Utilization System (RAUS) is designed to serve four functions: (1) Collect and systematically classify the findings of all intramural and extramural research supported by the National Institute on Drug Abuse (NIDA); (2) Evaluate the findings in selected areas of particular interest and formulate a state-of-the-art review by a panel of scientific peers; (3) Disseminate findings to researchers in the field and to administrators, planners, instructors, and other interested persons; and (4) Provide a feedback mechanism to NIDA staff and planners so that the administration and monitoring of the NIDA research program reflect the very latest knowledge gleaned from research in the field. Since there is a limit to the number of research findings that can be intensively reviewed annually, four subject areas are chosen each year to undergo a thorough examination. Distinguished scientists in the selected field are provided with copies of reports from NIDA-funded research and invited to add any information derived from the literature and from their own research in order to formulate a comprehensive view of the field. Each reviewer is charged with writing a state-of-the-art paper in his or her particular subject area. These papers, together with a summary of the discussions and recommendations which take place at the review meeting, make up a RAUS Review Report in the NIDA Research Monograph series. "Drug Abuse Treatment Evaluation: Strategies, Progress, and Prospects" was chosen as a subject for one of these comprehensive RAUS reviews in FY 1983 because a body of knowledge had evolved, including several large treatment evaluation systems. Reports are included on the DARP program of the seventies and on the more recent TOPS system, both designed for treatment evaluation.

Keywords: Literature review, RAUS, DARP, TOPS, CODAP, CAP, alternative treatment, program evaluation, psychopathology, methodological, client characteristics, treatment outcome, retention, employment, criminality, antagonists, methadone, maintenance, therapeutic community, detoxification, drug free, randomized experiment, heroin, other narcotics, nonnarcotics, amphetamines, alcohol.

- 2256 U.S. Department of Health and Human Services. (1987). Drug abuse and drug abuse research: The second triennial report to Congress from the Secretary, Department of Health and Human Services (DHHS Publication No. ADM 87-1486). Rockville, MD: National Institute on Drug Abuse.

This report summarizes the nature and extent of drug abuse and drug treatment in the U.S. between 1983 and 1986. Written by committee of over 18 distinguished researchers, the report includes chapters on: the nature and extent of drug abuse; prevention research; treatment research; marijuana and the cannabinoids; nicotine; stimulants; cocaine; sedatives and anti-anxiety agents; hallucinogens and inhalants; heroin and narcotics; basic research on

endogenous opioids; and AIDS. It extensively summarizes related information from several large research efforts, such as the National Household Survey, and physiological research.

Keywords: Literature review, physiological effects, multiple drug abuse, cocaine abuse treatment, alcohol abuse treatment, behavior modification, client characteristics, methadone, desipramine, maintenance, heroin, cocaine, alcohol, other narcotics, nonnarcotics.

- 2257 Watkins, J.D., Conway-Welch, C., Creedon, J.J., Crenshaw, T.L., Devos, R.M., Gebble, K.M., Lee, B.J., Lilly, F., O'Conner, J.C., Primm, B.J., Pullen, P., Servaas, C., & Walsh, W.B. (1988). Report of the Presidential Commission on the Human Immunodeficiency Virus Epidemic. District of Columbia: Presidential Commission on the Human Immunodeficiency Virus Epidemic.

Knowledge is a critical weapon against HIV--knowledge about the virus and how it is transmitted, knowledge of how to maintain one's health, knowledge of one's own infection status. It is critical too that knowledge lead to responsibility toward oneself and others. It is the responsibility of all Americans to become educated about HIV. It is the responsibility of those infected not to infect others. It is the responsibility of all citizens to treat those infected with HIV with respect and compassion. All individuals should be responsible for their actions and the consequences of those actions.

Keywords: Literature review, HIV/AIDS, needle sharing, attitudes, behavior change, methodological, research design, AIDS cases, I.V. drug users.

- 2258 Zweben, J., & Sorensen, J. (1988). Misunderstandings about methadone. Journal of Psychoactive Drugs, 20(3), 275-281.

Methadone maintenance and methadone detoxification are perhaps the most misunderstood of all substance abuse treatment efforts. Both methadone patients and the professionals who administer methadone treatment are stigmatized, despite what is now an abundance of research documenting that people in methadone treatment do in fact reduce or eliminate their illegal drug use and alter their lifestyles in a productive manner. This article is an attempt to clarify some common misconceptions and to provide a framework for a better understanding. It reviews the basis for negative attitudes about methadone treatment, examines the accumulation of evidence on how patients change in treatment, and looks at the current issues such as concurrent psychiatric disorder the treatment of opioid-addicted pregnant women, and the role of methadone treatment in the AIDS epidemic.

Keywords: Literature review, attitudes, methadone, maintenance, detoxification, HIV/AIDS, psychopathology, methadone clients, pregnant women.

III. TREATMENT ENTRY CHARACTERISTICS OF METHADONE CLIENTS

A. GENERAL CLIENT CHARACTERISTICS

- 3101 Anglin, M.D., Hser, Y., & Booth, M.W. (1987). Sex differences in addict careers. 4. Treatment. American Journal of Drug and Alcohol Abuse, 13(3), 253-280.

Comparisons of behaviors during treatment were made between a sample of women and a sample of men methadone maintenance clients. Women in this study exhibited high motivation for treatment. Overall, however, small differences were found between the sexes with respect to treatment process and outcome measures. The observed differences that were significant included use of substances other than heroin, interpersonal relationships, drug dealing, employment, and criminal behaviors. The differences seemed to be in accordance with traditional sex role expectations. The distinctive behavior pattern of Chicanas demonstrated in this study demands special attention. It is suggested that treatment programs should incorporate more services to meet women-specific needs.

Keywords: Client characteristics, treatment outcome, treatment process, methadone, maintenance, heroin, other narcotics, nonnarcotics, nonequivalent comparison groups, maintenance clients, San Diego, San Bernardino, Riverside, Orange, California.

- 3102 Anglin, M.D., & Speckart, G.R. (1988). Narcotics use and crime: A multisample, multimethod analysis. Criminology, 26(2), 197-233.

Various addict behaviors that are relevant to the narcotics-crime relationship are examined throughout the course of the addiction career. Anglo and Chicano methadone patients are studied and several methodological approaches are utilized. The data are representative of numerous critical periods within the addiction career as well as periods immediately preceding and subsequent to it. The results from the various methodological analyses converge to indicate that while involvement in property crime activities generally precedes the addiction career, after addiction occurs the highly elevated property crime levels demonstrated by addicts appear to be regulated by similarly high narcotics use levels. During periods of curtailed narcotics use produced by treatment, property crime levels are significantly reduced and become extremely low after termination of the addiction career. The findings are compared with results previously reported and new results are presented. Theoretical consideration of circumstances that significantly moderate the narcotics-crime relationship, such as geographic and sociodemographic differences, drug trafficking, and other behaviors, are discussed.

Keywords: Client characteristics, criminality, methadone, maintenance, heroin, other narcotics, correlational, nonequivalent comparison groups, maintenance clients, community-based clinic, California.

Related research: Hser, Y., Anglin, M., & Chou, C. (1988). Evaluation of drug abuse treatment: A repeated measures design assessing methadone maintenance. Evaluation Review, 12(5), 547-570.

- 3103 Ball, J.C. (1986). Characteristics of 633 patients in methadone maintenance treatment in three United States cities. Baltimore: University of Maryland, School of Medicine.

Forty-five preliminary tables provide data on the background characteristics and treatment experiences of 633 male methadone maintenance patients in three cities--New York, Philadelphia, and Baltimore. The patients were interviewed at six treatment programs in November and December of 1985. Almost twenty percent of the patients consist of consecutive new admissions to these programs; the remainder were randomly drawn samples of patients in treatment six months or longer. The tables are preliminary in that they are not cross tabulated on the basis of length of stay in treatment. Consequently, the findings refer to new admissions as well as to patients in methadone treatment for some time. Still, the sample provides a representative portrayal of this patient population. The tables are presented in this summary fashion in order to facilitate comparisons with other drug abuse treatment populations. Further analysis of patient characteristics and treatment outcome will build upon this foundation.

Keywords: Client characteristics, demographics, methadone, maintenance, heroin, other narcotics, descriptive, maintenance clients, community-based clinic, New York City, New York, Philadelphia, Pennsylvania, Baltimore, Maryland.

- 3104 Ball, J.C., Corty, E., Bond, H.R., Tommasella, A., & Myers, C.P. (1987, June). The reduction of intravenous heroin use, non-opiate abuse and crime during methadone maintenance treatment - further findings. Paper presented at the meeting of the Committee on Problems of Drug Dependency, Philadelphia, PA.

As part of a three state study of the effectiveness of methadone maintenance treatment, data from 617 addict patients were obtained with respect to their lifetime and in-treatment characteristics. The Addiction Severity Index (ASI) was employed along with supplementary items on previous treatment and criminal behavior. It was found that there was a marked reduction in intravenous heroin use after admission to treatment and a lesser reduction in the use of non-opiate drugs. Significantly, the overall incidence of drug abuse continued to decline with time in treatment; thus, the long-stay cohort (more than 4.5 years) had the lowest incidence of abuse while in treatment. The reduction in criminality after admission to methadone maintenance treatment was dramatic; all 14 types of crime declined markedly--most over 80 percent. The reduction in criminality was associated with time in treatment. Thus, mean crime-days per year at risk decreased as follows: (1) during addiction period when "on the street" = 306.8; (2) in treatment .5 to 4.5 years = 24.0; (3) in treatment more than 4.5 years = 18.0 crime days per year.

Keywords: Client characteristics, multiple drug abuse, ASI, retention, criminality, methadone, maintenance, retention, heroin, other narcotics, nonnarcotics, correlational, methadone clients, community-based clinic, New York City, New York, Philadelphia, Pennsylvania, Baltimore, Maryland.

- 3105 Bayer, R. (1981). Retention rates among methadone patients: An analysis of the New York experience 1964-1976. International Journal of the Addictions, 16, 33-41.

Concern regarding the capacity of methadone maintenance programs to retain patients in treatment for optimal periods has surfaced during recent years. This paper examines the New

York City experience from 1964-1976 and reveals a sharp decline in retention rates, each admission cohort being characterized by weaker capacity to retain new admissions. The data suggest that the greatest change has occurred in the first months of treatment and note significant differences among various treatment programs.

Keywords: Client characteristics, retention, methadone, maintenance, heroin, other narcotics, descriptive, time series, methadone clients, community-based clinic, New York City, New York.

- 3106 **Brown, B.S., Benn, G.J., & Jansen, D.R. (1975). Methadone maintenance: Some client opinions. American Journal of Psychiatry, 132(6), 623-626.**

The authors found similar attitudes toward methadone and methadone treatment programs in 75 detoxification and 115 methadone maintenance clients. Both groups expressed considerable ambivalence--although they viewed methadone as capable of helping them end their heroin addiction, they were concerned about possible methadone dependence and about side effects, both real and imagined. The authors compared addicts' and nonaddicts' opinions and found the 2 groups differed markedly in their thinking about methadone. The authors stress the societal context of such concerns and suggest that, although they are not easily allayed, limiting the duration of methadone maintenance from the outset of treatment may be an ameliorative factor.

Keywords: Client characteristics, attitudes, methadone, maintenance, detoxification, heroin, correlational, methadone clients, detoxification clients, nonaddicts, community-based clinic, District of Columbia.

- 3107 **Corty, E., & Ball, J.C. (1987). Admissions to methadone maintenance: Comparisons between programs and implications for treatment. Journal of Substance Abuse Treatment, 4, 181-187.**

Male admissions to six methadone programs in three cities were interviewed. The characteristics of these patients in the seven Addiction Severity Index (ASI) scales--medical, employment/support, alcohol, drug, legal, family/social and psychiatric--were described. The characterization of drug addicts was not found to be unidimensional. Though the admissions, as a group, had some positive characteristics (e.g., over 50% reported full time employment over the past three years), they also reported severe problems. For the 30 days prior to interview, heroin was the most commonly used drug, followed by cannabis, cocaine, and alcohol. Less than 10% had never been arrested and subjects reported engaging in crime on 6.4 of the past 30 days. The majority of these subjects had never married, but very few lived alone. The most common psychiatric symptoms reported were depression and anxiety. Characteristics were compared between programs and differences were found in race and age as well as two of the seven ASI areas. Thus, despite differences in demographics there was a great commonality in terms of the characteristics of admissions of these programs. The implications of this for the behavioral problems related to drug abuse and for the development of treatments aimed at specific areas (such as measured by the ASI) were discussed.

Keywords: Client characteristics, ASI, behavioral problems, methadone, maintenance, heroin, other narcotics, correlational, maintenance clients, community-based clinic, New York City, New York, Baltimore, Maryland, Philadelphia, Pennsylvania.

- 3108 Corty, E., Ball, J.C., & Myer, C. (1988). Psychological symptoms in methadone maintenance patients: Prevalence and change over time. Journal of Consulting and Clinical Psychology, 56(5), 776-777.

Methadone maintenance patients in three cities were interviewed twice using the Addiction Severity Index. Of the subjects followed, 35.4% reported having experienced recent psychological symptoms. No relation was found between the length of time in treatment at the first interview and psychiatric severity. In addition, over a 1-year period, the treatment that subjects received from the methadone programs had no impact on psychological symptoms. The majority (68.4%) reported on or more symptoms; the most common symptoms were anxiety (51.7%) and depression (48.3%). There was a significant positive correlation between age and length of treatment (LOT); none of the symptoms explained a significant additional amount of variance. The correlation of the total number of symptoms with LOT, partialling out age, was also nonsignificant. Thus, there was no relation between LOT and the number or type of lifetime symptoms.

Keywords: Client characteristics, psychopathology, symptoms, ASI, methadone, maintenance, heroin, other narcotics, correlational, maintenance clients, community-based clinic, New York City, New York, Philadelphia, Pennsylvania, Baltimore, Maryland.

- 3109 Cushman, P., Jr. (1977). Ten years of methadone maintenance treatment: Some clinical observations. American Journal of Drug and Alcohol Abuse, 4(4), 543-553.

Ten years of methadone maintenance were reviewed in all 547 patients admitted to one clinic in New York City. High retention rates, reduced but still high mortality rates, increased employment, and minor degrees of recognized opiate abuse characterized those remaining in treatment. The treated patients appeared to evolve into a unique social and economic class, partly in the drug subculture and partly outside the drug world. Many were dependent on public assistance for living expenses, methadone treatment, and medical care. An interesting finding was their heavy demands for inpatient hospital care, often for drug-related reasons. A segment of New York City narcotic addicts was sequestered in an open-ended treatment process with considerable benefits to themselves and to society. Only a small fraction appeared to gravitate toward full economic support, to discontinuation of methadone, and to an enduring narcotic-free state.

Keywords: Client characteristics, retention, treatment outcome, employment, economic costs, social costs, methadone, maintenance, heroin, other narcotics, descriptive, community-based clinic, maintenance clients, New York City, New York.

- 3110 Des Jarlais, D.C., & Friedman, S.R. (1988). The psychology of preventing AIDS among intravenous drug users. A social learning conceptualization. American Psychologist, 43, 865-870.

I.V. drug users represent the second largest group of AIDS cases yet the role of AIDS transmission through I.V. drug use is not well understood by the public. The purpose of this article is to examine the relationship between I.V. drug use and the spread of AIDS and to describe some educational and prevention strategies currently being used with I.V. drug users.

Keywords: Literature review, HIV/AIDS, needle sharing, needle exchange, behavioral change, IV drug users, Baltimore, Maryland, New Jersey, San Francisco, Sacramento, California, Amsterdam, Netherlands, Edinburgh, Scotland.

Related research: Des Jarlais, D.C., & Hunt, D.E. (1988). AIDS and intravenous drug use. National Institute of Justice: AIDS Bulletin, January.

- 3111 Dickinson, L., Polemis, B., Bermosk, L., & Welner, B. (1973). A comparison of three community drug abuse programs including clientele, cost, and effectiveness. Journal of Drug Education, 3(3), 247-259.

Three drug programs in one community are described by the demographic characteristics of persons enrolled. Important differences are found, for example relatively young and unemployed residents in the therapeutic community, and older, more often jailed members of the methadone program. These differences are attributable both to policy of the program and preference of the addicts themselves. Both methadone program and therapeutic community were successful in releasing persons who remained abstinent from drugs for a time, and when program costs were taken into account, a substantial monetary benefit to the community remained. Different programs benefit different addicts and produce a degree of effectiveness and benefit to the community.

Keywords: Client characteristics, alternative treatment, benefit-cost, treatment outcome, employment, methadone, maintenance, therapeutic community, heroin, other narcotics, descriptive, methadone clients, therapeutic community clients, inpatient, community-based clinic, outpatient, Oahu, Hawaii.

- 3112 Dolan, M.P., Black, J.L., Deford, H.A., Skinner, J.R., & Roblnowitz, R. (1987). Characteristics of drug abusers that discriminate needle-sharers. Public Health Reports, 102(4), 395-398.

To identify variables that discriminate needle-sharing among drug abusers, 244 male drug abusers were studied. They had been admitted to a 30-day inpatient drug treatment program over a 19-month period (September 1983 through March 1985). The variables examined were divided into three categories: demographic (age, race, education), personality (Minnesota Multiphasic Personality Inventory [MMPI] scores and MMPI deviant scores), and drug use patterns (drug of choice, use of single or multiple [mixed] drugs, severity of drug use, and place of use). Three variables were identified that discriminated needle-sharers from other drug abusers. Compared with other drug abusers, needle-sharers used more multiple drugs, were more likely to use a "shooting gallery", and had more problems related to drug use ($r=.51$, explaining 51% of the variance). No demographic or personality variable discriminated needle-sharers from nonsharers ($r=.51$, explaining 51% of the variance). The data suggested that needle-sharing is widespread in the drug culture. Needle-sharing was not confined to a particular racial group, educational level, or personality type. These findings can be used to structure education programs about acquired immunodeficiency syndrome (AIDS) for drug abusers. Drug treatment programs appear to provide an important opportunity to educate drug abusers about AIDS and related health issues associated with needle-sharing. Four variables were found to differentiate between sharers and nonsharers: 1) severity of drug use, 2) percentage who used multiple drugs, 3) percentage of "Shooting Gallery" use, and 4) drug of choice (accounted for 28 percent of the variance).

Keywords: Client characteristics, needle sharing, MMPI, HIV/AIDS, multiple drug abuse, detoxification, heroin, amphetamines, cocaine, correlational, veterans, detoxification clients, veterans' facility, inpatient, Dallas, Texas.

- 3113 Hubbard, R.L., Allison, M., Bray R.M., Craddock, S.G., Rachal, J.V., & Ginzburg, H.M. (1983). **An overview of client characteristics, treatment services, & during-treatment outcomes for outpatient methadone clinics in the Treatment Outcome Prospective Study (TOPS).** In J.R. Cooper, F.A. Altman, B.S. Brown, & D. Czechowicz (Eds.), Research on the treatment of narcotic addiction: State of the art treatment (Treatment Research Monograph Series, DHHS Publication No. ADM 83-1281, pp. 714-751). Rockville, MD: National Institute on Drug Abuse.

This paper provides detailed, up-to-date information on methadone clients and treatment in the TOPS programs. The data we present here are descriptive and form the basis for generating hypotheses to direct future, more comprehensive analyses. In the first section of this paper we outline some of the issues previously raised in the literature and in this monograph on methadone treatment that can be examined in the TOPS data. After a brief discussion of the methods used in the study, we present data in three major areas: client characteristics, treatment services, and during treatment outcome behaviors. We describe the characteristics of TOPS clients who entered methadone treatment and, where possible, we make comparisons with the client samples in the DARP research and Client Oriented Data Acquisition Process (CODAP) data. The next section of the paper briefly describes the nature of treatment available in outpatient methadone programs in 1979 and 1980 and the treatment services provided to individual clients. Finally, we present data describing the behavior of clients during their first 6 months in treatment. We then summarize the results of these analyses and present recommendations of issues that appear to warrant further examination.

Keywords: Client characteristics, treatment process, treatment outcome, retention, criminality, detoxification policy, abstinence, dosage, counseling, methadone, maintenance, heroin, other narcotics, nonnarcotics, alcohol, cocaine, amphetamines, literature review, correlational, maintenance clients, TOPS, outpatient, TOPS cities.

- 3114 Hubbard, R.L., Cavanaugh, E.R., Craddock, S.G., Bray, R.M., Rachal, J.V., Collins, J.J., & Allison, M. (1986). Drug abuse treatment client characteristics and pretreatment behaviors: 1979-1981 TOPS admission cohorts (Treatment Research Monograph Series, DHHS Publication No. ADM 86-1480). Washington, DC: U.S. Government Printing Office.

The Treatment Outcome Prospective Study (TOPS) collected data from personal interviews with 11,750 clients entering 41 drug abuse treatment programs from 1979 to 1981. The clients entering the TOPS methadone, residential, and outpatient drug free programs were generally similar to clients in the Client Oriented Data Acquisition Process (CODAP) census of publicly funded treatment programs. This report describes the major pretreatment differences among clients in the three modalities; compares the TOPS clients with clients in the Drug Abuse Reporting Program (DARP) from 1969 to 1973; and assesses the trends over the three TOPS admission cohorts. The TOPS program that treated heterogeneous populations differed greatly from modality to modality and within each modality. Most clients were young adult males (71 percent). About half the clients did not finish high school (48.5 percent). More than three-fourths of the methadone clients had been treated previously compared with about

one-third of the outpatient drug free clients and less than half of the residential clients. Most clients had used a variety of drugs. Heroin was identified most often by clients as their primary drug of abuse. Heavy drinking was reported by 38 percent of methadone, 61 percent of residential, and 43 percent of outpatient drug free clients. Clients entering drug abuse treatment programs had various drug-related problems. Alarming high proportions reported indicators of depression and suicide attempts. Many clients had committed robberies, burglaries, and thefts, and involvement with the criminal justice system was common. Many clients had employment problems and depended heavily on public assistance or income from predatory crimes. Multivariate analysis confirmed that modalities serve very different types of clients. The comparison of DARP and TOPS clients show that major changes in treatment populations have occurred. Trends in client characteristics and behaviors over the 3 years of TOPS suggest that basic characteristics of the clients served by programs are changing. Future treatment programs will need to provide services for a heterogenous clientele in multiple modalities.

Keywords: Client characteristics, alternative treatment, methadone, maintenance, therapeutic community, drug free, heroin, other narcotics, nonnarcotics, alcohol, cocaine, amphetamines, descriptive, correlational, TOPS, methadone clients, therapeutic community clients, drug free clients, DARP, CODAP, community-based clinic, inpatient, outpatient, residential, TOPS cities.

- 3115 Hunt, D.E., Lipton, D.E., Goldsmith, D.S., Strug, D.L., & Spunt, B. (1985-86). It takes your heart: The image of methadone maintenance in the addict world and its effect on recruitment into treatment. International Journal of the Addictions, *20*, 1751-1771.

Using data gathered on 368 current methadone clients and 142 narcotics users not in treatment in structured interviews and through ethnographic fieldwork, the study examines the image of methadone maintenance treatment in the drug-using community and discusses the effect of that image on recruitment of addicts into methadone treatment. The results indicate that the image of the methadone client is a "loser," fear of the long-term effects of methadone, and the perception of treatment as an intrusion in the user's daily life make addicts often difficult to recruit and, once in treatment, ambivalent about their participation. The image of methadone is based on both misinformation about treatment and the user's contrasting of a treatment status with the stereotypic ideal of the "righteous dope fiend." Policy implications and suggestions derived from the data are discussed.

Keywords: Client characteristics, attitudes, methadone, maintenance, heroin, other narcotics, descriptive, TRISEP, I.V. drug users, maintenance clients, street, community-based clinic, New York, New Jersey, Connecticut.

- 3116 Joe, G.W., & others. (1987). Methadone maintenance retention factors. Unpublished manuscript, Texas A&M University, College Station.

This study examined tenure among patients in methadone maintenance programs in the TOPS data system. The emphasis of the study was to examine the relationship of tenure to components in a framework that is being used to study treatment process factors: (1) demographics, (2) background characteristics, (3) background drug use, (4) psychological depression, (5) treatment history, (6) treatment entry characteristics, (7) treatment characteristics, (8) treatment events, (9) treatment satisfaction. Of the 9 components, only treatment history was not significant in the prediction of tenure in the multiple regression

analyses. Demographics were a weak factor. Ninety-four percent of the sample were in treatment beyond 90 days. The present study may be characterized as emphasizing the part that treatment factors have on tenure, as opposed to most studies which have emphasized pre-treatment predictors of tenure and retention. The treatment components (treatment entry characteristics and treatment events) were the strongest predictors of tenure, with longer tenure being related to professionals (though not physicians who were not psychiatrists) as diagnosticians of problems and treatment planners. Higher dosages of methadone, more urine monitoring, and more frequent take-home privileges of methadone were correlated with longer tenure. Although there were significant correlations of tenure with services, these tended to be situational except for medical services. Generally, where services were significant, more frequent services were related to longer tenure. Unlike previous studies employment, criminality and depression did not predict poor retention. However, multiple drug use was related to shorter tenure in methadone maintenance.

Keywords: Client characteristics, multiple drug abuse, urine monitoring, retention, methadone, maintenance, heroin, other narcotics, nonnarcotics, correlational, maintenance clients, TOPS, community-based clinic, TOPS cities. (TOPS Sample).

- 3117 Jorquez, J.S. (1984). Heroin use in the barrio: Solving the problem of relapse or keeping the tecato gusano asleep. American Journal of Drug and Alcohol Abuse, 10, 63-75.

The Chicano heroin addict or "tecato" belongs to a subculture that profoundly influences addict behavior and personality. Life-history interviews with a subsample of 18 Southern California ex-tecatos who were abstinent from 2.3 to 24.5 years revealed that tecatos employ the metaphor of an indestructible junkie worm or "tecato gusano" living in their viscera to explain heroin relapse, and abstinence in a manner essentially consistent with learning theories of opioid addiction. The study showed that ex-tecatos use a variety of coping mechanisms for maintaining abstinence and for avoiding "dangerous situations" which could trigger heroin craving and relapse. The research also revealed that being an ex-tecato does not necessarily imply living a crime free or nondeviant lifestyle, and that the process of working out of addiction involves two complementary social adjustment processes termed (a) extrication (from the tecato subculture) and (b) accommodation (to square society). Suggestions for utilizing these findings for treatment intervention purposes are offered.

Keywords: Client characteristics, relapse prevention, attitudes, withdrawal, heroin, case study, ex-addicts, California.

- 3118 Kosten, T.R., Rounsaville, B.J., & Kleber, H.D. (1985). Ethnic and gender differences among opiate addicts. International Journal of the Addictions, 20, 1143-1162.

This study compares the clinical characteristics of and treatment implications for five demographic groups of addicts: Black and White males and females and Hispanic males evaluated in Spanish. Among the 522 addicts, the 60 Puerto Rican males had the most frequent unemployment, the least education, the most polydrug abuse and violent crimes, the highest rate of schizophrenic or anxiety disorders, and more neurotic and depressive symptoms than the other male addicts. These addicts seem to have the greatest liabilities of any group and may need residential treatment. The 126 female addicts had frequent unemployment, high rates of depression and anxiety disorders, and more severe medical

problems than men. This suggested that they have some treatment needs that are different than those of male addicts, including care for dependent children. Some differences between Black and White males in drug use were also found between Black and White females. White males (177) had a high rate of antisocial personality and polydrug abuse but had fairly good economic functioning. A structured treatment program to deal with their common illicit activities may be necessary for these addicts. The 159 black males had poor occupational functioning but relatively little psychopathology. Vocational rehabilitation may be needed for them.

Keywords: Client characteristics, demographics, attitudes, ASI, chemical dependency, heroin, other narcotics, correlational, CODAP, community-based clinic, New Haven, Connecticut.

- 3119 Kosten, T.R., Rounsaville, B.J., & Kleber, H.D. (1986). A 2.5-year follow-up of treatment retention and reentry among opioid addicts. Journal of Substance Abuse Treatment, **3**, 181-189.

Two-hundred and sixty eight opioid addicts completed a 2.5 year follow-up during which we examined the psychosocial antecedents and consequences of leaving, reentering and remaining in treatment. Compared to those addicts who obtained more sustained treatment, the addicts who were only detoxified had fewer psychological problems and were more often male, black and younger. These baseline differences complicated comparisons between these minimally treated addicts and the rest, but among those who had more than minimal treatment, continuous treatment was better than intermittent treatment in controlling substance abuse and legal problems. Further analyses involved dividing the 30 months of follow-up into 6 month blocks and comparing the 6 months before, during, and after leaving or reentering treatment. We found that addicts left treatment at periods of relative abstinence and good psychosocial adjustment, although they increased their alcohol abuse during the period of leaving treatment. During the 6 months after leaving, patients often returned to drug abuse and then rapidly deteriorated in social adjustment. When reentering treatment, the majority (75%) stayed for over 6 months and improved steadily in most areas. At reentry patients also had less criminal activity, less physical disability, and less opiate use suggesting a carry-over of treatment benefits, but they had more problems with their spouse and more alcohol and cocaine use than they had when first entering treatment suggesting new precipitants for reentry into treatment.

Keywords: Client characteristics, alternative treatment, treatment outcome, methadone, maintenance, detoxification, therapeutic community, drug free, heroin, other narcotics, correlational, maintenance clients, detoxification clients, therapeutic community clients, drug free clients, inpatient, outpatient, residential, community-based clinic, New Haven, Connecticut.

- 3120 Kosten, T.R., Rounsaville, B.J., & Kleber, H.D. (1987). Multidimensionality and prediction of treatment outcome in opioid addicts: 2.5-year follow-up. Comprehensive Psychiatry, **28**, 3-13.

Treatment outcome for drug abusers may be almost entirely dependent on drug abstinence (unidimensional view) or may involve a complex of several relatively independent dimensions. In a 2.5-year follow-up of 150 opiate addicts, we found that their medical, social, psychological, legal, and employment problems, as assessed by the Addiction Severity Index

(ASI), improved substantially. Clinician ratings demonstrated more improvement than self-report composites of medical, employment, and family problems. Using factor analysis, the seven outcome areas covered by the ASI formed two factors that accounted for about 50% of the variance at both intake assessment and follow-up. The first factor included strong loadings from the employment, medical, psychological, family, and alcohol problem scales, while the second factor included the drug and legal problem scales primarily. Drug abstinence was correlated with better drug abuse and legal outcome at the 2.5-year follow-up, and abstainers showed more improvement than continued abusers. However, in most non-drug abuse areas the differences between abstainers and abusers were relatively small. Follow-up outcomes were only weakly predicted by the intake clinician ratings of problems, and the intake ratings did not have high specificity in predicting corresponding outcome areas. Thus, a unidimensional view focusing on abstinence described an important part of drug abuse treatment outcome, but a psychosocial factor, that did not include drug abuse, accounted for a large part of outcome variance.

Keywords: Client characteristics, alternative treatment, ASI, employment, criminality, naltrexone, methadone, maintenance, detoxification, drug free, therapeutic community, heroin, other narcotics, alcohol, correlational, treatment outcome, New Haven, Connecticut.

- 3121 Kosten, T.R., Rounsaville, B.J., & Kleber, H.D. (1987). Predictors of 2.5-year outcome in oploid addicts: Pretreatment source of income. American Journal of Drug and Alcohol Abuse, 13, 19-32.

A recent 6-month follow-up of methadone maintenance (MM) suggested that addicts supported by public assistance before seeking MM have a globally poor prognosis compared to addicts supported by employment or illegal activities. We therefore examined 2.5-year outcome among addicts prognostically stratified by three major sources of pretreatment income: employment (n=48), welfare (n=46), and criminal activities (n=57). Significant improvements in substance abuse, family, legal, and psychological problems were reported by all three groups. Furthermore, the welfare group showed the most improvement in medical status and on the Social Adjustment, Maudsley neuroticism, and Beck Depression scales. Thus, the welfare patients did not appear to have a globally poorer prognosis, although they showed the least improvement in employment and legal problems. To examine whether welfare patients on MM had no more than "expected" improvement in legal and employment problems, patients treated with MM (n=83) were compared to those getting only detoxification (DT) (n=40). Welfare patients showed no more improvement in these two areas from MM treatment than from DT alone, while at follow-up the "employed" and "criminal" groups had substantially less illegal income and unemployment with MM than with DT alone. Thus, welfare patients may do relatively poorly in some areas when treated on MM.

Keywords: Client characteristics, alternative treatment, income, criminality, employment, methadone, naltrexone, therapeutic community, drug free, detoxification, maintenance, heroin, other narcotics, correlational, drug free clients, maintenance clients, detoxification clients, therapeutic community clients, treatment outcome, inpatient, outpatient, residential, community-based clinic, New Haven, Connecticut.

- 3122 Lauzon, P. (1988, November). A profile of women heroin addicts under methadone maintenance: A Montreal experience. Paper presented at the meeting of the American Society of Criminology, Chicago, IL.

Although methadone maintenance has known a widespread development in English-speaking America, it was not until 1986 that the first structured methadone clinic appeared in Montreal. The clinic is currently treating 110 patients. It still has a precarious status being considered a pilot project and not yet granted with a recurrent budget. Research facilities are extremely limited. The data presented here are drawn from our first, 1986, admission cohort, being composed of 37 men and 19 women. It provides a detailed look at their characteristics and the antecedents to their entry into treatment.

Keywords: Client characteristics, methadone, maintenance, heroin, descriptive, methadone clients, women, Montreal, Canada.

- 3123 Maddux, J., & Desmond, D. (1984). Heroin addicts and nonaddicted brothers. American Journal of Drug and Alcohol Abuse, 10(2), 237-248.

Childhood and adult life experiences of 50 heroin addicts are compared with those of their nonaddicted brothers. The sibling pairs came from large families with a median of six children: 45 pairs came from Mexican-American families. The median age of both addicts and brothers was 39. One-third of both addicts and brothers lost a parent before age 16. The addicts showed early deviant behavior preceding heroin use in contrast to the socially conforming behavior of the brothers. Noteworthy discrepancies appeared in the retrospective explanations offered by the addicts and the brothers of conditions leading to addiction in one and abstinence in the other. The addicts attributed the addiction versus abstinence primarily to association with different peer groups; the brothers cited this difference, but also frequently cited personality differences and other differences, thus giving more complex explanations. As adults the addicts showed gross social impairment on dimensions of employment, criminal record, marital adjustment, and other life activities. The brothers, in contrast, seemed socially competent, but they nonetheless showed evidence of some impairment: 40% were arrested one or more times, and 50% had histories of alcohol use. Apparently the brothers did not entirely escape the adverse early environments which shaped the careers of the addicts.

Keywords: Client characteristics, peer reference groups, psychopathology, personality, criminality, employment, heroin, alcohol, correlational, substance abuse clients, nonaddicts, inpatient, Fort Worth, Texas.

- 3124 Marsh, K.L., & Simpson, D.D. (1986). Sex differences in opioid addiction careers. American Journal of Drug and Alcohol Abuse, 12, 309-329.

Differences between the opioid addiction careers of 84 female and 91 male addicts were examined longitudinally. Data were collected from clients participating in methadone maintenance treatment programs between 1969 and 1972 as part of the Drug Abuse Reporting Program (DARP). Clients were interviewed prior to and during treatment, as well as 6 and 12 years after treatment. No differences between male and female addicts were found for demographic characteristics or treatment histories. Further, differences in behavioral outcomes for criminality and employment found at 12-year follow-up were shown to be a function of pretreatment differences, and were not related to differential treatment effects. Males and females did differ, however, in psychological status at 12-year follow-up, and in their reasons for quitting drug use and entering treatments. These differences, along with significantly greater financial and medical needs for females, indicate systematic long-term

differences between female and male addiction careers which should be considered in prevention and treatment of opioid addiction.

Keywords: Client characteristics, treatment outcome, psychopathology, methadone, maintenance, heroin, other narcotics, nonequivalent comparison groups, maintenance clients, DARP, community based clinic, outpatient, DARP cities.

- 3125 McLellan, A.T., Ball, J.C., Rosen, L., & O'Brien, C.P. (1981). Pretreatment source of income and response to methadone maintenance: A follow-up study. American Journal of Psychiatry, 138, 785-789.

The authors assessed the relationship between source of pretreatment income and response to treatment at 6-month follow-up in 165 male veterans admitted to a methadone maintenance treatment program. Subjects were grouped according to whether the majority of their pretreatment income was based on job earnings, public assistance, or criminal activity. Significant improvements in drug use, legal status, and psychological functioning were found in the employed group. The group supported a criminal activity showed the most significant and pervasive improvements, especially in the areas of drug use and family, legal, and employment problems. The group receiving public assistance showed no significant improvements on any of the 16 criterion measures, including drug use.

Keywords: Client characteristics, income, criminality, methadone, maintenance, heroin, other narcotics, correlationa within subjects, maintenance clients, veterans, treatment outcome, veterans' facility, outpatient, Philadelphia, Pennsylvania.

- 3126 McLellan, A.T., Luborsky, L., Woody, G.E., & O'Brien, C.P. (1981). The generality of benefits from alcohol and drug abuse treatments. In L.S. Harris (Ed.), Problems of drug dependence, 1980 (Research Monograph 34, pp. 373-379). Rockville, MD: National Institute on Drug Abuse.

We tested the relationships between severity of chemical abuse and the status of several other problems commonly associated with addiction, by intercorrelating highly reliable problem status measures in samples of male alcoholics and drug addicts before and after substance abuse treatment. The results for the total population and for each of the samples showed very low correlations generally, and virtually no evidence of a general relationship between the chemical abuse measures and the remaining problem areas. We then tested the generality of treatment effects by calculating residual change scores on each of the problem measures and intercorrelating these scores. Again, the correlations were quite low with no suggestion of a general relationship between improvement in the chemical abuse problem and improvement in the other areas. While no general relationships were found between chemical abuse and the other problem areas, the posttreatment psychological status was generally related at a moderate level to the posttreatment status of the other measures, and psychological improvement was generally related to improvement in most of the other problem areas.

Keywords: Client characteristics, benefit-costs, social costs, treatment outcome, ASI, therapeutic community, alcohol, heroin, other narcotics, nonnarcotics, correlational, therapeutic community clients, alcoholics, veterans, veterans' facility, outpatient, residential, Coatesville, Philadelphia.

- 3127 McLellan, A.T., MacGahan, J.A., & Druley, K.A. (1979). Changes in drug abuse clients-1972-1978: Implications for revised treatment. American Journal of Drug and Alcohol Abuse, 6, 151-162.

Considerable anecdotal evidence at this hospital had suggested that the present population of drug abuse patients was qualitatively different from the population for which the original treatment program had been designed. In order to assess these suspected differences, samples of drug abuse clients from 1972 and 1978 were compared in terms of pattern of abuse, previous treatments, means of support, family background, and psychological status. Results suggested significant increases in symptom severity within the 1978 sample in all comparison areas, especially psychological status. The authors consider the possibility that therapeutic approaches which were previously effective may no longer be meeting the more extensive needs of the current population.

Keywords: Client characteristics, heroin, other narcotics, nonnarcotics, descriptive, veterans, inpatient, veterans' facility, Coatesville, Pennsylvania.

- 3128 Ottomanelli, G.A., Wilson, P., & Whyte, R. (1978). MMPI evaluation of 5-year methadone treatment status. Journal of Consulting and Clinical Psychology, 46(3), 579-581.

Treatment outcome over a 5-year period was evaluated for 148 first admissions to a methadone treatment program. Eleven patients (7%) were successful treatment completions, 16 patients (11%) transferred to other methadone programs, 38 patients (26%) remained in continuous treatment, and 83 patients (56%) were unsuccessful treatment terminations. Discriminant analysis using the Minnesota Multiphasic Personality Inventory (MMPI) suggested that the more stable patients at admission had the best treatment outcome. For the patients in continuous treatment, MMPIs administered at 6-week, 6-month, and 5-year intervals indicated that this group of patients did not change on the personality dimension.

Keywords: Client characteristics, MMPI, treatment outcome, retention, methadone, maintenance, heroin, other narcotics, maintenance clients, outpatient, Brooklyn, New York City, New York.

- 3129 Rounsaville, B.J., & Kleber, H.D. (1985). Untreated opiate addicts. How do they differ from those seeking treatment? Archives of General Psychiatry, 42, 1072-1077.

Treatment-seeking opiate addicts were compared with an untreated, community sample identified through the chain-referral technique. Community and treatment-seeking addicts were found to be comparable in duration and severity of opiate use and in current engagement in risky, illegal activities connected with procurement of drugs. However, community addicts reported more adequate social functioning, fewer drug-related legal problems, and lower rates of depressive disorders. Despite the comparatively less severe problems in current functioning, community addicts were found to be a substantially impaired group whose failure to seek help appeared more related to misunderstanding of the severity of their drug use and of treatment opportunities than to the lack of need for help.

Keywords: Client characteristics, heroin, other narcotics, correlational, CMHCS, I.V. drug users, maintenance clients, therapeutic community clients, detoxification clients, community-based clinic, residential, street, New Haven, Connecticut.

- 3130 Rounsaville, B.J., Kosten, T.R., & Kleber, H.D. (1987). The antecedents and benefits of achieving abstinence in opioid addicts: A 2.5-year follow-up study. American Journal of Drug and Alcohol Abuse, 13, 213-229.

This report examines long-term and short-term benefits of achieving abstinence from opioids in a sample of opioid addicts who were reevaluated 2.5 years following seeking treatment. Extensive assessment of drug use history and drug-associated problems had been obtained when the subjects applied for treatment. At follow-up evaluations, detailed information was obtained on intervening course of drug use, treatment, legal problems, psychological problems, social functioning, occupational functioning, and medical status. The results were as follows: (1) Achieving abstinence from illicit opioids was associated with concurrent improvement in other aspects of functioning including reduction of criminal activity, improved medical status, improved social functioning, and reduced abuse of other psychoactive substances. However, many of these improvements were reversed immediately if relapse to opioid use occurred. (2) Achieving abstinence was associated with being in drug treatment, especially treatment in a methadone maintenance program. (3) Achievement of abstinence was not successfully predicted by client characteristics measured at entrance into treatment. (4) Long-range benefits of abstinence were detectable in social functioning even for those who had relapsed at the time of follow-up reevaluation.

Keywords: Client characteristics, treatment outcome, employment, criminality, retention, naltrexone, methadone, maintenance, detoxification, therapeutic community, drug free, heroin, other narcotics, correlational, CMHCS, community-based clinic, residential, outpatient, New Haven, Connecticut.

- 3131 Rounsaville, B.J., Weissman, M.M., Wilber, C.H., & Kleber, H.D. (1982). Pathways to opiate addiction: An evaluation of differing antecedents. British Journal of Psychiatry, 141, 437-446.

This paper defines and tests a typology of addicts defined through assessment of the sequence of three types of key events: (a) traumatic childhood events such as death of a parent or child abuse; (b) onset of regular delinquent activity; and (c) initiation of illicit drug use. By evaluating the sequence of these events three groups are defined: (a) an initial childhood trauma group; (b) an early delinquency group; and (c) an initial drug use group. Data derived from a sample of treated opiate addicts are used to define and differentiate these three groups.

Keywords: Client characteristics, treatment outcome, methadone, maintenance, therapeutic community, heroin, other narcotics, correlational, CMHCS, detoxification clients, maintenance clients, therapeutic community clients, residential, community-based clinic, New Haven, Connecticut.

Related research: Rounsaville, B.J., Tierney, T., Crits-Cristoph, K., Weissman, M., & Kleber, H.D. (1982). Predictors of outcome in treatment of opiate addicts: Evidence for the multidimensional nature of addicts' problems. Comprehensive Psychiatry, 23, 462-478.

- 3132 Savage, L.J., & Simpson, D.D. (1981). Drug use and crime during a four-year posttreatment follow-up. American Journal of Drug and Alcohol Abuse, 8, 1-16.

Follow-up interview data for 1,155 opioid addicts showed that about three-fourths of the sample reported some criminal behavior during a 4-year period after leaving drug abuse treatment. Males had a higher prevalence of "major" crimes (including crimes against persons, robbery, mugging, burglary, theft, or dealing drugs) than did females, while females reported a higher percentage engaged in the so-called "victimless" crimes (primarily based on prostitution or pimping). Criminal behavior was primarily profit-related and strongly associated with drug use, especially opioid drugs. Drug users reported more criminal behavior than nonusers, and criminality and drug use increased and decreased together among persons who showed changes in drug use during the follow-up period.

Keywords: Client characteristics, criminality, methadone, maintenance, therapeutic community, drug free, detoxification, heroin, other narcotics, treatment outcome, descriptive, DARP, maintenance clients, therapeutic community clients, drug free clients, detoxification clients, inpatient, outpatient, community-based clinic, residential, DARP cities.

B. PSYCHOPATHOLOGY

- 3201 **Fracchia, J., Sheppard, C., & Merllis, S. (1976). Patterns of psychological needs in heroin addicts: Some implications for therapist-client interactions. Psychiatric Journal of the University of Ottawa, 1(1-2), 82-85.**

Many psychotherapeutically-oriented treatment programs have as a basic goal for their clients a better understanding of their needs, motivations, and behaviors. It is assumed that the therapeutic process requires the attaining of "insight" into these areas and the therapist-client interaction produces this "insight". However, to the extent that clients and therapists differ with respect to their perceptions or definitions of the particular psychological needs that comprise basic motivational clusters in people, opportunities for "misunderstanding" the client's need structure or "miscommunication" between a therapist and client exist. This paper presents interrelationships among 15 psychological needs in a sample of 59 applicants to a suburban methadone maintenance program and compares them with those of a normative sample. Also analyzed and compared is the need factor structure manifested in both groups. Differences in both the pattern of need interrelationships and factorial composition of these psychological needs are examined. The implications these differences have for understanding the clients' behavior in the "real world" and in a therapist-client relationship are discussed.

Keywords: Psychopathology, symptoms, client characteristics, methadone, maintenance, heroin, descriptive, maintenance clients, community-based clinic, Suffolk, New York.

- 3202 **Ginzburg, H.M., Allison, M., & Hubbard, R.L. (1984). Depressive symptoms in drug abuse treatment clients: Correlates, treatment, and changes. In L.S. Harris (Ed.), Problems of drug dependence, 1983 (Research Monograph 49, pp. 313-319). Rockville, MD: National Institute on Drug Abuse.**

This paper describes the depressive symptomatology found in clients in drug abuse treatment programs in the Treatment Outcome Prospective Study (TOPS). In addition, correlations between the depressive symptoms and a number of demographic and outcome variables are presented and discussed. Finally, changes in symptom levels observed after three months in treatment are reported.

Keywords: Psychopathology, client characteristics, symptoms, methadone, maintenance, drug free, detoxification, therapeutic community, heroin, other narcotics, nonnarcotics, community-based clinic, correlational, maintenance clients, drug free clients, detoxification clients, therapeutic community clients, TOPS, residential, outpatient, TOPS cities.

- 3203 **Kosten, T.R., Rounsaville, B.J., & Kleber, H.D. (1986). A 2.5-year follow-up of depression, life crises, & treatment effects on abstinence among opioid addicts. Archives of General Psychiatry, 43, 733-738.**

Follow-up studies have suggested that treatment increases addicts' likelihood of remaining abstinent and that depression and life crises are associated with decreased abstinence. An important issue is to what extent receiving treatment can ameliorate psychosocial risk factors such as life crises and depression and decrease ex-addicts' vulnerability to continued drug abuse. In our 2.5-year follow-up of 268 opiate addicts, drug abuse treatment was generally associated with increased abstinence, and life crises and depression were significant risk

factors for continued drug abuse. The impact of these risk factors, however, was ameliorated by drug abuse treatment. Although life crises had a greater impact than depression, these two risk factors had additive effects in increasing the risk for continued drug abuse. Among the types of life crises, arguments, and losses ("exits") had very strong additive effects with depression as predictors of drug abuse.

Keywords: Psychopathology, symptoms, alternative treatment, treatment outcome, heroin, other narcotics, correlational, maintenance clients, detoxification clients, therapeutic community clients, methodological, outpatient, inpatient, naltrexone, methadone, maintenance, detoxification, therapeutic community, New Haven, Connecticut.

- 3204 LaPorte, D.J., McLellan, A.T., O'Brien, C.P., & Marshall, A.R. (1981). Treatment response in psychiatrically impaired drug abusers. Comprehensive Psychiatry, 22, 411-419.

Male veterans treated in the drug abuse TC programs at the Coatesville VA Medical Center were separated into groups based upon their rated degree of psychiatric problem severity. The psychiatric problem severity was the only factor generally related to the admission status of these patients, and the separation yielded three groups which differed in most of the comparison items as well as various psychological measures. Results of the pre- and posttreatment comparisons indicated that there was significant improvement for all groups in the areas of drug use, employment, illegal involvement, and family/social problems. However, the 6-month follow-up status of the high severity group had only reached the level at which the low and medium severity groups entered treatment. These results suggested that despite the improvement shown, the final outcome status of the high severity group was still at a problematic level, with considerable potential for recidivism and readmission. The authors discuss the services offered to treat this growing segment of psychiatrically impaired substance abusers, and suggest that this treatment might be more effectively administered in a psychiatric setting.

Keywords: Psychopathology, alternative treatment, treatment outcome, therapeutic community, heroin, other narcotics, nonnarcotics, correlational, therapeutic community clients, veterans, veterans' facility, residential, Coatesville, Pennsylvania.

- 3205 Luborsky, L., & McLellan, A.T. (1978). Our surprising inability to predict the outcomes of psychological treatments--with special reference to treatments for drug abuse. American Journal of Drug and Alcohol Abuse, 5, 387-398.

Our ability to predict the outcome of psychological treatments, particularly for drug dependence, is examined by (1) new data on a VA sample, (2) a review of studies predicting the outcome of drug abuse treatment, and (3) a review of predicting the outcome of psychotherapy for other types of patients. For (1), the direct predictions of 13 staff members' ratings of the outcome of treatment correlated .27 with the outcome. Although staff predictions improved when grosser predictions were examined, the results are disappointing given the level of discrimination required and the modest levels of prediction attained. For (2), prediction success with drug abuse patients in other studies were also disappointing and the bases for predictions often did not hold up on crossvalidation. For (3), direct predictions in the Penn Psychotherapy Study were similar to the VA sample in level of success. Other studies produced insignificant or similarly low levels of prediction success. In our discussion we

suggest that rather than relying mainly upon pretreatment status for prediction, two promising areas should be examined in future studies: (1) the patient's early response to the treatment and to the therapist, (2) the patient's environment posttreatment that should be altered to consolidate and perpetuate the gains made during treatment. In conclusion, it is true that we are surprisingly unable to predict the outcomes of psychological treatments beyond a very modest level.

Keywords: Psychopathology, alternative treatment, treatment outcome, therapeutic community, drug free, heroin, other narcotics, correlational, therapeutic community clients, veterans, veterans' facility, inpatient, Coatesville, Pennsylvania.

- 3206 Milby, J.B., Garrett, C., & Meredith, R. (1980). Introgenic phobic disorders in methadone maintenance treatment patients. International Journal of the Addictions, *15*, 737-747.

A detoxification phobia idiosyncratic to methadone maintenance programs is described and several representative cases are presented. Reliability of diagnostic criteria for the phobia are described and their overall reliability was found to be 93% while occurrence reliability was 67%, which investigators conclude is a moderate but clinically useful level. Prevalence data show the phobia occurring in 27% of a random sample of patients treated with methadone maintenance, an estimate the investigators feel is too high to be representative of typical methadone programs. Implications for treatment are discussed.

Keywords: Psychopathology, client characteristics, withdrawal, counseling, DSM-III, methodological, urine monitoring, methadone, detoxification, case study, detoxification clients, outpatient, Alabama.

Related research: Milby, J.B., Garrett, C., & Meredith, R. (1976). The efficacy of desensitization therapy for treating iatrogenic detox phobia in detoxifying methadone maintenance patients (NIDA Grant H80-DA-00582). Unpublished manuscript, University of Alabama School of Medicine, Tuscaloosa, AL.

- 3207 Murphy, S.L., Rounsaville, B.J., Eyre, S., & Kleber, H.D. (1983). Suicide attempts in treated opiate addicts. Comprehensive Psychiatry, *24*, 79-89.

This paper presents lifetime prevalence rates of suicide attempts in a sample of 533 treated opiate addicts and evaluates clinical characteristics of those who report having made a suicide attempt. In this sample, 17.3% reported having made at least one suicide attempt, a rate which is over 4 times higher than that found in a community survey. When compared with addicts without a history of suicide attempts, those who had attempted suicide reported more drug overdoses, and had a clinical profile characterized by fewer resources and greater liabilities. Compared with other addicts, suicide attempts had a childhood history of more severe family disturbance and disruptive behavior, a higher rate of depression and alcoholism in the family, a history of heavier alcohol, sedative, and amphetamine abuse, higher rates of psychiatric disorders, especially of depression and severe personality disorders, and poorer social and psychological functioning.

Keywords: Psychopathology, symptoms, client characteristics, methadone, maintenance, therapeutic community, heroin, other narcotics, correlational, CMHCS, maintenance clients,

therapeutic community clients, substance abuse clients, residential, community-based clinic, New Haven, Connecticut.

- 3208 Rounsaville, B.J., Kosten, T.R., Weissman, M.M., & Kleber, H.D. (1986). Prognostic significance of psychopathology in treated opiate addicts. Archives of General Psychiatry, 43, 739-745.

Two different methods for assessing psychopathology in opiate addicts were compared as predictors of long-term treatment outcome: (1) categorical psychiatric diagnosis using the Schedule for Affective Disorders and Schizophrenia--Lifetime Version and the Research Diagnostic Criteria and (2) global rating of psychiatric impairment using the Psychiatric Severity scale of the Addiction Severity Index (ASI). Follow-up interviews were completed 2.5 years after treatment seeking in 76% of a sample of 361 opiate addicts. Five dimensions of treatment outcome were assessed, including current functioning, psychosocial adjustment, substance use impairment, legal problems, and medical disability. Most lifetime psychiatric disorders with a prevalence of greater than 10% were significantly related to the outcome dimensions of current functioning and/or psychosocial adjustment and were unrelated to substance use impairment, legal problems, and medical disability. The ASI Psychiatric Severity rating more robustly predicted poorer functioning in the same two areas and less severe legal problems. While controlling for ASI Psychiatric Severity, the only Research Diagnostic Criteria diagnosis that remained significantly related to treatment outcome was major depression, suggesting that, as regards their prognostic characteristics, the other diagnoses are accounted for by a global underlying severity dimension.

Keywords: Psychopathology, symptoms, ASI, DSM-III, RDC, SADS-L, GAS, client characteristics, treatment outcome, naltrexone, methadone, maintenance, detoxification, therapeutic community, drug free, heroin, other narcotics, correlational, CMHCS, community-based clinic, residential, inpatient, New Haven, Connecticut.

Related research: Kleber, H.D. (1981). The significance of psychiatric diagnosis of opiate addicts (Contract No. 271-77-3410). Rockville, MD: National Institute on Drug Abuse.

- 3209 Rounsaville, B.J., Kosten, T.R., Weissman, M.M., & Kleber, H.D. (1986). A 2.5 year follow-up of short-term Interpersonal psychotherapy in methadone-maintained opiate addicts. Comprehensive Psychiatry, 27(3), 201-210.

In this study, investigators attempted to reevaluate 72 opiate addicts 2.5 years following their participation in a randomized clinical trial evaluating short-term interpersonal psychotherapy vs. a low-contact control condition as treatment for methadone-maintained patients with additional psychiatric disorders. The two aims of the reevaluation were (a) to detect long-term effects of psychotherapy and (b) to assess patterns of improvement taking place in either treatment group during time following the study. Sixty-six of the original 72 subjects (92%) were reinterviewed. Findings indicated that subjects in both treatment groups experienced significant improvement in ratings of symptoms and social functioning and that there were no significant differences in long-term outcome for the two groups. Assessment of patterns of change in symptoms and social functioning during and after the study indicated that those addicts who made gains during the study treatment tended to maintain them but those who did not gain in the short range were not barred from further improvement.

Keywords: Psychopathology, symptoms, counseling, psychotherapy, treatment outcome, behavior change, methadone, maintenance, heroin, other narcotics, randomized experiment, maintenance clients, community-based clinic, New Haven, Connecticut.

- 3210 Rounsaville, B.J., Weissman, M.M., Crits-Christoph, K., Wilber, C., & Kleber, H.D. (1982). Diagnosis and symptoms of depression in opiate addicts. Archives of General Psychiatry, 39(2), 151-156.

Evaluations of diagnosis and symptoms of depression were undertaken in 157 opiate addicts at entrance to a multimodality drug treatment program and six months later. While 17% were having an episode of major depression (defined by Research Diagnostic Criteria) and 60% had at least mildly elevated depressive symptoms at entrance to treatment, substantial improvement was noted at the six-month reevaluation, with the rates of major depression and elevated symptoms dropping to 12% and 31%, respectively. Symptomatic improvement, although related to retention in treatment, was not the result of specific antidepressant pharmacotherapy and did not differ across treatment modalities. Starting treatment during a major or minor depressive episode was predictive of poorer outcome in the areas of illicit drug use and psychological symptoms, but unrelated to the areas of occupational functioning, legal problems, and program retention.

Keywords: Psychopathology, client characteristics, symptoms, treatment outcome, methadone, naltrexone, detoxification, drug free, maintenance, therapeutic community, heroin, other narcotics, correlational, detoxification clients, drug free clients, maintenance clients, community-based clinic, private clinic, inpatient, outpatient, residential, New Haven, Connecticut.

- 3211 Rounsaville, B.J., Weissman, M.M., Kleber, H.D., & Wilber, C. (1982). Heterogeneity of psychiatric diagnosis in treated opiate addicts. Archives of General Psychiatry, 39, 161-166.

A survey evaluated current and lifetime rates of psychiatric disorders in 533 opiate addicts in treatment at a multimodality program. Information was gathered using a structured interview format, the Schedule for Affective Disorders and Schizophrenia-Lifetime version, and the criteria were the Research Diagnostic Criteria. Most were given the diagnosis of at least one psychiatric disorder in addition to opiate addiction. The most common diagnoses were major depressive disorder, alcoholism, and antisocial personality, and rates of chronic minor mood disorders and anxiety disorders also were found to be elevated in comparison with those found in a community population. The findings are interpreted as suggesting the importance of detecting and attending to psychopathology associated with opiate addiction.

Keywords: Psychopathology, client characteristics, symptoms, methadone, maintenance, therapeutic community, heroin, other narcotics, descriptive, substance abuse clients, maintenance clients, therapeutic community clients, community-based clinic, residential, New Haven, Connecticut.

- 3212 Titlevsky, J., Seco, G., Barranco, M., & Kyle, E.M. (1982). Doxepin as adjunctive therapy for depressed methadone maintenance patients: A double-blind study. Journal of Clinical Psychiatry, 43, 454-456.

Depression and anxiety can contribute to both drug dependence and reduced retention rates in methadone maintenance programs. In a 5-week double-blind study, the effectiveness of doxepin as an adjunctive treatment was compared to placebo in 46 depressed/anxious patients attending a methadone maintenance program. Doxepin was superior to placebo on Clinical Global Impressions and several factors of the Hamilton Rating Scale for Depression and the Profile of Mood States. No clinically significant potentiation of side effects was observed with the combined administration of doxepin and methadone.

Keywords: Psychopathology, alternative drugs, placebo, symptoms, treatment outcome, retention, psychotropic drugs, methadone, maintenance, randomized experiment double blind, maintenance clients, New York.

- 3213 Uhde, T.W., Redmond, E., & Kleber, H.D. (1982). Psychosis In the oploid addicted patient: Assessment and treatment. Journal of Clinical Psychiatry, *43*, 240-247.

This article illustrates an example of the schizophreniform-like psychosis that develops in certain individuals following prolonged drug abuse. Such patients have special problems, including a possible genetic vulnerability to illnesses in the schizophreniform spectrum who, therefore, require special treatment. Finding appropriate treatment facilities to handle such patients may not be easy.

Keywords: Psychopathology, symptoms, behavioral problems, treatment process, methadone, maintenance, heroin, other narcotics, nonnarcotics, amphetamines, psychiatric clients, inpatient, outpatient, New Haven, Connecticut.

- 3214 Woody, G.E., McLellan, A.T., Luborsky, L., & O'Brien, C.P. (1985). Sociopathy and psychotherapy outcome. Archives of General Psychiatry, *42*, 1081-1086.

One hundred ten nonpsychotic opiate addicts were randomly assigned to receive paraprofessional drug counseling alone or counseling plus professional psychotherapy. The outcomes of patients who received psychotherapy were examined in terms of their DSM-III diagnoses. Four groups were compared: those with opiate dependence alone (N=16); opiate dependence plus depression (N=16); opiate dependence plus depression plus antisocial personality disorder (N=17); and opiate dependence plus antisocial personality disorder (N=13). Those with opiate dependence plus antisocial personality disorder alone improved only on ratings of drug use. Patients with opiate dependence alone or with opiate dependence plus depression improved significantly and in many areas. Opiate-dependent patients with antisocial personality plus depression responded almost as well as those with only depression. Antisocial personality disorder alone is a negative predictor of psychotherapy outcome, but the presence of depression appears to be a condition that allows the patient to be amenable to psychotherapy, even though the behavioral manifestations of sociopathy are present.

Keywords: Psychopathology, alternative treatment, cognitive-behavioral psychotherapy, counseling, treatment outcome, methadone, maintenance, heroin, other narcotics, randomized experiment, maintenance clients, Philadelphia, Pennsylvania.

Related research: Woody, G.E., O'Brien, C.P., McLellan, A.T., & Mintz, J. (1981). Psychotherapy for opiate addiction: Some preliminary results. Annals of the New York Academy of Sciences, 362, 91-100.

- 3215 Woody, G.E., McLellan, A.T., & O'Brien, C.P. (1984). Treatment of behavioral problems associated with opiate dependence. In J. Grabowski, M.L. Stitzer, & J.E. Henningfield (Eds.), Behavioral Intervention techniques in drug abuse treatment (Research Monograph 46, pp. 23-35). Rockville, MD: National Institute on Drug Abuse.

Many difficult and complex behavioral and psychiatric problems can occur in a methadone treatment program. Some behavioral problems are very serious, and it is essential that the program place a high priority on controlling them. This is best done by structuring the treatment milieu via program rules. Careful attention must be paid to consistent, fair, and accurate enforcement of these rules. A proper staffing pattern is essential; this should include counselors along with medical, administrative, and pharmacy personnel, and police. Written policies explaining clinic procedures such as treatment plans, use of ancillary medications and take-home policies are most helpful. They provide structure for the staff and increase the chances that work will be done in an organized and consistent manner. The physical facility may have features which either enhance or interfere with treatment and must be taken into account when planning. Attention should be paid to accurate diagnosis and treatment of the patients' psychiatric, behavioral, and social problems, and staff morale must be maintained. The best general ingredients for good patient management appear to be a combination of structure and support, applied in a systematic and coordinated way by a well-trained staff. Finally, integration of research and clinical efforts may present unique problems but has considerable benefit in most programs.

Keywords: Psychopathology, symptoms, behavioral problems, methadone, maintenance, drug free, detoxification, heroin, other narcotics, case study, maintenance clients, drug free clients, detoxification clients, veterans, outpatient, residential, community-based clinic, veterans' facility, Philadelphia, Pennsylvania.

- 3216 Woody, G.E., O'Brien, C.P., McLellan, A.T., Marcovici, M., Evans, B. (1982). The use of antidepressants with methadone in depressed maintenance patients. Annals of the New York Academy of Sciences, 363, 120-127.

Substance abuse patients often use opiates, stimulants, or other abusable drugs in response to depressive or other psychological symptoms. It seems reasonable to implement a treatment that would reduce the frequency and intensity of depressive symptoms and, with it, an additional motive for illicit drug use. A nonabusable antidepressant (Doxepin) was tested to see if it can be an effective antidepressant with this patient group.

Keywords: Psychopathology, symptoms, physiological research, psychotropic, RDC, SADS-L, BDI, DSM-III, methadone, maintenance, heroin, other narcotics, nonnarcotics, correlational, maintenance clients, nonaddicts, outpatient, Pennsylvania.

C. I.V. DRUG USE AS A RISK FACTOR FOR HIV TRANSMISSION

- 3301 Abdul-Quader, O.S., Friedman, S.R., Des Jarlals, D., Marmor, M.M., Maslansky, R., & Bartelme, S. (1987). Methadone maintenance and behavior by Intravenous drug users that can transmit HIV. Contemporary Drug Problems, Fall, 425-434.

In heterosexual and perinatal AIDS cases I.V. drug users are the main route of transmission. Methadone maintenance treatment programs (MMTPs) provide a way of reducing risk behaviors. In this study HIV current risk behaviors and the effectiveness of MMTPs to change these behaviors were assessed. The results were that MMTPs are effective in reducing drug transmission behaviors but do not seem to affect sexual frequencies. Length of time in treatment was related to a decrease in transmission behavior.

Keywords: HIV/AIDS, needle sharing, treatment outcome, behavior change, retention, methadone, maintenance, heroin, other narcotics, cocaine, correlational, maintenance clients, outpatient, New York City, New York.

- 3302 Ball, J.C., Lange, W., Myers, C., & Friedman, S. (1988). Reducing the risk of AIDS through methadone maintenance treatment. Journal of Health and Social Behavior, 29, 214-226.

In a three-year field study of methadone maintenance programs in New York City, Philadelphia, and Baltimore, treatment was found to be effective in reducing IV drug use and needle sharing among most heroin addicts. Of 388 patients who remained in treatment for one year or more, 71 percent had ceased IV use. Conversely, 82 percent of patients who left treatment relapsed rapidly to IV drug use. Marked differences in the effectiveness of various programs were observed: current IV use varied from less than 10 percent to over 57 percent of patients in particular treatment programs. This differential effectiveness was related both to length of patient's stay and to the quality of treatment provided. HIV seropositivity among high-risk drug users is related to frequency of injections and needle-sharing contacts. Effective methadone treatment can stop these practices, but a widespread impact on the AIDS epidemic will require improvement of treatment in many programs.

Keywords: HIV/AIDS, methadone, maintenance, heroin, correlational, maintenance clients, treatment outcome, retention, community-based clinic, New York City, New York, Philadelphia, Pennsylvania, Baltimore, Maryland.

- 3303 Brown, L.S., Jr., & Primm, B.J. (1988). Sexual contacts of Intravenous drug abusers: Implications for the next spread of the AIDS epidemic. Journal of the National Medical Association, 80, 651-656.

A scarcity of knowledge exists regarding the sexual behavior of intravenous drug abusers (IVDAs) despite their potential role in the heterosexual transmission of acquired immunodeficiency syndrome (AIDS). Using a standardized questionnaire of drug and sexual practices, 96 patients enrolled in methadone maintenance treatment in New York City were interviewed anonymously. Over one half of the 767 sexual contacts reported by this sample were non-IVDAs. Male IVDAs, compared with female IVDAs, reported a significantly greater percentage of heterosexual non-IVDA contacts ($P < .001$). Participating in needle-sharing behavior or being younger than 35 years of age was also associated with a significant

probability ($P < .001$) of having a nondrug-using sex partner. Female IVDAs, as compared with male IVDAs, were at greater risk for human immunodeficiency virus (HIV) infection from sexual contacts with male IVDAs and their own parenteral drug use. Black and Hispanic IVDAs, in contrast to white IVDAs, reported a statistically insignificant greater percentage of non-IVDA sex partners. These findings suggest that aggressive health education campaigns targeted for IVDAs and sexually active female non-IVDAs are sorely needed to reduce HIV-exposing sexual behaviors, especially in communities where intravenous drug use is prevalent.

Keywords: HIV/AIDS, needle sharing, client characteristics, methadone, maintenance, heroin, cocaine, descriptive, maintenance clients, New York City, New York.

- 3304 Buning, E.C., Curran, R.A., van Brussel, G.H.A., van Santen, G.W., & van Zadelhoff, A.W. (1986). Preventing AIDS in drug addicts in Amsterdam. Lancet, 1, 1435.

Three measures to prevent the spread of AIDS in Amsterdam are described. They are a publicity campaign, a needle exchange system, and the distribution of condoms. Amsterdam's approach to the drug problems was revised in the late 1970s toward a more pragmatic, nonmoralistic approach. Consequently, between 60% to 80% of the city's drug addicts are in touch with the Amsterdam helping system. The AIDS campaign is potentially reaching a substantial proportion of the target group. A study to assess the success of the campaign is now in process.

Keywords: HIV/AIDS, free needles, client characteristics, descriptive, I.V. drug users, Amsterdam, Netherlands.

- 3305 Centers for Disease Control. (1989). Coordinated community programs for HIV prevention among intravenous-drug users--California, Massachusetts. Morbidity and Mortality Weekly Report, 38, 369-378.

This report describes two coordinated community-wide programs that provide education for intravenous drug users and their sexual partners to reduce the transmission of human immunodeficiency virus (HIV). The changes in the behaviors reported by IVDUs participating in the educational programs were modest. In Sacramento, the proportion of IVDUs reporting "safer shooting" drug-use practices increased from 23% in 1986 to 41% in 1988. Among IVDUs returning for followup interviews and HIV testing, 57% of those using drugs reported using "safer shooting" techniques. While these results suggest that some IVDUs will adopt lower risk behaviors, many of the IVDUs interviewed did not report adoption of safer behaviors.

Keywords: HIV/AIDS, HIV counseling, prevention, needle sharing, methadone, maintenance, drug free, case study, prisoners, I.V. drug users, sexual partners, outpatient, Sacramento, California, Worcester, Massachusetts.

- 3306 Chalsson, R., Bacchetti, P., Osmond, M., Brodke, B., Merle, S., & Moss, A. (1989). Cocaine use and HIV infection in intravenous drug users in San Francisco. Journal of the American Medical Association, 261(4), 561-609.

Risk factors for human immunodeficiency virus (HIV) infection were assessed in 633 heterosexual intravenous drug users. The HIV seroprevalence was 26% in blacks, 10% in Hispanics, and 6% in whites. Intravenous cocaine use significantly increased the risk of HIV infection, with a seroprevalence of 35% in daily cocaine users (odds ratio, 6.4; 95% confidence interval, 3.0 to 13.3). Black subjects were more likely to use cocaine regularly. Drug use in shooting galleries and sharing of drug injection by blacks and Hispanics, all other cocaine injection, heavy use prior to entry into methadone treatment by blacks, and use of drugs in shooting galleries were independent predictors of HIV infection. Methadone therapy was associated with substantial reductions in heroin use and some reduction in cocaine use, but 24% of cocaine users receiving methadone began or increased cocaine injection after entry into treatment.

Keywords: HIV/AIDS, methadone, maintenance, detoxification, cocaine, correlational, maintenance clients, detoxification clients, community-based clinic, outpatient, San Francisco, California.

- 3307 Chalmers, R., Moss, A., Onishi, R., Osmond, D., & Carlson, J. (1987). Human Immunodeficiency virus Infection In heterosexual Intravenous drug users In San Francisco. American Journal of Public Health, 77,(2), 169-172.

To investigate the risk of infection with the human immunodeficiency virus (HIV) in San Francisco, the prevalence of antibodies to HIV was determined in 281 heterosexual intravenous drug users recruited from community-based settings. Ten percent of subjects had ELISA and Western blot confirmed seropositivity for antibodies (95 percent CI 6.8-14.2 percent). Analysis of behavioral factors revealed an increased risk of seropositivity in addicts who reported regularly sharing needles when injecting, particularly those sharing with two or more persons (odds ratio = 5.43; 95 percent CI 1.08-52.5). Blacks and Latinos also had a greater prevalence of seropositivity than Whites, and this finding persisted after adjustment for needle sharing (adjusted odds ratio - 2.8; 95 percent CI .84-8.59). Seropositivity was not associated with age, sex, duration of drug use, or history of prostitution. These data indicate that a new epidemic of AIDS in intravenous drug users, similar to that which has occurred among homosexuals in San Francisco, is possible. The relatively low seroprevalence in 1985 provides health officials an important opportunity to intervene and attempt to prevent widespread infection of drug users with HIV.

Keywords: HIV/AIDS, needle sharing, civil commitment, methadone, detoxification, maintenance, heroin, other narcotics, descriptive, detoxification clients, maintenance clients, heterosexuals, community-based clinic, San Francisco, California.

- 3308 Des Jarlais, D.C., Friedman, S.R., Novick, D.M., Sothorn, J.L., Thomas, P., Yancovitz, S.R., Milder, D., Weber, J., Kreek, M.J., Maslansky, R., Bartelme, S., Spira, T., & Marmor, M. (1989). HIV-1 Infection among Intravenous drug users In Manhattan, New York City, from 1977 through 1987. Journal of the American Medical Association, 261, 1008-1012.

Intravenous drug users are the second largest group to develop the acquired immunodeficiency syndrome, and they are the primary source for heterosexual and perinatal transmission in the United States and Europe. Understanding long-term trends in the spread of human immunodeficiency virus among intravenous drug users is critical to controlling the

acquired immunodeficiency syndrome epidemic. Acquired immunodeficiency syndrome surveillance data and seroprevalence studies of drug treatment program entrants are used to trace seroprevalence trends among intravenous drug users in the borough of Manhattan. The virus entered this drug-using group during the mid-1970s and spread rapidly in 1979 through 1983. From 1984 through 1987, the seroprevalence rate stabilized between 55% and 60%-well below hepatitis B seroprevalence rates. This relatively constant rate is attributed to new infections, new seronegative persons beginning drug injection, seropositive persons leaving drug injection, and increasing conscious risk reduction.

Keywords: HIV/AIDS, client characteristics, needle sharing, methadone, maintenance, detoxification, descriptive, maintenance clients, detoxification clients, inpatient, New York City, New York.

- 3309 Friedland, G.H., Harris, C., Butkus-Small, C., Shlne, D., Moll, B., Darrow, W., & Klein, R.S. (1985). Intravenous drug abusers and the acquired Immunodeficiency syndrome (AIDS). Archives of Internal Medicine, 145, 1413-1417.

The demographic characteristics, drug use patterns, and sexual habits of intravenous (IV) drug abusers are studied to further define this population at risk for acquired immunodeficiency syndrome (AIDS). Sixteen IV drug abuser patients with AIDS, 24 IV drug abuser patients with AIDS-related complex (ARC), and 14 IV drug abuser controls without evidence of AIDS or ARC were evaluated. The subjects in each group were similar demographically, in drug use practice, and in sexual orientation and experience. Of the AIDS and ARC patients, 34 (88%) of 40, including all seven homosexual men, shared needles, as did all drug abusers without AIDS or ARC. Seventy-four percent of patients, including all homosexual men, attended "shooting galleries," where anonymous multiple-partner needle sharing took place. Needle sharing supports the hypothesis of AIDS transmission by a blood-borne route, can explain the spread of AIDS and the high rate of seropositivity to the putative AIDS agent among IV drug abusers, and is a logical link between IV drug abusers and male homosexuals, the two largest groups with AIDS.

Keywords: HIV/AIDS, client characteristics, AIDS-related complex (ARC), descriptive, I.V. drug users, inpatient, New York City, New York.

- 3310 Hubbard, R.L., Marsden, M.E., Cavanaugh, E.R., Rachal, J.V., & Ginzburg, H.M. (1988). Role of drug-abuse treatment in limiting the spread of AIDS. Reviews of Infectious Diseases, 10(2), 377-384.

Drug-abuse treatment may have important direct and indirect effects on restricting the spread of infection with human immunodeficiency virus by decreasing the prevalence of intravenous drug use and by decreasing regular drug use that impairs the immune system. Drug-abuse treatment results in substantial declines in the use of heroin, cocaine, prescription psychotherapeutic drugs, and other drugs in the year after treatment. Declines are closely related to the length of time spent in treatment; treatment duration of less than 6 months has a significant impact on drug use after treatment. The potential impact of drug-abuse treatment in combatting the AIDS epidemic is discussed.

Keywords: HIV/AIDS, methadone, detoxification, drug free, maintenance, therapeutic community, heroin, other narcotics, cocaine, correlational, detoxification clients, maintenance

clients, drug free clients, therapeutic community clients, TOPS, community-based clinic, outpatient, residential, TOPS cities.

- 3311 Levy, N., Carlson, J.R., Hinrich, S., Lerche, N., Schenker, M., & Gardner, M.B. (1986). The prevalence of HTLV-III/LAV antibodies among intravenous drug users attending treatment programs in California: A preliminary report. New England Journal of Medicine, 314, 446.

The preliminary results of a study of the prevalence of AIDS virus antibodies among 345 intravenous drug users attending state-licensed treatment centers in seven counties of California are reported. Testing revealed that only 1.7 percent of the samples were positive. This is a considerably lower rate than the rates reported for the northeastern United States although drug-taking behaviors are similar.

Keywords: HIV/AIDS, HTLV-III/LAV, client characteristics, methadone, descriptive, maintenance clients, California.

- 3312 Magura, S., Grossman, J.I., Lipton, D.S., Siddiqui, Q., Shapiro, J., Marlon, I., & Amann, K.R. (1989). Determinants of needlesharing among intravenous drug users. American Journal of Public Health, 79, 459-462.

Data from 110 IV-drug abusing persons in methadone maintenance were analyzed to determine the correlates of needle sharing. Sharing was directly related to peer group behavior, attitudes conducive to sharing, economic motivation to share, not owning injection equipment, and fatalism about developing AIDS. Sharers were aware of their AIDS risk. Indicated measures to reduce needle sharing would be positive peer support groups to help resist pressures to share, legal and free access to fresh injection equipment, education on the utility of risk reduction, and increased treatment options for IV cocaine users.

Keywords: HIV/AIDS, needle sharing, social support, peer reference groups, behavior change, methadone, maintenance, correlational within subjects, IV drug users, community-based clinic, New York City, New York.

Related research: Magura, S., Grossman, J.I., Lipton, D.S., Amann, K.R., Koger, J., & Ethan, K. (1989). Correlates of participation in AIDS education and HIV antibody testing by methadone maintenance patients. Public Health Reports, 104, 231-240.

- 3313 National Institute on Drug Abuse, Division of Applied Research, Community Research Branch. (1988, Dec 15-17). AIDS prevention among female sexual partners of IVDAs. Workshop on development of the AIDS prevention model, Rockville, MD.

This document provides an abstract of the three-day "Workshop on Development of the AIDS Prevention Model among Female Sexual Partners of IVDAs." It provides an overview of the thinking of NIDA and the principal investigators of the NADR/ATOM programs. It includes discussion of: client profiles, program implementation, staff training, risk behaviors, program models, follow-up, and evaluation.

Keywords: HIV/AIDS, HIV counseling, prevention, treatment process, workshop proceedings, sexual partners.

- 3314 Pohl, M.I. (1988). Counseling patients in chemical dependence treatment about AIDS. Journal of Psychoactive Drugs, 20, 223-226.

It is impossible to provide care in a chemical dependence treatment program (CDTP) without encountering AIDS-related issues and concerns. This article will discuss basic information that staff members of CDTPs need to know to be able to properly inform their clients. First, attitudes as potential barriers to effective counseling of patients about AIDS in CDTPs will be discussed. Second, there is certain general information that is necessary for each patient in a CDTP to learn as part of the core curriculum. Third, there is more specific information that must be communicated to patients who are considering taking the HIV antibody test. And lastly, there is certain information that needs to be provided for patients who do not take the test and are antibody positive.

Keywords: HIV/AIDS, counseling, alternative treatment, attitudes, heroin, other narcotics, nonnarcotics, substance abuse, substance abuse clients, community-based clinic, residential, Eden Prairie, Minnesota.

- 3315 Raymond, C.A. (1988). Study of IV drug users and AIDS finds differing infection rate, risk behaviors. Journal of the American Medical Association, 260, 3105.

In a study of IV drug users, within city differences in HIV seropositivity were observed and HIV seropositivity rates were higher for drug users reporting injecting drugs daily and sharing needles with 4 or more persons. Rates of HIV infection of drug abusers selected from a street population and those tested at state-run alternative testing sites, when compared, showed a large discrepancy. Twenty one percent of the street sample tested positive and ten percent of the testing site sample tested positive. These testing sites are the primary source for statistics reporting on national seroprevalence rates.

Keywords: HIV/AIDS, methodological, client characteristics, IV drug users, street, Chicago, Illinois.

- 3316 Robert-Guroff, M., Welss, S.H., Giron, J.A., Jennings, A.M., Ginzburg, H.M., Margolls, I.B., Blattner, W.A., & Gallo, R.C. (1986). Prevalence of antibodies to HTLV-I, -II, -III in intravenous drug abusers from an AIDS endemic region. Journal of the American Medical Association, 255, 3133-3137.

Antibody prevalences for human T-cell lymphotropic virus (HTLV) types I, II, and III were determined for 56 intravenous drug abusers from Queens, NY. While control serum samples lacked antibodies to all HTLV subgroups, seropositivity among drug users was 41% for HTLV-III, 18% for HTLV-II, and 9% for HTLV-I. Infection by HTLV-I and -II occurred independently of HTLV-III infection. Blacks had greater HTLV-III antibody prevalence than whites (54% vs. 16%) and were more likely than whites to be seropositive for HTLV-I or -II (46% vs. 11%). They exhibited a greater incidence than whites of double infection with HTLV-I or -II and HTLV-III (27% vs. 0%), and 73% were seropositive for at least one of the viruses, compared with only 26% of the whites. The increased HTLV-I and -II infection seen in intravenous drug

users suggests that once introduced into a population, these viruses may be transmitted by the same routes as HTLV-III. Transmission may have been restricted mainly to blacks in this study because of local drug use practices.

Keywords: HIV/AIDS, physiological research, heroin, cocaine, correlational, IV drug users, Queens, New York City, New York.

- 3317 Robertson, J.R., Bucknall, A.B.V., Welsby, P.D., Roberts, J.J., Inglis, J., Peutherer, J., & Brettle, R. (1986). Epidemic of AIDS related virus (HTLV-III/LAV) infection among intravenous drug abusers. British Medical Journal, 292, 527-529.

Stored blood samples from 164 intravenous drug abusers who attended a Scottish general practice were tested for HTLV-III/LAV (human T cell lymphotropic virus type III/lymphadenopathy associated virus) infection. Of those tested, 83 (51%) were seropositive, which is well above the prevalence reported elsewhere in Britain and Europe and approaches that observed in New York City. The timing of taking samples of negative sera and continued drug use suggest that as many as 85% of this population might now be infected. The infection became epidemic in late 1983 and early 1984, thereafter becoming endemic. The practice of sharing needles and syringes correlated with seropositivity, which, combined with the almost exclusive intravenous use of heroin and other behavioral patterns, may explain the high prevalence of HTLV-III/LAV infection in the area. Rapid and aggressive intervention is needed to control the spread of infection.

Keywords: HIV/AIDS, needle sharing, physiological research, client characteristics, heroin, IV drug users, general practice, correlational, community-based clinic, Edinburgh, Scotland.

- 3318 Rothenberg, R., Woelfel, M., Stoneburner, R., Mulberg, J., Parker, R., & Truman, B. (1987). Survival with the acquired immunodeficiency syndrome. New England Journal of Medicine, 317, 1297-1302.

In a cohort of 5,833 subjects in whom the acquired immunodeficiency syndrome (AIDS) was diagnosed in New York City before 1986, the cumulative probability of survival (mean \pm SE) was 48.8 ± 0.7 percent at one year and 15.2 ± 1.8 percent at five years. The group with the most favorable survival rate--white homosexual men 30 to 34 years old who presented with Kaposi's sarcoma only--had a one-year cumulative probability of survival of 80.5 percent; that group was used as the reference group in assessing the effect of five variables: sex, race or ethnic background, age, probable route of acquiring AIDS (risk group), and manifestations of AIDS at diagnosis. The range in the mortality rate was greater than threefold, depending on these variables. Black women who acquired the disease through intravenous drug abuse, for example, had a particularly poor prognosis. The manifestations of disease at diagnosis had the most influence on survival, accounting on average for 56.3 percent of the excess risk. This variable was followed in importance by age (12.2 percent), race or ethnicity (10.6 percent), risk group (8.4 percent), and sex (8.0 percent), with 4.5 percent of the risk attributable to interactions between variables. When we compared subcohorts based on the year of diagnosis (1981 through 1985), we found a significant improvement in the one-year cumulative probability of survival among subjects with *Pneumocystis carinii* pneumonia, but not among subjects without *P. carinii* pneumonia.

Keywords: HIV/AIDS, client characteristics, AIDS cases, I.V. drug abusers, nonaddicts, New York City, New York.

- 3319 Selwyn, P.A., Schoenbaum, E.E., Davenny, K., Robertson, V.J., Feingold, A.R., Shulman, J.F., Mayers, M.M., Klein, R.S., Friedland, G.H., & Rogers, M.F. (1989). Prospective study of human immunodeficiency virus infection and pregnancy outcomes in intravenous drug users. Journal of the American Medical Association, 261, 1289-1294.

To determine the effects of human immunodeficiency virus (HIV) infection on pregnancy outcomes, we prospectively studied female intravenous drug users in a methadone program in New York City. Of 191 women with HIV status known prior to pregnancy, 17 (24%) of 70 seropositives and 26 (22%) of 121 seronegatives became pregnant during 28 months of follow-up. Including 54 additional women first tested for HIV antibody after becoming pregnant, 125 pregnancies were studied in 97 women (39 seropositive, 58 seronegative). None of the seropositive pregnant women had advanced HIV-related disease at entry, and only one developed symptomatic disease (oral candidiasis) during pregnancy. No differences were observed between groups in the frequency of spontaneous or elective abortion, ectopic pregnancy, preterm delivery, stillbirth, or low-birth-weight births. Among women giving birth to live infants, seropositives were more likely than seronegatives to be hospitalized for bacterial pneumonia during pregnancy and had an increased tendency for breech presentation, although these events were infrequent. There were otherwise no differences between groups in the occurrence of antenatal, intrapartum, or neonatal complications. Results suggest that asymptomatic HIV infection is not associated with a decreased pregnancy rate or an increased risk of adverse pregnancy outcomes in intravenous drug users, and that an acceleration in HIV-disease status during pregnancy is uncommon.

Keywords: HIV/AIDS, physiological effects, pregnancy, methadone, maintenance, nonequivalent comparison groups, maintenance clients, AIDS cases, pregnant women, community-based clinic, Bronx, New York City, New York.

Related research: Schoenbaum, E.E., Selwyn, P.A., Klein, R.S., et al. (1986, June). Prevalence of and risk factors associated with HTLV-III/LAV antibody among intravenous drug users in a methadone program in New York City. Paper presented at the Second International Conference on AIDS, Paris, France.

- 3320 Watters, J.K., & Cheng, Y. (1988). HIV-1 infection and risk among intravenous drug users in San Francisco: Preliminary results and implications. Contemporary Drug Problems, Fall, 397-410.

This article reports the preliminary findings of a pilot study that studied AIDS knowledge, participation in risk behaviors, immunofunctioning as measured by T-cell data, and HIV-1 seroprevalence in order to determine if there is a difference between those who present for treatment and those who do not.

Keywords: HIV/AIDS, physiological research, methadone, detoxification, heroin, other narcotics, amphetamines, cocaine, correlational, I.V. drug users, detoxification clients, San Francisco, California.

IV. METHADONE IN DRUG ABUSE TREATMENT

A. PHYSIOLOGICAL EFFECTS

- 4101 Chasnoff, I.J., Schnoll, S.H., Burns, W.J., & Burns, K. (1984). Maternal nonnarcotic substance abuse during pregnancy: Effects on Infant development. Neurobehavioral Toxicology and Teratology, 6, 277-280.

Although material ingestion of narcotic substances throughout pregnancy has been of increasing concern over the past two decades in this country, the even more prevalent problem of use and abuse of nonnarcotic substances by the pregnant woman has received little attention. This paper presents data on a group of infants delivered to nonnarcotic-abusing women and compares these infants to a group of infants born to mothers on low-dose methadone maintenance and to a group of infants delivered to drug-free women. Nonnarcotic-exposed infants were of normal birth weight and length and had a normal head circumference; on the other hand, opiate-exposed neonates were of low birth weight and length and had a small head circumference. On the Brazelton Neonatal Behavioral Assessment Scales, the nonnarcotic-exposed infants demonstrated irritability and deficits in state control. In long-term follow-up, evaluation of these infants with the Bayley Scales of Infant Development revealed normal scores through 12 months of age. By 24 months of age, scores for all groups, including the control group, began to fall away from the normal range.

Keywords: Client characteristics, pregnancy, nonequivalent comparison groups, outpatient, Chicago.

- 4102 Judd, L.L., Janowsky, D.S., Segal, D.S., Parker, D.C., & Huey, L.Y. (1981). Behavioral effects of methadone in schizophrenic patients. American Journal of Psychiatry, 138, 243-245.

The possible role that the endogenous opioid peptide system may play in the pathophysiology of major psychiatric disorders continues to be of considerable interest. A standard method of research for understanding this system has been to manipulate the endogenous opiate-like peptides by exogenous agonist and antagonist agents and then to attempt to identify the resultant changes in behavior. It appeared that methadone induced a subtle, but generalized subduing and motor retardation effect in this small sample of schizophrenic patients.

Keywords: Physiological effects, psychopathology, behavior change, symptoms, RDC, methadone, correlational, within subjects, psychiatric clients, inpatient.

- 4103 Judson, B.A., & Goldstein, A. (1981). Symptom complaints of patients maintained on methadone, LAAM (methadyl acetate), and naltrexone at different times on their addiction careers. Drug and Alcohol Dependence, 10, 269-282.

In this study, side effect complaints were compared between methadone patients on a stable dose with no heroin for at least 3 months and matched non-drug-using controls; between methadone patients when using and not using heroin; and between patients in treatment (stable dosage, no heroin use for at least one month) and at follow-up, when not using any

opiates and no longer in treatment. This last comparison was done for methadone, LAAM (1-alpha-acetylmethadol, methadyl, acetate), and naltrexone patients. Methadone patients had more complaints than did non-drug-using controls; patients in methadone treatment felt worse when using heroin than when not using heroin; methadone, LAAM, and naltrexone patients felt worse while in treatment than when they left treatment and stopped using all opiates; the level of complaints for patients abstinent from opiates at follow-up was not different from that reported by non-drug-using controls. The difficulty of ascribing the symptom complaints to the drugs, in the absence of placebo-treated control groups, is discussed.

Keywords: Physiological effects, alternative drugs, withdrawal, abstinence, methadone, LAAM, naltrexone, maintenance, heroin, other narcotics, nonequivalent comparison groups, maintenance clients, nonaddicts, community-based clinic, Santa Clara, California.

- 4104 McCaul, M.E., Bigelow, G.E., Stitzer, M.L., & Liebson, I.A. (1982). Short-term effects of oral methadone in methadone maintenance subjects. Clinical Pharmacology and Therapy, 31, 753-761.

In two experiments the physiologic and subjective status of methadone maintenance patients was assessed during the presumed peak (0 to 6 hr postmethadone) and during the presumed nadir of the daily methadone effect (18 to 30 hr postmethadone). In the first experiment physiologic and subjective responses were measured in seven ambulatory subjects at 2, 4, and 6 hr after a regular daily dose of methadone or placebo. In the second, physiologic measures were continuously monitored for 4 hr in six inactive seated subjects. In both studies, pupil diameter decreased after moderate to high methadone doses (35 to 80 mg). In the second experiment, heart rate fell and skin temperature rose significantly after methadone. Responses to the morphine-benzedrine group scale of the Addiction Research Center Inventory were elevated after methadone for most subjects in both studies, although there were individual differences in the magnitude and time course of this effect. Finally, low methadone maintenance doses of 10 and 20 mg/day had little or no effect on physiologic or subjective responses in two subjects. These studies showed that short-term effects of oral methadone can be readily detected during a 24-hr dosing regimen. The changes in function after the regular maintenance dose may result both from short-term opiate effects and relief of mild withdrawal.

Keywords: Physiological effects, dosage, methadone, maintenance, heroin, other narcotics, functional, maintenance clients, inpatient, Baltimore, Maryland.

- 4105 Rounsaville, B.J., Novelly, R.A., Kleber, H.D., & Jones, C. (1981). Neurophysiological impairment in opiate addicts: Risk factors. Annals of the New York Academy of Sciences, 362, 79-90.

The current paper presents data regarding, (1) the prevalence of neuropsychological impairment in a sample of opiate addicts evaluated earlier in the treatment, (2) antecedents of neuropsychological impairment in this group, and (3) concomitant clinical and behavioral characteristics associated with neuropsychological impairment in addicts. Evaluating the measures in which addicts perform most poorly, it appears that those tasks which call for greatest integration of different cortical areas are most affected, while measures of focal cortical regions are comparatively unimpaired in this group. For instance, there was a linear relationship between the number of subjects impaired on motor tasks (grip, finger tapping, and

pegboard) and the increasing need for integration of different cortical areas. Similarly, although verbal and performance IQ measures were not impaired in the group as a whole, verbal performance discrepancies were commonly noted. In the addict group as a whole, neuropsychological impairment appears to be diffuse and not localized. Thus, this sort of dysfunction is likely to be missed in clinical evaluations which do not rely on psychological testing, and may be an important factor in some addicts' impaired ability to sustain integrated efforts at work or to learn new vocational tasks.

Keywords: Physiological effects, client characteristics, psychopathology, methadone, antagonists, detoxification, maintenance, drug free, therapeutic community, nonequivalent comparison groups, epileptics, nonaddicts, detoxification clients, maintenance clients, drug free clients, therapeutic community clients, outpatient, residential, New Haven, Connecticut.

- 4106 Skarln, K., & Sulzer, J. (1978). Placebo attribution in methadone patients. International Journal of the Addictions, 13(7), 1049-1059.

The effect of external cues on the attributed effectiveness of a placebo was evaluated with methadone patients and a nonaddict control group. Two sources of external feedback, implicit dosage strength (liquid drug color) and explicit performance information (pursuit rotor feedback), were varied along with drug usage. The results indicated that the methadone patients made significantly greater placebo attributions and relied more upon the external cues in making those attributions than did the nonaddict control group. Implications for drug therapy are presented.

Keywords: Physiological effects, methodological, placebo, attitudes, methadone, maintenance, heroin, nonequivalent comparison groups, maintenance clients, nonaddicts.

B. DOSAGE REGIMENS

- 4201 Bickel, W.K., Higgins, S.T., & Stitzer, M.L. (1986). Choice of blind methadone dose increases by methadone maintenance patients. Drug and Alcohol Dependence, *18*, 165-171.

In the present study, a choice procedure was used in an outpatient methadone maintenance clinic to examine preferences for different double-blind methadone dose increases in 5 male patients. Subjects chose between 50 mg vs. 50 mg, 60 mg, 75 mg, and 100 mg of methadone. In the 50 mg condition, each alternative was selected equally often. Percent selection of the higher doses (60, 75, and 100 mg) over the 50 mg dose of methadone increased in a dose-related fashion. Subject self-reports were consistent with methadone's opiate-like properties with dose-related trends being noted in most scales (e.g., opiated effects, drug liking). Overall, the result shows that a choice procedure can be used successfully to assess the reinforcing properties of drugs in methadone maintenance patients and that methadone dose increases can function as a reinforcer in this population even under blind dosing conditions. None of the self-report measures was found to be statistically significant.

Keywords: Dosage, physiological research, self-regulation, treatment outcome, methadone, maintenance, heroin, other narcotics, choice procedure, maintenance clients, outpatient.

- 4202 Brown, B.S., Watters, J., & Inglehart, A.S. (1982-83). Methadone maintenance dosage levels and program retention. American Journal of Drug and Alcohol Abuse, *9*, 129-139.

Study was made of the relationship between methadone dosage policy and retention in drug abuse treatment. Responses were obtained from administrators of 113 methadone maintenance programs representing the 11 states with the largest number of maintenance programs. It was found that program policies involving the use of flexible dosages, i.e., where no single dosage policy predominated, were associated with greater retention in treatment. Programs making use of flexible strategies retained clients an average of almost 9 months longer than those programs making use of any other dosage policy. In contrast, no differences in retention were found between high, mid, and low dose programs when effort was made to control for relevant client variables. Study is suggested to explore the relationship of service delivery elements to dosage policy within methadone maintenance programs.

Keywords: Dosage, retention, treatment outcome, methadone, maintenance, correlational, program administrators, California, Connecticut, Illinois, Maryland, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, Texas.

- 4203 Craig, R.J. (1980). Effectiveness of low-dose methadone maintenance for the treatment of inner city heroin addicts. International Journal of the Addictions, *15*, 701-710.

Addicts were maintained on a daily average methadone dose of 30 mg. Clients remaining in treatment for 6 and 12 months were compared to clients dropping out of treatment within the first 30 days and followed up 1 year later. Results showed that clients remaining in treatment showed significant reductions in heroin usage and arrests, and large increases in full-time employment. One year later, the dropouts were doing as poorly as they had 1 year earlier.

Methadone maintenance averaging 30 mg/day achieved similar "success" rates as other studies using larger daily doses, but did so at the expense of retaining fewer clients in treatment. It was recommended that treatment strategies be designed to impact at the "remainders" may have been a more stable group initially and this may have potentiated the effects of treatment. They had higher rates of pretreatment employment, fewer total arrests than clients with an arrest history, and were slightly older than the dropouts. The challenge is to provide a treatment package that attracts and maintains the subset of addicts who are likely to leave before completing treatment. A more concentrated program should be initiated in the first 30 to 60 days of treatment, since this is where the major dropout occurs. Tighter screening and evaluation procedures prior to admission seem warranted in view of the high dropout rate at the onset of treatment. This may serve to separate those clients who are serious about rehabilitation from those clients who merely want free dope. Research on different program packages at the early stages of treatment is recommended.

Keywords: Dosage, retention, criminality, employment, treatment outcome, methadone, maintenance, heroin, nonequivalent comparison groups, maintenance clients, veterans, outpatient, veterans' facility, Chicago, Illinois.

Related research: Craig, R.J. (1980). Characteristics of inner city heroin addicts applying for treatment in a veterans administration hospital drug program (Chicago). International Journal of the Addictions, 15(3), 701-710.

- 4204 Gossop, M., Strang, J., & Connell, P.H. (1982). The response of out-patient opiate addicts to the provision of a temporary increase in their prescribed drugs. British Journal of Psychiatry, 141, 338-343.

Addicts who use illicit drugs despite receiving a maintenance prescription present a difficult management problem for drug dependence clinics. This study looks at a small group of such addicts and at their response to the provision of a temporary increase in their prescribed opiates. The results indicate that this increase led to a reduction in illicit drug use and to improvements in social functioning. These and other findings are discussed. It is suggested that clinics should be more prepared to consider such temporary increases, but the need for careful monitoring and for the involvement of more than one member of the treatment team is stressed.

Keywords: Dosage, urine monitoring, treatment outcome, multiple drug abuse, methadone, maintenance, heroin, other narcotics, alcohol, nonnarcotics, functional, maintenance clients, outpatient, London, England.

- 4205 Gunne, L.M., & Gronbladh, L. (1981). The Swedish methadone maintenance program: A controlled study. Drug and Alcohol Dependence, 7, 249-256.

Thirty-four addicts, aged 20-24 years, with a history of 4-8 years of intravenous heroin abuse, were randomly assigned either to a methadone maintenance treatment (MMT) (17) or to an untreated group (17). The untreated controls could not apply for entrance to the program until two years later. It was found that after two years 12 MMT patients had abandoned their drug habits and begun work, whereas 5 had recurrent drug abuse problems. Of the controls, one was drug-free and gainfully employed, 12 were continuously abusing heroin (3 of these had incurred potentially fatal diseases in consequence), 2 were in prison and 2 had died. Two to

seven years after their first visit to the Psychiatric Research Center 8 of the original control groups have been accepted into the program. At present 19 (out of 25 admitted) are gainfully employed and no longer abusing drugs. Among the remaining controls 4 are dead, 3 are in prison, one in spite of a serious heart condition abuses heroin and one is drug-free. The rehabilitation rate was thus 76 percent in the program as compared to 6 percent among the control group. In addition, MMT obviously reduced the high morbidity and mortality rates found in a selection of heroin addicts who fulfilled the admittance criteria of the Swedish program.

Keywords: Dosage, methodological, employment, criminality, mortality, treatment outcome, treatment process, methadone, maintenance, heroin, randomized experiment, maintenance clients, I.V. drug users, outpatient, Uppsala, Sweden.

Related research: Olsson, B., Carlsson, G., Fant, M., Johansson, T., Olsson, O., & Roth, C. (1981). Heavy drug abuse in Sweden 1979--A national case finding study in Sweden. Drug and Alcohol Dependence, 7, 273-283.

- 4206 Havassy, B.E., Hargreaves, W., & De Barros, L. (1979). Self-regulation of dose in methadone maintenance with contingent privileges. Addictive Behaviors, 4, 31-38.

The effect of giving methadone maintenance clients the opportunity to regulate their dosage and of offering take-home doses as an incentive for dose reduction was studied. Subjects (116) were randomly assigned to one of three conditions: self-regulation of dose with incentive for reduction (SR-2) and standard treatment (control). Dependent variables were dosage and use of illicit drugs (measured by urinalyses). Results for the first four months show SR-1 subjects increased dose and maintained themselves at dosages significantly greater than the SR-2 or control groups while having significantly less use of illicit opiates during certain time periods. SR-2 subjects were not different from controls. Findings indicate subjects behaved responsibly under self-regulation and that this regimen is clinically feasible. Nevertheless, an increase in take-home privileges was an insufficient incentive to yield major reductions in dosage in SR-2 as a group.

Keywords: Dosage, take-home privileges, methadone, maintenance, heroin, other narcotics, randomized experiment, maintenance clients, self-regulation, treatment outcome, community-based clinic, San Francisco, California.

- 4207 Havassy, B.E., & Tschann, J.M. (1983). Client Initiative, Inertia, and demographics: More powerful than treatment interventions in methadone maintenance. International Journal of the Addictions, 18, 617-631.

A major treatment intervention, previously reported in the literature, was conducted in which methadone clients were able to regulate their maintenance dose on a weekly basis. In this paper, the relationships among the intervention outcomes, demographic and personality variables, and treatment assignment are presented. The analyses indicate that personality, demographic, drug career, and treatment history variables did not interact with treatment assignment to produce particular outcomes. Nevertheless, outcome could be predicted by baseline illicit opiate use, prestudy methadone dosage, an interaction of age and ethnicity, and variables related to clients' initiative versus inertia with regard to treatment.

Keywords: Dosage, client characteristics, psychopathology, personality, self-regulation, methadone, maintenance, heroin, other narcotics, correlational, maintenance clients, San Francisco, California.

Related Research: Havassy, B.E., & Hargreaves, W. (1981). Allowing methadone clients control over dosage: A 48-week controlled trial. Addictive Behaviors, *6*, 283-288.

- 4208 Havassy, B.E., & Tschann, J.M. (1984). Chronic heroin use during methadone treatment: A test of the efficacy of high maintenance doses. Addictive Behaviors, *9*, 57-65.

A pilot study was conducted at two maintenance programs to test the effect of increasing the methadone dose of clients who continue chronic heroin use after stabilization on methadone. Program 1 subjects (Group 1) received substantial dose increases for a 14-week period; Program 2 subjects (Group 2) received no dose modifications during the same period. Results show Group 1 reported an alleviation of physical and psychological complaints but did not decrease illicit opiate use. Group 2 maintained the low level of complaints reported at baseline and, unexpectedly, decreased opiate abuse. Because the two maintenance programs differed in clinical practices and in enforcement of rules, it was concluded that clients who continue chronic heroin use need not only long-term dosage increases, but also clear, consistently applied program policies.

Keywords: Dosage, treatment outcome, physiological research, methadone, maintenance, heroin, nonequivalent comparison groups, maintenance clients, community-based clinic, San Francisco, California.

- 4209 Johns, A.R., & Gossop, M. (1985). Prescribing methadone for the opiate addict: A problem of dosage conversion. Drug and Alcohol Dependence, *16*, 61-66.

This study examines the relationship between self-reported use of opiates and the dose of oral methadone found to be needed on admission to an inpatients drug dependence unit. The sample consisted of all opiate addicts admitted in a 12-month period. For methadone addicts there was a close relationship between the two dose measures: for heroin addicts there was no relationship. Users of illicit heroin who generally state doses in 'grammes', reported a mean daily dose of 312.5 mg, but needed only 43 mg of oral methadone. Mean values for methadone addicts were 56 mg self-reported use, and 49 mg needed on the drug unit. Some of the reasons for the discrepancy in the two doses for the heroin addicts are discussed and clinical implications with regard to prescribing for opiate addicts are drawn.

Keywords: Dosage, methadone, maintenance, heroin, other narcotics, correlational, maintenance clients, inpatient, London, England.

- 4210 Ling, W., Charuvastra, C., Kalm, S.C., & Klett, J. (1976). Methadyl acetate and methadone as maintenance treatments for heroin addicts. Archives of General Psychiatry, 33, 709-720.

This was a double-blind comparison of methadyl acetate and two dose levels of methadone hydrochloride in the maintenance of 430 street heroin addicts from 12 Veterans Administration hospitals. The starting sample consisted of 146 patients receiving low-dose methadone, 142 patients receiving high-dose methadone, and 1421 patients receiving methadyl acetate. Patients were first given 30 mg of both drugs, and doses were incremented by 10 mg/week until they stabilized at methadyl acetate, 80 mg three times a week, and methadone hydrochloride, 50 mg daily or 100 mg daily. Dosage was fixed for the balance of the 40-week treatment period. Safety was evaluated by illicit drug use, program retention and attendance, and global staff judgments. It is concluded that methadyl acetate is as safe a drug as methadone and that it compares favorably with high-dose methadone in terms of efficacy. Both methadyl acetate and high-dose methadone appear to be better maintenance regimens than low-dose methadone under the conditions of this study.

Keywords: Dosage, alternative drugs, treatment outcome, retention, LAAM, methadone, maintenance, heroin, randomized experiment, veterans, veterans' facility, California, New York, Pennsylvania.

- 4211 McGlothlin, W.H., & Anglin, M.D. (1981). Long-term follow-up of clients of high- and low-dose methadone programs. Archives of General Psychiatry, 38, 1055-1063.

A six- to seven-year follow-up of 1971-1973 admissions to three methadone hydrochloride maintenance programs was conducted. Ninety percent of those alive were interviewed. Two of the programs used a high-dose, long-retention policy, while the third used low doses and a relatively strict policy with respect to involuntary termination for program violations. Retention was much longer for the two high-dose programs, and during the six- to seven-year period from program entry to interview, the clients had significantly less arrests, incarceration, narcotic addiction, and self-reported criminal behavior than did the patients in the low-dose program. These advantages persisted until the time of interview and existed for periods with as well as without methadone. In addition, the overall social costs in the high-dose programs were substantially less than in the low-dose program.

Keywords: Dosage, retention, treatment outcome, methadone, maintenance, heroin, other narcotics, correlational, maintenance clients, community-based clinic, California.

- 4212 Metzger, D.S., & Platt, J.J. (1987). Methadone dose levels and client characteristics in heroin addicts. International Journal of the Addictions, 22, 187-194.

Methadone dosage levels have typically been examined with regard to patient symptomatology, treatment retention, and continued narcotic use. The results of these studies have generally supported the conclusion that daily dosages of 40-60 mg per day are both safe and maximally effective for the majority of methadone clients. Yet, in practice, dosage levels for maintenance clients continue to vary a great deal both within and across clinics. The data presented here suggest that one source of this variation may be the social and cognitive skills of clients.

Keywords: Dosage, client characteristics, treatment outcome, methadone, maintenance, correlational, maintenance clients, outpatient.

Related research: Meltzer, J.D., & Katz, S.E. (1980). Methadone patients: Dosage, psychopathology, and research participation. International Journal of the Addictions, 15, 1097-1102.

Platt, J.J., Morell, J., Flaherty, E., & Metzger, D. (1982). Controlled study of methadone rehabilitation process (NIDA Grant No. R01-DA01929). Philadelphia: Hahnemann University, Department of Mental Health Sciences.

- 4213 Newman, R.G., & Whitehill, W.B. (1979). Double-blind comparison of methadone and placebo maintenance treatments of narcotic addicts in Hong-Kong. Lancet, September 8, 485-488.

In a double-blind study carried out between 1972 and 1975 in Hong Kong 100 heroin addict volunteers were initially admitted to hospital for two weeks for stabilization on 60 mg of methadone before being assigned at random to two groups: one group received methadone (range 30-130 mg, average 97 mg/day); those in the other group had their dose of methadone reduced at the rate of 1 mg/day and were then maintained on placebo. All subjects were provided with a broad range of supporting services. After thirty-two weeks 10% of the controls were still on treatment, compared with 76% of those receiving methadone. At the end of the three-year project, only 1 of the original 50 placebo subjects still turned up for treatment (2%), whereas the retention-rate (proportion still on treatment) for methadone subjects was 56%. Subjects who had dropped out of the study and were readmitted for methadone treatment under known conditions had the same retention-rate as the original treatment group.

Keywords: Dosage, placebo, treatment outcome, retention, methadone, maintenance clients, heroin, randomized experiment double blind, maintenance, inpatient, outpatient, Kowloon, Hong Kong.

Related research: Hong Kong Discharged Prisoner's Aid Society. (1978). Methadone maintenance pilot scheme: Final report to the three-year experiment, 6 December 1972 to 6 December 1975. Hong Kong: New Life Printing Press.

- 4214 Resnick, R.B., Butler, P., & Washton, A.M. (1982). Patient self-adjustment of methadone maintenance dose. In L.S. Harris (Ed.), Problems of drug dependence, 1981 (Research Monograph 41, pp. 327-330). Rockville, MD: National Institute on Drug Abuse.

To save staff time and increase patient satisfaction, patients were allowed during a trial period to adjust their own methadone dose up or down 5 mg without having to see a counselor or clinic physician. At the end of the trial period slightly less than half had no dose change. Of those with a dose change more chose self-adjustment rather than physician-implemented adjustment.

Keywords: Dosage, self-regulation, treatment outcome, methadone, maintenance, heroin, other narcotics, descriptive, maintenance clients, community-based clinic, New York City, New York.

- 4215 Stitzer, M.L., McCaul, M.E., Bigelow, G.E., & Liebson, I.A. (1984). Chronic opiate use during methadone detoxification: Effects of a dose increase treatment. Drug and Alcohol Dependence, 14, 37-44.

The effects of administering high methadone doses during detoxification treatment were examined on illicit opiate use and treatment retention in chronic opiate supplementors. Twenty-six applicants to a 90-day outpatient detoxification program who delivered 50% or more opiate-positive urine samples during treatment weeks 2 and 3 were randomly assigned to receive a constant 30-mg dose through treatment week 10 or an increase to 60 mg in week 4 with gradual reduction to 30 mg by week 10. Dosage for both groups was reduced to 0 mg during weeks 11-13. Treatment retention was better for experimental (median=86 days) than for control (median=41 days) subjects, but the difference was not statistically significant. In the dose increase group, percent opiate-positive urines decreased from 80% to 62% during the first two weeks of dose increase ($t=2.39$, $P<0.05$); opiate positive rates for the control group remained above 80%. A 20% between group difference in percent of opiate positive urine tests persisted through study week 10 in subjects ($N=5$ control, 7 experimental) who remained in treatment this long. Although the blind dose increase did improve treatment outcome, we concluded that the magnitude of the effect in this population of chronic opiate supplementors was insufficient to judge the procedure clinically useful.

Keywords: Dosage, abstinence, supplemental dosage, retention, treatment outcome, methadone, detoxification, heroin, other narcotics, randomized experiment, detoxification clients, outpatient, Baltimore, Maryland.

Related research: Stitzer, M.L., McCaul, M.E., Bigelow, G.E., & Liebson I.A. (1984). Effects of a dose increase on chronic opiate use during methadone detoxification. In L.S. Harris (Ed.), Problems of drug dependence, 1984 (Research Monograph 55, pp. 197-201). Rockville, MD: National Institute on Drug Abuse.

C. METHADONE TO ABSTINENCE

- 4301 Goid, M.L., Sorensen, J.L., McCaniles, N., Trler, M., & Diugosch, G. (1988). Tapering from methadone maintenance: Attitudes of clients and staff. Journal of Substance Abuse Treatment, 5, 37-44.

To investigate the barriers to tapering from methadone and to generate ideas for clinical services, 60 clients on methadone maintenance and 30 staff members in five methadone maintenance clinics were interviewed. The interview format combined quantitative and qualitative response options and assessed subjects' experience with tapering from methadone, ideas about barriers to tapering, suggestions about services that would aid them in getting off methadone, and aftercare services that would help them to remain drug-free. Both staff and patients noted significant barriers to methadone detoxification, estimating the likelihood of completing a successful taper at 10% and 14%, respectively. Patients reported psychological symptoms of withdrawal discomfort, but they emphasized physical problems of withdrawal much more than did staff. Both groups noted the need for counseling, role models of detoxified former addicts, and a wide array of available services.

Keywords: Abstinence, social support, attitudes, methadone, maintenance, heroin, other narcotics, descriptive, maintenance clients, counselors, program administrators, community-based clinic, San Francisco, California.

- 4302 Gossop, M., Bradley, B., & Phillips, G.T. (1987). An investigation of withdrawal symptoms shown by opiate addicts during and subsequent to a 21 day in-patient methadone detoxification procedure. Addictive Behaviors, 12, 1-6.

Methadone detoxification procedures are widely accepted as a satisfactory way of withdrawing opiate addicts from drugs. There have, however, been comparatively few empirical studies which have examined the development and course of withdrawal symptoms in opiate addicts in response to such detoxification procedures. This study investigates the opiate withdrawal syndrome in a group of 116 opiate addicts during the subsequent to a gradual oral methadone detoxification programme. Withdrawal symptoms peak at the end of the methadone schedule and decline steadily thereafter. Not until 40 days after the beginning of the withdrawal regime have symptom levels returned to normal. It is suggested that this protracted withdrawal response is not entirely satisfactory and alternative clinical and research options are proposed. The results fail to support the accepted view that dose is a major determinant of withdrawal severity. Low dose users did not experience less severe withdrawal symptoms than high dose users. This finding together with those of a previous study suggest that this issue also warrants further research attention.

Keywords: Abstinence, dosage, withdrawal, methadone, detoxification, heroin, other narcotics, descriptive, nonequivalent comparison groups, detoxification clients, inpatient, Beckenham, England.

- 4303 McCaul, M.E., Stitzer, M.L., Bigelow, G.E., & Liebson, I.A. (1983). Methadone detoxification: Effects of methadone dose versus time in treatment. In L.S. Harris (Ed.), Problems of drug dependence, 1983 (Research Monograph 49, pp. 269-273). Rockville, MD: National Institute on Drug Abuse.

The present study attempted to dissociate methadone dose and time in treatment as contributing factors to detoxification treatment outcome. Three groups of subjects received different dose reduction protocols during a 6-week period in the detox. One group received a rapid dose reduction to 10 mg at the beginning of the 6-week period and was then maintained at this low dose. A second group was maintained on a constant moderate 20 mg dose of methadone throughout the 6-week period. In previous studies, 10 mg to 15 mg of methadone had been suggested as a critical dose or a "breaking point" in the detox above which patients report few withdrawal symptoms and generally do not supplement their methadone dose with street drugs, but below which discomfort appears and relapse to drug use increases. Thus, methadone dose during the 6-week study period was stabilized above this theorized critical dose for the 20 mg group and below the critical dose for the 10 mg group. The third group in the present study received a gradual dose reduction of 2 mg per week during the study weeks; this group provided a comparison, employing the type of gradual dose reduction schedule most commonly employed in clinic-controlled detoxes. Illicit opiate and nonopiate drug use, clinic attendance and withdrawal symptomatology were assessed throughout the 13-week detoxification protocol.

Keywords: Abstinence, dosage, treatment outcome, withdrawal, physiological effects, retention, methadone, detoxification, heroin, other narcotics, correlational, detoxification clients, outpatient.

- 4304 McLeod, D.R., Bigelow, G.E., & Liebson, I.A. (1981). Self-regulated opioid detoxification by humans: Effects of methadone pretreatment. In L.S. Harris (Ed.), Problems of drug dependence, 1981 (Research Monograph 41, pp. 232-238). Rockville, MD: National Institute on Drug Abuse.

In the present experiment we have used an experimental human drug self-administration methodology to evaluate the effects of pharmacological pretreatments upon opioid drug-seeking and self-administration behavior, as well as upon the signs and symptoms of gradual opioid detoxification. Six male volunteer methadone-maintenance patients requesting detoxification from methadone gave written informed consent prior to participation. Within an eight-bed residential behavioral pharmacology research laboratory human drug self-administration methods were used to assess the effects of pretreatment with placebo and two doses of methadone upon methadone self-administration behavior and upon the signs, symptoms, subjective, and behavioral effects of methadone detoxification. Patients engaged in self-regulated methadone detoxification by engaging in operant responding to obtain 4-mg doses of methadone. Pharmacological pretreatments occurred on a randomized schedule as described below.

Keywords: Abstinence, self-regulation, behavior modification, classical conditioning, methadone, maintenance, detoxification, functional, maintenance clients, inpatient.

- 4305 Rounsaville, B.J., Kosten, T.R., & Kleber, H.D. (1983). Success and failure at outpatient opioid detoxification: Evaluating the process of clonidine- and methadone-assisted withdrawal. Journal of Nervous and Mental Disease, 173, 103-110.

Two controlled trials have suggested that clonidine can be used on an outpatient basis to assist in opioid withdrawal, but that rates of successful detoxification do not exceed those obtained with gradual methadone reduction. This study examines the process of clonidine-

and methadone-assisted detoxification to provide information about the timing and severity of withdrawal symptoms and side effects associated with each of the two methods. Derived from a double-blind clinical trial with randomized treatment assignment, data are presented which might guide the clinician in the choice of detoxification methods. In this study, subjects in either treatment condition had a success rate of approximately 40% and most subjects experienced at least moderate withdrawal discomfort in the areas of difficulty sleeping, feeling "blah," and craving. In both treatment groups the best predictor of detoxification failure was a high level of psychological symptoms at the onset of the study. Compared with gradual methadone reduction, clonidine treatment resulted in higher levels of withdrawal symptoms and side effects, earlier onset of withdrawal discomfort, earlier attrition, earlier termination of withdrawal discomfort, and a posttreatment course of drug use that was more consistent with success status during the study treatment.

Keywords: Abstinence, withdrawal, clonidine, methadone, detoxification, heroin, other narcotics, randomized experiment, detoxification clients, outpatient, New Haven, Connecticut.

- 4306 Senay, E.C., Dorus, W., Goldberg, F., & Thornton, W. (1977). Withdrawal from methadone maintenance. Archives of General Psychiatry, 34, 361-367.

One hundred twenty-seven successfully methadone-hydrochloride-maintained patients were randomly assigned to one of the following four groups and studied for 30 weeks: (1) known maintenance-patients were maintained on methadone under open conditions; (2) blind maintenance-patients were maintained on methadone under double-blind conditions; (3) rapid withdrawal-patients were withdrawn under double-blind conditions at a rate of 10% of initial dose per week; (4) gradual withdrawal-patients were withdrawn under double-blind conditions at a rate of 3% of initial dose per week. Differences in dropout rates, illicit drug use, symptoms scores, and requests for study interruption indicate that withdrawal from methadone maintenance should be carried out at approximately 3% of initial dose per week. Better patient preparation also is indicated to reduce the effects of expectation.

Keywords: Abstinence, methodological, dosage, withdrawal, treatment outcome, retention, methadone, maintenance, detoxification, heroin, other narcotics, randomized experiment, correlational within subjects, detoxification clients, maintenance clients, community-based clinic, Chicago, Illinois.

- 4307 Senay, E.C., Dorus, W., & Showalter, C. (1984). Methadone detoxification: Self versus physician regulation. American Journal of Drug and Alcohol Abuse, 10, 361-374.

We studied 108 heroin-dependent patients who had been "stabilized" on methadone, i.e., had no change in methadone dose for at least 2 weeks. With respect to their methadone detoxification regimen, 65 of the study patients preferred physician regulation and 43 study patients preferred self-regulation. Half of each group was randomly assigned to self- or physician regulation. Twenty-five of the 108 patients reached abstinence following a regimen which lasted 22 weeks; there was no statistically significant difference in proportion of subjects reaching abstinence from any of the four study groups. We observed no differences in treatment retention, symptom severity, frequency of urines positive for morphine or quinine, or psychosocial functioning. Study subjects preferring self-regulation had statistically significant increases in the number of dose raises. We conclude that there is no evidence to support the belief that physician regulation is superior to self-regulation in opioid detoxification regimens.

Keywords: Abstinence, self-regulation, dosage, attitudes, urine monitoring, treatment outcome, methadone, detoxification, heroin, randomized experiment, detoxification clients, outpatient, Chicago, Illinois.

- 4308 Sorensen, J.L., Hargreaves, W.A., & Weinberg, J.A. (1981). Withdrawal from heroin in three or six weeks: Comparison of LAAM versus methadone. In L.S. Harris (Ed.), Problems of drug dependence, 1981 (Research Monograph 41, pp. 230-231). Rockville, MD: National Institute on Drug Abuse.

A group of 61 heroin addicts were randomly assigned to one of four treatment groups: 6 weeks LAAM, 6 weeks methadone, 3 weeks LAAM, 3 weeks methadone. One problem with drug treatment is that short-term detoxification is ineffective in encouraging heroin users to adopt a drug-free lifestyle and that outpatient detoxification programs require the client to attend a clinic every day. In this study the successfulness of a withdrawal program other than the standard 21-day methadone detoxification program is tested. There were some temporary benefits to extending the time limit on detoxification; however, withdrawal symptoms were similar for LAAM and methadone clients.

Keywords: Abstinence, treatment outcome, retention, methadone, LAAM, detoxification, heroin, randomized experiment, detoxification clients, outpatient, San Francisco, California.

V. SUPPORT SERVICES IN METHADONE MAINTENANCE

A. COUNSELING

- 5101 Aiken, L.S., LoSciuto, L.A., Husetts, M.A., & Brown, B.S. (1984). Paraprofessional versus professional drug counselors: The progress of clients in treatment. International Journal of the Addictions, 19(4), 383-401.

The progress in treatment of 302 methadone maintenance and drug-free outpatient clients was examined as a function of the background of their 82 counselors. Counselors were either ex-addict paraprofessionals (EXAs), non-ex-addict paraprofessionals (NEAs), or degreed professional counselors (PROs). Client progress was assessed in five areas: drug use, criminality, educational activities, employment, and life quality. In the first four areas, status at treatment entry contrasted with that at two subsequent measurement points: the first interview and a 4-month follow-up. In no area of evaluation were outcomes substantially more favorable for clients of one counselor group over another. It was concluded that the three counselor groups were equally effective.

Keywords: Counseling, counselors, ex-addict paraprofessionals, treatment outcome, employment, methadone, maintenance, drug free, heroin, other narcotics, nonequivalent comparison groups, maintenance clients, drug free clients, community-based clinic, outpatient, New York, District of Columbia, Chicago, Illinois, Los Angeles, San Francisco, California.

- 5102 Connett, G.E. (1980). Comparing progress of patients with professional and paraprofessional counselors in a methadone maintenance program. International Journal of the Addictions, 15, 585-589.

The progress of two groups of patients on methadone maintenance were compared by examining urine results for use or nonuse of illicit drugs, attainment of a drug-free status, employment, continuous time in treatment, and take-out-of-clinic (TOC) medication (an assessment of a patient's overall progress as determined by the treatment team). Four paraprofessional counselors with an average education level of 12.7 years followed Group A patients (CGA) while five master's degree trained counselors followed Group B patients (CGB) (Table 1).

Keywords: Counseling, ex-addict paraprofessional, multiple drug abuse, take-home privileges, treatment outcome, retention, employment, urine monitoring, methadone, maintenance, heroin, other narcotics, non-equivalent, comparison groups, maintenance clients, Tucson, Arizona.

- 5103 Desmond, D.P., & Maddux, J.F. (1983). Optional versus mandatory psychotherapy in methadone maintenance. International Journal of the Addictions, 18, 281-290.

Treatment outcomes of 23 methadone maintenance patients who were offered optional psychotherapy were compared with those of 31 methadone maintenance patients who received mandatory psychotherapy. There were no statistically significant differences in pretreatment characteristics between the optional group and the mandatory group. Patients in

the optional group received less than half as many hours of therapy as patients in the mandatory group. Differences between the two groups in retention, employment, illicit drug use, and arrests were nonsignificant during a 1-year study period. The findings were compatible with those of most previous studies of the effectiveness of psychotherapy in methadone maintenance, which suggests that outcomes with or without psychotherapy do not differ significantly.

Keywords: Counseling, psychotherapy, retention, treatment outcome, methadone, maintenance, heroin, other narcotics, nonequivalent comparison groups, maintenance clients, community-based clinic, San Antonio, Texas.

- 5104 Farley, R.C., & Akridge, R.L. (1986). The feasibility of peer counseling as a rehabilitation resource. International Journal of Rehabilitation Research, 9, 69-72.

Two studies attempted to determine if peer counseling training would be received favorably by rehabilitation clients and whether such a program could teach critical helping skills. This was viewed as a first step in determining the feasibility and effectiveness of peer counseling as a resource for vocational rehabilitation. The results of the two studies reveal that peer counseling training can be a promising resource. The objectives of the training were achieved in both studies. The participants had a positive reaction toward the training and demonstrated significantly higher levels of basic interpersonal helping skills than did a comparison group who did not receive the training. An analysis of covariance of the data obtained in Study 1 from the Overall Communication Index Scale resulted in $F(1, 19) = 10.38, p \leq .0045$. The experimental group had a higher adjusted post-mean indicating that the training was effective in improving clients basic helping skills. These findings were replicated in Study 2. The analysis resulted in $F(1, 18) = 6.81, p \leq .0177$ with the experimental group again having the higher post-mean.

Keywords: Counseling, group counseling, peer counseling, vocational education, drug free, randomized experiment, rehabilitation clients, vocational rehabilitation center.

- 5105 Kosten, T.R., Astrachan, B.M., RJordan, C.E., & Kleber, H.D. (1982). The organization of a methadone maintenance program. Journal of Drug Issues, 12(4), 333-342.

This paper examines the organizational structure and operation of a methadone maintenance program whose major emphasis is on rehabilitation. Explicit program goals include teaching clients' real life problem solving and enabling some program members to give up methadone. The program is hierarchically structured and rule making and rule enforcement are managed through a clearly defined "chain of command". Small counseling groups are the major rehabilitative structure. They help to motivate client collaboration and teach problem solving in order to enhance skills, model behaviors, provide success experiences and allow individuals to master difficulties in order to limit social anxiety. These small groups engage and maintain addicts in treatment. However, they may paradoxically impede full return to the community because the client's dependency needs are met in the group setting. Problems for the program's organization include: (1) monitoring psychiatric disorder in the client population since deviant behaviors and affective experiences in the small group are routinely identified as reflecting socially determined individual problems, and (2) development of more adequate structures to help to prepare clients for withdrawal from methadone, graduation from the program, and the loss of small group and organizational supports.

Keywords: Counseling, group counseling, methadone, maintenance, heroin, other narcotics, descriptive, community-based clinic.

- 5106 Kosten, T.R., Hogan, I., Jalali, B., Stedl, J., & Kleber, H.D. (1986). The effect of multiple family therapy on addict family functioning: A pilot study. Advances In Alcohol and Substance Abuse In Women and Children, 5(3), 51-62.

Family therapy may help addicts remain drug abstinent by improving family functioning. In an outpatient pilot study eight addict families were evaluated before and after 16 weeks of multiple family therapy (MFT), while the addict was maintained on naltrexone, an opiate antagonist. The Beavers Timberlawn Family Assessment was used to rate videotapes on problem solving, family structure, individual autonomy, and affect. The 8 families showed significant improvement in global functioning ($T=3.5$, $n=8$, $p<0.05$), problem solving, structure, and autonomy, but not in affect. One addict relapsed during the 10 month follow up, and his was the only family that functioned worse at follow up. We concluded that MFT can help addict families progress from chaotic interactions to more stable family structures and from rigid to more flexible family functioning. This improvement in family functioning may be associated with ex-addicts remaining abstinent.

Keywords: Counseling, family therapy treatment outcome, family functioning, naltrexone, maintenance, case study, naltrexone maintenance clients, outpatient, New Haven, Connecticut.

- 5107 Luborsky, L., McLellan, A.T., Woody, G.E., O'Brien, C.P., & Auerbach, A. (1985). Therapist success and its determinants. Archives of General Psychiatry, 42, 602-611.

This study examined the relatively unexplored contribution of the therapist's performance in determining outcomes of treatment. Nine therapists were studied: three performed supportive-expressive psychotherapy; three, cognitive-behavioral psychotherapy; and three, drug counseling. Profound differences were discovered in the therapists' success with the patients in their case loads. Four potential determinants of these differences were explored: (1) patient factors; (2) therapist factors; (3) patient-therapist relationship factors; and (4) therapy factors. Results showed that (1) patient characteristics within each case load (after random assignments) were similar and disclosed no differences that would have explained the differences in success; (2) therapist's personal qualities were correlated with outcomes but not significantly (mean $r=.32$); (3) an early-in-treatment measure of the patient-therapist relationship, the Helping Alliance Questionnaire, yielded significant correlations with outcomes (mean $r=.65$); (4) among the therapy techniques, "purity" provided significant correlations with outcomes (mean $r=.44$), both across therapists and within each therapist's case load. The three therapist-related factors were moderately associated with each other.

Keywords: Counseling, psychotherapy, RDC, client characteristics, treatment outcome, methadone, maintenance, heroin, other narcotics, nonnarcotics, counselors, veterans, maintenance clients, outpatient, veterans' facility, Coatesville, Pennsylvania.

- 5108 Page, R.C. (1985-86). The effects of marathon groups on the ways illicit drug users perceive counseling. International Journal of the Addictions, 20, 1675-1684.

This research investigated the effects of five 16-hour unstructured marathon groups on changing the attitudes toward counseling of male and female imprisoned, illicit drug users. The attitudes of the participants of the marathon groups were compared on posttests to the attitudes of the participants of five matched, randomly selected control groups. The members of the marathon groups rated counseling higher than the members of the control groups on an evaluative semantic differential scale. They also rated many of the specific evaluative and potency adjective pairs of the semantic differential for counseling differently than the control group members.

Keywords: Counseling, group counseling, marathon groups, drug free, heroin, other narcotics, nonnarcotics, cocaine, amphetamines, nonequivalent comparison groups, prisoners, prison, Southeast.

- 5109 Rounsaville, B.J., Glazer, W., Wilber, C.H., Welssman, M.M., & Kleber, H.D. (1983). Short-term Interpersonal psychotherapy In methadone-maintained opiate addicts. Archives of General Psychiatry, 40, 629-636.

A clinical trial was used to evaluate short-term interpersonal psychotherapy (IPT) as treatment for psychiatric disorders in opiate addicts who were also participating in a full-service methadone hydrochloride maintenance program. Seventy-two opiate addicts were randomly assigned to one of two treatment conditions for six months: (1) IPT, consisting of weekly individual psychotherapy, and (2) low-contact treatment, consisting of one brief meeting per month. Recruitment was a problem, as only 5% of eligible clients agreed to participate and only around half of the subjects completed the study treatment. The outcome was similar for the two study groups. However, in many of the outcome areas, subjects in both treatment conditions attained significant clinical improvement. Several factors limited the generalizability of findings and may have biased against showing a psychotherapy effect.

Keywords: Counseling, psychotherapy, psychopathology, treatment outcome, methadone, maintenance, heroin, other narcotics, randomized experiment, maintenance clients, community-based clinic, New Haven, Connecticut.

- 5110 Slassl, I., Angle, B.P., & Alston, D.C. (1977). Who should be counselors In methadone maintenance programs: Ex-addicts or non-addicts? Community Mental Health Journal, 13, 125-132.

Counselors play a central role in most methadone maintenance programs. Yet the choice of who should be employed as counselors is based on little more than personal whims of decisionmakers. And in evaluating the effectiveness of this highly controlled rehabilitative therapy, the influence of the counselors as an important factor is often ignored. The total changeover of the counselors from an ex-addict to a nonaddict group in an otherwise stable clinic provided an unusual opportunity to compare the performance of the two groups. Both the objective and subjective data supported the hypothesis that ex-addicts as a group compare unfavorably with a similar group of nonaddicts when employed as counselors in a methadone maintenance clinic.

Keywords: Counseling, ex-addict paraprofessional, treatment outcome, urine monitoring, retention, treatment process, methadone, maintenance, heroin, nonequivalent comparison groups, maintenance clients, community-based clinic, Pittsburgh, Pennsylvania.

- 5111 Willet, E.A. (1973). Group therapy in a methadone treatment program: An evaluation of changes in interpersonal behavior. International Journal of the Addictions, 8(1), 33-39.

Eighteen outpatient heroin addicts participated in a project to determine the efficacy of group therapy as an adjunct to methadone treatment. Although the therapeutic outcome appeared truncated, the results generally support the contention that group therapy, combined with methadone treatment, can effect changes in interpersonal behavior as measured by the ICL. The mode of therapy was found to be related to the number of interpersonal changes, with the analytical group approach being somewhat more effective than the T-group. Methadone treatment alone did not produce a significant number of changes.

Keywords: Counseling, group counseling, ICL, behavior change, methadone, maintenance, heroin, correlational, maintenance clients, community-based clinic, Midwest.

- 5112 Woody, G.E., McLellan, A.T., Luborsky, L., O'Brien, C.P., Blaine, J., Fox, S., Herman, I., & Beck, A.T. (1984). Severity of psychiatric symptoms as a predictor of benefits from psychotherapy: The Veterans Administration-Penn Study. American Journal of Psychiatry, 141, 1172-1177.

One hundred ten nonpsychotic opiate addicts were randomly assigned to receive paraprofessional drug counseling alone, counseling plus cognitive-behavioral psychotherapy, or counseling plus supportive-expressive psychotherapy. Patients were classified low-severity, mid-severity, or high-severity on the basis of the number and severity of their psychiatric symptoms. Overall, the addition of professional psychotherapy was associated with greater benefits than was drug counseling alone. Low-severity patients made considerable and approximately equal progress with added psychotherapy or with counseling alone. Mid-severity patients had better outcomes with additional psychotherapy than with counseling alone, but counseling did effect numerous significant improvements. High-severity patients made little progress with counseling alone, but with added psychotherapy made considerable progress and used both prescribed and illicit drugs less often.

Keywords: Counseling, psychopathology, client characteristics, cognitive-behavioral psychotherapy, symptoms, treatment outcome, DSM-III, ASI, methadone, maintenance, heroin, other narcotics, randomized experiment, correlational, veterans, maintenance clients, nonpsychotic, veterans, outpatient, veterans' facility, Philadelphia, Pennsylvania.

B. VOCATIONAL TRAINING AND SERVICES

- 5201 Bloch, H.I., Ellis, R.D., & Spelman, C.R. (1977). Employment patterns of methadone maintenance clients. Drug Forum, 6(2), 127-135.

Analysis of the employment patterns of methadone maintenance clients has indicated that the majority were not employed at time of program admission. At time of evaluation, 70 percent of the sample were employed; 88 percent of these clients had previous work histories and brought marketable skills with them to the treatment setting. It was found that more than half the clients without a work history were employed at evaluation. These results suggest that the program had interceded in clients' lives at a time when they were tractable to reestablishing or developing work careers.

Keywords: Vocational services, treatment outcome, employment, methadone, maintenance, heroin, other narcotics, correlational, maintenance clients, New York City, New York.

- 5202 Hall, S.M., Loeb, P.C., LeVols, M., & Cooper, J.L. (1981). Increasing employment in ex-heroin addicts II: Methadone maintenance sample. Behavior Therapy, 12, 453-460.

Sixty job-seeking methadone maintenance clients were assigned to either the Job-Seeker's Workshop (n=30), a treatment program designed to increase job interview and job-seeking skills, or to an information only control condition (n=30), in a factorial design where leaders were crossed with treatments. At a 3-month follow-up, more experimental subjects (52%) than controls (30%) were employed, and workshop participation produced superior ratings of job interview behavior. Although major comparisons tended to produce results below traditionally acceptable levels of significance, differences were consistently in the expected direction. Leader x Treatment Condition interactions were not found, although main effects for leader were noted. Subjects who reported no job history in the past 5 years did not find employment, regardless of treatment condition, but previous work history above this threshold was not related to employment.

Keywords: Vocational services, treatment outcome, employment, methadone, maintenance, heroin, randomized experiment, maintenance clients, community-based clinic, San Francisco, California.

Related Research: Hall, S.M., Loeb, P.C., Coyne, K., & Cooper, J.L. (1981). Increasing employment in ex-heroin addicts I: Methadone maintenance sample. Behavior Therapy, 12, 443-452.

Hall, S.M., Loeb, P.C., Norton, J.W., & Yang, R. (1977). Improving vocational placements in drug treatment clients: A pilot study. Addictive Behaviors, 15, 438-439.

- 5203 Helmes, E., & Fekken, G.C. (1986). Effects of psychotropic drugs and psychiatric illness on vocational aptitude and interest assessment. Journal of Clinical Psychology, 42, 569-576.

This study examined the vocational aptitude and interest scores of 326 inpatients at a large urban psychiatric hospital. The inpatient group performed significantly below the adult normative mean on eight of nine General Aptitude Test Battery (GATB) aptitude measures;

the single exception was Verbal Aptitude. Further, GATB aptitude scores (adjusted for age and education) were significantly lower for patients who were receiving (N=210) psychotropic medication than for patients who were not receiving (N=114) psychotropic medication, again with the exception of Verbal Aptitude. Differentiation of patients into subsamples who were receiving particular drugs or drug combinations indicated that phenothiazines in combination with Anti-Parkinsonians were associated with the poorest GATB performances. Interestingly, self-reported vocational interests were not related in any systematic fashion to receiving medication. A variety of explanations that may account for these findings, including drug side-effects and severity or type of psychiatric disorder, were investigated. Implications for vocational counselors were discussed.

Keywords: Vocational services, psychopathology, employment, psychotropic drugs, correlational, psychiatric clients, inpatient, Canada.

C. SOCIAL SUPPORT

- 5301 Batki, S.L. (1988). Treatment of intravenous drug users with AIDS: The role of methadone maintenance. Journal of Psychoactive Drugs, 20, 213-216.

With the emergence of AIDS, effective treatment of intravenous drug users (IVDUs) has become even more crucial. This article discusses the multiple roles of methadone maintenance in the treatment of IVDUs with AIDS, examines the opportunities and dilemmas presented by such treatment, and describes an AIDS-specific methadone treatment program. The Program for AIDS Counseling and Education (PACE) is a part of the methadone maintenance unit at the San Francisco General Hospital Substance Abuse Services. PACE aims to provide specialized treatment services for IVDUs with AIDS or ARC (or other evidence of HIV infection) and their sexual partners. These patients are primarily opiate addicts, although many have other secondary drug abuse problems, especially with stimulants and/or alcohol. PACE offers methadone maintenance and an enriched treatment program. Treatment includes AIDS-specific counseling, which focuses on a number of issues found to be important in the care of patients with AIDS. Psychotherapy is supportive, didactic and pragmatic, focusing on stress reduction and health maintenance. Treatment in PACE also includes closer monitoring of patients through greater frequency of both counseling contacts and urine testing. Finally, PACE offers liaison with other providers of medical and social services. This work resembles the case-management approach adopted by community mental health programs to treat those disabled patients who are too disorganized to obtain access to services whose complexity can often seem bewildering.

Keywords: Social support, needle sharing, HIV/AIDS, benefit-cost, methadone, maintenance, heroin, other narcotics, case study, maintenance clients, AIDS cases, outpatient, San Francisco, California.

Related research: Batki, S.L., Sorensen, J.L., Faltz, B., & Madover, S. (1988). AIDS among intravenous drug users: Psychiatric aspects of treatment. Hospital and Community Psychiatry, 39, 439-441.

Dilley, J.W., Shelp, E.E., & Batki, S.L. (1986). Psychiatric and ethical issues in the care of patients with AIDS: An overview. Psychosomatics, 17, 562-566.

- 5302 Friedman, S.R., Des Jarlais, D.C., Sothoran, J.L., Garber, J., Cohen, H., & Smith, D. (1987). AIDS and self-organization among intravenous drug users. International Journal of the Addictions, 22, 201-219.

Gays and intravenous (i.v.) drug users are the two largest risk groups for AIDS. Gays, unlike drug users, have formed many organizations to deal with AIDS. Data are presented indicating that gay individuals have more risk-reducing behavioral changes than have i.v. drug users. It is also shown that i.v. drug users are more likely to protect themselves if their acquaintances do so. It is suggested that collective self-organization can lead to peer support for risk reduction and that this can help i.v. drug users to reduce their risks on an ongoing basis. Difficulties that face i.v. drug users' attempts to organize collectively and examples of i.v. drug user collective organization to deal with AIDS and other problems are discussed.

Keywords: Social support, HIV/AIDS, peer reference groups, behavior change, correlational, I.V. drug users, homosexuals, maintenance clients, community based clinic, New York City, New York.

- 5303 Harper, R.A. (1975). The new psychotherapies. Englewood Cliffs, NJ: Spectrum.

Some peer self-help groups, like Alcoholics Anonymous, are widely known, others are less well known and more transitory. Four groups are described to give the reader knowledge of how peer self-help groups work. The four groups selected were Synanon, Recovery, Integrity Groups, and Alcoholics Anonymous.

Keywords: Social support, alcohol abuse treatment, alternative treatment, psychotherapy, group counseling, peer counseling, therapeutic community, self-help, case study, alcoholics therapeutic community clients, residential.

- 5304 Hunt, D.E., Lipton, D.E., Goldsmith, D.S., & Strug, D.L. (1984). Problems in methadone treatment: The Influence of reference groups. In J. Grabowski, M.L. Stitzer, & J.E. Henningfield (Eds.), Behavioral Intervention techniques in drug abuse treatment (Research Monograph 46, pp. 8-22). Rockville, MD: National Institute on Drug Abuse.

The Tri-State Ethnographic Project (TRISEP) was a cooperative effort of researchers and program administrators in New York, New Jersey, and Connecticut to examine multifaceted aspects of methadone treatment. By gathering information from patients, staff, and addicts not in treatment, the project sought to focus attention on the processes of methadone treatment and the characteristics of patients which affect those treatment processes. The purpose was to determine whether informal social networks among persons in and around a methadone clinic influence attitudes and opinions about methadone and, consequently, affect patients' cooperation and compliance. The TRISEP research also examine problems common to most methadone programs--diversion, loitering, and polydrug abuse--to gather information which might be helpful for developing strategies to alleviate these problems. This paper describes four distinguishable groups identified in and around the methadone treatment clinic which act as referents for the behavior of their membership. These groups have important influences on addicts' decisions regarding whether or not to enter into and/or to cooperate with methadone treatment. The problems common to treatment programs can also be better understood in terms of the social organization of these groups. The groups differed significantly in their drug use, loitering, and treatment retention.

Keywords: Social support, peer reference groups, multiple drug abuse, methadone, maintenance, heroin, other narcotics, nonnarcotics, correlational, maintenance clients, TRISEP, community-based clinic, New York, New Jersey, Connecticut.

- 5305 Menon, P., Evans, R., & Madden, J.S. (1986). Methadone withdrawal regime for heroin misusers: Short-term outcome and effect of parental involvement. British Journal of Addiction, 81, 123-126.

Fifty young outpatient attenders at a regional drug dependence service were traced between 6 and 12 months after entering treatment. All had been physically dependent on heroin and received outpatient detoxification by a 14-day methadone withdrawal regime. The initial 25

patients were offered individual counseling and the remainder were counselled together with their parents. Forty-three subjects were interviewed (23 without and 20 with parental involvement in therapy). Abstinence was confirmed by urine testing on nine patients interviewed outside prison. Parental involvement made no difference to outcome in respect of abstinence and other changes in heroin usage, or to criminal activity. Heroin smokers were no more likely than injectors to abstain or decrease heroin use. It is likely that abstinence and decreased heroin consumption were spontaneous changes unrelated to therapeutic intervention.

Keywords: Social support, counseling, family therapy, treatment outcome, abstinence, criminality, employment, methadone, detoxification, heroin, correlational, detoxification clients, outpatient, Chester, England.

- 5306 Sorensen, J.L., Gibson, D., Bernal, G., & Deltch, D. (1985). Methadone applicant dropouts: Impact of requiring involvement of friends or family in treatment. International Journal of the Addictions, 20(8), 1273-1280.

This paper examines attrition among applicants to a methadone maintenance program before and after it began to require that applicants have a relative or close friend willing to act as a treatment sponsor. Few applicants were unable to locate sponsors. The dropout rate was greater for Blacks than for Hispanics and Anglo Whites both before and after the sponsor requirement was introduced. However, young addicts, addicts with recent drug histories, and singles were somewhat less likely to enter treatment after the requirement was introduced. Implications for drug treatment clinicians and administrators are discussed.

Keywords: Social support, sponsor, requirement, retention, methadone, maintenance, heroin, other narcotics, pretest-posttest, maintenance clients, outpatient, San Francisco, California.

- 5307 Wermuth, L., & Scheldt, S. (1986). Enlisting family support in drug treatment. Family Process, 25, 25-33.

Drug abuse programs often experience difficulties involving clients' families in treatment. This article describes general principles and specific techniques for recruiting family members in drug abuse programs and in other treatment settings. Stanton and Todd's principles of recruiting for family therapy in drug programs generally apply, adapted to a project that involves only one family member in multifamily groups and provides psychoeducational training rather than therapy. Additional principles include: focusing on family members who live with the client, tailoring recruitment to the needs of individual families, emphasizing how the family member will benefit, addressing resistance directly, helping families to build a support network, and informing family members of what is expected of them. The psychoeducational approach shows promise as a beneficial adjunct to client-focused treatment and as a gateway to more extensive family treatment.

Keywords: Social support, counseling, family therapy, methodological, methadone, maintenance, descriptive, outpatient, San Francisco, California.

D. BEHAVIOR MODIFICATION

- 5401 Anglin, M.D., McGlothlin, W.H., & Speckart, G.R. (1981). The effect of parole on methadone patient behavior. American Journal of Drug and Alcohol Abuse, 8, 153-170.

A 7-year followup of three male samples of 1971-1973 methadone maintenance admissions was conducted: a random sample of 100; a sample of 136 who had a minimum of 30 months remaining on civil addict parole status at the time of methadone entry; and a matched sample of 136 not on parole. Ninety percent of those not deceased were interviewed. The overall sample spent 58% of the nonincarcerated follow-up interval on methadone. This resulted in a large decline in daily heroin use and associated criminal behavior measures. The addition of parole supervision with urine testing resulted in only marginal improvements in behavior over that attributable to maintenance alone; however, the parole status did significantly reduce the length of intervals of daily heroin use both prior and subsequent to methadone entry.

Keywords: Behavior modification, coercion, parole, urine monitoring, treatment outcome, methadone, maintenance, heroin, other narcotics, nonequivalent comparison groups, methadone clients, parolees, CAP, community-based clinic, California.

- 5402 Collins, J.J., & Allison, M. (1983). Legal coercion and retention in drug abuse treatment. Hospital and Community Psychiatry, 34(12), 1145-1149.

The criminal justice system is increasingly referring offenders who have mental health problems to the community mental health system for treatment. The effects of such referrals on treatment outcome and on the mental health and criminal justice systems are not well understood. Because the length of time an individual remains in a drug abuse treatment program is an important indicator of treatment effectiveness, this paper assesses the impact of court referrals by examining the relationship between a drug abuser's length of stay in treatment and his referral by legal and nonlegal sources. Regression analyses on data for more than 2,200 individuals indicate that clients who are legally induced to seek treatment stay in treatment longer than, and do at least as well as, those who seek treatment voluntarily. The implications of these findings for drug abuse treatment and policy are discussed.

Keywords: Behavior modification, coercion, civil commitment, client characteristics, retention, treatment outcome, correlational, maintenance clients, therapeutic community clients, drug free clients, TOPS, outpatient, residential, TOPS cities.

Related research: Collins, J.J., Hubbard, R.L., Rachal, J.V., Cavanaugh, E.R., & Craddock, S.G. (1982). Criminal justice clients in drug treatment. Research Triangle Park, NC: Research Triangle Institute.

- 5403 Hall, S.M., Cooper, J.L., Burmaster, S., & Polk, A. (1976). Contingency contracting as a therapeutic tool with methadone maintenance clients: Six single subject studies. Behavioral Research and Therapy, 15, 438-441.

Contingency contracting ameliorated the target behavior in 3 of 6 cases (Subjects 1, 2, and 3), and the beneficial effects achieved were still present at 6 and 8 month follow-up. Further comparisons of contingent reinforcement periods with noncontingent periods in 2 of these cases indicated that the contracted contingencies did, in fact, influence the behaviors. In a

third case, social approval appeared to be the effective component of the treatment package. Possible therapeutic effects were noted in 2 additional cases (Subjects 4 and 5) Attenuation of effects appeared to be due to physical illness in the case of Subject 4. Also, Subjects 5 and 6 were both subjected to physical assault by their respective mates during the treatment period. The effect of such catastrophic events on treatment was not directly determined, but hardly could have been positive.

Keywords: Behavior modification, contingency management, contingency contracting, treatment outcome, methadone, maintenance, heroin, functional, maintenance clients, community-based clinic, San Francisco, California.

- 5404 Havassy, B.E., & Hall, S. (1981). Efficacy of urine monitoring in methadone maintenance. American Journal of Psychiatry, 138(11), 1497-1500.

To test the efficacy of screening urine specimens of methadone maintenance clients as a deterrent to illicit drug use, the authors randomly assigned 431 subjects to a monitored or an unmonitored group for 1 year. Monitored subjects continued to provide urine specimens once a week; unmonitored subjects did not. All other aspects of treatment remained the same. At 4 and 8 months after the study began, surprise urine collections were conducted. There was no difference between the groups in the proportion of drug-free specimens at either time.

Keywords: Behavior modification, urine monitoring, treatment outcome, methadone, maintenance, heroin, nonnarcotics, randomized experiment, maintenance clients, community-based clinic, California.

- 5405 Higgins, S.T., Stltzer, M.L., Bigelow, G.E., & Liebson, I.A. (1986). Contingent methadone delivery: Effects on illicit-opiate use. Drug and Alcohol Dependence, 17, 311-322.

The study examined the effects of contingent vs. non-contingent delivery of a methadone dose supplement on relapse to illicit opiate use in the context of a methadone outpatient detoxification program. Following a 3-week methadone stabilization period on 30 mg, patients (N=39) were randomly assigned to a contingent, a non-contingent, or a control treatment group. All patients received identical gradual reductions in their assigned methadone dose. During the dose reduction period (weeks 4-11), members of the contingent (N=13) and non-contingent groups (N=13) could obtain daily methadone-dose supplements up to 20 mg, but contingent group members could obtain supplements only if their most recent urinalysis results were opiate negative. Control subjects (N=13) did not have dose increases available. The contingent group presented significantly lower opiate-positive urines during weeks 8-11 (14% positive) of the detoxification than the non-contingent (38% positive) or control (50% positive) groups. Additionally, the availability of extra methadone improved treatment retention and increased clinic attendance above levels observed in the control group. The potential for further use of methadone's reinforcing properties in the treatment of opiate dependence is discussed.

Keywords: Behavior modification, contingency management, supplemental dosage, dosage schedules, treatment outcome, methadone, detoxification, heroin, other narcotics, randomized experiment, detoxification clients, outpatient, Baltimore, Maryland.

- 5406 Khatami, M., Woody, G., O'Brien, C., & Mintz, J. (1982). Biofeedback treatment of narcotic addiction: A double-blind study. Drug and Alcohol Dependence, 9, 111-117.

This is a report on the double-blind study on EMG biofeedback for 37 narcotic addicts in an outpatient methadone clinic. Patients were randomly assigned to either the experimental group (N=24) receiving a contingent EMG biofeedback or a control group (N=13) receiving non-contingent pretaped "pseudo-biofeedback". All patients were stabilized on a study dose of methadone and the mean daily amount did not differ between groups. All were experiencing a significant degree of anxiety at the time of evaluation. The evaluation consisted of the patient's self-report, which comprised the Beck Depression Inventory, anxiety checklist, withdrawal sickness rating, drug references, and the psychiatrist's rating of depression, namely the Hamilton Depression Scale, Hamilton Anxiety Scale, and BPRS. In addition, an evaluation of progress was obtained from the patient and his counselor which included the current job or school status and brief ratings of drug use, psychiatric symptoms, social adjustment, and illegal activity. All patients had at least one urine sample analyzed weekly for illicit drug use. Evaluation was done at the beginning, and at the end of the treatment and at a follow-up one month later. Termination status was assessed only for subjects who completed the course of 15 biofeedback sessions (N=19). Patients attended five sessions per week for thirty minutes just prior to receiving the methadone. Fifteen sessions were scheduled over a three-week period. The results indicated that the two study groups did not differ and there was a significant improvement ($p < 0.05$) on several variables for the total patient sample. All the psychiatric ratings of anxiety, depression, psychopathology were significantly reduced. In addition, self-rated craving for narcotics and self-rated anxiety were lower and there were fewer drug avoidance responses on the sentence completion test. But there were no meaningful differences in the two groups in improvement as reflected in the psychometric instruments.

Keywords: Behavior modification, contingency management, feedback, urine monitoring, treatment outcome, methadone, maintenance, randomized experiment double blind, maintenance clients, veterans, outpatient, veterans' facility, Philadelphia, Pennsylvania.

- 5407 Magura, S., Casriel, C., Goldsmith, D.S., & Lipton, D.S. (1987). Contracting with clients in methadone treatment. Social Casework, 68, 485-493.

Behavioral contracting with methadone clients facilitated several kinds of useful behavior but not abstinence from illicit drugs. Reasons for success or failure of contracts are illustrated by case examples. Contracting can serve as a valuable adjunct to counseling for selected clients. Five case examples included.

Keywords: Behavior modification, contingency contracting, treatment outcome, methadone, maintenance, heroin, other narcotics, case study, descriptive, maintenance clients, outpatient, New York City, New York.

- 5408 McCaul, M.E., Stitzer, M.L., Bigelow, G.E., & Liebson, I.A. (1984). Contingency management interventions: Effects of treatment outcome during methadone detoxification. Journal of Applied Behavior Analysis, 17, 35-43.

We examined the effectiveness of a contingency management program in preventing relapse to illicit opiate use and increasing treatment retention during outpatient methadone

detoxification treatment. Twenty male opiate addicts were randomly assigned to an experimental or control group. Following a 3-week methadone stabilization period, men in both groups received identical gradual methadone dose reductions during Weeks 4 through 9 and were maintained on placebo during Weeks 10 through 13. Beginning in Week 4, control patients received \$5.00 for providing a specimen twice weekly. Experimental patients received \$10.00 and a take home methadone dose for each opiate-free urine specimen but forfeited the incentives and participated in more intensive clinic procedures when specimens were opiate positive. The contingency management procedure slowed the rate of relapse to illicit opiate use. Experimental patients provided significantly more opiate-free urines during the methadone dose reduction in Weeks 4 through 9 than control patients, although the difference between groups was no longer significant during placebo administration in Weeks 10 through 13. In addition, the contingency management program improved treatment retention and reduced symptom complaints during the detoxification. The usefulness and limitations of contingency management procedures for outpatient methadone detoxification are discussed.

Keywords: Behavior modification, contingency management, treatment outcome, urine monitoring, methadone, detoxification, heroin, other narcotics, randomized experiment, detoxification clients, outpatient, Baltimore, Maryland.

- 5409 McLellan, A.T., & Druley, K.A. (1977). A comparative study of response to treatment in court-referred and voluntary drug patients. Hospital and Community Psychiatry, 28, 241, 245.

In a study of 121 male veteran clients in a 90-day Veterans Administration drug rehabilitation program, court-referred and voluntary patients were compared. Objective and subjective measures both indicate that the court-referred drug patient is potentially as responsive to treatment as the voluntary patient. Sixty-two percent of the court-referred patients were judged to have a good prognosis compared with 58 percent of the other patients (n.s.d.).

Keywords: Behavior modification, coercion, client characteristics, criminality, heroin, other narcotics, nonnarcotics, nonequivalent comparison groups, veterans, veterans' facility, Coatesville, Pennsylvania.

- 5410 Stitzer, M.L., Bickel, W.K., Bigelow, G.E., & Liebson, I.A. (1986). Effect of methadone dose contingencies on urinalysis test results of polydrug-abusing methadone-maintenance patients. Drug and Alcohol Dependence, 18, 341-348.

Drug abuse outcomes were examined during 2 contingency management procedures in which the size of the methadone dose was determined by recent urinalysis test results. Twenty polydrug-abusing methadone-maintenance patients were exposed to one of two specific altered dose consequences: a positive incentive procedure in which dose could only increase above the original baseline as a result of drug-free urines and a negative incentive procedure in which dose could only decrease below original baseline levels as a result of drug-positive urines. About 13% of urinalysis test results were drug-free during a 10-week pre-study baseline period while about 40-50% of urines were drug-free for both treatment groups during an 18-week intervention period. Repeated measures analysis of variances revealed a significant treatment effect ($F(1,18)=55.5$ $P>0.001$). About half of the subjects in each study condition showed marked improvement during the intervention, while the other half failed to

improve their urine test results. There was no difference between the two incentive procedures as far as the overall extent of improvement in drug use was concerned ($F(1,18)=0.12, NS$). Treatment failures in the dose decrease as compared with the dose increase condition were more likely to drop out of the study. The study showed that size of the methadone dose can be effectively used as a consequence to influence illicit drug use during treatment. The study suggests that positive reinforcement as compared with aversive control procedures can produce an equivalent number of successful cases while avoiding dropout among patients who fail to respond to treatment.

Keywords: Behavior modification, contingency management, multiple drug abuse treatment, supplemental dosage, urine monitoring, treatment outcome, methadone, maintenance, heroin, other narcotics, cocaine, nonnarcotics, randomized experiment, functional, maintenance clients, outpatient, Baltimore, Maryland.

E. PREVALENCE AND TREATMENT OF COCAINE ABUSE IN METHADONE MAINTENANCE

- 5501 Kosten, T.R., Gawin, F.H., Rounsaville, B.J., & Kleber, H.D. (1986). Cocaine abuse among opiod addicts: Demographic and diagnostic factors in treatment. American Journal of Drug and Alcohol Abuse, 12, 1-16.

Cocaine is becoming a major drug of abuse among the general population and among opiate addicts. Reports from the early 1970s found that most abusers were older black males with some antisocial characteristics. Cocaine abuse at that time was reported by about 17% of opiate addicts seeking treatment and by 7 to 11% of ex-addicts on methadone maintenance. However, that rate increased dramatically during the 1970s, and in our 1980 study of 533 addicts we found that 74% of opiate addicts applying for treatment used cocaine. It was the second most abused nonopioid drug after marijuana, surpassing alcohol intoxication. Although the mean number of days of abuse over the previous 30 days was substantially lower among the addicts on our methadone maintenance program ($\bar{x} = 1.4$ days, $n = 120$) than among the addicts applying for treatment ($\bar{x} = 9$ days, $n = 204$), the following associations with cocaine abuse were consistent in both subsamples. Cocaine abuse was more frequent among Blacks. It was associated with a variety of antisocial indices including Research Diagnostic Criteria antisocial personality disorder, number of arrests, and legal, family, employment, and drug abuse problems as assessed by the Addiction Severity Index and the Social Adjustment Scale. Several differences emerged between black and white cocaine-abusing addicts, the most interesting being an increased rate of anxiety disorders among white cocaine abusers. Based on these associations, we offer several guidelines for treating cocaine abuse in opiate addicts.

Keywords: Cocaine abuse treatment, client characteristics, methadone, maintenance, therapeutic community, cocaine, heroin, other narcotics, correlational, maintenance clients, therapeutic community clients, community-based clinic, New Haven, Connecticut.

- 5502 Kosten, T.R., Rounsaville, B.J., & Kleber, H.D. (1988). Antecedents and consequences of cocaine abuse among opiod addicts: A 2.5-year follow-up. Journal of Nervous and Mental Disease, 176, 176-181.

During a 2.5-year follow-up of opiod addicts, we examined psychosocial antecedents and consequences of the onset and remission of cocaine abuse. Patients who never used cocaine were compared with those whose use increased or decreased along several dimensions of treatment outcome including drug abuse, legal, employment, family, social, psychological, and medical problems. Cocaine abuse had a marked impact on almost every outcome area except medical problems. Patients whose cocaine use increased during follow-up had more severe problems than either those whose use decreased or those who never used cocaine. Furthermore, the attainment of cocaine abstinence among abusers was associated with improved psychosocial functioning, whereas the onset of cocaine abuse was associated with increased problem severity. Compared with drug-free and detoxification alone treatments, methadone maintenance may minimize legal complications of cocaine abuse, but otherwise it did not significantly reduce psychosocial morbidity from increasing cocaine abuse. These findings suggest that treatment-seeking opiod addicts are vulnerable to wide-ranging deterioration when they become increasingly involved with cocaine but that with the attainment of abstinence many problem areas improve.

Keywords: Cocaine abuse treatment, treatment outcome, employment, retention, criminality, methadone, drug free, detoxification, maintenance, heroin, other narcotics, cocaine, correlational, drug free clients, detoxification clients, maintenance clients, outpatient, community-based clinic, New Haven, Connecticut.

Related research: Kosten, T.R., Rounsaville, B.J., & Kleber, H.D. (1987). A 2.5 year follow-up of cocaine abuse among opioid addicts: Have our treatments helped? Archives of General Psychiatry, 44, 281-285.

- 5503 Kosten, T.R., Schumann, B., Wright, D., Carney, M.K., & Gawin, F.H. (1987). A preliminary study of desipramine in the treatment of cocaine abuse in methadone maintenance patients. Journal of Clinical Psychiatry, 48, 442-444.

Intravenous cocaine use is a major problem in methadone maintenance programs. In this pilot study of 16 cocaine-abusing methadone maintenance patients, 8 received desipramine and 8 received no medication other than methadone. During an 8-week open trial the desipramine patients reported significantly less cocaine craving and had less cocaine use than the other patients.

Keywords: Cocaine abuse treatment, treatment outcome, desipramine, methadone, maintenance, cocaine, heroin, other narcotics, nonequivalent comparison groups, maintenance clients, community-based clinic, New Haven, Connecticut.

- 5504 Tennant, F., & Berman, M.L. (1988). Stepwise detoxification from cocaine: A promising regime. Post Graduate Medicine, 84, 225-235.

No single drug has been found to be consistently effective in helping patients withdrawal from cocaine dependence, apparently because biochemical abnormalities vary widely from patient to patient. Drs. Tennant and Berman therefore suggest a relatively successful stepwise detoxification regimen that includes most of the effective pharmacologic agents. The regimen is combined with education and counseling of patient and family.

Keywords: Cocaine abuse treatment, social support, family counseling, alternative drugs, desipramine, detoxification, cocaine, nonequivalent comparison groups, cocaine detoxification clients, community-based clinic, West Covina, California.

F. PREVALENCE AND TREATMENT OF ALCOHOL ABUSE IN METHADONE MAINTENANCE

- 5601 Hunt, D.E., Strug, D.L., & Goldsmith, D.S. (1986). Alcohol use and abuse: Heavy drinking among methadone clients. American Journal of Drug and Alcohol Abuse, *12*, 147-64.

This paper discusses alcohol use among methadone maintenance clients and narcotics users not in treatment. The data are derived from the Tri-State Ethnographic Project, a study of four methadone maintenance clinics in three states. Data indicate that methadone clients consume more alcohol than comparable age groups in the general population, but not more alcohol than narcotics users not in treatment. For a portion of the treatment population, however, heavy drinking presents significant problems. Sixteen percent of the treatment sample were found to be abusive pattern drinkers; that is, persons who report not only drinking heavily but also spending a great deal of time hanging out on the street, getting high, and consuming many other additional drugs. These abusive pattern drinkers reflect a pattern of polydrug use which began in their early teens and report multiple unsuccessful treatment attempts.

Keywords: Alcohol abuse treatment, client characteristics, methadone, maintenance, alcohol, heroin, other narcotics, correlational, maintenance clients, I.V. drug users, TRISEP, street, community-based clinic, New York, New Jersey, Connecticut.

- 5602 Marcovici, M., McLellan, A.T., O'Brien, C.P., & Rosenzweig, J. (1980). Risk for alcoholism and methadone treatment: A longitudinal study. Journal of Nervous and Mental Disease, *168*, 556-558.

To investigate the relationship between methadone and alcohol abuse, 60 male veteran narcotic addicts entering a methadone maintenance program were divided into either a problem drinker group (N=21) or a normal drinker group (N=39) based on their drinking histories and Breathalyzer tests at admission. Their performance was monitored throughout methadone treatment. Results showed no systematic changes in alcohol use. Problem drinkers tended to be involved in more criminal activity, showed more evidence of depression and anxiety, and were more likely to continue abuse of illicit drugs. These results suggest that stabilization on methadone was not etiologically associated with alcohol abuse.

Keywords: Alcohol abuse treatment, treatment outcome, methadone, maintenance, alcohol, heroin, other narcotics, correlational, maintenance clients, veterans, veterans' facility, outpatient, Philadelphia, Pennsylvania.

- 5603 Rounsaville, B.J., Welssman, M.M., & Kleber, H.D. (1982). The significance of alcoholism in treated opiate addicts. Journal of Nervous and Mental Disease, *170*, 479-488.

This paper presents an evaluation of clinical characteristics of opiate addicts who also have a current or past history of alcoholism diagnosed according to Research Diagnostic Criteria. Based on data derived from a survey of 533 treated opiate addicts, the following findings were obtained. First, alcoholism in treated opiate addicts was found to be a common problem occurring at rates far exceeding those in the surrounding community in all demographic

groups. Second, regarding the sequence of alcoholism and opiate addiction, most alcoholic addicts in this sample had alcohol problems before developing a drug use disorder or seeking treatment for opiate addiction. Third, entrance into treatment did not appear to lead to either increased or decreased alcohol abuse, and alcohol abuse while in treatment usually took place in those who had a history of alcohol problems. Fourth, when compared with nonalcoholic addicts, alcoholic addicts had fewer assets and more liabilities including a more disruptive childhood history, heavier history of legal problems and polydrug abuse, more severe problems with social functioning, and higher rates of psychiatric disorders. Fifth, despite these liabilities follow-up findings 6 months after seeking treatment indicate that alcoholism was of little prognostic significance in relationship to treatment outcome.

Keywords: Alcohol abuse treatment, treatment outcome, methadone, maintenance, therapeutic community, heroin, other narcotics, alcohol, descriptive, New Haven, Connecticut.

- 5604 Sells, S.B., & Simpson, D.D. (1987). Role of alcohol use by narcotic addicts as revealed in the DARP research evaluation of treatment for drug abuse. Alcoholism: Clinical and Experimental Research, 11, 437-439.

As already noted, alcohol use was one of the treatment outcomes measured preDARP, during DARP, and postDARP, along with opioid use, nonopioid use, marijuana use, criminality, and employment. Although alcohol use increased after DARP, along with marijuana use, while opioid use declined, careful studies verified that substitution of alcohol for heroin occurred in not more than about 10% of the cases. Even with the increase, postDARP alcohol use by the majority of clients followed in the postDARP surveys was moderate. As a matter of fact, alcohol use was most highly associated with marijuana use and could be considered a component of multiple (or poly) drug use, but alcohol use was not associated with opioid use, except for a very small minority of the client population. In the follow-up sample, the lowest alcohol use was in the group that received DARP MM treatment.

Keywords: Alcohol abuse treatment, alternative treatment, treatment outcome, methadone, maintenance, therapeutic community, drug free, detoxification, alcohol, heroin, other narcotics, correlational, maintenance clients, therapeutic community clients, drug free clients, detoxification clients, alcoholics, DARP, community-based clinic, residential, outpatient, inpatient, DARP cities.

- 5605 Stimmel, B., Cohen, M., Sturlano, V., Hanbury, R., Kerts, D., & Jackson, G. (1983). Is treatment for alcoholism effective in persons on methadone maintenance? American Journal of Psychiatry, 140, 862-866.

A randomized prospective study of 625 drug addicts on methadone maintenance revealed that 105 (17%) were active alcoholics, 47 (8%) were inactive alcoholics, and 473 (76%) were not alcoholics. The active alcoholics were randomly assigned to abstinence therapy, controlled linking with behavior modification, or a control group receiving the usual clinic services. There were no differences between treatment and control groups at baseline and during follow-up of up to 2 1/2 years, and there was no relation between remission and treatment, suggesting that the effectiveness of currently employed specific interventions for alcoholism in active alcoholic addicts maintained on methadone cannot be demonstrated.

Keywords: Alcohol abuse treatment, treatment outcome, retention, behavior change, group counseling, maintenance, alcohol, heroin, nonnarcotics, randomized experiment, maintenance clients, alcoholics, community-based clinic, New York City, New York.

Related research: Jackson, G., Korts, D., Hanbury, R., et al. (1982). Alcohol consumption in persons on methadone maintenance. American Journal of Drug and Alcohol Abuse, 9, 69-76.

G. PREVALENCE AND TREATMENT OF OTHER FORMS OF DRUG ABUSE IN METHADONE MAINTENANCE

- 5701 Glosser, D.S. (1983). The use of token economy to reduce illicit drug use among methadone maintenance clients. Addictive Behaviors, 8, 93-104.

The effects of a token economy in modifying the illicit polydrug use of 97 methadone maintenance clients was investigated over a period of two and a half years. Subjects' drug-free urinalysis reports were reinforced with points which could be redeemed to obtain methadone. Each subject's daily dose level varied with the point balance. A multiple baseline analysis showed that when methadone acquisition was in part made contingent upon drug-free urinalyses, illicit drug use declined rapidly. After six months, the token economy group's urines were 14% positive for illicit drugs compared to 39% in the traditional treatment group. As time in treatment increased, illicit drug use further declined. These results suggest a more effective and practical strategy for the treatment of polydrug abusing methadone maintenance clients than has previously been available.

Keywords: Multiple drug abuse, behavior modification, dosage, contingency management, token economies, urine monitoring, treatment outcome, methadone, maintenance, heroin, other narcotics, functional, nonequivalent comparison groups, maintenance clients, community-based clinic, Worcester, Massachusetts.

- 5702 McCarthy, J.J., & Borders, O.T. (1985). Limit setting on drug abuse in methadone maintenance patients. American Journal of Psychiatry, 142, 1419-1423.

In this prospective study the authors examined the effects of setting limits on continued drug abuse in patients receiving methadone maintenance. Subjects were randomly assigned either to structured treatment (drug use exceeding set limits resulted in methadone withdrawal) or to unstructured treatment (no consequences attended continued drug use). The structured treatment resulted in significantly less drug use and greater retention in the program. The authors conclude that these results confirm the importance of external structure in the treatment of addiction-related psychopathology.

Keywords: Multiple drug abuse, behavior modification, contingency management, treatment outcome, urine monitoring, methadone, maintenance, heroin, other narcotics, nonnarcotics, randomized experiment, maintenance clients, community-based clinic, Davis, California.

- 5703 Stitzer, M.L., Blgelow, G.E., Liebson, I.A., & Hawthorne, J.W. (1982). Contingent reinforcement for benzodiazepine-free urines: Evaluation of a drug abuse treatment intervention. Journal of Applied Behavior Analysis, 15(4), 493-503.

This study evaluated contingent reinforcement for benzodiazepine-free urines as a therapeutic intervention for promoting reduced use of supplemental benzodiazepine drugs among methadone maintenance outpatients. Ten methadone maintenance patients were selected for participation on the basis of positive urinalysis results. During a 12-week intervention period these patients were offered clinic privileges, including monetary payments or methadone take-home doses, contingent on benzodiazepine negative urinalysis test results. Eight of ten participants responded to the intervention with at least 2.5 weeks of consecutive clean urines. An increase in benzodiazepine-negative tests during the contingent reinforcement period was

significant for the group as a whole (Emit^R test, low calibration) ($F=10.03$, $p<.05$), Emit^R test 25 point-above-calibration-cutoff ($F=9.64$, $p<.05$), TLC test ($F=7.5$, $p<.05$)). The results suggest that more widespread application of contingent reinforcement procedures may be warranted in drug abuse treatment clinics.

Keywords: Multiple drug abuse, behavior modification, contingency management, urine monitoring, treatment outcome, methadone, maintenance, benzodiazepine, functional, maintenance clients, community-based clinic, Baltimore, Maryland.

- 5704 Stltzer, M.L., Griffiths, R.R., McLellan, A.T., Grabowski, J., & Hawthorne, J.W. (1981). **Diazepam use among methadone maintenance patients: Patterns and dosages.** Drug and Alcohol Dependence, 8, 189-199.

Methadone maintenance patients who use benzodiazepine drugs were interviewed about the dosage levels, patterns, frequency, and motives of their use of these drugs. The sample was drawn from two treatment clinics, one in Baltimore ($N=12$) and one in Philadelphia ($N=17$). Benzodiazepine use was prevalent at both of these clinics--65-70% of maintenance patients had positive urinalysis tests during a single month. Ninety-three percent of survey participants identified diazepam as the drug which they used most often. The median value of the usual daily dose was 40-45 mg, 31% reported usual daily doses between 70 and 300 mg and 62% had experience with doses of 100 mg and higher. The majority of the sample reported taking diazepam in a single daily dose within one hour of the time that they ingested their daily methadone; 72% of the sample indicated that diazepam boosts the effects obtained from the daily methadone dose. Another sample of addicts who reported extensive experience with both benzodiazepines and barbiturates indicated that diazepam increases the effects of methadone while barbiturates produce no change in the effects of methadone. Results of this study suggest that patterns and dosages of diazepam use among methadone maintenance patients are primarily abusive rather than therapeutic.

Keywords: Multiple drug abuse, client characteristics, methadone, maintenance, benzodiazepine, barbiturates, descriptive, veterans, maintenance clients, veterans' facility, outpatient, Philadelphia, Pennsylvania, Baltimore, Maryland.

- 5705 Thrower, J.H., & Taylor, J.D. (1986). **Edwards Personal Preference Schedule Correlates of Addiction Counselor Effectiveness.** International Journal of the Addictions, 21, 191-193.

Edwards Professional Preference Schedule scores of 21 males and 10 female paraprofessional chemical dependency counselors working at inpatient treatment centers were correlated with ratings and rankings of effectiveness by supervisors and peers. Counselors judged as more effective scored higher on Dominance and Heterosexuality and lower on Order. When compared to their respective normative samples, both male and female counselors scored higher on Intraception and Heterosexuality and lower on Order and Endurance. The findings suggest that characteristics suitable for other types of counseling activities are not necessarily optimal for alcoholic and addiction counselors.

Keywords: Multiple drug abuse, alcohol abuse treatment, counseling, ex-addict paraprofessional, EPPS, chemical dependency, alcohol, nonnarcotics, correlational, counselors, inpatient, Minnesota, North Dakota.

H. RELAPSE PREVENTION AND AFTERCARE

- 5801 Marlatt, G.A., & George, W.H. (1984). Relapse prevention: Introduction and overview of the model. British Journal of Addiction, 79, 261-273.

As an introductory overview of the Relapse Prevention (RP) model, this article briefly describes the conceptual and clinical features of the RP approach to altering excessive or addictive behavior patterns. In contrast with traditional approaches that overemphasize initial habit change, RP focuses more on the maintenance phase of the habit change process. From this perspective, relapse is not viewed merely as an indicator of treatment failure. Instead, potential and actual episodes are key targets for both proactive and reactive intervention strategies. RP treatment procedures include specific intervention techniques designed to teach the individual to effectively anticipate and cope with potential relapse situations. Also included are more global lifestyle interventions aimed at improving overall coping skills and promoting health and well being. Important questions raised by this relatively recent alternative to traditional approaches are discussed.

Keywords: Relapse prevention, literature review, behavior modification, cognitive-behavioral psychotherapy, social support.

Related research: Cummings, C., Gordon, J.R., & Marlatt, G.A. (1980). Relapse: Strategies of prevention and prediction. In W.R. Miller (Ed.), The addictive behaviors. Oxford, England: Pergamon Press.

Marlatt, G.A. (1982). Relapse prevention: A self-control program for the treatment of addictive behaviors. In R.B. Stuart (Ed.), Adherence, compliance, and generalization in behavioral medicine. New York: Brunner/Mazel.

Marlatt, G.A., & Gordon, J.R. (1984). Relapse prevention: Maintenance strategies in addictive behavior change. New York: Guilford Press.

- 5802 Novick, D.M., Pascarella, E.F., Joseph, H., Salplitz, E.A., Richman, B.L., Des Jarlais, D.C., Anderson, M., Dole, V.P., & Nyswander, M.E. (1988). Methadone maintenance patients in general medical practice. A preliminary report. Journal of the American Medical Association, 259(22), 3299-3302.

Medical maintenance is the treatment by primary care physicians of rehabilitated methadone maintenance patients who are stable, employed, not abusing drugs, and not in need of supportive services. In this research project, physicians with experience in drug abuse treatment provided both the pharmacologic treatment of addiction as well as therapy for other medical problems, as needed. Decisions regarding treatment were based on the individual needs of the patient and on currently accepted medical practice rather than on explicit regulations. We studied the first 40 former heroin addicts who were transferred to this program from more conventional methadone clinics. At a follow-up visit at 12 to 55 months, 33 (82.5%) of 40 patients had remained in treatment; five (12.5%) had been discharged because of cocaine abuse and two (5%) had been voluntarily discharged. Personal benefits of medical maintenance include the dignity of a standard professional atmosphere and a more flexible reporting schedule. This program has the potential for improving treatment of selected methadone maintenance patients.

Keywords: Relapse prevention, retention, treatment outcome, methadone, maintenance, heroin, case study, descriptive, maintenance clients, outpatient, general practice, New York City, New York.

Related research: Wesson, D.R. (1988). Revival of medical maintenance in the treatment of heroin dependence. Journal of the American Medical Association, 259, 3314-3315.

- 5803 Simpson, D.D., & Marsh, K.L. (1985). Relapse and recovery among opioid addicts 12 years after treatment. Unpublished manuscript, Texas Christian University, Institute of Behavioral Research, Fort Worth.

This chapter reviews the empirical evidence on relapse and recovery among opioid addicts over a period of approximately 12 years after admission to community-based treatment programs. These data include multiple episodes of daily opioid use and abstinence over time, and several analytic strategies have been employed in order to explore the complex relationships involved. The data base for this study--the Drug Abuse Reporting Program (DARP)--was initiated in 1969 for the purpose of describing and assessing clients and services at community-based drug abuse treatment programs. During 1969 to 1973, intake records were obtained on almost 44,000 admissions to 52 Federally-funded agencies from across the United States. Since that time, further data collection and research has been carried out on during-treatment performance, posttreatment evaluations based on 6-year followups, and addiction careers based on 12-year followups. Findings from these longitudinal records concerning relapse and recovery of addicts are presented. The first section summarizes outcomes considered cross-sectionally over time, from DARP preadmission baseline period to the 12-year followup interview. The second and third sections focus on relapse and recovery in Years 1-6 and Years 7-12, respectively, in relation to periods of abstinence. Finally, the fourth section examines reasons associated with relapse.

Keywords: Relapse prevention, treatment outcome, methadone, maintenance, therapeutic community, drug free, detoxification, heroin, other narcotics, correlational, DARP, maintenance clients, therapeutic community clients, drug free clients, detoxification clients, outpatient, community-based clinic, residential, DARP cities.

Related research: Simpson, D.D., & Savage, L.J. (1979). Treatment reentry and outcomes among opioid addicts during a four year follow-up after drug abuse treatment (IBR Report 79-19). Fort Worth: Texas Christian University, Institute of Behavioral Research.

- 5804 Sorensen, J.L., Acampora, A.P., & Iscoff, D. (1984). From maintenance to abstinence in a therapeutic community: Clinical treatment methods. Journal of Psychoactive Drugs, 16, 229-239.

This article describes the treatment methods used to help clients on methadone maintenance detoxify to a drug-free life while residing in a TC. This is one of several ways that TCs and methadone maintenance programs may collaborate to their mutual benefit (Sorensen, Deitch, & Acampora, 1984). The maintenance-to-abstinence research project involved collaboration between the Mission Methadone Treatment Program and Walden House, a TC for drug abusers, both located in San Francisco. For nearly a decade, methadone maintenance patients had been undergoing detoxification at Walden House. From 1981 through 1984, the

treatment process received more intense scrutiny under a research grant from NIDA. The authors tested the feasibility of having clients progress from methadone maintenance to abstinence in the Walden House program.

Keywords: Relapse prevention, abstinence, alternative treatment, treatment process, withdrawal, treatment outcome, methadone, maintenance, therapeutic community, case study, maintenance clients, community-based clinic, residential, San Francisco, California, New York City, New York.

Related research: Sorensen, J.L., Acampora, A.P., & Deitch, D.A. (1984). From maintenance to abstinence in a therapeutic community: Preliminary results. Journal of Psychoactive Drugs, 16, 73-77.

- 5805 Wermuth, L., Brummett, S., & Sorensen, J.L. (1987). Bridges and barriers to recovery: Clinical observations from an opiate recovery project. Journal of Substance Abuse Treatment, 4, 189-196.

Clinical issues are described in opiate addicts attempting to taper off methadone maintenance, and techniques are suggested to help this patient population. The observations were generated in an experimental "Tapering Network" project, in which opiate addicts on methadone maintenance had the opportunity to receive individual and group counseling, relapse prevention training, self-help groups, and other services. Vignettes illustrate clinical problems with intimacy and social isolation, identity as a former addict, and a "post methadone syndrome" characterized by vulnerability, dramatic swings in mood, and disordered thinking for a period of up to six months after detoxification. To counteract these barriers to recovery, a program model is suggested that used curricula available in the emerging literature on treatment of substance abuse. These techniques can provide bridges to recovery.

Keywords: Relapse prevention, group counseling, individual counseling, peer counseling, cognitive-behavioral psychotherapy, behavior change, methadone, detoxification, heroin, cocaine, case study, maintenance clients, community-based clinic.

Related research: Brummett, S., Dumontet, R., Wermuth, L., Gold, M., Sorensen, J., Batki, S., Dennis, R., & Heaphy, R. (1986). Methadone maintenance to abstinence: The tapering network project manual (NIDA Grant No. 1-R01-DA03057). Unpublished manuscript, University of California, San Francisco, CA.

VI. COMPARISON OF METHADONE WITH OTHER TREATMENT ALTERNATIVES

A. METHADONE MAINTENANCE VERSUS ALTERNATIVE TREATMENT MODALITIES

- 6101 Anglin, M.D., Speckart, G.R., Booth, M.W., & Ryan, T.M. (1987). Consequences and costs of shutting off methadone. Unpublished manuscript, UCLA, UCLA Drug Abuse Research Group, Los Angeles.

In the face of rising fiscal conservatism, many states and localities with sizable addict populations have reduced or eliminated public funding for methadone maintenance (MM) programs and permitted private-fee-for-service programs to replace them. The social and economic costs of these changed funding policies with reference to the California experience were analyzed. A two and one-half year followup of a sample of San Diego MM clients (195 men, 129 women) terminated from a public subsidized program compared outcome results to clients from publicly funded MM programs in Orange, Riverside, and San Bernardino counties (129 men, 131 women). In a secondary analysis, San Diego clients who transferred into private (fee-for-service) treatment programs were compared with those who did not transfer. Major adverse consequences were found for clients unable or unwilling to transfer to private programs: higher crime and dealing rates, more contact with the criminal justice system, and higher rates of illicit drug use were demonstrated by nontransfer clients. Moreover, the savings resulting from a reduction of MM program costs were nearly offset by increased direct costs for incarceration, legal supervision, and other government-funded drug treatment; Indirect costs were not assessed.

Keywords: Alternative treatment, benefit-cost, social costs, treatment outcome, methadone, maintenance, heroin, other narcotics, nonequivalent comparison groups, maintenance clients, community-based clinic, private clinic, San Diego, California.

- 6102 Bale, R.N., Van Stone, W.W., Kuldau, J.M., Engelsing, T.M., Elashoff, R.M., & Zarcone, V.P. (1980). Therapeutic communities vs. methadone maintenance. A prospective controlled study of narcotic addiction treatment: Design and one-year follow-up. Archives of General Psychiatry, 37, 179-193.

This study compares the efficacy of three residential therapeutic communities and an outpatient methadone maintenance program for 585 male veterans addicted to heroin. Subjects were randomly assigned to the treatment modalities. More than 93% of the subjects completed both six- and 12-month questionnaires. In this report, the treatment settings, characteristics of the sample, assignment protocol, and pattern of treatment entry and first-year follow-up results are outlined. The various clinical demands that affected the research protocol, and pattern of treatment entry and first-year follow-up results are outlined. The various clinical demands that affected the research protocol, the degree of which the randomization was compromised, and the implications for the analysis of outcome are discussed. One year after admission to the study.

Keywords: Alternative treatment, treatment outcome, retention, methodological, methadone, maintenance, detoxification, therapeutic community, heroin, randomized experiment, correlational, veterans, maintenance clients, therapeutic community clients, detoxification clients, outpatient, residential, San Francisco, California.

- 6103 Bracy, S.A., & Simpson, D.D. (1982-83). Status of opioid addicts 5 years after admission to drug abuse treatment. American Journal of Drug and Alcohol Abuse, 9, 115-127.

A sample of 2,099 Black and White male daily opioid drug users admitted to drug abuse treatment programs located across the United States were followed up 5 to 6 years after admission. Follow-up interviews focused on posttreatment behavioral functioning, including drug and alcohol use, treatment reentry, criminality, and employment. The sample included Black and White males in the nationally oriented Drug Abuse Reporting Program (DARP) who were admitted to methadone maintenance (MM), therapeutic community (TC), outpatient drug-free (DF), and outpatient detoxification (DT) programs; in addition, intake-only (IO) who never returned to receive treatment in the DARP were included as a comparison group. This study examined the status of these former addicts during the year immediately before the follow-up interview. It was found that 60% of the total sample reported no opioid drug use and 78% reported no daily use. Furthermore, over one-third had no illicit drug use at all during the year, as well as no arrests or incarcerations in jail or prison. Long-term status was slightly more favorable for persons treated in DARP, MM, TC, and DF programs, compared to DT and IO clients. Limitations on the interpretations of these results and suggestions for further research are discussed.

Keywords: Alternative treatment, client characteristics, treatment outcome, methadone, detoxification, drug free, maintenance, therapeutic community, heroin, other narcotics, alcohol, descriptive, detoxification clients, drug free clients, maintenance clients, therapeutic community clients, DARP, inpatient, outpatient, community based clinic, residential, DARP cities.

- 6104 Condelli, W., & De Leon, G. (1989). The AIDS epidemic and drug treatment programs. Unpublished manuscript, Research Triangle Institute, Research Triangle Park, NC.

This paper examines the extent to which matching clients to programs is related to improved retention and other outcomes. Several studies are reviewed that have produced mixed results. This appears to have occurred because of differences in the scope or heterogeneity of the samples they used and limits of bivariate correlational analysis. This paper uses a multivariate model to examine the matching issue with a six month client sample from five therapeutic communities. Interviewer ratings, drug abuse pattern (soft before hard), spending time in large groups, attending school, having an alcoholic sister, and just getting out of jail appeared to be the best predictors of length of stay. ($B^2=.1140$).

Keywords: Alternative treatment, client characteristics, treatment outcome, retention, criminality, program evaluation, therapeutic community, heroin, other narcotics, nonnarcotics, alcohol, correlational, therapeutic community clients, residential, East.

- 6105 Fabrizio, L., Blandino, P., Botti, P., Caramelli, L., Fantozzi, R., Masini, E., Morovic, F., Peruzzi, S., Zorn, A.M., & Mannaloni, P.F. (1983). Overall evaluation of treatment modalities for heroin addiction in a toxicology unit. Substance and Alcohol Actions/Misuse, 4, 283-304.

A survey of treatment results is presented, using a variety of guidelines for the therapy of different features of heroin addiction in a toxicology unit. Data on 3,211 inpatients under

treatment from 1972 are analyzed separately, as well as the follow-up status of 1,262 outpatients who were enrolled in a methadone treatment program. The results are discussed in terms of reliability of the programs and their risk-benefit ratios for the community.

Keywords: Alternative treatment, alternative drugs, treatment outcome, methadone, clonidine, naloxone, maintenance, detoxification, heroin, other narcotics, descriptive, maintenance clients, detoxification clients, outpatient, inpatient, Florence, Italy.

- 6106 Hubbard, R.L., Marsden, M.E., Rachal, J.V., Harwood, H.J., Cavanaugh, E.R., & Ginzburg, H.M. (1989). Drug abuse treatment: A national study of effectiveness. Chapel Hill, NC: University of North Carolina Press.

This book presents the findings from the most recent and most comprehensive national longitudinal study of the effectiveness of drug abuse treatment conducted in the United States. Whereas earlier research on treatment dealt almost exclusively with heroin addiction, the research discussed in this volume takes into account the broad array of drugs now being widely abused. By examining in detail the aims and capabilities of publicly funded methadone, residential, and outpatient drug-free programs, the authors are able to provide the most authoritative information to date regarding the efficacy and cost-effectiveness of drug abuse treatment. The book offers strong argument for continuing government support of treatment programs. While treatment cannot guarantee a cure, it has had notable success in reducing the rate of drug abuse. Still, large numbers of program clients are in need of a variety of services to help build more productive lives and effectively treat multiple drug use. No less critical is the particular attention that should be given to the treatment of intravenous drug users, the second largest group at risk for AIDS. The book uses the findings of the National Treatment Outcome Prospective Study to illustrate a new model of the treatment process.

Keywords: Alternative treatment, client characteristics, psychopathology, methodological, urine monitoring, treatment outcome, retention, criminality, employment, multiple drug abuse, behavior change, methadone, maintenance, detoxification, drug free, therapeutic community, heroin, other narcotics, nonnarcotics, alcohol, amphetamines, cocaine, correlational, descriptive, TOPS, maintenance clients, detoxification clients, drug free clients, therapeutic community clients, outpatient, residential, community-based clinic, TOPS cities.

- 6107 Hubbard, R.L., Rachal, J.V., Craddock, S.G., & Cavanaugh, E.R. (1984). Treatment Outcome Prospective Study (TOPS): Client characteristics and behaviors before, during, and after treatment. In F.M. Tims & J.P. Ludford (Eds.), Drug abuse treatment evaluation: Strategies, progress, and prospects (Research Monograph 51, pp. 42-68). Rockville, MD: National Institute on Drug Abuse.

The Treatment Outcome Prospective Study (TOPS) is a longitudinal investigation of the natural history of persons identified as eligible for treatment at selected federally funded drug treatment programs in 1979-1981. The present report describes the characteristics, behavior, and intreatment outcomes of 3,389 treatment clients in 27 drug treatment programs (three outpatient detoxification, eight outpatient methadone, seven outpatient drug free, and nine residential) in six cities in 1979. Most clients are males (72 percent), non-Hispanic whites (52 percent), 30 years of age or younger (71 percent), and without high school diplomas (51 percent). Clients frequently used a variety of drugs and alcohol in the year prior to treatment. Regardless of treatment modality, the majority of clients reported weekly or more frequent use of alcohol (57 percent) and marijuana (65 percent). Although it varied by modality, heroin was

used weekly or more often by a large majority of clients (12-85%). A large proportion of clients previously participated in drug treatment (37-76%). Most clients (60 percent) reported indicators of depression. One of six clients in outpatient drug free and residential programs reported a suicide attempt in the year prior to treatment. Many clients were involved in illegal activity and in the criminal justice system. Arrests reported for all offenses during the year before treatment were highest among residential clients (69 percent) followed by drug free clients (43 percent), detoxification clients (31 percent), and methadone clients (30 percent). The clients have not been successful in finding and keeping jobs. Fulltime employment for the entire 52 weeks prior to treatment was reported by only 19 percent of methadone clients, 14 percent of detoxification clients, 10 percent of drug free clients, and 4 percent of residential clients. Retention varied among types of clients and modalities/environments. Methadone programs had considerably more clients (51 percent) staying in treatment six months or more than did residential (22 percent) or drug free programs (17 percent). Drug related problems including medical, psychological, family, and employment were substantially reduced during treatment. Negative behaviors (drug use, illegal activity) and depression decreased substantially during treatment, and positive behavior (employment) increased.

Keywords: Alternative treatment, client characteristics, psychopathology, treatment outcome, retention, criminality, employment, multiple drug abuse, behavior change, methadone, maintenance, detoxification, drug free, therapeutic community, heroin, other narcotics, nonnarcotics, alcohol, amphetamines, cocaine, correlational, descriptive, TOPS, maintenance clients, detoxification clients, drug free clients, therapeutic community clients, outpatient, residential, community-based clinic, TOPS cities.

Related research: Bray, R.M., Hubbard, R.L., Rachal, J.V., Cavanaugh, E.R., Craddock, S.G., Collins, J.J., Schlenger, W.E., & Allison, M. (1981). Treatment Outcome Prospective Study. Client characteristics, behaviors and intreatment outcomes 1979 TOPS admission cohort. Research Triangle Park, NC: Research Triangle Institute.

Bray, R.M., Hubbard, R.L., Rachal, J.V., Cavanaugh, E.R., Craddock, S.G., Collins, J.J., Schlenger, W.E., & Allison, M. (1981, August). Describing clients in the Treatment Outcome Perspective Study: Preliminary results for the 1979 cohort. Paper presented at the meeting of the American Psychological Association, Los Angeles, CA. Research Triangle Park, NC: Research Triangle Institute.

- 6108 Joe, G.W., Lloyd, M.R., Simpson, D.D., & Singh, B.K. (1982-83). Recidivism among oploid addicts after drug treatment: An analysis by race and tenure in treatment. American Journal of Drug and Alcohol Abuse, 9(4), 371-382.

Recidivism rates and recidivism proportions for return to a state of daily opioid use following discharge from drug abuse treatment were studied for a sample of Black and White male daily opioid users. The rates and proportions were analyzed by treatment type and time in treatment. Significantly higher recidivism proportions were found for shorter tenure clients.

Keywords: Alternative treatment, client characteristics, treatment outcome, methadone, maintenance, therapeutic community, drug free, detoxification, heroin, other narcotics, correlational, detoxification clients, drug free clients, maintenance clients, therapeutic community clients, DARP, inpatient, outpatient, community-based clinic, residential, DARP cities.

- 6109 Joe, G.W., & Simpson, D.D. (1983). Social factors related to the follow-up status of opioid addicts. Journal of Psychoactive Drugs, 15, 207-217.

The present findings concerning social and environmental factors that might affect follow-up outcomes offer tentative support for several major theoretical themes. These findings may be interpreted in terms of their practical implications for treatment and other intervention strategies for opioid addicts (such as emphasizing compensatory experiences, appropriate reference group identifications and social readjustment of clients), but the results are not definitive and lack precision in causal interpretations. Hopefully, subsequent research will benefit from these preliminary findings and will develop improved procedures for identifying and measuring the important variables in these and other theoretical models for greater precision in establishing predictive relationships with outcomes.

Keywords: Alternative treatment, client characteristics, methodological, detoxification, drug free, maintenance, therapeutic community, heroin, other narcotics, correlational, detoxification clients, drug free clients, maintenance clients, therapeutic community clients, DARP, treatment outcome, inpatient, outpatient, community-based clinic, residential, DARP cities.

- 6110 Joe, G.W., Singh, B.K., Lehman, W., Simpson, D.D., & Sells, S.B. (1983). Agency differences in posttreatment outcomes: A follow-up of drug abuse treatment clients. International Journal of the Addictions, 18, 523-538.

The present study examined variations in posttreatment outcomes for clients treated in the same modality but in different treatment agencies located across the United States. Three modalities were studied, represented by seven methadone maintenance (MM) programs, seven therapeutic community (TC) programs, and nine outpatient drug-free (DF) programs. Agency differences within MM and TC programs were not significantly different on posttreatment outcomes for opioid use, non-opioid use, alcohol use, productive activities, and criminality. There were significant outcome differences among the DF agencies, but they were explained by variations in the background characteristics of the particular types of clients served by each agency. In particular, these post-treatment outcome differences appeared to be related to programs treating primarily opioid addicts versus primary non-opioid users.

Keywords: Alternative treatment, client characteristics, methadone, maintenance, therapeutic community, drug free, detoxification, heroin, other narcotics, alcohol, nonnarcotics, correlational, detoxification clients, drug free clients, maintenance clients, therapeutic community clients, treatment outcome, DARP, inpatient, outpatient, community-based clinic, residential, DARP cities.

- 6111 Krleger, E.C., McLellan, A.T., & Parente, R. (1980). Opening move in substance abuse therapy: Appropriateness of treatment assignment. American Journal of Drug and Alcohol Abuse, 7, 347-359.

This study examines the relationships between pretreatment severity of six problem areas commonly affected by addiction and type of discharge from inpatient substance abuse programs at the Veterans Administration Hospital, Coatesville, Pennsylvania. A comparison of patients in the five programs showed different patterns of problem severity, and different variables emerged as correlates or discriminators of discharge status. Results of multiple discriminant analyses were useful in predicting those patients who received an unfavorable

discharge from treatment, although the analyses were not as successful in identifying those patients who received favorable discharges. Based on this data, some approaches to improving the match between patients and programs are discussed.

Keywords: Alternative treatment, client characteristics, treatment outcome, ASI, therapeutic community, alcohol, heroin, other narcotics, nonnarcotics, correlational, substance abuse clients, therapeutic community clients, veterans, veterans' facility, inpatient, Pennsylvania.

- 6112 **McGlothlin, W.H., & Anglin, M.D. (1981). Shutting of methadone: Costs and benefits. Archives of General Psychiatry, 38, 885-892.**

We report the findings of a two-year follow-up of the 99 methadone clients enrolled in the Bakersfield, Calif., clinic when it was closed in September 1976. Because of the remote location, only 11 transferred to another clinic. A sample of 88 were selected from a continuing program for comparison. Ninety-five percent of the combined samples were interviewed. Fifty-four percent of the terminated clients became readdicted to heroin, and the arrest and incarceration rates were approximately double that for the comparison sample. The simultaneous initiation of a special police narcotic task force may have contributed to the arrest rate and limited the percent of time addicted. The net economic costs subsequent to discharge were slightly less than that for the comparison group; however, when the benefits resulting from new admissions are considered, the clinic closing represented an economic loss in addition to the detrimental effects experienced by the clients.

Keywords: Alternative treatment, benefit-cost, treatment outcome, methadone, maintenance, heroin, correlational, maintenance clients, community-based clinic, California.

- 6113 **McLellan, A.T., Luborsky, L., O'Brien, C.P., Barr, H.L., & Evans, F. (1986). Alcohol and drug abuse treatment in three different populations: Is there improvement and is it predictable? American Journal of Drug and Alcohol Abuse, 12(1&2), 101-120.**

Prior research had shown that alcohol and drug abuse treatments were effective and that the results of treatments could be predicted from pretreatment information regarding the patient's employment, family, and especially psychiatric problems. However, this research had been conducted entirely with adult male service veterans, largely from lower socioeconomic strata. Three treatment centers were included in the present study to examine these conclusions with other populations containing adolescents, females, and patients from higher socioeconomic strata. Data from the Addiction Severity Index was collected at treatment admission and again at independent follow-up, 6 months later. Results confirmed prior observations. Both alcohol and drug abuse treatments showed substantial improvements in the chemical use problems of their patients and in the important areas of employment, criminal behavior, family relations, and psychological health. As in earlier reports, a global measure of the nature and extent of pretreatment psychiatric problems was the single best predictor of treatment response for both alcoholics and drug-dependent samples.

Keywords: Alternative treatment, psychopathology, alcohol abuse treatment, multiple drug abuse, ASI, treatment outcome, employment, criminality, methadone, naltrexone, maintenance, therapeutic community, drug free, heroin, alcohol, other narcotics, maintenance clients, drug free clients, therapeutic community clients, veterans' facility, alcoholics, outpatient, residential, Princeton, New Jersey, Coatesville, Philadelphia, Pennsylvania.

Related research: McLellan, A.T., Childress, A.R., Griffith, J., & Woody, G.E. (1984). The psychiatrically severe drug abuse patient: Methadone maintenance or therapeutic community. American Journal of Drug and Alcohol Abuse, 10, 77-95.

- 6114 McLellan, A.T., Woody, G.E., Luborsky, L., O'Brien, C.P., & Druley, K.A. (1983). Increased effectiveness of substance abuse treatment: A prospective study of patient-treatment matching. Journal of Nervous and Mental Disease, 171, 597-605.

An earlier study retrospectively evaluated the effectiveness of six separate substance abuse treatment programs and generated a set of hypotheses for matching patients to the most appropriate programs. In the present study, these predictors and the matching strategy were tested in a prospective design, using the same treatment programs and a new sample of 130 alcohol- and 256 drug-dependent patients. The new group of patients who were treated in their predicted program (matched patients) were compared with those patients from the same sample who were not treated in their predicted program (mismatched patients). Treatment staff were not apprised of the matching criteria or which patients were matched, thus permitting an experimental test of the predictions. Results indicated superior performance during treatment and an average of 19 percent better 6-month outcomes for the matched patients than for their mismatched counterparts. The matching effect was seen in both the alcohol- and drug-dependent samples and in all treatment programs. The authors discuss the application of these findings to other types of patients and treatments in substance abuse and other fields of psychiatry.

Keywords: Alternative treatment, multiple drug abuse, methodological, ASI, psychopathology, treatment outcome, methadone, detoxification, maintenance, therapeutic community, heroin, alcohol, other narcotics, nonnarcotics, nonequivalent comparison groups, maintenance clients, therapeutic community clients, alcoholics, detoxification clients, veterans, veterans' facility, residential, outpatient, inpatient, Coatesville, Philadelphia, Pennsylvania.

Related research: McLellan, A.T., Luborsky, L., O'Brien, C.P., Woody, G.E., & Druley, K.A. (1982). Is treatment for substance abuse effective? Journal of the American Medical Association, 247, 1423-1428.

McLellan, A.T., Luborsky, L., Woody, G.E., O'Brien, C.P., & Druley, K.A. (1983). Prediction response to alcohol and drug abuse treatments: Role of psychiatric severity. Archives of General Psychiatry, 40, 620-628.

McLellan, A.T., Woody, G.E., Evans, B.D., & O'Brien, C.P. (1982). Treatment of mixed abusers in methadone maintenance: Role of psychiatric factors. Annals of the New York Academy of Sciences, 398, 65-78.

- 6115 National Institute on Drug Abuse. (1978). Evaluation of drug abuse treatments. Based on first year followup (Services Research Monograph Series). Washington, DC: U.S. Government Printing Office.

A sample of 3131 admissions to 25 different DARP drug abuse treatment agencies during 1969-72 were followed up and interviewed during 1975-76. The present study was based on 2178 black and white males from this sample who were in DARP Methadone Maintenance (MM), Therapeutic Communities (TC), Drug Free Treatments (DF), and Detoxification

programs (DT). A comparison group was also included in the study, based on persons who completed formal admission procedures but never returned to receive treatment in DARP (Intake Only, IO). The purpose of the study was (1) to compare Pre DARP baseline levels for criterion measures with Post DARP outcomes based on the first year after leaving DARP, (2) to compare the DARP treatment groups on the basis of first year Post DARP outcomes, after making statistical adjustments for population differences between these groups, and (3) to examine client characteristics and DARP treatment measures in retention to differential outcomes in the first year Post DARP, conducted separately for each of the DARP treatment groups. Drug use, employment, and criminality indicators were compared before and after DARP treatment. Statistically significant improvements were generally found for the MM, TC, and DF groups, but not for the DT and IO groups. Group comparisons were made for drug use, employment, incarcerations in jail, and treatment reentries in the first year Post DARP, but after statistical adjustments were made for demographic, background, Pre DARP treatment history, and baseline measures. The MM, TC, and DF groups (especially TC) tended to have significantly more favorable outcomes than DT and IO. A hierarchical analytic model was used to examine outcomes in the first year Post DARP in relation to client demographic variables, background factors, Pre DARP treatment history, criterion baseline factors, and During DARP treatment performance. The most consistent result was that low Pre DARP criminality and favorable During DARP performance (in terms of low social deviance and relatively longer time in treatment) were related to more favorable Post DARP outcomes.

Keywords: Alternative treatment, client characteristics, program evaluation, treatment outcome, methadone, maintenance, detoxification, drug free, therapeutic community, heroin, other narcotics, nonnarcotics, correlational, DARP, maintenance clients, detoxification clients, drug free clients, therapeutic community clients, outpatient, community-based clinic, residential, DARP cities.

Related research: Simpson, D.D., & Lloyd, M.R. (1979). Client evaluations of drug abuse treatment in relation to follow-up outcomes (IBR Report 79-6). Fort Worth: Texas Christian University, Institute of Behavioral Research.

- 6116 Senay, E.C., Mehta, C., Dorus, W., Soberlg, K., & Baumgardner, M. (1986). Comprehensive treatment for heroin addicts: A pilot study. Journal of Psychoactive Drugs, 18, 107-115.

Although some clinics in the U.S. may have implemented some of the substance abuse treatment concepts incorporated in the present research, the authors know of no comprehensive outpatient substance abuse treatment programs for heroin dependent patients. A review of the literature failed to reveal attempts to compare innovative maintenance and withdrawal programs under conditions of random assignment to experimental or control groups. The specific aims of this pilot study were to: (1) determine patient acceptance of a comprehensive substance abuse treatment program; (2) implement a comprehensive substance abuse treatment program; (3) study changes in substance abuse patterns; and (4) describe experiences in training staff to implement a comprehensive substance abuse treatment program.

Keywords: Alternative treatment, methadone, maintenance, drug free, heroin, randomized experiment, non-equivalent comparison groups, drug free clients, maintenance clients, Chicago, Illinois.

Related research: Senay, E.C. (1983). Clinical implications of NIDA's treatment outcome research. Unpublished manuscript, University of Chicago, Chicago, IL.

- 6117 Simpson, D.D. (1981). Treatment for drug abuse. Follow-up outcomes and length of time spent. Archives of General Psychiatry, 38, 875-880.

A sample of 1,496 persons admitted to 26 community treatment agencies participating in the Drug Abuse Reporting Program (DARP) during 1972 and 1973 were located and interviewed in 1978 and 1979. Favorableness of one-year posttreatment outcomes with respect to illicit drug use, criminality, and employment and other productive activities was found to increase linearly with the length of time patients stayed in methadone maintenance, a therapeutic community, or outpatient drug-free treatment. In addition, follow-up outcome for persons who spent less than three months in treatment was least favorable, and was not significantly different from that of persons in outpatient detoxification programs or who were admitted but not treated (intake-only). Persons who completed treatment generally stayed in treatment longer, as expected; they also had a more favorable outcome after DARP treatment than did others.

Keywords: Alternative treatment, treatment outcome, retention, criminality, methadone, maintenance, therapeutic community, drug free, detoxification, heroin, other narcotics, nonnarcotics, correlational, DARP, maintenance clients, detoxification clients, drug free clients, therapeutic community clients, community-based clinic, outpatient, residential, DARP sites.

Related research: Savage, L.J., & Simpson, D.D. (1978). Illicit drug use and return to treatment: Follow-up study of treatment admissions to DARP during 1969-1971. American Journal of Drug and Alcohol Abuse, 5, 23-38.

Savage, L.J., & Simpson, D.D. (1980). Posttreatment outcomes of sex and ethnic groups treated in methadone maintenance during 1969-1972. Journal of Psychedelic Drugs, 12, 55-64.

B. ALTERNATIVE TREATMENT DRUGS

- 6201 Charney, D.S., Heninger, G.R., & Kleber, H.D. (1986). The combined use of clonidine and naltrexone as a rapid, safe, and effective treatment of abrupt withdrawal from methadone. American Journal of Psychiatry, 143, 831-837.

Combined clonidine and naltrexone treatment allowed 38 to 40 patients addicted to methadone to withdraw completely in 4-5 days. For most patients naltrexone was gradually increased from 1 mg/day to 50 mg/day over 4 days. Clonidine reduced the intensity of naltrexone-induced withdrawal symptoms. Clonidine significantly decreased blood pressure without producing syncope and caused sedation but no other clinical problems. The withdrawal symptoms of anxiety, anorexia, insomnia, restlessness, and muscular aching were most resistant but were mild or nonexistent at discharge. Clonidine-naltrexone treatment should succeed with patients receiving methadone doses up to 50 mg/day, facilitate naltrexone maintenance, and apply to many clinical settings.

Keywords: Abstinence, alternative drugs, physiological effects, clonidine, naltrexone, methadone, detoxification, maintenance, maintenance clients, nonequivalent comparison groups, maintenance clients, inpatient, New Haven, Connecticut.

- 6202 Freedman, R.R., & Czerko, G. (1981). A comparison of thrice weekly LAAM and daily methadone in employed heroin addicts. Drug and Alcohol Dependence, 8, 215-222.

Forty-eight employed heroin addicts were maintained on daily doses of methadone for four months and then randomly assigned to continue methadone maintenance or be switched to thrice weekly levo-alpha-acetylmethadol (LAAM). LAAM patients had significantly less illicit drug use ($F=5.29, d.f.=1,45; p<0.05$) and longer treatment retention times ($t=2.48, d.f.=46, p<0.02$) than those remaining on methadone. They also preferred LAAM to methadone on nine of 15 criteria such as the dosage schedule, feeling 'normal', and reduction of craving for heroin. LAAM may be particularly useful with employed patients owing to the reduced frequency of clinic visits.

Keywords: Alternative drugs, treatment outcome, retention, LAAM, methadone, maintenance, heroin, randomized experiment, employed I.V. drug users, dosage, physiological effects, community-based clinic, Detroit, Michigan.

- 6203 Gold, M.S., & Kleber, H.D. (1981). Clinical utility of clonidine in opiate withdrawal: A study of 100 patients. Psychopharmacology of Clonidine, 71, 299-306.

The effect of clonidine on opiate withdrawal symptoms and signs was evaluated for a total of 100 addicts. All 100 patients received clonidine in a hospital setting over a 14-day period during which the efficacy of clonidine treatment was studied. None of the patients chose a return to methadone after their first dose of clonidine. Opiate withdrawal symptoms, signs, and affective changes were safely and effectively suppressed during the course of treatment. Clonidine, being a nonopiate, allows the patient to discontinue opiate administration abruptly and to remain free of opiates long enough to initiate alternative maintenance treatment.

Keywords: Alternative drugs, physiological research, withdrawal, abstinence, ARCI, clonidine, methadone, maintenance, detoxification, heroin, other narcotics, descriptive, maintenance clients, detoxification clients, inpatient.

- 6204 Gold, M.S., Pottash, A.L., Sweeney, D.R., & Kleber, H.D. (1980). Effect of methadone dosage on clonidine detoxification efficacy. American Journal of Psychiatry, 137, 375-376.

The effect of clonidine on opiate withdrawal symptoms and signs was evaluated across 3 methadone dosage groups for a total of 15 male subjects. The only consistent complaints in all groups were reports of insomnia and irritability. The data indicate that clonidine is a safe and rapid treatment for addicts receiving 15, 50, and 75 mg doses of methadone and may be effective even for higher doses.

Keywords: Alternative drugs, dosage, withdrawal, clonidine, methadone, maintenance, detoxification, heroin, other narcotics, correlational, detoxification clients, maintenance clients, Inpatient.

- 6205 Hartnoll, R., Mitcheson, M.C., Battersby, A., Brown, G., Eillis, M., & Fleming, P. (1980). Evaluation of heroin maintenance in controlled trial. Archives of General Psychiatry, 37, 877-884.

Ninety-six confirmed heroin addicts requesting a heroin maintenance prescription were randomly allocated to treatment with injectable heroin or oral methadone. Progress was monitored throughout the next 12 months by research workers operating independently of the clinic. Heroin can be seen as maintaining the status quo, with the majority continuing to inject heroin regularly and to supplement their maintenance prescription from other sources; it was associated with a continuing intermediate level of involvement with the drug subculture and criminal activity. Refusal to prescribe heroin while offering oral methadone constituted a more confrontational response and resulted in a higher abstinence rate, but also a greater dependence on illegal sources of drugs for those who continued to inject. Those offered oral methadone tended to polarize toward high or low categories of illegal drug use and involvement with the drug subculture, and were more likely to be arrested during the 12-month follow-up. There was no difference between the two groups in terms of employment, health, or consumption of nonopiate drugs. Refusal to prescribe heroin resulted in a significantly greater drop out from regular treatment.

Keywords: Alternative drugs, treatment outcome, employment, heroin/treatment, methadone, heroin maintenance, maintenance, heroin, randomized experiment, maintenance clients, community-based clinic, London, England.

- 6206 Hunt, D.E., Lipton, D.E., Goldsmith, D.S., & Strug, D.L. (1984). Street pharmacology: Uses of cocaine and heroin in the treatment of addiction. Drug and Alcohol Dependence, 13, 375-387.

This paper examines a unique finding from a larger research study of methadone maintenance treatment at four treatment programs in three Northeastern states. In looking at methods used by narcotics addicts to withdraw or detoxify from heroin, we found a small group of persons

who had successfully detoxified from heroin addiction using a structured injection regimen of gradually decreasing amounts of heroin and gradually increasing amounts of cocaine. While this paper represents the case study of ten cases, the regimen was reported by others as part of 'street pharmacology.' It is a relatively uncommon regimen, reportedly due to the expense of the procedure and the problems associated with cocaine abuse. It is the pharmacological aspects of the procedure which warrant attention. All ten cases reported little or no withdrawal symptoms after the last injection containing small amounts of heroin. It was widely believed that cocaine interacts with heroin in a way which masks withdrawal during the detoxification process, providing a measure of physiological relief. Information from the addict world on that interaction provides clues as to the biochemical properties of drug interactions and may suggest areas for further clinical and pharmacological research.

Keywords: Alternative drugs, self-regulation, cocaine abuse treatment, detoxification, physiological effects, cocaine/treatment, detoxification, heroin, case studies, I.V. drug users, streets, New York, New Jersey, Connecticut.

- 6207 Irwin, S., Blachly, P.H., Marks, J., Carlson, E., Loewen, J., & Reade, N. (1976). The behavioral, cognitive, & physiologic effects of long-term methadone and methadyl treatment in 1973. In J.D. Blaine & P.F. Renault (Eds.), Rx: 3x/week LAAM alternative to methadone (Research Monograph 8, pp. 66-67). Rockville, MD: National Institute on Drug Abuse.

1-alpha-acetylmethadol (LAAM) has been shown to be an effective, longer-acting substitute for methadone in maintenance therapy. The purpose of this study was to establish the basic data on the pharmacology, potential toxicity, and comparative safety of methadone and LAAM.

Keywords: Alternative drugs, physiological effects, treatment outcome, retention, LAAM, methadyl, methadone, maintenance, heroin, randomized experiment, I.V. drug users, nonaddicts.

- 6208 Irwin, S., Blachly, P.H., Marks, J., & Carter, C.C. (1976). Preliminary observations with acute and chronic methadone and 1-alpha-Acetylmethadol administration in humans. In J.D. Blaine, & P.F. Renault (Eds.), Rx: 3x/week LAAM alternative to methadone (Research Monograph 8, pp. 68-69). Rockville, MD: National Institute on Drug Abuse.

This paper reports the results of studies to determine: (1) Peak time effects for LAAM and methadone over 10 hours; (2) Develop of cross-tolerance to morphine in LAAM-treated subjects; (3) Possible adverse effects of LAAM and methadone on EEG, Blood chemistry, Hematology, Thyroid function, Urinary function, and Cognitive performance.

Keywords: Alternative drugs, treatment outcome, physiological effects, LAAM, methadone, maintenance, heroin, other narcotics, case study, non-equivalent comparison groups, maintenance clients, nonaddicts.

- 6209 Irwin, S., Kinohi, R.G., Cooler, P.M., & Bottomly, D.R. (1976). Acute time-dose-response effects of cyclazocine, methadone, & methadyl in man, 1973. In J.D. Blaine & P.F. Renault (Eds.), Rx: 3x/week LAAM alternative to methadone (Research Monograph 8, pp. 70-71). Rockville, MD: National Institute on Drug Abuse.

Twenty-eight male, nonaddicted volunteers received two doses of a drug or a placebo orally at least one week apart on a randomized, coded, double-blind basis. Trained observers assessed the subjects on a scale of 0-8 at -60, 20, 80, 160, 220, and 280 minutes before and after treatment using the Irwin Comprehensive Human Assessment Procedures. The duration of effects with the high dose of 1-alpha-acetylmethadol was over 24 hours; for methadone it was 12 hours or less.

Keywords: Alternative drugs, cyclazocine, LAAM, methadone, randomized experiment, nonaddicts, treatment outcome.

- 6210 Karp-Gelernter, E., Savage, C., & McCabe, O.L. (1982). Evaluation of clinic attendance schedules for LAAM and methadone: A controlled study. International Journal of the Addictions, 17(5), 805-813.

The authors randomly assigned 95 male narcotic addicts to one of four treatment conditions: either methadone or LAAM maintenance and one of two drug-appropriate clinic attendance schedules. Although no differences were observed among treatment conditions on any of the outcome measures employed, the conclusion that the drugs and attendance regimens were equally efficacious and acceptable was made cautiously due to the relatively small sample size and to the observed trend ($p = .10$) in favor of methadone maintenance combined with the 3-day (LAAM-appropriate) attendance schedule. There was no evidence of untoward physical effects associated with any of the treatment approaches.

Keywords: Alternative drugs, treatment outcome, retention, LAAM, methadone, maintenance, heroin, other narcotics, randomized experiment, maintenance clients, outpatient, community-based clinic, veterans' facility, Baltimore, Maryland.

- 6211 Ling, W., Blakis, M., Holmes, E.D., Klett, C.J., & Carter, W.E. (1980). Restabilization with methadone after methadyl acetate maintenance. Archives of General Psychiatry, 37, 194-196.

Sixty-eight heroin addicts maintained for 40 weeks on a regimen of methadyl acetate or methadone hydrochloride in a double-blind study were transferred to a uniform dose of 60 mg of methadone daily at the end of their tenure in the study. They were observed for the ensuing six weeks, during which their daily methadone doses were adjusted according to their clinical needs. Patients were observed for symptoms and signs of discomfort and for the amount of illicit drug use during this period of transition. The results indicate that patients maintained on a regimen of methadyl acetate can be readily restabilized with methadone and that sudden decrease of the methadone dose tends to result in the patient's supplementing with illicit heroin. Conversely, increasing methadone doses resulted in a corresponding reduction in illicit drug use. It is suggested that a chronic covert abstinence syndrome may exist in some patients receiving long-term methadone maintenance therapy, and that while it may contribute to their continued illicit drug use, it may have a different pathophysiologic basis and require different therapeutic considerations.

Keywords: Alternative drugs, dosage, LAAM, methadone, maintenance, heroin, other narcotics, functional, veterans, veterans' facility, California, Maryland.

- 6212 Parwatkar, S., Crawford, J., & Unverdl, C. (1975). LAAM (l-a-acetylmethadol) study in St. Louis. American Journal of Drug and Alcohol Abuse, 2, 341-352.

In this study methadone and LAAM were compared. LAAM was found to be toxicologically safe with side-effects similar to methadone. Withdrawal symptoms in almost all cases were blocked for 48 hours and in many cases up to 72 hours. A major advantage of LAAM over methadone is that the LAAM dosage schedule saves both client time and staff time.

Keywords: Alternative drugs, physiological effects, treatment outcome, LAAM, methadone, maintenance, randomized experiment, methadone clients, outpatient, Saint Louis, Missouri.

- 6213 Resnick, R.B., Washton, A.M., Garwood, J., & Perzel, J. (1981). LAAM Instead of take-home methadone. In L.S. Harris (Ed.), Problems of drug dependence, 1981 (Research Monograph 41, pp. 473-475). Rockville, MD: National Institute on Drug Abuse.

This study reports on a clinical trial which tested the feasibility of conducting a maintenance treatment program where patients had the choice of either LAAM requiring three clinic visits per week or daily methadone requiring six clinic visits per week. During the eight-month trial period patients admitted for maintenance treatment were given the choice of: (a) attending the clinic three days per week for LAAM; or, (b) attending six days per week for methadone with one take-home dose. No additional take-home methadone doses were available during the study period. Patients had the option of switching between maintenance on LAAM and methadone. No patients declined admission to the program during the study period, despite the restrictions on take-home methadone. The retention mode and changing rates were nearly identical for the two groups. LAAM maintenance appears to be feasible and a useful tool in reducing methadone dependency.

Keywords: Alternative drugs, retention, LAAM, methadone, maintenance, heroin, other narcotics, descriptive, maintenance clients, community-based clinic, New York City, New York.

- 6214 Savage, C., Karp, E., & Curran, S. (1976). A methadone/1-alpha-acetylmethadol (LAAM) maintenance study. In J.D. Blaine & P.F. Renault (Eds.), Rx: 3x/week LAAM alternative to methadone (Research Monograph 8, pp. 86-87). Rockville, MD: National Institute on Drug Abuse.

LAAM has had clinical success as a substitute for methadone. The purpose of this study was to validate past clinical research, to determine the relative safety and effectiveness of LAAM and methadone, and to identify factors associated with treatment success and failure.

Keywords: Alternative drugs, treatment outcome, retention, LAAM, methadone, maintenance, heroin, randomized experiment, I.V. drug users.

- 6215 Senay, E.C., Jaffe, J.H., Dimenza, S., & Renault, P.F. (1976). A 48-week study of methadone, methadyl acetate, & minimal services. In J.D. Blaine & P.F. Renault (Eds.), Rx: 3x/week LAAM alternative to methadone (Research Monograph 8, pp. 88-89). Rockville, MD: National Institute on Drug Abuse.

d1- and 1-alpha-acetylmethadol have been shown to be capable of suppressing narcotic withdrawal symptoms for long periods of time (Fraser and Isbell, 1952). These findings have been confirmed in pilot comparisons with methadone (Jaffe et al., 1970; Jaffe and Senay, 1971; Jaffe et al., 1972). This study reports investigations into the clinical acceptability and safety of the levo isomer, 1-alpha-acetylmethadol, (LAAM), and an evaluation of the role of auxiliary services in the treatment of heroin addiction.

Keywords: Alternative drugs, treatment outcome, retention, LAAM, methadone, maintenance, heroin, other narcotics, randomized experiment, I.V. drug users, community-based clinic.

- 6216 Senay, E.C., Renault, P.F., Dimenza, S., Collier, W.E., Daniels, S.J., & Dorus, W. (1976). Three times a week LAAM equals seven times a week methadone: A preliminary report of a control study. In J.D. Blaine, & P.F. Renault (Eds.), Rx: 3x/week LAAM alternative to methadone (Research Monograph Series 8, pp. 90-91). Rockville, MD: National Institute on Drug Abuse.

LAAM has been shown to be an effective substitute for methadone in the treatment of heroin addiction. Medication is only one part of therapy, however; and the decreased frequency with which LAAM patients need to visit the clinic may weaken the influence of the rest of the program, i.e., therapy, vocational rehabilitation, and legal services. This paper reports an extension of previous studies to determine whether new LAAM patients attend clinic less frequently than new methadone patients and if treatment outcome is influenced by attendance.

Keywords: Alternative drugs, treatment outcome, retention, LAAM, methadone, maintenance, heroin, other narcotics, randomized experiment, maintenance clients, community-based clinic.

- 6217 Woody, G.E., Mintz, J., Tennant, F., O'Brien, C.P., McLellan, A.T., & Marcovici, M. (1981). Propoxyphene for maintenance treatment of narcotic addiction. Archives of General Psychiatry, **38**, 898-900.

Two studies compared propoxyphene napsylate (Darvon-N) with methadone hydrochloride as maintenance treatment for narcotic addicts. Most measures indicated that methadone was more effective than propoxyphene as a maintenance drug. Patients receiving propoxyphene reported more withdrawal-related symptoms early in treatment, tended to drop out sooner than patients receiving methadone, and were more likely to abuse heroin ($\chi^2=4.0$, $df=1$ $P<.05$). Nevertheless, follow-up interviews at one and six months after treatment indicated no between-group differences in adjustment. Patients who dropped out of treatment were more likely to do so for negative reasons (e.g., side effects) in the propoxyphene group ($\chi^2=11.2$, $P<.01$).

Keywords: Alternative drugs, propoxyphene, methadone, maintenance, propoxyphene maintenance, heroin, randomized experiment, treatment outcome, physiological effects, retention, community-based clinic, Los Angeles, California, Philadelphia, Pennsylvania.

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1/ One to two digit numbers refer to pages in Chapter 1; four digit numbers refer to abstract numbers where the first digit is for the chapter, the second for the section, and the last two are numerical counts of the entries in alphabetical order by author.

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