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Making Use of Information to Anticipate Treatment Needs, Outcomes and Crime Risks in Philadelphia's Criminal Justice Population

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Philadelphia, Pennsylvania

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Executive Highlights

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Introduction

Given the challenges presented by the drug-involved criminal justice population to local justice systems in particular, this study asks to what extent the treatment and public safety concerns posed by this population can be anticipated by criminal justice officials at the earliest stages of processing making (better) use of available information. Specifically, this study considers the utility of a variety of types of justice and treatment information in "predicting" treatment and criminal justice outcomes in the criminal justice population and developing predictive classifications that could, if deployed in advance, assist decisionmakers dealing with treatment issues in the criminal process. The prediction and classification analyses draw on and further develop two special data sets from studies of recent criminal justice treatment initiatives in Philadelphia: the Women's Criminal Justice Treatment Network (a.k.a. FOCIS) (Goldkamp et al., 1999c and 2002)and the Philadelphia Treatment Court (Goldkamp et al., 1999a and 2001).

In a basically illustrative manner, this study seeks to test the plausibility, if not the feasibility, of identifying information from a variety of available sources that, where possible, could be of assistance in targeting various categories of defendants or offenders for appropriate services or interventions, depending on the treatment aim. As part of that research, the study also considered whether such the development of such information tools (predictive classifications) (were they to be found to exist) would apply with equal utility to the problems and risks posed by men and women in the criminal justice population. The purpose of the study is not to present fully formed, field-tested and validated prediction instruments, but rather to make use of the special treatment data to explore the possibility of more fully developed classification schemes.

The special assignment of this research was to ask whether and how information could be employed to anticipate treatment concerns in the special circumstances of the criminal justice population. The attempt to develop predictive approaches relating to treatment decisions and outcomes is premised on recognition that the treatment challenge in criminal justice is related to but also different from challenges faced by treatment outside of the justice context. Improved information capacity addressing treatment concerns is critical to the development of effective treatment approaches in criminal justice.

Main Findings

In these exploratory analyses, the study was reasonably successful in identifying predictors of the treatment process outcomes selected for examination, including

- attendance at assessment,
- determination of treatment need,
- level of care recommendation (residential treatment),
- attending treatment (first appointment), and
- treatment retention (30 days or longer)
- rearrest, and
- failure-to-appear in court.

The nature and strength of the predictive variables varied depending on the predictive concern. Differences in prediction for male and female defendants were sometimes pronounced. The analyses suggest overall that both treatment (clinical/assessment) and criminal justice information were helpful in anticipating treatment process outcomes in certain circumstances, The development of the predictive classifications would not have been as successful using only on type of information. The findings provide strong general support for the notion that predictive classification—focused use of available treatment and criminal justice data—could usefully be developed to assist in treatment decision making and to enhance efficacy when dealing with the substance abusing criminal justice population.

Dual-Classification of Treatment Candidates: Linking Different Justice and Treatment Concerns

The study considered two-dimensional classifications of potential treatment candidates in Philadelphia's criminal justice population incorporating two predictive concerns.

Court Absconding and Lack of Continued Attendance at Treatment

The criminal justice-based treatment process is constrained in its ability to secure the appearance of potential treatment candidates at assessment and risks losing a large share of its potential clients even before the treatment process has had a chance to get underway. Similarly, the criminal court suffers to the extent that treatment candidates fail to attend court itself—both in normal criminal case settings and in special courts, such as Philadelphia's Treatment Court. To investigate the relationship between the probability of court absconding and the probability of failing to attend treatment (at least 30 days), we classified the 1,020 assessment-stage criminal justice treatment defendants who made it into treatment would have been ranked simultaneously on these two dimensions: probability of court absconding (FTA) and probability of attending treatment less than 30 days after intake.

If staying in treatment (30 days or longer) and attending court as required involved the same behaviors, then the separate predictive classifications for FTA and retention would categorize defendants in very similar ways. That is, persons seen as least likely to attend court would also be least likely to attend treatment—according to this reasoning. If the two rankings agreed precisely, all cases would fall on the diagonals of the four-by-four matrix.

- In fact, only about 26 percent of cases are classified similarly by both schemes.

This finding suggests that though conceptually similar—both involve attendance—court attendance and treatment stick-to-it-tiveness are not one and the same and can be anticipated on different dimensions simultaneously.

Or more generally, one might expect that a large portion of those ranked in the two highest FTA groups on one scale would also fall in the two least likely groups to complete 30 days of treatment.

- In fact, about 57 percent of those classified as most likely to fail to appear are also classified as least likely to make it 30 days in treatment. Nearly half (49 percent) of those ranked as least likely to FTA are also ranked as most likely to stay in treatment for at least 30 days.

In short, there is considerable conceptual and empirical correspondence in predicting flight from court or dropping out of treatment. However, the overlap is less than complete and both classifications provide important information for officials responsible both for getting defendants to attend court and to continue in the treatment process. Future research might wish to develop one (rather than two separate) attendance-oriented predictive classifications.

Treatment Need and Public Safety Risk

Questions have been raised about the role of criminal justice factors in the determination of treatment need and about the relation of drug problems and criminality. Typical assessment instruments include criminal justice measures—though often in self-report form—along with other clinical and more subjective information. Perhaps criminal justice treatment screening for need and level of care could benefit from a classification that would characterize potential treatment clients on likely need for treatment and on public safety risk conjointly. Is the predictive classification estimating the probability of treatment need different or very closely similar to that designed to estimate the likelihood of rearrest? Would a treatment candidate be ranked similarly on each scale?

- Of the 926 defendants ranked as showing highest risk of rearrest, 378 or about 41 percent are ranked in the two categories of defendants most likely to be found in need of treatment.
- Of the 186 grouped as least likely to be in need of treatment, 87 or about 47 percent were also classified as showing the lowest risk of being rearrested.
- Of the 222 most likely to be in need of treatment, 173 or fully 78 percent were in the highest risk of rearrest category. Relatively few defendants who were ranked as most likely to be in need of treatment were classified as having low probabilities of rearrest.

Admittedly, despite the great correspondence between the two classifications, the conjoint classification of public safety risk and treatment does show that the two schemes are not entirely duplicative and, thus, may classify defendants on different underlying dimensions.

- For example, the matrix shows that 287 defendants in the highest rearrest risk category are also placed in the two categories least likely to be found in need of treatment.
- For about 30 percent of the high risk defendants, public safety risk did not overlap at all with treatment need probability.

Overall, then, the predictors of treatment need and the predictors of rearrest show some overlap in the way they classify defendants in the potential treatment population. Does this make conceptual sense? Why should the two predictive classifications produce such convergent results?

There are several possible explanations that research should consider.

- First, the correspondence between predictors of crime and predictors of treatment need determination may make perfect sense—to the extent that drug use and crime are related in a causal way.
- Or, second, the treatment need (assessment) determination may in practice amount to a re-digestion of public safety risk in its reliance on criminal justice information, albeit often in self-reported form.

This same question can be asked of level of care determinations: This study found that an important predictor of residential care recommendation for women was whether they were incarcerated at or immediately preceding assessment (male Treatment Court candidates by design were generally not), in a sense replacing one form of secure, controlled environment with another. In short, however, the correspondence, empirical and conceptual, between public safety and treatment need determinations should be investigated in more depth in the interests of a more effective criminal justice treatment process.

<u>Differential Classification of or Different Classifications for Men and Women in the Criminal Justice Treatment Population</u>

The gender-balanced Philadelphia data set offered a special opportunity to consider the differences between male and female treatment candidates in the criminal justice population. The evidence of gender-based difference in attributes and outcomes is ample, both in previous work and in this study. In fact, the study has surfaced two versions of gender differences, each with different possible implications for treatment practice:

- similar predictive classifications classify men and women differently based on the same criteria;
- different classifications can and should be developed for each gender group.

The implications are different because, in the first instance, we have a common (reasonably acceptable) classification framework which points to the differences in how men and women are categorized. Using the common yardstick we would adjust treatment resources based

on the knowledge that male treatment candidates are ranked as higher risk, etc., while women will generally be lower risk, etc.

In the second instance, the common classification approach is jettisoned based on the argument that a) men and women are different in important ways (have different problems and needs) and b) a common classification classifies both groups based on an aggregate or averaged treatment candidate that resembles neither males nor females very well. From this perspective, those managing treatment in the criminal justice population should base classification of needs and predictive classification of likely outcomes on analysis of each group separately.

When classifying Philadelphia males and females in the criminal justice treatment population using the common framework approach, this study found important differences in how the two groups were ranked in the following areas: attendance at assessment, treatment need determination, level of care recommendation (residential), and rearrest.

- Male defendants would be classified more often in categories less likely to attend assessment than their female counterparts;
- Males were much more likely to be classified as in need of treatment than females: 71 percent of males fall in the high probability treatment need category, compared to only 38 percent of females and no males fall within the lowest probability treatment need group, compared to 29 percent of the females;
- The classification predictive of level of care recommendation ranks males and females differently: a larger proportion (39 percent) of females was classified in the category with the highest likelihood of residential treatment than of males (13 percent). A much larger share of the males (55 percent) than of females (19 percent) was ranked in the least likely to be assigned residential care; and finally,
- Males and females are classified very differently using the rearrest classification derived from analysis of the overall sample of treatment candidates in criminal justice: nearly twice the proportion of males (46 percent) as females (24 percent) were classified in the two highest rearrest risk groups.

In short, men and women were—and would be, if these classifications were operation—classified differently under each of the predictive classifications developed from the overall population of Philadelphia treatment candidates based on pooling the male and female data.

This research has demonstrated that, in most of the analyses as well, separate classifications based on sometimes partly and sometimes greatly different predictors could be developed for males and females. We emphasize that these analyses were intended as illustrations of differential prediction. Further work, larger samples, and validation would be needed to incorporate any of the classifications into an actual programmatic use, for example, if efforts were made to develop classification responsive to gender differences.

Conclusion

These findings suggest that information resources of the type illustrated in these analyses could provide important tools for enhancing the development, efficacy and impact of treatment

approaches addressing the criminal justice population. Drawing on criminal justice, general background, and treatment/assessment data, such approaches can help improve targeting of candidates (better predicting actual treatment need), enrolling (and not losing) candidates in treatment, anticipating treatment need and public safety risk. Such information can serve as a sound basis for developing effective criminal treatment mechanisms.

The role of gender in criminal justice treatment is, of course, tied to larger questions about gender in criminal justice and in society more generally. These data provide strong evidence to support the argument that the attributes, needs and risks of the men and women in the criminal justice treatment population differ in important ways, even though they may share important other themes at the same time. Thus, all-purpose classifications relating to treatment derived from overall populations of males and females will fully reflect the attributes, risks and needs of neither gender and will allocate them to different categories for disposition.

Unlike the general Philadelphia criminal justice population, these data consisted of nearly half male and half female defendants and offenders. Normally in Philadelphia, females represent from about five to 15 percent of the population, depending on the stage of processing. The impact of using criteria or even well-developed decision classifications based on the overall population will derive disproportionately from the male subset of the population. So, while in our data we can say that a classification will treat the "composite" defendant and neither the male nor female accurately, in the real population it will be the female substance abuser that will disproportionately be made to fit in the male-based classification approach.

The argument that, in appropriate circumstances or decision stages, decision making could be greatly improved by use of classifications derived from separate study of the attributes, needs and risks of the men and women in the criminal justice population seems particularly compelling given the different predictors we found in our exploratory analyses of treatment concerns and outcomes when we were able to "equalize" the make-up of the criminal justice treatment population. Without the roughly equal representation of male and female treatment candidates reflected in our data, the issue of gender-specific predictors of treatment aims and outcomes could not have been addressed. There simply would not have been enough women to study.

Making Use of Information to Anticipate Treatment Needs, Outcomes and Crime Risks in Philadelphia's Criminal Justice Population

I. Introduction: Anticipating Treatment Enrollment and Progress in a Criminal Justice Population

Since the onslaught of criminal cases associated with the enforcement initiatives of the War on Drugs in the 1980's, the share of the justice system workload involving substance abusers has grown sharply and, relenting only occasionally in brief plateaus. The general increase in drug workload for the justice system was accompanied by continual changes in the types of controlled substances most affecting the criminal justice population. During the last several decades, changes in trafficking and market conditions for the illicit drug trade have been reflected in changes in availability and prices of the dominant types of drugs. Depending on the historical period and on geographic location in the United States (e.g., rural vs. urban, Northeast vs. Northwest, etc.), powder cocaine, crack cocaine, heroin, methamphetamine and/or combinations of these substances have replaced one another as predominant drugs of choice and have posed difficult challenges of local, state and Federal treatment and justice systems. Thus, despite fluctuations in trends over time, wide-scale and serious drug involvement has become what appears to be a permanent attribute among persons findings themselves in the criminal justice population.

Concern about the role of substance abuse in crime—or at least the interrelatedness of the two problems—has a history that extends over the last century at least. Since the passage of the Harrison Act in 1914 and the birth of a Federal drug enforcement role in the 1920's (Courtwright, D., 1982), treatment approaches to addiction and criminal justice responses to drug use have developed, overlapped and, sometimes controversially, conflicted in how they assumed

drug-related drug problems or drug-related crime problems should be addressed. Debates about justice versus treatment approaches, drug policy (prohibition versus legalization, public health and harm reduction versus harsh punishment, etc.) and the methods and efficacy of treatment, have long histories that continue to play out today. In the beginning of the new century, drug courts, methadone treatment, therapeutic communities and marijuana decriminalization, to name a few examples, are topics of current debate shaped by historically familiar themes.

Like other states, the Commonwealth of Pennsylvania has felt the impact of drug crime on its local jails, state courts, and state correctional system. In Philadelphia, the state's largest population center and the focus of this study, the impact of drug-related cases on the local criminal justice system continues to be dramatic. A recent study of drug arrests in Philadelphia showed a dramatic and unrelenting upward trend in drug arrests since at least 1996, with no end in sight as police initiatives have successively focused on drug crime (e.g., Operation Sunrise, Operation Safe Streets) and added pressure to the court workload and local jail population (Goldkamp et al., 2000, 2001). In short, since at least the late 1980's, the large and increasing volume of drug cases has posed critical problems nationally, on a statewide basis in Pennsylvania, and in Philadelphia, its major urban center.

While debates about effective drug policy and its criminal justice and health dimensions continue, the demand for substance abuse treatment for the criminal justice population has increased dramatically nationally, as well as in Pennsylvania's rural, suburban and urban jurisdictions. As local and state criminal justice systems have sought to alleviate the strains placed on them by turning to treatment strategies for the growing drug-abusing criminal justice population, the resulting increased demand for treatment has placed added burdens on

Pennsylvania's limited Federal treatment dollars. Compelled by the necessity to address the challenges posed by the growing drug-involved criminal justice population, jurisdictions have demanded greater accountability and effectiveness of treatment providers in the criminal justice context than ever before. Treatment services have had to reexamine methodologies, "best practices," and outcomes to deal with the array of problems presented by the criminal justice population. In Philadelphia, various innovations have been developed in response to the problems posed by the drug-related criminal caseload, including the Philadelphia Treatment Court, the Women's Criminal Justice Treatment Network, and the Forensic Intensive Recovery (FIR) program.

II. The Special Case of the Criminal Justice Population

The drug-involved criminal justice population represents a special problem and challenge for the criminal justice and publicly-funded treatment systems. Because of the locus of the potential client population—in some version of the criminal justice arena—treatment issues are confronted within a special, heavily public safety-oriented context. Although the problems associated with the drug-involved justice population need to be jointly addressed by justice and treatment initiatives and resources, treatment and justice priorities are not ranked as co-equal in the justice setting. The dilemmas posed for effective treatment strategies must be dealt with within criminal justice boundaries and be governed by basic criminal justice aims (rehabilitation, deterrence, incapacitation, just desert and community protection).

The need to develop effective treatment strategies has not derived solely—or even primarily—from an enlightened government interest in addressing the health (drug abuse) problems of its citizens who happen to find themselves in the criminal justice system at some stage. Rather, criminal justice agencies have been forced to deal with problems of substance abuse because of their close connection with crime. Quite simply, criminal justice systems have turned to drug treatment in the interest attacking a key link to (catalyst for) criminal behavior. The logic is straightforward: If addiction "causes" criminal involvement, then its treatment, reduction and elimination will reduce criminal behavior. Thus, reducing addiction among offenders should reduce crime generally and, specifically, reduce the rate of return to the overburdened and overwhelmed criminal justice system.

The expectations of treatment impact are both different and intensified in the criminal justice context. A large body of literature has addressed questions of treatment impact (see, e.g., Anglin et al., 1990) over the last four decades. Studies have examined questions relating to

identification of substance abusers (assessment to determine need for treatment), retention in treatment, the relative efficacy of treatment modalities, need for ancillary services to address co-occurring problems and disorders, and treatment outcomes. Very little of that literature has addressed these questions specifically as they relate to the criminal justice population in particular. As difficult as treatment issues generally have proven to be in their own context, it is unlikely that their application to the criminal justice population is straightforward—if only because that population represents a concentration of persons with extensive histories of problems in many areas. The criminal justice system serves as a social service institution of "last resort," in the sense that many of the persons in the criminal justice population have "failed" or been failed by other service delivery systems, including education, vocational, health, mental health, housing, prior treatment failures, repeated involvement (and failures) in the criminal justice system, serious physical and mental health problems, substance abuse treatment, and, in many cases, the criminal justice system itself. Though sharing many traits and problems in common, at a minimum this means that, compared to a "normal" treatment population, the criminal justice population presents more challenging clients who have more acute problems, have compiled greater records of failure (with a wide variety of social systems), have a greater probability of future treatment failure and of recidivism. Absent effective intervention, in short, they are in many cases destined to return again and again.

The treatment challenge posed by the criminal justice population consists of the need to achieve both treatment and justice aims. Substance abuse treatment in the criminal justice population must come to grips with drug abuse and ancillary problems as well as attend seriously to the risk of reoffending. The treatment aims, broadly speaking, include addressing the specific substance abuse problem itself, as well as dealing with related health, mental health, vocational,

educational, family, abuse, and housing issues, among others, that may contribute to the substance abuse. The criminal justice aims are similar, with the exception that they are focused on criminogenesis and prevention of future criminal behavior. While substance abuse treatment seeks to restore an addict to an abstinent, healthy, fully functioning and responsible lifestyle, criminal justice goals would add "crime-free" to the "drug free" aims of treatment.

III. The Purpose of This Study: Making Use of Information to Anticipate Treatment Outcomes and Crime Risks

Given the challenges presented by the drug-involved criminal justice population to local justice systems in particular, this study asks to what extent the treatment and public safety concerns posed by this population can be anticipated by criminal justice officials at the earliest stages of processing making (better) use of available information. Specifically, this study considers the utility of a variety of types of justice and treatment information in "predicting" treatment and criminal justice outcomes in the criminal justice population and developing predictive classifications that could, if deployed in advance, assist decisionmakers dealing with treatment issues in the criminal process. The prediction and classification analyses draw on and further develop two special data sets from studies of recent criminal justice treatment initiatives in Philadelphia: the Women's Criminal Justice Treatment Network (a.k.a, FOCIS) and the Philadelphia Treatment Court.

In a basically illustrative manner, this study seeks to test the plausibility, if not the feasibility, of identifying information from a variety of available sources that, where possible, could be of assistance in targeting various categories of defendants or offenders for appropriate services or interventions, depending on the treatment aim. (Treatment decisions in criminal justice can be made, at a minimum, at the pretrial release, sentencing, and parole (or jail release) stages.) As part of that research, the study also considered whether such the development of such information tools (predictive classifications) (were they to be found to exist) would apply with equal utility to the problems and risks posed by men and women in the criminal justice population.

Anticipating Treatment Need and Outcomes

From a treatment perspective, a number of decisions are potentially important in delivering appropriate and effective treatment to substance abusing defendants and offenders. First, the treatment process needs to identify appropriate candidates for treatment. In a time of limited treatment resources, treatment providers need to have confidence that the persons identified to receive treatment services truly need those services and that the necessary services are available. In the grossest sense, the first treatment decision is the screening decision sorting those in need from those not needing the treatment services available. Quite a literature—and quite a few instruments—address the evaluation or assessment of treatment need.[1] Screening instruments vary in their aims and complexity, in the type of information collected, in the criteria weighed in assessing treatment need, the relative weighting of those criteria, their empirical basis, their subjective content, and their endorsement and acceptance by various professional organizations. This diversity in form and content reflects both the importance and difficulty of the treatment assessment decision.

Level of Care (Type of Treatment) Appropriate

Once an individual has been evaluated as in need of treatment according to an accepted assessment instrument, the next task is to decide what type of treatment services are appropriate and effective for that person. In this decision, ideally, the aim is to match the type of substance abuse problem and related needs of an individual with appropriate services. At a basic level, the decision involves selecting among detoxification, outpatient, intensive outpatient and residential or hospital-based treatment services—or combinations of those services. In a location with an array of services, the level of care decision is more complex, involving consideration of ancillary

[1] See, for example, recent CSAT monographs dealing with assessment and treatment (1993, 1994, and 1995).

services addressing related issues (such as mental health, physical health, housing, job skills, parenting, etc.). In addition, these first treatment decision tasks are made more complicated by the dynamic nature of the treatment process: assessment may (and should) occur on an ongoing basis and, depending on its results, treatment services (level of care) may be adjusted, for example, from residential to intensive outpatient or from outpatient to residential as more information is gathered in the treatment process.

Attendance (at Assessment, at Treatment)

The literature on addiction echoes the day-to-day experience of those providing treatment services: substance abusers have more problems than just abuse of a controlled substance. Their addiction is associated with many other sorts of difficulties, from maintaining stable relationships and family ties, holding employment, to even successfully showing up at important appointments. An important concern of treatment providers (in and out of criminal justice) is to ensure that, once identified as being in need of treatment, clients actually make it to treatment. The problem of reliability in attendance actually affects the prior statement. Of course, the requirement of securing attendance at substance abuse assessment in the first place precedes possible problems that occur at the actual treatment stage. Clearly, the beneficial effects of treatment cannot accrue to individuals who either fail to be evaluated in the first place or, who subsequently fail to make to treatment, if they have been found in need.

Retention (Length of Participation in Treatment)

If one assumes that, fully attended and completed, substance abuse treatment is effective, one might also assume—as the literature does—that treatment success is related to the period of time spent in treatment in the sense that insufficient attendance defeats the positive impact of

treatment (much as an interrupted treatment of antibiotics would not be expected to cure an infection). The treatment "decision" is to devise a treatment regime that will involve the substance abuser in treatment long enough to realize its positive benefits. That decision is based on an estimate (an underlying "prediction") of the difficulties that face the treatment process in retaining the client in treatment for a sufficient period of time.

Treatment Success

Treatment success can be conceived of in a variety of ways. Entering treatment, attending treatment, remaining in treatment, successfully completing treatment, reduction in substance abuse, and abstinence all have been viewed as indicators of treatment progress and success. In addition, other behavioral and lifestyle changes can be considered measures of treatment success: improved physical health, employment, completing training or education, stabilized family relations, decent housing, etc.

Weighing Public Safety Risks

The principal criminal justice outcome of concern in the criminal justice treatment population is the threat released persons may pose to public safety. Very simply, the primary aim of treatment in the criminal justice setting is to produce a healthy former substance abuser who refrains from re-involvement in crime and who will not be returning to the criminal justice system. Estimations of an offender's prospects of reoffending figure importantly into a number of criminal justice decision stages when release to treatment may be considered (e.g., pretrial release, sentencing, release from confinement, and probation or parole revocation). Public safety concerns figure into assessments of whether a person will reoffend or be rearrested, will fail to

attend court proceedings, will end up back in jail, will fail if granted provisional release (on pretrial release, diversion, probation or parole).

IV. Study Design: Philadelphia Treatment Court (1998-1999) and Women's Criminal Justice Treatment Network (1998-1999) Data

This study draws on two unique data sets assembled to evaluate two treatment innovations in the Philadelphia justice system. Although these data sets do not share similar designs and were not constructed to be parallel data sets, they do contain reasonably comparable information relating to roughly similar categories of felony level (drug) offenders referred to screening for treatment need and possible placement in treatment during roughly comparable periods of time. Using these data both pooled into one data set and separated into males and females, the analyses we present sought to predict key treatment and criminal justice outcomes.

Although each data set was designed to be representative of its respective population (the primarily male Treatment Court population and the exclusively female FOCIS population), the pooling or combining of the two data sets do not produce estimates representative of the overall population of male and female offenders in the substance abusing population. For the purposes of this study, which does not seek to estimate attributes of an overall population, this is not a drawback. Development of formal information tools (predictive classifications) from these data would be subject to cross-validation and weighting to the overall population. These data—pooled and un-pooled—do offer a unique opportunity to conduct comparative analysis on this exploratory level to examine the attributes, problems, risks and outcomes of male and female drug abusers in the criminal justice population in almost equal numbers (whereas women typically make up only about ten percent of the population.)

More specifically, the data combined and examined in the following analyses included all males targeted for the Philadelphia Treatment Court from January 1998 through November 1999 (Goldkamp et. al., 2002a) and all females referred to the Female Offenders Comprehensive and

Integrated Services (FOCIS) Network from July 1997 through December 1999 (Goldkamp et al., 1999c and 2002). The Treatment Court study made use of the following five comparison groups of defendants ordered to assessment between January 1998 and November 1999 (Goldkamp et al., 2001):[2]

1. Defendants ordered to substance abuse assessment but never appearing (n=304)
2. Defendants assessed but not found to need treatment (n=308)
3. Defendants assessed in need of treatment who declined to enter Treatment Court (n=355)
4. Defendants found ineligible after referral (n=513)
5. Defendants assessed and entering Treatment Court (n=352)

The Women's Criminal Justice Treatment Network data included four samples of women who were targeted for participation in FOCIS between July 1997 and June 2000:

1. Women ordered to FOCIS for drug and alcohol assessment but never appearing (a 75 percent sample, n=687)
2. Women assessed but not found to need treatment(n=400)
3. Women who were assessed in need and received FOCIS services (treatment placement and intensive case management)(n=602)
4. Women who were assessed in need and assigned to a control group, directed to voluntary treatment without FOCIS case management services (n=168)

Although we do not have data capable of measuring all possible treatment and justice outcomes of concern, these data sets do allow examination of a number of useful treatment measures in predictive analyses. From a long list of possible outcome measures, we focused on

[2] In addition, at the end of the study period there was a small number of defendants whose entry into Treatment Court was pending.

seven that would be supported by the most consistently available data and that were fairly substantially represented in the two samples. Thus, although a possible criminal justice outcome of interest might be rearrests on drug charges or rearrests for serious offenses against a person, the low numbers of such rearrests occurring during the follow-up period made successful predictive modeling unlikely.

Treatment-related outcomes of interest for predictive modeling were those that had implications for addressing attrition and allocating resources in criminal justice treatment initiatives. Thus we selected appearance at assessment (for candidates actually referred), being found in need of substance abuse treatment (for candidates actually assessed)[3], placement recommendation for residential as opposed to less intensive forms of treatment, actually making it to the first treatment appointment (intake), and having a minimum of 30 days in treatment.

The best candidates for criminal justice outcome were any rearrest and any failure to make a required court appearance (FTA), both measured within a one year follow-up period from identification for the program (generally at preliminary arraignment but later for post conviction referrals).

[3] Excluded from this analysis were the occasional program candidates who were informally determined to be in need of treatment and lacked assessment information on which to substantiate the determination or base prediction.

Table 1 Data Sources for Treatment Court and FOCIS Network Study Groups

	Treatment Court n=1912						FOCIS women			
Available Data	Pending	Entered Treatment Court	Assessment no show	No treatment needed	Refused Treatment Court	Ineligible	FOCIS	Control	Assessment no show	No treatment needed
Outcomes										
Criminal Justice:										
Rearrest	X	X	X	X	X	X	X	X	X	X
FTA	X	X	X	X	X	X	X	X	X	X
Treatment:										
Assessment	X	X	X	X	X	X	X	X	X	X
Treatment need	X	X		X	X	X	X	X		X
Residential care	X	X		X	X	X	X	X		X
Intake		X					X	X		
In treatment 30 days or more		X					X	X		
Predictors										
Demographic										
Age, race, gender	X	X	X	X	X	X	X	X	X	X
Criminal justice										
Current arrest	X	X	X	X	X	X	X	X	X	X
Open cases	X	X	X	X	X	X	X	X	X	X
Adult history	X	X	X	X	X	X	X	X	X	X
Juvenile history	X	X	X	X	X	X	X	X	X	X
Assessment[4]	X	X		X	X	X	X	X		X
Interviews							X	X		

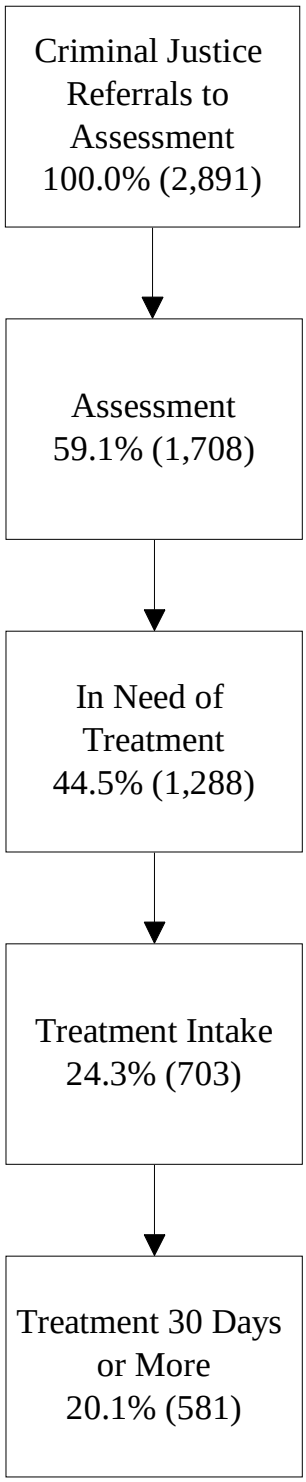
[4] The Addiction Severity Index "Lite" version was used almost exclusively by both Treatment Court and the FOCIS Network. It does not contain the interviewer ratings found in the full version, which we would have liked to test as a potential predictor of various outcomes. The ASI Lite provides self-reported information on family status and issues, employment and education, physical and mental health, substance abuse and treatment history, history of abuse victimization, and criminal history. Treatment court candidates who refused to participate or were found ineligible for reasons other than lack of treatment need may or may not have been assessed, depending on when that determination was made.

Basic demographic attributes (age, race and gender) were generally available for individuals in all study groups (with the exception of occasional invalid dates or other entries that could not be corrected from other sources). Likewise, criminal justice information was collected for all study groups and included adult criminal history (arrests, failures to appear, convictions, sentences and confinements), juvenile delinquent and non-delinquent justice system involvement (petitions, adjudications, commitments), current case and justice system status information, and follow arrests and failures to appear. All individual in the study groups shown had a one-year follow from the start date. Table 1 shows sources of dependent and independent variables available for the various study groups in the Treatment Court and FOCIS Network data sets. (See Appendix for a complete list of variables examined in the analysis.)

For most individuals in study groups reaching the assessment stage, more in depth personal and family background information was available. The ASI "Lite" used for the majority of assessments provided information on marital status, living situation, employment, education, income, abuse victimization history, and mental and physical health. The ASI also provided information on substance abuse and treatment history and self-reported criminal history. Finally, one-year treatment follow-up information was available for Treatment Court participants and FOCIS participant and control groups. Although additional information was available on women from follow-up interviews of FOCIS participant and control groups, the data suffer from high numbers of missing that can produce difficult-to-interpret CHAID outcomes (e.g. CHAID may categorize cases based on missing versus non-missing for a given variable).

Analyses utilize samples of various sizes based on some logical considerations and available relevant data. Basically, sample sizes decrease as the analyses proceed farther into the justice/treatment decision process. (See Table 1a.)

Table 1a Attrition in the Potential Criminal Justice Population



Thus, in the first analysis predicting attendance at assessment, we selected all defendants/offenders who were referred for assessment (n=2,891). Treatment need was predicted based on those who actually are known to have attended assessment (n=1,708) and residential recommendation was predicted based on those who were found to be in need of treatment (1,288) (excluding any informal determinations of treatment need that may have been made). Predictive models of attendance at treatment intake and retention in treatment were based on individuals who were assessed in need of treatment and who were in study groups that were tracked subsequently (n=1,020). Excluded would have been male Treatment Court candidates who declined to participate or who were found ineligible subsequent to assessment and for whom no treatment information was therefore collected; included were FOCIS control group women, whose subsequent involvement in treatment was tracked.

Preparation of Dissimilar Data Sets

The data sets employed in these analyses contained essentially similar data, but they were not strictly parallel. Consequently fairly extensive preparation was required to link the two data sets, and to create or recode variables that could cover both data sets. The initial step in the process was a variable by variable comparison of the two data sets, identifying first identical measures (generally in the criminal justice modules designed to provide consistent measures), then comparing variable attributes to ensure compatibility even in these. The next step was to identify incompatible variables from which new, composite variables could be created. Finally, we expected that some variables might be available in or applicable to only one data set or the other but might still be important to the analyses.

Once data compatibility issues had been resolved and the two data sets merged, the next step was to eliminate duplicate cases, the result of women who were candidates for Treatment

Court as well as FOCIS. Individuals who were in different groups at different point in time (primarily as a result of different arrests) were allowed to remain as separate "cases" (the rationale, which has also been applied in pretrial release studies, is that the same person entering the sample at several points in time will have different case and history attributes, be subject to different system processes and decisions, and have different outcomes – thus, in the long run looking like a different individual). Duplicate records resulting from the same arrest were eliminated. At the same time, we had to ensure that all the available data were preserved in the record that was retained, a somewhat manual process.

The resulting data set still contained well over one thousand variables, beyond the capacity of the statistical application to process. The final step in the process was therefore to create greatly reduced sets of "candidate" variables for each dependent variable to be predicted. Candidate variables were identified by cross tabulating each dependent variable with fairly exhaustive sets of possible predictors. Generally, variables were chosen for the final CHAID analyses if they had a chi-square significant at the 0.05 level, if they did not have an excessively high number of missing values, and if they had a sufficient number of positive responses to provide potential gains to the model (e.g. if only five people had prior arrests for arson, prior arrests for arson would contribute limited predictive power to the model, even if all five people were rearrested during the follow-up). We tended to be somewhat overinclusive, keeping variables if they were of borderline significance and intuitively of interest, as for example history of abuse or living with a substance abuser. We also excluded some variables that we knew to be of low reliability or difficult to interpret. For example, dollar income amounts were generally excluded on that basis (we had observed some inconsistency and error in either reporting or recording of these).

The final reduced data sets were analyzed using CHAID (Chi-squared Automatic Interaction Detector), a classification algorithm available in Answer Tree (version 3), distributed by SPSS, Inc. Analyses used program default criteria for decision-making: Pearson Chi-square and alpha for splitting and merging of 0.05. Stopping rules were also default, with a minimum of 100 for a parent node and a minimum of 50 for a child node (i.e. a group is not split further if it contains less than 100 cases or if one of the resulting groups would be less than 50 cases). Because of the fairly large sample, we set a maximum depth of five levels for the analyses (the default depth is three levels).

Each CHAID analysis was allowed to run with all candidate variables entering freely and again with gender selected as the first predictor. In most instances, gender was not immediately a competing predictor. At each level of the analysis, CHAID presents a list of all variables available for the analysis, ranked in order of probability of the dependent variable. In some instances, the top competitor may not be the best intuitively. For example, it may group cases based on whether that variable has a valid value or is missing. In these instances, alternative competitors may be manually selected.

Assessment questions are framed in terms of the last 30 day and lifetime (excluding the last 30 days). For brevity, in figures, the last 30 days are referred to as *recent*. *Lifetime* refers to lifetime excluding the past 30 days. Computed variables combining the two time frames are labeled *ever*. Similarly to save space, criminal history variables that specify *recent* refer to events within the last three years; all others refer to *ever*.

Gender Differences Reflected in Philadelphia Assessment Data

We have argued that, for the purpose of predictive analyses, it is useful to both combine the male and female data sets and to analyze them separately to determine whether different

attributes of male and female populations appear to be important in anticipating certain outcomes. In the separate analyses, we mean to explore rather than to put aside or ignore differences between the male and female substance abuser populations in the Philadelphia criminal justice system. (In fact, the Women's Criminal Justice Treatment Network or FOCIS was created based on the assumption that the female population of substance abusers in criminal justice had special needs). Male and female defendants potentially eligible for Treatment Court and female defendants potentially eligible for FOCIS services were all assessed for substance abuse involvement and treatment needs, usually shortly after pretrial release (see the discussion of the flow of cases below). Because we had a research role in evaluating both undertakings, we were able to contrast treatment-relevant attributes of males and females[5] and these contrasts are relevant background for this study. The data examined in this analysis included the ASI responses of 942 males assessed for the Treatment Court from between January 1, 1998 and November 30, 1999 and 1007 females assessed for the FOCIS Network between July 1, 1997 and December 31, 1999, not just those found to be in need of treatment. They continued to bear out findings reported for an earlier stage of program implementation (Goldkamp, Weiland, Collins and Moore, 1999).

Demographics

- Females assessed for FOCIS were notably older than the male defendants who were assessed for Treatment Court, with a median age of 31 for the women and 24 for the men.

[5] These data are available because of the role of the researchers in evaluating both the Treatment Court and the Women's Criminal Justice Treatment Network. They provide a comparison of convenience, not intentional design. Although both men and women were eligible for the Treatment Court in specific categories (mostly felony drug offenses not involving sales or possession of amounts implying sales), comparatively few women were found in these categories. Most of the assessment data for the women are drawn from a broader category of women charged with many types of less serious felonies (below a pretrial release guidelines level eight on a scale of one to ten). Most men and women were classified within categories designated for Type I and Type II supervised release under Philadelphia's pretrial release guidelines. Although, as a result, the men and women were roughly similar, in fact, the comparisons we draw are between a broader array of substance abuse involved women (FOCIS candidates) and a narrower class of substance abuse involved men (Treatment Court candidates). Male Treatment Court candidates, for example, had fewer prior arrests and convictions than women who were FOCIS candidates, in part because of the narrower eligibility criteria of Treatment Court. This said, we believe the data do allow for a reasonable comparison of the treatment-related attributes of males and females charged with felonies in the Philadelphia courts.

- About two-thirds of both men and women were African-American (61 and 64 percent, respectively), a greater proportion of men (33 percent) than the women (16 percent) were Hispanic, and a greater proportion of women were white (17 percent versus six percent of men).
- A large majority of both males and females (94 and 91 percent, respectively) reported that they were unmarried at the time of their assessments. A somewhat higher percentage of men (85 percent) than women (74 percent) had never been married.
- Half the women had one or more dependents and 18 percent had three or more. Forty-four percent of the men reported any dependents and only 10 percent reported three or more.[6]
- Although men and women were equally likely to be living with a partner and children (13 percent), a notably higher proportion of women reported living with their children alone: over 19 percent compared with one-tenth of one percent of the assessed men, lending support to conventional wisdom that single parenthood is more prevalent among women than men, at least in this population, and indicating a need for substance abuse treatment to accommodate single mothers and their children. Nearly one third of men reported living with parents and an additional one-third with other family compared with 11 and 28 percent of women reporting such arrangements.
- A higher proportion of women (11 percent) than men (eight percent) reported living with someone with an alcohol problem. Twice as many women (10 percent) as men (five percent) reported at assessment that they lived with someone with a drug problem.

Education, Employment, and Income

- Similar proportions of women and men (43 and 41 percent, respectively) had finished high school or an equivalency degree at the time of the assessment.
- Although high proportions of both men and women had been primarily unemployed in the three years prior to assessment (53 and 50 percent, respectively), slightly higher percentages of women than men reported full-time employment (28 versus 21 percent) and regular part-time employment (13 versus 10 percent).

[6] Although there appears to be a discrepancy between the number of men reporting dependants compared with the number reporting living with children, this may possibly be explained by some ambiguity in terms. That is, dependants may be persons other than children and 34 percent of men reported living with "family", a term that some may have interpreted to include children as well as other relatives.

- Forty-seven percent of the men reported relying on someone else for the majority of their support, compared with 38 percent of women.
- Thirty-five percent of the women had received money from public assistance or food stamps over the 30 days before assessment compared to just five percent of the men. A quarter of women had relied completely on public assistance over the past 30 days, compared with four percent of the men, and it was the primary source of income for 30 percent. Men more commonly relied on employment for income than did women, roughly 26 percent exclusively and primarily, compared with 12 percent exclusively and 18 percent primarily for the women. More men than women (56 percent compared to 23 percent) reported no income in the past 30 days. Again, some of these differences may be partly explained by the age differences between the assessed males and females
- Sixty-five percent of women and 62 percent of men said employment counseling was at least moderately important.

Self-reported Drug and Alcohol Use

- A large majority of both assessed men (78 percent) and women (60 percent) reported some drug or alcohol use during the 30 days prior to the assessment.
- Proportionately more assessed women (26 percent) than men (19 percent) admitted to using cocaine or crack over the 30 days prior to assessment. More than twice the proportion of men as women (61 versus 30 percent) admitted to marijuana use during the month before assessment. Men were also somewhat more likely to have used hallucinogens (six percent versus one percent of the females).
- Thirteen percent of women and six percent of men had used only alcohol, while seven percent of women and 23 percent of men had used only marijuana. Men used alcohol and marijuana (17 percent) more often than women (eight percent), but the assessed women (23 percent) admitted to use of cocaine/crack or some combination involving cocaine or crack (but not opiates) more often than men (17 percent). Nine percent of assessed men and seven percent of women reported using opiates (usually heroin) or some drug combination including opiates.
- Men were more likely than women to have spent money on drugs (43 percent to 34 percent) and equally likely to have spent money on alcohol (20 percent) in the 30 days before the

assessment. However, among those who spent money on drugs or alcohol, women spent less, averaging a median of $20 dollars on alcohol and $100 on drugs, compared to $50 and $160 for the men.

- Overall, men reported experiencing more days over the last 30 with alcohol and drug problems, felt more bothered by alcohol and drug problems, and felt it was more important to receive help for these problems than the women who were assessed.
- More of the assessed women (36 percent) than men (23 percent) had been through some form of drug treatment in the past and equal proportions (14 percent) had been treated for alcohol abuse.

Legal Status

- Twenty-two percent of men and 30 percent of women reported one or more prior convictions.
- Only 9 percent of men and 11 percent of women reported being involved in illegal activities in the previous 30 days.

Medical Status

- A larger proportion of assessed women (36 percent) than men (29 percent) reported some chronic medical condition. More women than men reported prior hospitalizations (57 percent to 19 percent). Slightly more women than men reported current use of a prescribed medication (29 percent to 17 percent).
- A somewhat larger proportion of the women (20 percent) than the men (12 percent) felt that medical treatment was at least moderately important.

Mental Health

- Over two-thirds of assessed men and just over half of assessed women reported some period of serious depression in their life. Thirty-seven percent of the women and 44 percent of the men had experienced serious depression during the 30 days prior to assessment.
- A greater proportion of women (29 percent) than men (18 percent) reported having serious thoughts of suicide, and women were more likely to have attempted suicide (22 percent to compared to nine percent of the men).

- Seventeen percent of the women and 14 percent of the men assessed reported experiencing three or more symptoms of mental illness (of the seven inquired about during assessment) during the 30 days prior to assessment. Women were also more likely to have experienced some of these symptoms every day (16 percent versus five percent of men).
- Twenty-three percent of women had been prescribed psychotropic medication at some time in their past, 18 percent had been hospitalized for psychological problems, and 18 percent had received outpatient mental health treatment. Far fewer men had received psychotropic medication (nine percent) or been hospitalized (four percent), but about the same proportion had been treated for psychological problems as outpatients (18 percent).
- Women were more bothered by psychological problems and were more likely than men to feel that treatment was of considerable or extreme importance.

Family/Social Status

- A far greater proportion of women than men reported experiencing abuse in the past. Overall, half the women but only 13 percent of the men reported having experienced physical and/or sexual abuse. Twelve percent of men and 42 percent of women experienced physical abuse (nine percent of women in the last 30 days). Thirty-one percent of women but only four percent of men reported experiencing prior sexual abuse; 17 percent of the women had experienced sexual abuse in the 30 days prior to assessment.

These assessment data suggest that a large proportion of men and women who are evaluated for treatment in the Philadelphia court are involved in substance abuse and experience other significant difficulties in life. However, the problems—or rather the "treatment needs"—of men and women appear to differ notably.

In contrast to men, women assessed for treatment in the early court process in Philadelphia were, on average, older, had more dependents, were more often single parents, relied on welfare more often (in general and for total financial support), used crack/cocaine more and marijuana less, more often had histories of suicidal ideation or attempts, more often had histories of treatment and/or hospitalization for mental health problems, more often had histories

of drug treatment, and much more often reported being physically and sexually abused (both in the past and currently).

In short, these assessment data show different life circumstances and problems associated with substance-abusing women and men entering the criminal justice process and provide substantial support for the premise underlying both overall and comparative analyses.

Homogeneity and Prediction of Rare Events

One implication of the nature of two treatment-oriented samples employed in this study is that, dictated by the targeting criteria of the two programs, they represent samples of defendants or offenders that are considerably more homogeneous than samples representing a cross section of all defendants entering the process at preliminary arraignment would be.[7] Male Treatment Court defendants for the most part entered the justice process on non-mandatory-sentence felony drug charges not subject to mandatory sentences and with limited adult and juvenile criminal histories. Most fall within the pretrial release guidelines zones (Type I and Type II) eligible for supervised release. Female FOCIS candidates had greater somewhat latitude in terms of charges and criminal histories but were all charged with felonies and likewise fell within the Type I and II guidelines zones. In addition, women referred at stages of processing beyond preliminary arraignment (e.g. conditional release, bench warrant hearings, and post-conviction) can be expected to have been subject to a certain degree of pre-assessment screening, leading to a higher likelihood of being assessed in need of treatment. The homogeneity of the samples makes it more difficult to predict certain outcomes. For example, by design, the study samples are primarily within a medium-high risk group for pretrial misconduct (FTA and/or rearrest).

[7] Homogeneity translates into lack of variability on some independent and independent variables, restricting both the variation that can be explained in the dependent variables and the variability in the independent variables thought to be related.

A Note about "Prediction"

Please note that we refer to this analysis as "predictive" in the sense that we are seeking defendant attributes that *would have been* predictive of later outcomes—i.e., to predict attendance in advance of the attendance stage—had they been known or identified. In reality, however, this statistical prediction is a paper exercise that amounts to "post-diction" or retrospective prediction, in which we use the later outcomes to reconstruct a prediction. In other words, because we know who events turned out (at each decision stage and at the end of the one-year follow-up), the analysis benefits from hindsight (after-the-fact, to coin a Yogi Berra-ism). From this reconstructive analysis, we seek to develop the elements of an information tool (predictive classification) that in actual use by decisionmakers in the future would indeed amount to prediction.

V. Predicting Treatment Process Outcomes

Attendance at Assessment

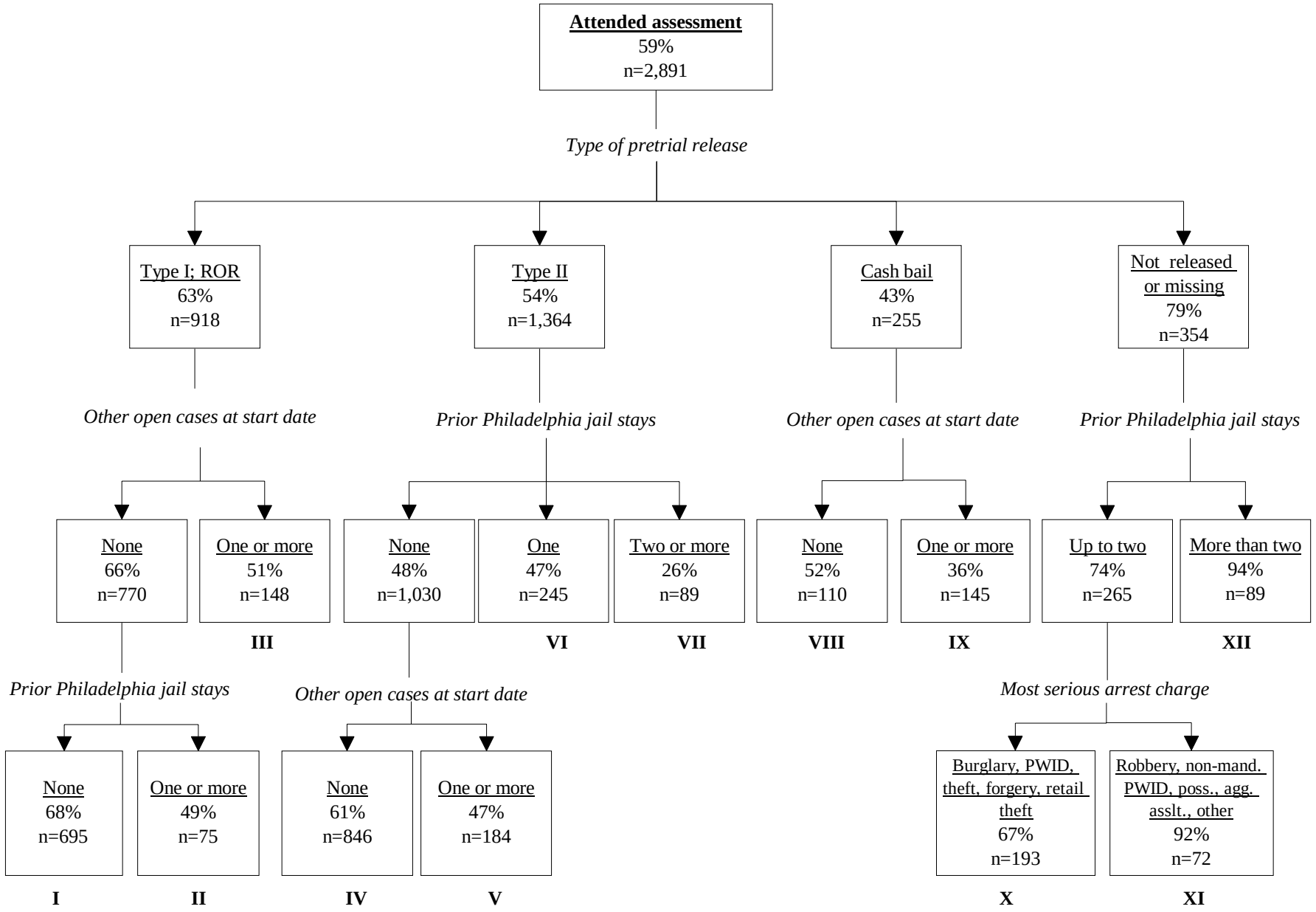
Persons identified as potentially eligible for participation in the Philadelphia Treatment Court or the FOCIS Network were ordered either by the bail commissioner at the preliminary arraignment stage or a judge at the pre-sentencing or pre-jail release stage to report to a central Philadelphia location to be assessed (women incarcerated at assessment were generally assessed at the prisons). If found to be in need of treatment, persons assessed for prospective Treatment Court participation were also ordered to attend Treatment Court to decide whether they wished to participate. (Participation in the Treatment Court was voluntary after that stage.) Female felony defendants or offenders assessed to be in need of treatment were ordered to participate in treatment under the supervision and case management of FOCIS (the Women's Criminal Justice Treatment Network) usually as a condition of pretrial release. Women entering Treatment Court were also case managed by the FOCIS staff.

In order for both of these treatment paths to effectively enroll substance abusing persons in treatment, the first challenge was to secure their attendance (usually three to five days after pretrial release was granted or they were otherwise directed) at the assessment appointment. About 59 percent of both groups (Treatment Court and Women's Criminal Justice Treatment Network referrals), 63 percent of the women and 55 percent of the men actually attended assessment once so ordered. Despite the system's best efforts 40 percent or more of defendants and offenders potentially in need of treatment were lost to the two innovative treatment programs simply because they did not attend the threshold screening function, assessment for substance abuse need. Thus, these criminal justice treatment programs faced the problem that a sizeable share of their respective target populations would not ever even be screened for eligibility.

The problem of attendance at assessment is widely shared by other treatment and criminal justice treatment programs (and should not be seen as a unique feature of these two initiatives). Our analyses asked the question, given information that would have been available to justice officials in advance of assessment, could a predictive classification be formed categorizing defendants and offenders according to the likelihood that they would attend assessment? Such a classification, if possible, in the future might help officials anticipate who might need extra support, assistance or monitoring to ensure attendance at assessment and, in this way, maximize evaluation of the substance abuse treatment needs of the target population.

Figure 1 considers men and women charged with felony drug offenses together as a pool (combined unweighted samples) reasonably representing the potential criminal justice treatment population as it entered the criminal process. CHAID analysis, through successive partitioning of the data, asks whether groups can be identified that differ from one another in their actual assessment attendance rates. The resulting classification allows one to draw inferences about the factors most related to probability of attendance in this type of Philadelphia criminal justice population. Partitioning occurs on the basis of defendant attributes most related to the likelihood of assessment attendance (or other dependent variable) and stops when no such predictors can be found or when too few cases in the sample remain for meaningful analysis. If such groups can be identified, we next ask whether we can form a useful predictive classification that could be used to anticipate the attendance risks posed in advance.

Figure 1 Predictive Classification: Attendance at Assessment: CHAID Analysis



The predictive analysis summarized in Figure 1 suggests that, on a general level, several variables are related to the relative probability that defendants or offenders ordered to assessment will actually attend: method of recent release for referral to assessment; having other cases open at the time of the referral, prior stays in the Philadelphia Prisons, and type of charged offense.

More specifically, the CHAID analysis suggests that a first important differentiator of attendance risk is the type of pretrial release assigned to defendants referred to assessment.[8] Defendants not gaining release and referral at the pretrial stage (e.g., sentence stage referrals) attended assessment most often (79 percent of the time); nearly two-thirds of persons released on personal recognizance (ROR) attended assessment; only about half (54 percent) of persons released on Type II conditional release and less than half of those released on cash bail (43 percent) managed to attend assessment.

After being divided by method of release, a number of attributes further differentiated defendants according to the likelihood of attending assessment. Persons assigned ROR were further divided on the basis of open cases: 66 percent of those with no open charges versus 51 percent of those with other open cases attended assessment. Of those on ROR with no open cases, defendants with no prior Philadelphia jail stays attended 68 percent of the time compared to 49 percent of those with prior jail stays. Type II releasees were further sorted on the basis of prior jail stays (those with two or more jail stays very infrequently attended [29 percent]) and other open cases. Cash bail releases—with the lowest proportion attending assessment of any

[8] Note that most but not all treatment candidates were referred to assessment at the pretrial release stage. Some were referred as later stages, including at the preliminary hearing stage or "special release" from pretrial detention and post-conviction stages. Relatively few Treatment Court referrals but more Women's Criminal Justice Treatment Network referrals consisted of persons facing sentencing or, in some cases, seeking early release from a jail sentence to participate in treatment. The attendance at assessment was generally higher among those seeking either to avoid or to be released from a jail sentence (because of the immediate threat of sanction).

release group—are further differentiated based on open cases: only 36 percent of those with open cases attended assessment; 52 percent with no open cases attended assessment.

The highest attendance release group (not released at the pretrial stages) was differentiated by prior jail stays and most serious criminal charges. Persons released at the post-conviction stage with two or fewer prior jail stays, and who were charged with robbery, non-mandatory possession of drugs with the intent to deliver[9], drug possession, aggravated assault and miscellaneous other offenses showed the highest assessment attendance rate: 92 percent.

The roman numerals shown in Figure 1 show the 12 "end groups" of categories of defendants resulting from the CHAID classification analysis. Table 2 arrays these defendant categories according to relative rates of assessment attendance, ranging from the lowest attendance group (end group VII) consisting of those released under Type II conditions (assigned to most Treatment Court and FOCIS defendants) to those released post-conviction with more than two prior jail stays, 94 percent of whom attended assessment. When defendant groupings showing similar rates of attendance are combined, we can produce a simple four-part predictive classification that ranks criminal justice referrals into low (32 percent attendance), medium (49 percent attendance), medium-high (64 percent attendance), and high likely attendance with a rate of 93 percent attendance, with a base rate of 59 percent. (See Table 2.)

[9] In Pennsylvania, persons convicted of possession with intent to deliver of controlled substances over certain threshold amounts (varying per substance) are subject to mandatory incarcerative sentences.

Table 2 Predictive Classification: Attendance at Assessment

Model 1: Relative Probability of Attending Assessment: CHAID End Groups

End Group	N	Percentage of Referred	Percentage Assessed	Risk Classification
7	89	3.1	25.8	Low
9	145	5.0	35.9	
6	245	8.5	46.5	Medium
5	184	6.4	47.3	
2	75	2.6	49.3	
3	148	5.1	50.7	
8	110	3.8	51.8	
4	846	29.3	60.6	Medium high
10	193	6.7	67.4	
1	695	24.0	67.6	
11	72	2.5	91.7	High
12	89	3.1	94.4	
Total	2,891	100.0	59.1	Total

Simplified Predictive Classification: Estimating Probability of Attendance

Risk Group	N	Percentage of Referred	Percentage Assessed
Low	234	8.1	32.1
Medium	762	26.4	48.6
Medium high	1734	60.0	64.2
High	161	5.6	93.2
Total	2,891	100.0	59.1

Role of Gender in Predicting Attendance at Assessment

Figure 2 separates the classification analysis based on gender. Thus, the criminal justice treatment pool is first purposefully divided into male and female defendants and then predictors of attendance were sought for each group. The prediction of attendance rates for males seemed relatively simple: only the presence of open cases differentiated them according to likely attendance at assessment. Males with no open cases showed the highest attendance (60 percent); a smaller proportion (46 percent) of those with one open case; and a very small proportion (30

percent) of those with two or more open cases attended assessment. Method of release did not enter into the prediction of attendance rates for males.[10] For females, release type was important—because women were referred to treatment under various release options and were more heterogeneous in this attribute than males. Female defendants were further differentiated by age, prior failures-to-appear (bench warrants) and prior Philadelphia jail stays.

The predictive classification analysis of the probability of attending assessment was successful in identifying categories of defendants who varied sharply in their likely attendance rates, whether males and females were taken together or treated separately. The separate analyses for male and female defendants did indicate that different factors may apply to each gender group in predicting attendance at assessment.

[10] Note that the male population is strictly a Treatment Court population release mostly on Type I or Type II conditions of pretrial release. They were therefore fairly homogeneous in release method and one would expect little variation.

Figure 2 Predictive Classification: Attendance at Assessment: CHAID Analysis, by Gender

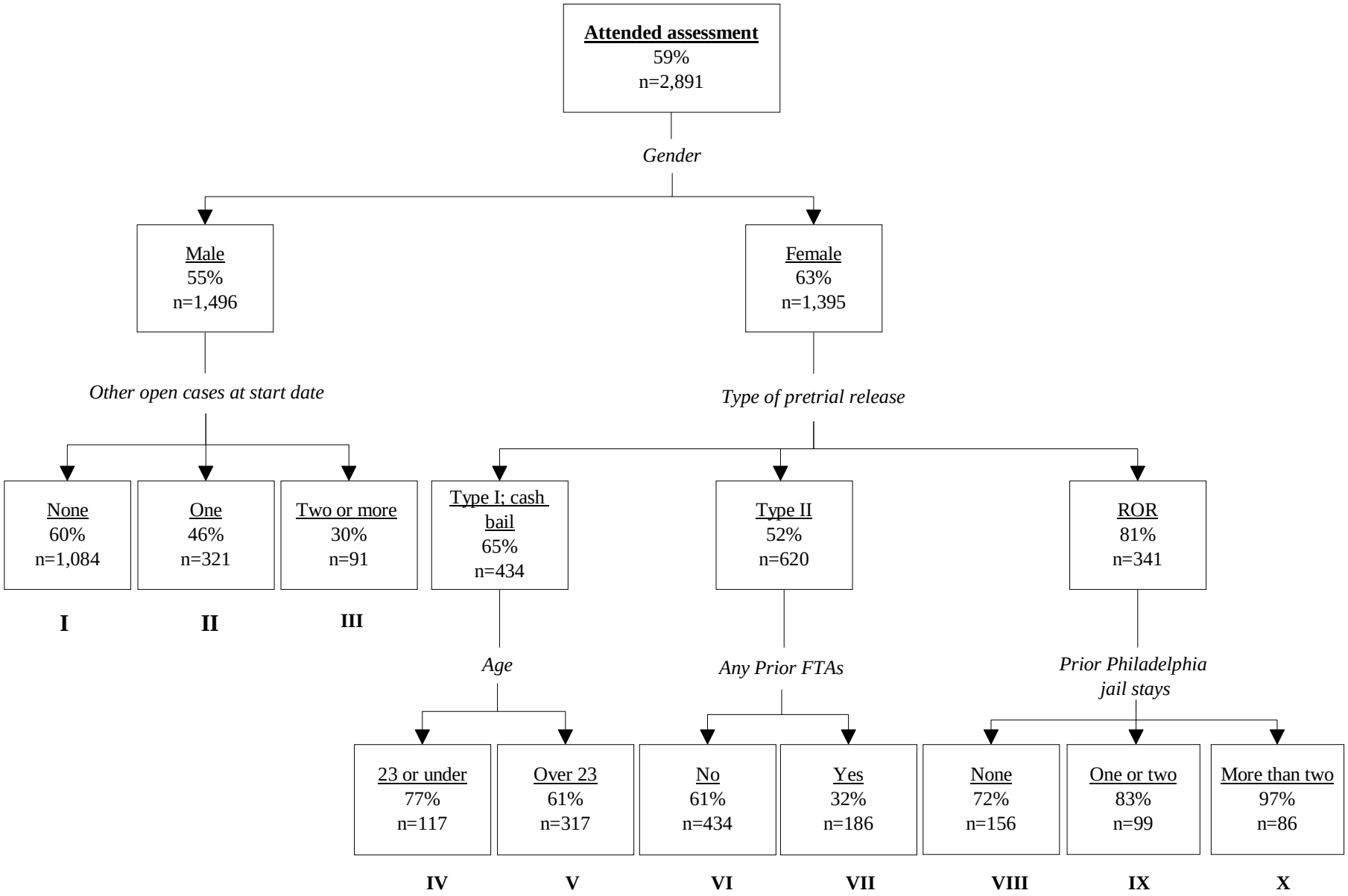


Table 2 Predictive Classification: Attendance at Assessment (Cont.)

Model 2: Relative Probability of Attending Assessment: Males Only

End Group	N	Percentage of Males Referred	Percentage Assessed	Risk Classification
3	91	6.1	29.7	Low
2	321	21.5	46.1	Medium
1	1,084	72.5	59.8	High
Total	1,496	100.0	55.0	Total

Simplified Predictive Classification: Estimating Probability of Attendance: Males Only

Risk Group	N	Percentage of Males Referred	Percentage Assessed
Low	91	6.1	29.7
Medium	321	21.5	46.1
High	1,084	72.5	59.8
Total	1,496	100.0	55.0

Model 3: Relative Probability of Attending Assessment: Females Only

End Group	N	Percentage of Females Referred	Percentage Assessed	Risk Classification
7	186	13.3	32.3	Low
5	317	22.7	60.9	Medium
6	434	31.1	61.1	
8	156	11.2	71.8	Medium high
4	117	8.4	76.9	
9	99	7.1	82.8	High
10	86	6.2	96.5	
Total	1,395	100.0	63.4	Total

Simplified Predictive Classification: Estimating Probability of Attendance: Females Only

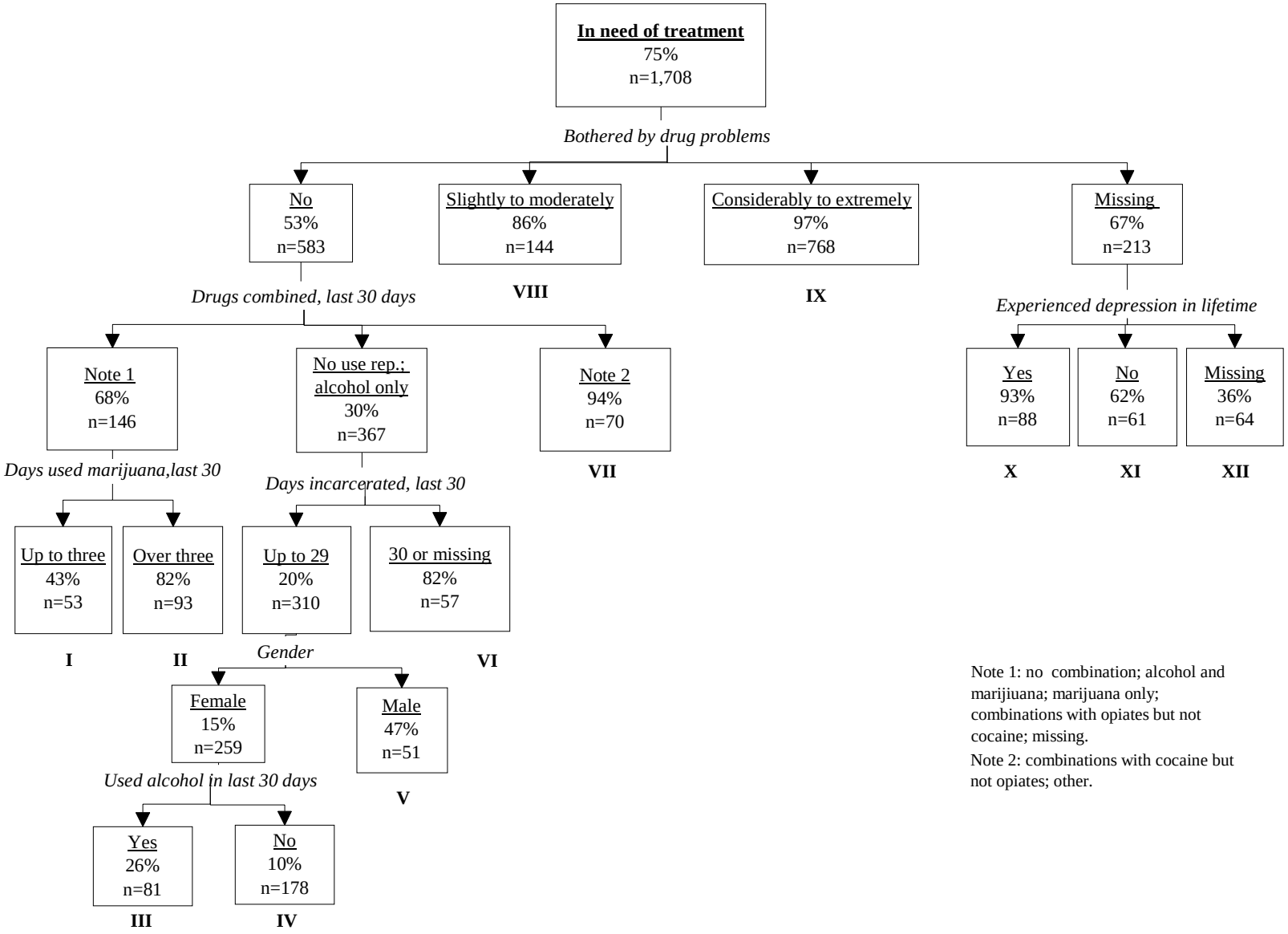
Risk Group	N	Percentage of Females Referred	Percentage Assessed
Low	186	13.3	32.3
Medium	751	53.8	61.0
Medium high	273	19.6	74.0
High	185	13.3	89.2
Total	1,395	100.0	63.4

Ideally, a good classification would not only produce groupings with distinct relative probabilities of attendance, but also allocate the classified population well across groupings. The predictive classification was not that satisfactory when the distribution of risk attributes among defendants is considered. When the classification based on the combined male and female data sets was constructed, the majority of defendants were classified in a medium high attendance group (with a 64 percent attendance rate). The classification based only on female defendants placed 54 percent in a medium group (with a 61 percent rate), while the male classification placed most (79 percent of male defendants) in a high risk group (with a 60 percent rate).

Predicting Treatment Need

Among persons actually attending the substance abuse evaluation (assessment), the threshold screening decision—the gatekeeping mechanism to the treatment process—is the determination of treatment need. Figure 3 summarizes the results of the CHAID analysis that sought to identify predictors of treatment need through the predictive classification method described above. On a general level, a handful of factors were related to the probability that assessed defendants would be found in need of treatment: their response to the interview question asking whether and to what extent they were bothered by drug problems; their response to being asked whether they ever experienced depression in their lifetime; self-reported drug use (combinations) over the last 30 days; days incarcerated of the last 30; days using marijuana over the last 30 days; gender; and days using alcohol over the last 30 days.

Figure 3 Predictive Analysis of Treatment Need Using CHAID



Note 1: no combination; alcohol and marijiuana; marijuana only; combinations with opiates but not cocaine; missing.

Note 2: combinations with cocaine but not opiates; other.

In a reasonably functioning screening system, it would be logical to expect that a large proportion of persons referred to assessment would be found in need of treatment. More specifically, when the male and female criminal justice treatment data sets are combined, the analysis shows that about 75 percent of those assessed through the Treatment Court and FOCIS Network paths were found to be in need of treatment. The self-report variable from the assessment interview, whether interviewees believed they were bothered by drug problems, was the attribute first identified as most useful in subdividing defendants into groups with different proportions found to be in need of treatment. About half (53 percent) of persons answering no to this question were found to be in need of treatment, compared to most of persons admitting to being slightly or moderately (86 percent) bothered by drug problems or reporting that they were considerably or extremely bothered by drug problems (97 percent). About two-thirds of persons not answering this question were also found to be in need of treatment.

Of those reporting no problems, self-reported drug use (combinations) over the last 30 days further differentiated defendants according to the probability of treatment need: only 30 percent of those reporting no drug use or only alcohol use were found in need of treatment; nearly all (94 percent) of those reporting cocaine use in combination with other drugs (not opiates) were found to be in need of treatment; about two-thirds (68 percent) of those with no drug problems who reported using marijuana combinations were found to be in need of treatment.

Defendants who reported no drug problems and no drug use or only alcohol use in the last 30 days were further subdivided on the basis of recent incarceration (during the 30 days prior to assessment): defendants reporting less than 30 days of incarceration were found to be in need of treatment only rarely (20 percent); those with 30 or more days incarcerated were found in

need of treatment most (82 percent) of the time. Those with less than 30 days of incarceration could be further broken down into groups of males (47 percent found in need) and females (15 percent). Females in this category were further differentiated on the basis of alcohol use in the last 30 days: only ten percent of those reporting alcohol use were found in need of treatment, compared to 26 percent of those who reported alcohol use in the last 30 days.

Defendants who reported no drug problems and marijuana use in the last 30 days, were further subdivided on the basis of the number of days of reported marijuana use in the last month: persons reporting three or fewer were found in need of treatment about 43 percent of the time; most (82 percent) of those reporting more than three days of marijuana use were found in need of treatment.

Persons who admitted to being slightly to moderately or considerably to extremely bothered by drug problems were simply very likely to be found in need of treatment (86 and 97 percent, respectively) and could not be further differentiated.

Persons having no response to this question were further differentiated on the basis of whether they reported ever having experienced depression in their lifetime: Those who had experienced depression were almost all (93 percent) found to be in need of treatment; 62 percent of those who did not report depression were found in need of treatment; few (36 percent) of those not answering this question were found to be in need of treatment.

Analysis of the relationship between defendant attributes and the probability of being found in need of treatment resulted in the identification of 12 defendant groups ranging from a low of ten percent found in need of treatment (Group 4) to 97 percent found in need of treatment (Group 9).

Table 3 Predictive Classification: Determining Treatment Needs

Model 4: Relative Probability of Needing Treatment: CHAID End Groups

End Group	N	Percentage of All Assessed	Percentage in Need	Risk Classification
5	178	10.4	10.1	Low
3	81	4.7	25.9	
12	64	3.7	35.9	Medium
1	53	3.1	43.4	
5	51	3.0	47.1	
11	61	3.6	62.3	
2	93	5.4	81.7	Medium high
6	57	3.8	82.5	
8	144	8.4	86.1	
10	88	5.2	93.2	High
7	70	4.1	94.3	
9	768	8.3	97.1	
Total	1,708	100.0	75.4	Total

Simplified Predictive Classification: In Need of Treatment

Risk Group	N	Percentage of All Assessed	Percentage in Need
Low	259	15.2	15.1
Medium	229	13.4	47.2
Medium high	294	17.2	84.0
High	926	54.2	96.5
Total	1,708	100.0	75.4

Model 5: Relative Probability of Needing Treatment: Males Only

End Group	N	Percentage of Males Assessed	Percentage in Need	Risk Group
1	259	31.5	64.5	Low
2	564	68.5	97.7	High
Total	823	100.0	87.2	Total

[Note: No further simplification possible.]

Table 3 Predictive Classification: Determining Treatment Needs, cont'd.

Model 6: Relative Probability of Needing Treatment: Females Only

End Group	N	Percentage of Females Assessed	Percentage in Need	Risk Classification
3	206	23.3	16.0	Low
5	52	5.9	19.2	
6	54	6.1	48.1	Medium
2	63	7.1	57.1	
7	53	6.0	64.2	
1	55	6.2	83.6	High
8	88	9.9	92.0	
9	190	21.5	96.3	
4	124	14.0	97.6	
Total	885	100.0	64.4	Total

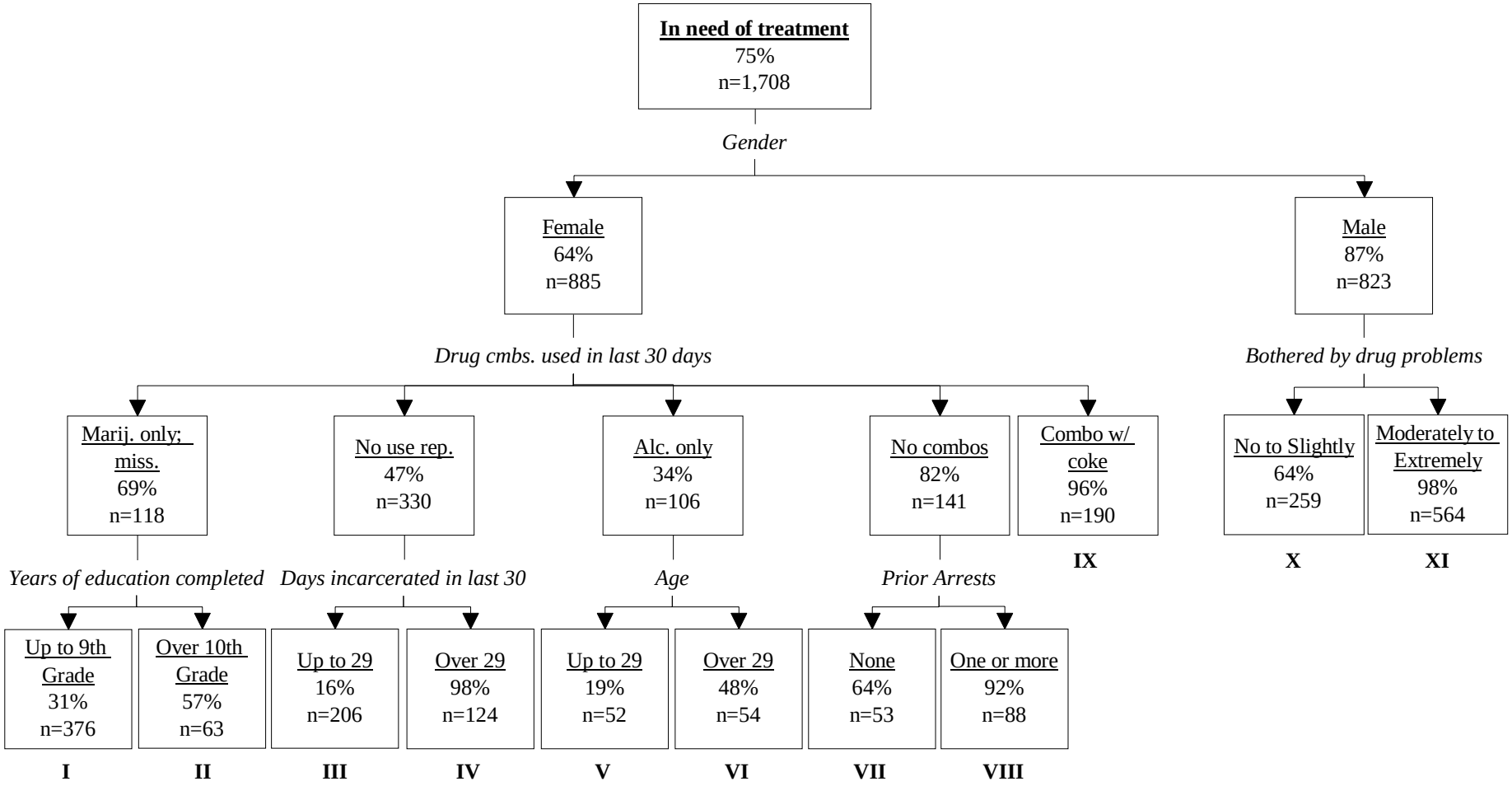
Simplified Predictive Classification: In Need of Treatment: Females Only

Risk Group	N	Percentage of Females Assessed	Percentage in Need
Low	258	29.2	16.7
Med	170	19.2	56.5
High	457	51.6	94.3
Total	885	100.0	64.4

Gender in Predicting Treatment Need

In the analysis of the pooled data sets, gender entered, albeit marginally as a differentiator of the probability of treatment need: among those not reporting being bothered by drug problems and who also reported no drug use or only drug use during the last 30 days and who had been incarcerated less than 30 days in the last year. Figure 4 displays separate analysis of males and females to determine whether different attributes are predictive of treatment need for each population. In fact, the predictors of being found in need of treatment do appear to differ according to gender groups.

Figure 4 Predictive Classification: Treatment Need: CHAID Analysis, by Gender



To begin with, males and females had different base rates of treatment need, 64 percent of female felony defendants compared with 87 percent of males were found in need of treatment. The question to be asked in each predictive classification is whether subgroups of males and females can be identified with notably different probabilities of reoffending compared to the respective base rates.

The female classification partitioned the sample first on the basis of whether women self-reported using drug combination within the last 30 days: those admitting to marijuana use or for whom the information was not available were found in need of treatment 69 percent of the time; those reporting no drug use within the past 30 days were found in need 47 percent of the time and those using alcohol only were assessed in need 34 percent of the time; women reporting use of single drugs other than marijuana or alcohol were found in need 82 percent of the time. Women using any combinations including cocaine were almost always found to be in need (96 percent). Education level further differentiates women reporting marijuana use or with no response: those completing less than the tenth grade were found in need 31 percent of the time; those with a tenth grade education of higher were found in need 57 percent of the time. Women reporting no drug use in the past 30 days were further subdivided on the basis of days incarcerated in that same time period; those with up to 29 days were found in need only 16 percent of the time; those with 29 days or more were almost always found in need (98 percent of the time). Age differentiated women reporting only recent alcohol use: in that group women up to 29 years of age were found in need only 19 percent of the time compared with women over 29, who were found in need 48 percent of the time. Of women reporting single drugs other than alcohol or marijuana, those with no prior arrests were found in need 64 percent of the time, compared with 92 percent of those having one or more prior arrests.

Thus, based on combinations of drugs, educational level, recent days incarcerated, age , and prior arrests, nine classes of female defendants could be identified with differing relative probabilities of being found in need of treatment, ranging from a low of 16 percent (Group 3) to a high of 98 percent (Group 4). When grouped according to similar probabilities, a three-part classification predicting the probability of being found in need of treatment could be constructed, distinguishing groups with different probabilities of treatment need: low: 17 percent; medium: 57 percent; high: 94 percent.

The male population was partitioned on the basis of how bothered defendants reported to be by drug problems. Even those who professed to be bothered only slightly or not at all were found in need of treatment nearly two-thirds of the time. Those who admitted to being moderately to extremely bothered were almost always found in need (98 percent). However, the predictive classification for males was not very satisfactory.

What is perhaps most striking in these analyses is the primacy of self-reported information relating to recent drug use, incarceration, and drug problems as principal predictors of treatment need. Apparently, the pre-screening criteria (categories of drug charges and pretrial release guidelines recommendations) serve to forward a population of male and female candidates of which a majority will be found in need of treatment, and determination of treatment need relies very little on criminal justice information, at least that is not self-reported. Assuming that treatment need determination is clinical diagnosis and not a ratification of the referral itself, the dominant role of self-reported variables may be explained by the fact that the screening process has in effect "controlled for" charge and prior history information in its eligibility criteria and in producing a relatively homogeneous population. These discriminators serve to classify female candidates in an array of groups displaying a full range of differing

probabilities of being in need of treatment. Only one self-reported variables is able to differentiate classes of male defendants according to the relative probability of being found in need of treatment—but the result is a classification that produces categories of males that are either highly or very highly likely to be found in need of treatment.

Predicting Level of Care Recommendation for Persons in Need of Treatment: Residential Treatment

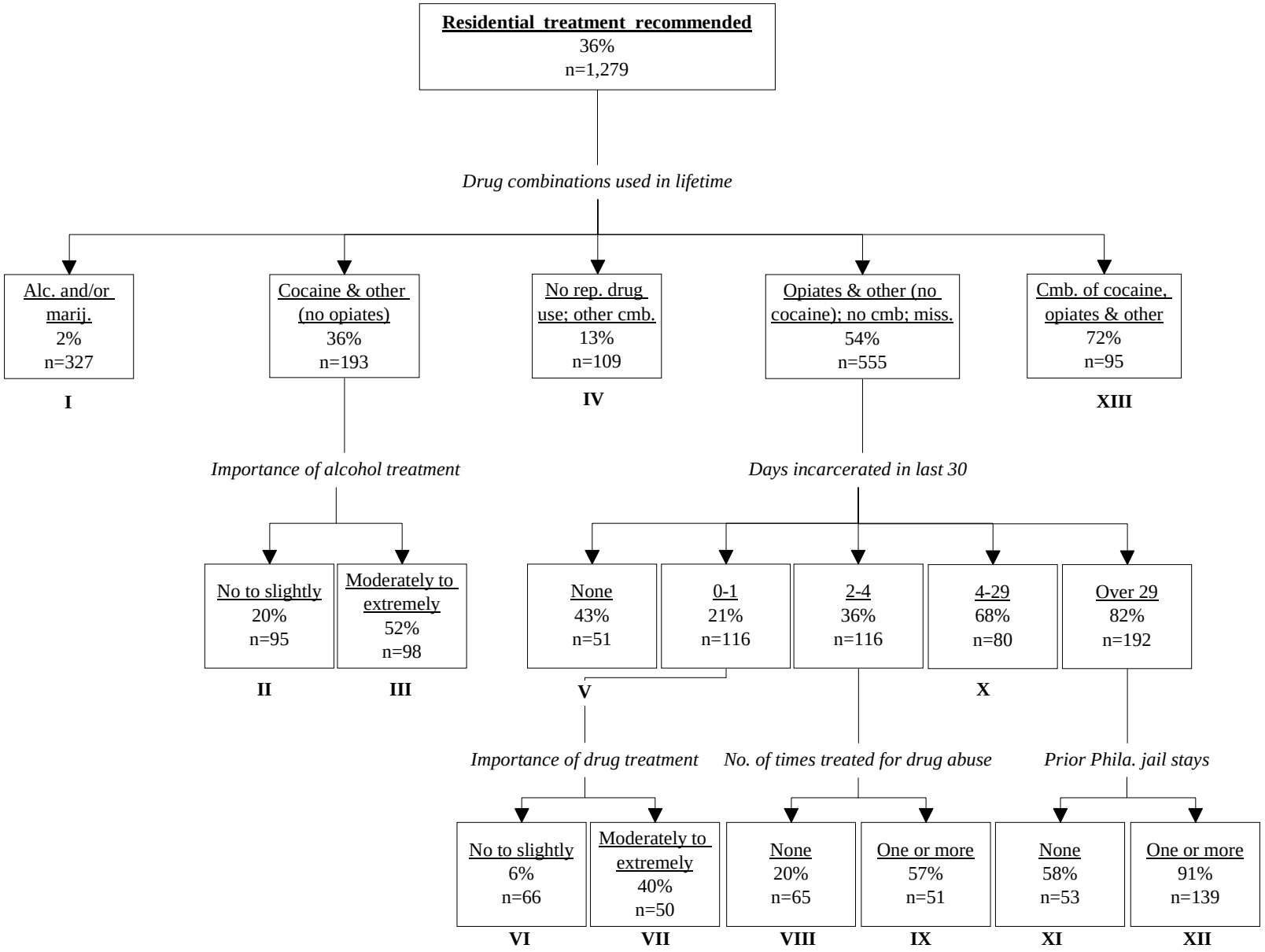
We noted above that, once the substance abuse evaluation had indicated that an individual is in need of treatment, the decision task for treatment is then to decide what type of treatment services would be most effective. For the purposes of analysis, we oversimplify this decision into one between residential treatment and other non-residentially based services (basically, outpatient and intensive outpatient). We focus on this dichotomy because the choice of residential treatment is the most resource intensive and most scarce from the perspective of availability, and because it represents the most restrictive kind of treatment regimen for the substance abusing defendant in the criminal justice population.

Figure 5 shows first that residential treatment was recommended on a selective basis, for only 36 percent of all persons found in need of treatment (pooled male and female samples). The first predictor of the residential care recommendation was a measure of the drug combinations the defendants had used during their lifetime. The classification resulted in five groups of persons with varying rates of recommendation for residential treatment: those with a history of alcohol and marijuana use were recommended only two percent of the time; those who used combinations including cocaine but not opiates were recommended 36 percent of the time; those not admitting to lifetime drug use were recommended 13 percent of the time; those who had used combinations including opiates but not cocaine, single drugs only or had no information

available were recommended 54 percent of the time. The group that reported using combinations with cocaine and opiates were recommended 72 percent of the time and could not be further differentiated.

Person who used combinations including cocaine but not opiates could be further differentiated on the basis of their interest in alcohol treatment: those who considered it of no or slight importance were recommended for residential treatment 20 percent of the time while those who considered it moderately to extremely important were recommended 52 percent of the time. Persons who had used drug combinations with opiates but not cocaine, single drugs only or had no information available were further distinguished according to the time they had been incarcerated during the 30 days prior to assessment, the importance of drug treatment, prior treatment episodes and prior Philadelphia jail stays. The small group that had not been incarcerated was recommended for residential 43 percent of the time. Of persons who had been incarcerated no more than one day and professed no or slight interest in drug treatment, only six percent were recommended. Of those with two to four days in jail, those with no prior treatment were recommended 20 percent of the time, compared with 57 percent of those with any treatment history. Persons incarcerated for more than four and up to 29 days incarcerated were recommended 68 percent of the time and could not be further distinguished. Persons incarcerated over 29 days (and therefore most likely incarcerated at assessment) were recommended 82 percent of the time overall. This group could be further differentiated by their history of Philadelphia jail stays: 58 percent of those with prior jail stays were recommended for residential treatment compared with 91 percent of those with one or more prior jail stays.

Figure 5 Predictive Classification: Residential Treatment: CHAID Analysis



When the 13 end group categories of participants are grouped based on similar probabilities of residential treatment recommendation, a predictive classification consisting of four categories can be constructed, identifying defendants with very low chances of recommendation for residential treatment (five percent) to defendants with very high chances (79 percent).

Table 4 Predictive Classification: Recommending Residential Treatment

Model 7: Relative Probability of Residential Treatment Recommendation: CHAID End Groups

End Group	N	Percentage of Assessed	Percentage Residential	Risk Classification
1	327	25.6	2.0	Low
6	66	5.2	6.1	
4	109	8.5	12.8	
2	95	7.4	20.0	Medium
8	65	5.1	20.0	
7	50	3.9	40.0	Medium-high
5	51	4.0	43.1	
3	98	7.7	52.0	
9	51	4.0	56.9	
11	53	4.1	58.5	
10	80	6.3	67.5	High
13	95	7.4	71.6	
12	139	10.9	90.6	
Total	1,279	100.0	35.9	Total

Simplified Predictive Classification: Residential Treatment

Risk Group	N	Percentage of Assessed in Need	Percentage Residential
Low	502	39.2	5.2
Medium	160	12.5	20.0
Medium high	303	23.7	50.5
High	314	24.6	79.0
Total	1,279	100.0	35.9

Model 8: Relative Probability of Residential Recommendation: Males Only

End Group	N	Percentage of Males Assessed in Need	Percentage Residential	Risk Classification
8	298	42.2	2.7	Low
11	97	13.7	14.4	Medium
9	93	13.1	20.4	
10	101	14.2	48.5	Medium high
12	52	7.3	51.9	
13	69	9.7	81.2	High
Total	710	100.0	24.4	Total

Simplified Predictive Classification: Residential Treatment: Males Only

Risk Group	N	Percentage of Males Assessed in Need	Percentage Residential
Low	298	42.0	2.7
Medium	190	26.8	17.4
Medium high	153	21.5	49.7
High	69	9.7	81.2
Total	710	100.0	24.4

Model 9: Relative Probability of Residential Recommendation: Females Only

End Group	N	Percentage of Females Assessed in Need	Percentage Residential	Risk Classification
1	118	20.7	7.6	Low
3	66	11.6	13.6	
2	64	11.2	50.0	Med
4	51	9.0	58.8	
5	84	14.8	63.1	
6	71	12.5	63.4	
7	115	20.2	93.9	High
Total	569	100.0	50.3	Total

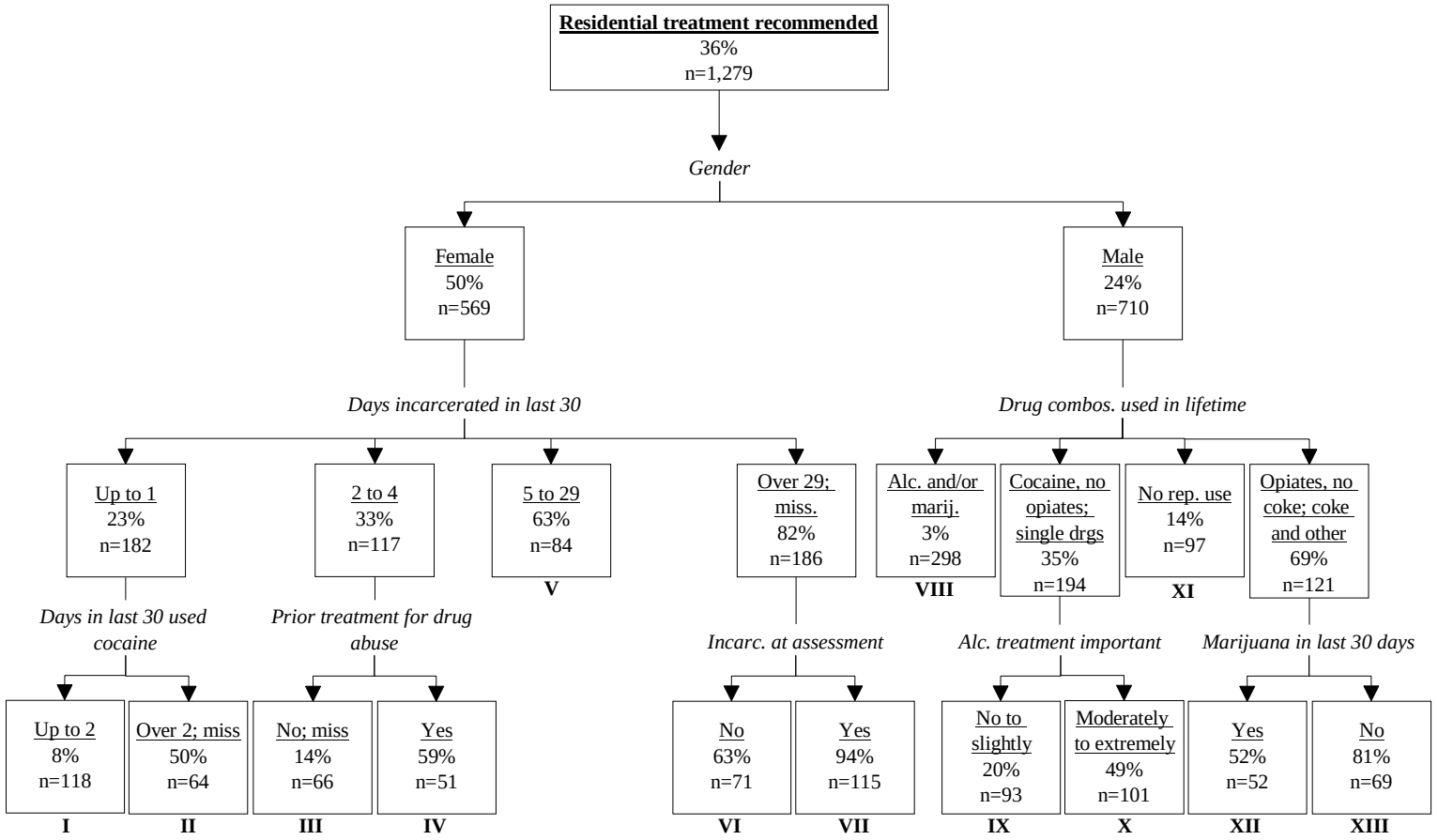
Simplified Predictive Classification: Residential Treatment: Females Only

Risk Group	N	Percentage of Females Assessed in Need	Percentage Residential
Low	184	32.3	9.8
Med	270	47.5	59.3
High	115	20.2	93.9
Total	569	100.0	50.3

Gender in Level of Care Recommendation

Figure 6 suggests that female defendants in Philadelphia had, in general, a substantially higher rate of residential care recommendation (50 percent) than male defendants (24 percent) and the factors predictive of that recommendation appeared to differ for each gender group. The recommendations for female defendants were associated with days incarcerated in the last 30, reported recent cocaine use, prior drug treatment episodes, and incarceration at assessment. Male defendant recommendations were affected by drug combinations used lifetime, the importance of alcohol treatment, and marijuana use in the last 30 days. These different factors formed reasonably good predictive classifications for each gender group, with four male defendant risk categories ranging from a low of 3 percent residential treatment to a high of 81 percent and three female categories with probabilities of residential treatment recommendations ranging from 10 percent for the low risk group to 94 percent for the high risk group. Both classifications allocated defendants fairly well across categories.

Figure 6 Predictive Classification: Residential Treatment Recommendation: CHAID Analysis, by Gender



Note 1: theft/RSP; agg asslt; prostitution; drug poss; PWID; robbery; nonmandatory drug poss.

Note 2: burglary; forgery; retail theft; obstructing the highway; other.

Attending Treatment Intake (First Treatment Appointment)

The treatment screening and enrollment process successively winnows the treatment population of potential criminal justice treatment participants from those meeting rough eligibility criteria, to those attending assessment, being found in need of treatment and recommended to a certain level of care. By the time treatment recommendations are made, the treatment process has eliminated those not in need of treatment as well as those never showing up for assessment. Among those having passed the initial screening hurdles and now assigned to attend a first treatment appointment (intake) at a treatment provider location, there is still an opportunity to lose recalcitrant substance abusers who have difficulty in arriving at the first treatment stage. This analysis asks the question, within the increasingly homogeneous treatment population after the assessment stage, is it still possible to anticipate the likelihood of attendance at the first treatment stage? Note that this prediction is increasingly difficult, given that many "poor attenders" have been eliminated by having failed to attend the assessment stage.

Figure 7 indicates that most (69 percent) of those assessed and found to be in need of treatment attended the first treatment appointment; yet a sizeable proportion (31 percent) did not. The first most important predictor of treatment attendance in the criminal justice treatment population appeared to be method of referral to treatment. This suggests that the degree of programmatic monitoring of attendance, supervision of the process and/or threat of sanctions, may be highly related to attendance. The group of (female) defendants with the least amount of monitoring was the FOCIS control group, made up of women who were assessed, informed of the fact that they were in need of treatment, and then were referred to the public defender to pursue treatment voluntarily on their own. They attended treatment intake least often (39 percent). About two-thirds of women (65 percent) case managed by the FOCIS program

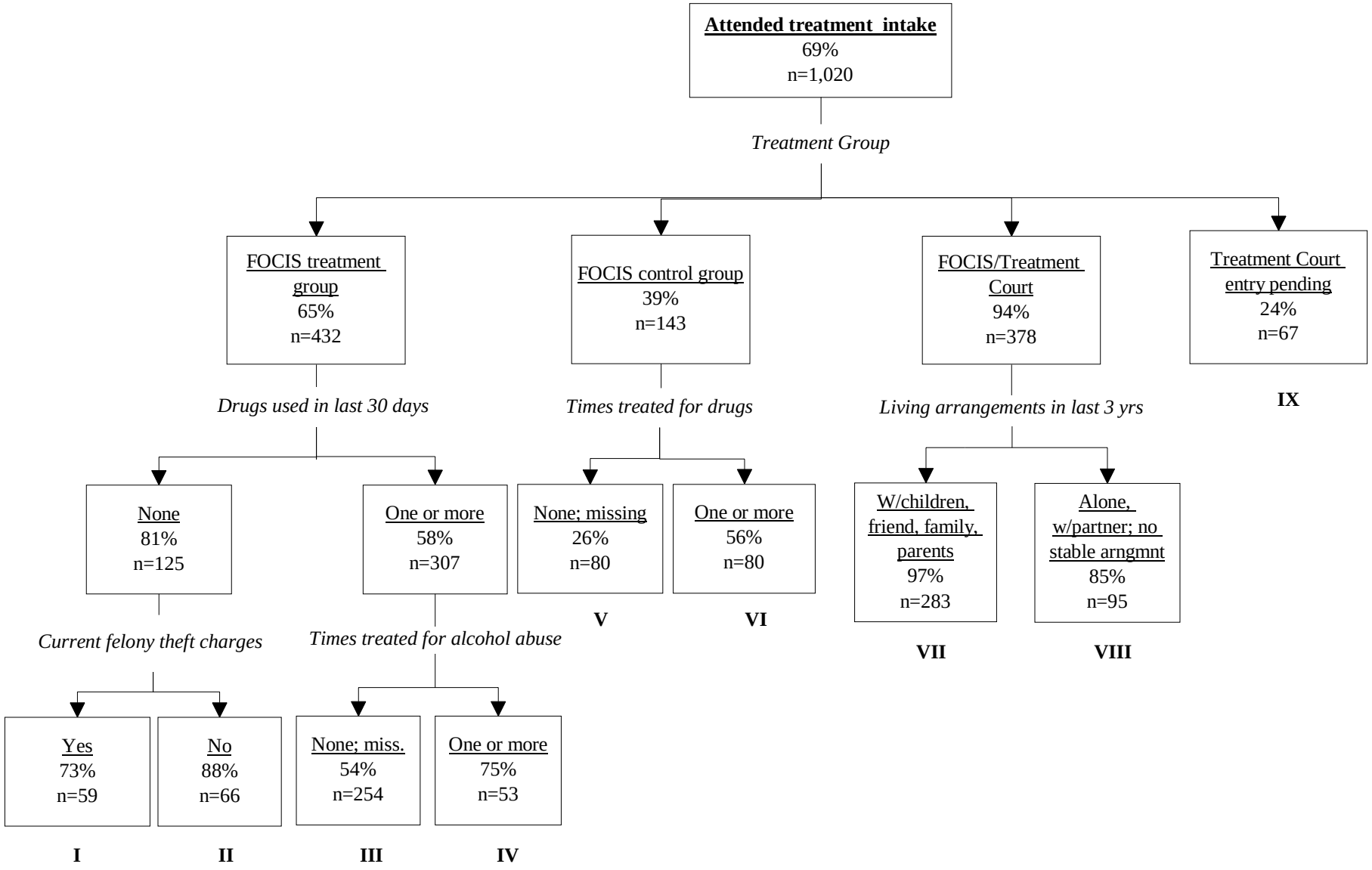
managed to attend treatment intake. Persons referred from the Treatment Court or Treatment Court and FOCIS were the most monitored and attended treatment in 94 percent of cases. Persons who at the end of the study period had not yet completed initial Treatment Court processing represent a special category of Treatment Court entry pending, who had arrived at treatment intake in only 24 percent of cases.

This first level predictor suggests that practical, programmatic factors have an important influence on whether or not an in-need defendant actually makes it to the first treatment stage. The Treatment Court pending group represents those identified for Treatment in the court program but not yet assigned to treatment (when the study period stopped). The Women's Criminal Justice Treatment Network (FOCIS) comparison group of female felony defendants was unsupervised (by design), although they were provided their assessment results and referred to a voluntary treatment process. The FOCIS participants (experimental group of women) were supervised through case management and received some monitoring of their actions. Persons in the Treatment Court were under the most direct supervision (with threat of sanctions) to guide them to the first treatment stage.

Several other factors mitigated the basic affects of referral method on attendance at treatment intake in the treatment population. The rate at which the unsupervised FOCIS control group women voluntarily reached the treatment intake stage varied by whether they had prior treatment: those without prior treatment episodes attended treatment intake 26 percent of the time; those with prior treatment experience made it to intake in more than half (56 percent) of the cases. A larger proportion (81 percent) of the women referred to intake under FOCIS case management who did not report drug use in the last 30 days attended intake than those who did report drug use in their assessment interviews (58 percent). Of those referred to intake from the

Treatment Court or the joint Treatment Court/FOCIS (e.g., women in Treatment Court) process, those with family, children, or parents for support attended at a higher rate (97 percent) than those who did not live with a partner, lived alone and did not report a stable living arrangement. Persons with felony theft charges (lower rate) and with prior treatment for alcohol abuse (higher rate) differed in predicted intake attendance only within the narrow category of FOCIS women.

Figure 7 Predictive Classification: Attendance at Treatment Intake: CHAID Analysis



The factors identified in the predictive analysis summarized in Figure 7 produced nine categories of defendants (end groups) with probabilities of intake attendance ranging from a low of 24 and 26 percent to a high of 88 and 97 percent. (See Table 5.) These nine groups could be usefully collapsed to form a four-part classification scheme predictive of attendance at treatment intake with predicted probabilities of attendance at 25 percent of the lowest probability group, 55 percent of the medium probability group, 74 percent of the high probability group, and 93 percent of a very high probability attendance group. (See Table 5.) The four-part categorization allocated the criminal justice treatment population reasonably well across categories.

Table 5 Predictive Classification: Attending Intake (First Treatment Appointment)

Model 10: Relative Probability of Attending Intake: CHAID End Groups

End Group	N	Percentage of Assessed in Need	Percentage Attending Intake	Risk Classification
9	67	6.6	23.9	Low
5	80	7.8	26.3	
3	254	24.9	54.3	Medium
6	63	6.2	55.6	
1	59	5.8	72.9	Medium high
4	53	5.2	75.5	
8	95	9.3	85.3	High
2	66	6.5	87.9	
7	283	27.7	96.8	
Total	1,020	100.0	69.2	Total

Simplified Predictive Classification: Attending Intake

Risk Group	N	Percentage of Assessed in Need	Percentage Attending Intake
Low	147	14.4	25.2
Medium	317	31.1	54.6
Medium high	112	11.0	74.1
High	444	43.5	93.0
Total	1,020	100.0	69.2

Model 11: Relative Probability of Attending Intake: Males Only

End Group	N	Percentage of Males Assessed in Need	Percentage Attending Intake	Risk Classification
8	65	17.9	24.6	Low
10	73	20.1	83.6	Medium high
9	226	62.1	96.9	High
Total	364	100.0	81.3	Total

Simplified Predictive Classification: Attending Intake: Males Only

Risk Group	N	Percentage of Males Assessed in Need	Percentage Attending Intake
Low	65	17.9	24.6
Medium high	73	20.1	83.6
High	226	62.1	96.9
Total	364	100.0	81.3

Model 12: Relative Probability of Attending Intake: Females Only

End Group	N	Percentage of Females Assessed in Need	Percentage Attending Intake	Risk Classification
5	87	13.3	26.4	Low
3	254	38.7	54.3	Medium
6	64	9.8	56.3	
1	59	9.0	72.9	Medium high
4	53	8.1	75.5	
2	66	10.1	87.9	High
7	73	11.1	98.6	
Total	656	100.0	62.5	Total

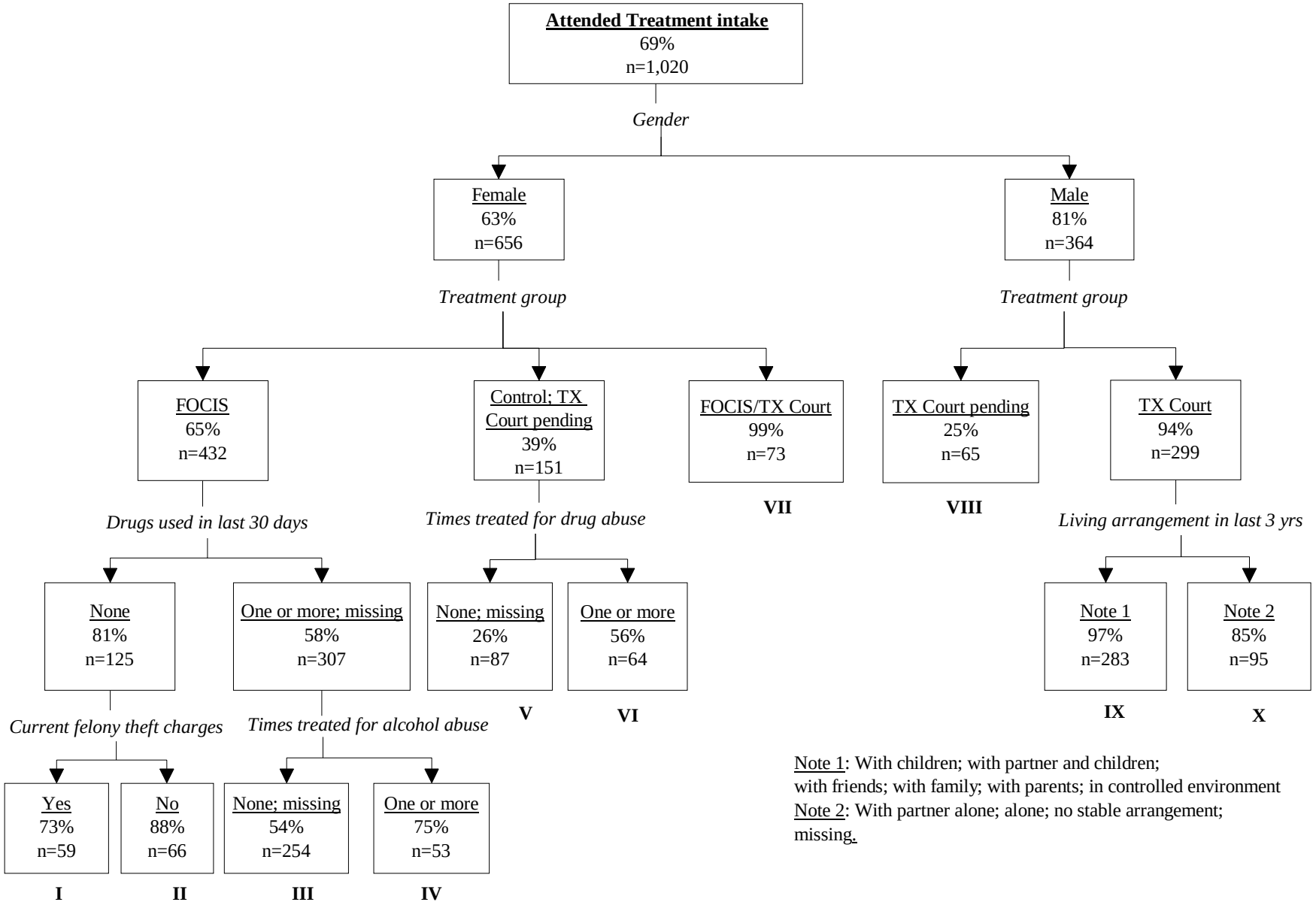
Simplified Predictive Classification: Attending Intake: Females Only

Risk Group	N	Percent of Females Assessed in Need	Percent Attending Intake
Low	87	13.3	26.4
Medium	318	48.5	54.7
Medium high	112	17.1	74.1
High	139	21.2	93.5
Total	656	100.0	62.5

Gender in Predicting Treatment Intake Attendance

Figure 8 separates predictors of intake attendance by gender. Generally, the separate classification of defendants by gender does not substantively change the findings from the combined analysis presented in Figure 7. (See Table 5 as well.)

Figure 8 Predictive Classification: Attending Intake (First Treatment Appointment): CHAID Analysys, by Gende



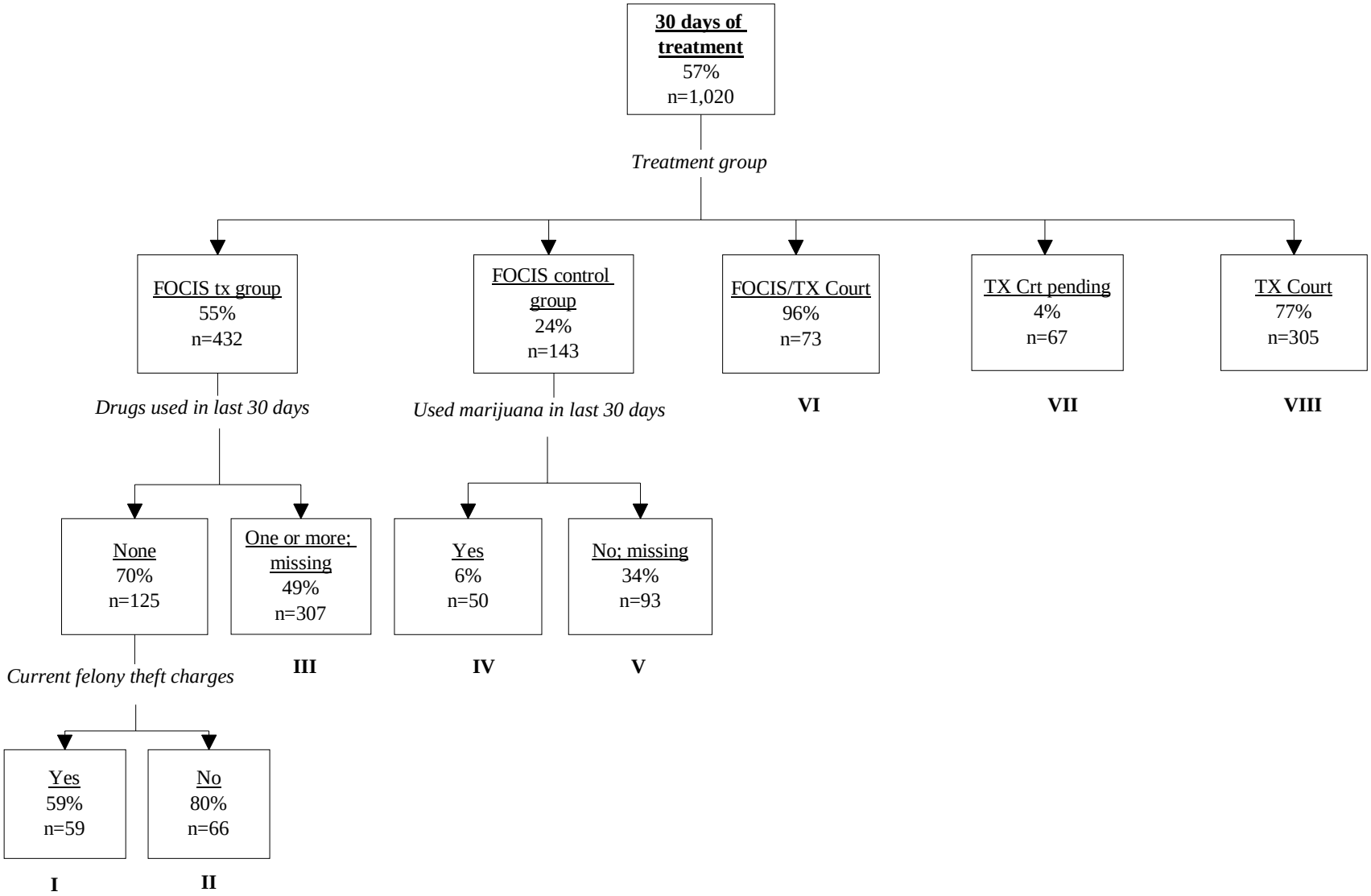
Note 1: With children; with partner and children; with friends; with family; with parents; in controlled environment
Note 2: With partner alone; alone; no stable arrangement; missing.

Predicting Retention in Treatment (Measured as 30 days or More)

Once having identified treatment candidates and placed them in treatment, a clear aim of the treatment process is to retain participants in treatment for a sufficiently long period to permit the positive effects of treatment to be realized. This aim is not only common-sensical, it represents a theme in the drug treatment literature, from which treatment advocates have inferred that "the longer in treatment, the greater the chances for success." This analysis seeks to predict a short term measure of treatment retention—whether persons assessed to be in need of treatment actually attended treatment 30 days or more. This short-term measure of treatment is not intended to represent treatment success, but rather, given the challenges associated with enrolling and retaining the criminal justice population, seeks to gauge early engagement of participants in the treatment process. The measure of 30 days or more in treatment is determined from treatment records showing the last date a participant was seen in treatment.

Figure 9 shows that the CHAID predictive analysis was not very successful in identifying factors other than method of referral. Following the pattern found in trying to predict treatment attendance, this figure again points to the importance of programmatic, supervisory effects. Very few (24 percent) of the FOCIS control group (voluntary, self-referred participants in treatment) or Treatment Court/pending defendants (4 percent) were found in treatment for more than 30 days. More than half (55 percent) of the FOCIS case managed women who had been found in need of treatment were in treatment longer than 30 days. More than three-fourth (77 percent) of Treatment Court participants and 96 percent of joint FOCIS/Treatment Court participants were in treatment at least that long.

Figure 9 Predictive Classification: Treatment Participation for 30 Days or More: CHAID Analysis

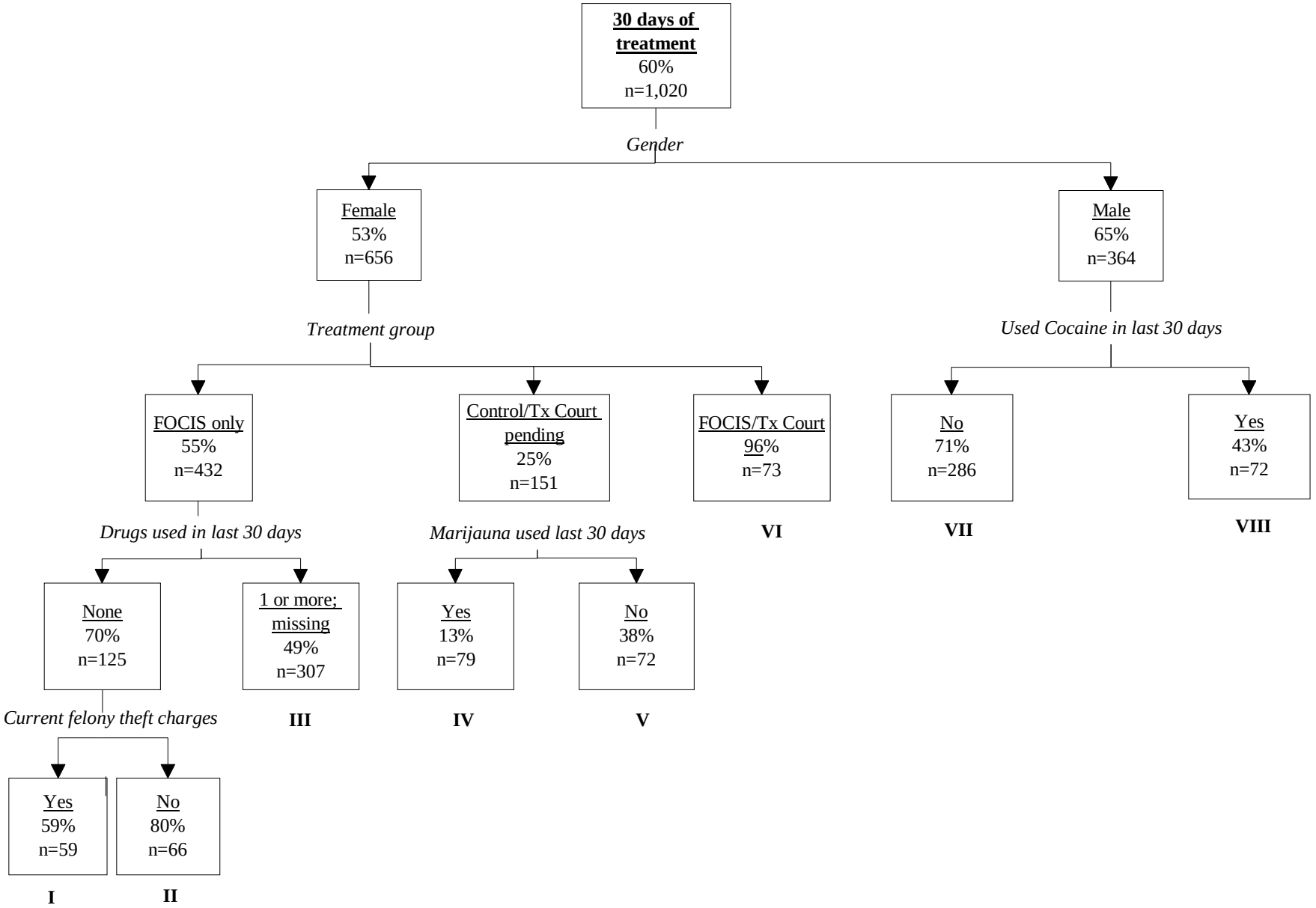


Several factors slightly affected these probabilities: Of the FOCIS referred women, 70 percent of those who had not reported drug use in the last 30 days were in treatment compared to 49 percent of those who had. Of those not reporting recent drug use in this category, those with felony theft charges remained in treatment less often (59 percent) than those without such charges (80 percent). The probability of remaining in treatment at least 30 days among the FOCIS control group (self-referred) defendants was improved (to 34 percent) if they had not reported marijuana use in the last 30 days, and greatly worsened if they had (6 percent).

Gender in Predicting Treatment Retention

When treatment retention was predicted separately for males and females, differences in predictive factors were identified. See Figure 10. First, a larger proportion of male treatment participants (65 percent) than female participants (53 percent) remained in treatment longer than 30 days. Two simple categories of males with differing retention probabilities were identified. A larger proportion (71 percent) of males who reported no cocaine use in the prior 30 days than did report cocaine use (43 percent) remained in treatment that long. For women, the prospects for remaining in treatment more than 30 days depended first on method of referral (as described above) and then on self-reported drug use in the last 30 days and the presence of theft charges. About half (49 percent) of FOCIS women who reported using drugs in the last 30 days stayed in treatment that long, compared to 70 percent of those who did not. Of those who did not, fewer who had felony theft charges (59 percent) than those who did not (80 percent) stayed in treatment that long.

Figure 10 Predictive Classification: Treatment Participation for 30 Days or More: CHAID Analysis by Gender



The predictive classifications that resulted from these separate analyses were not very helpful in the case of males, and, in the case of females, quite similar to the overall analyses. See Table 6.

Table 6 Predictive Classification: Treatment Participation for 30 Days or More

Model 13: Relative Probability of Treatment Retention: CHAID End Groups

End Group	N	Percentage of Assessed in Need	Percentage with 30 Days	Risk Classification
9	67	6.6	4.5	Low
5	80	7.8	17.5	
6	63	6.2	33.3	Medium
3	254	24.9	46.5	
1	59	5.8	59.3	Medium high
4	53	5.2	60.4	
8	95	9.3	73.7	
2	66	6.5	80.3	High
7	283	27.7	83.0	
Total	1,020	100.0	57.0	Total

Simplified Predictive Classification: 30 Days in Treatment

Risk Group	N	Percentage of Assessed in Need	Percentage with 30 Days
Low	147	14.4	11.6
Medium	317	31.1	43.8
Medium high	207	20.3	66.2
High	349	34.2	82.5
Total	1,020	100.0	57.0

Model 14: Relative Probability of Treatment Retention: Males Only

End Group	N	Percentage of Males Assessed in Need	Percentage with 30 Days	Risk Classification
8	65	17.9	4.6	Low
10	73	20.1	69.9	Medium
9	226	62.1	80.5	High
Total	364	100.0	64.8	Total

Simplified Predictive Classification: 30 Days in Treatment: Males Only

Risk Group	N	Percentage of Males Assessed in Need	Percentage with 30 Days
Low	65	17.9	4.6
Medium high	73	20.1	69.9
High	226	62.1	77.1
Total	364	100.0	64.8

Model 15: Relative Probability of Treatment Retention: Females Only

End Group	N	Percentage of Females Assessed in Need	Percentage with 30 Days	Risk Classification
5	87	13.3	18.4	Low
6	64	9.8	32.8	Medium
3	254	38.7	46.5	
1	59	9.0	59.3	Medium high
4	53	8.1	60.4	
2	66	10.1	80.3	High
7	73	11.1	95.9	
Total	656	100.0	52.6	Total

Simplified Predictive Classification: 30 Days in Treatment: Females Only

Risk Group	N	Percentage of Females Assessed in Need	Percentage with 30 Days
Low	87	13.3	18.4
Medium	318	48.5	43.7
Medium high	112	17.1	59.8
High	139	21.2	88.5
Total	656	100.0	52.6

Overall, treatment path (method of referral to treatment) seemed again to make an important difference in the prospects of progressing in treatment, particularly for the female defendants. Self-reported drug use (overall, cocaine, marijuana) further mitigated the prospects for remaining in treatment. Unfortunately, smaller proportions of those who reported recent use remained in treatment past 30 days than those who reported no such use. (One interpretation of

this finding is that those with more serious or more recently active substance abuse problems were less likely to stay for needed treatment.) From the perspective of prediction, one might draw on these data to anticipate greater challenges in keeping in treatment persons reporting recent use and devise strategies to reverse the correlation.

VI. Predicting Criminal Justice Outcomes: Failure to Attend Court and Rearrest

Among the criminal justice concerns associated with the criminal justice treatment population, public safety threat (as measured by rearrest) and attendance in court (as measured through failures-to-appear resulting in bench warrants) certainly rank highly. Although these concerns are fundamental to the criminal process generally, this research focused on flight and crime concerns more narrowly, anticipated from the assessment stage as relevant to the potential criminal justice treatment population, a distinct but important subset of the overall criminal justice population. From this perspective, then, the predictive task at assessment is to anticipate the likelihood of rearrest and failure to appear among persons undergoing evaluation for substance abuse treatment needs. Based on information available at that time—either through criminal justice sources or through the assessment interview itself—how well can such behavior be anticipated?

Predicting Failure to Appear in the Substance Abusing Criminal Justice Population

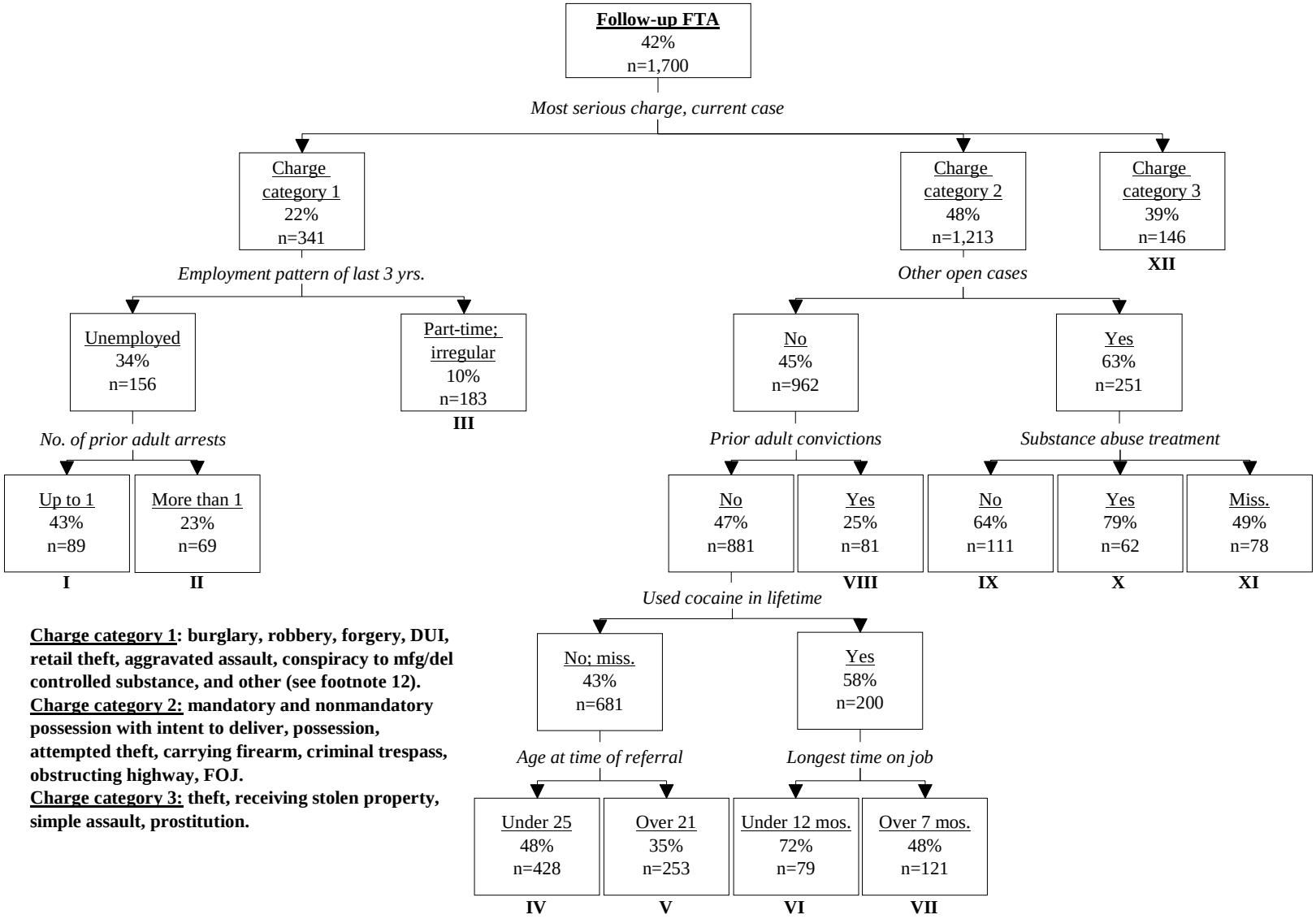
Securing attendance of defendants and offenders at required court proceedings is a central traditional concern of the criminal justice system. This issue, with which the pretrial release and detention process is primarily concerned, is basic to the court system's ability to transact justice. If defendants do not attend court proceedings, their cases are not resolved and the aims of justice are thwarted—leaving the victim's status and public safety concerns unaddressed, as well as raising serious credibility problems for the justice system. Because of these concerns, research studying the correlates of failure to appear and recidivism during the pretrial period currently forms an important component of the pre-preliminary arraignment assessment carried out by pretrial services under the First Judicial District's pretrial release guidelines.[11] In fact, the

[11] See Goldkamp et al. (1995, 1997).

release guidelines are used to target medium- to higher-risk defendants for treatment screening. Thus, the persons attending assessment are already risk-identified.

The estimation of flight and crime risk at the assessment stage addressed in figures 11 through 13 is more difficult than it is at the pretrial release stage when all defendants are involved, at least in a statistical sense, because the population of those reaching assessment for whom the prediction is being made has become more homogenous. First, they are pre-identified by pretrial services according to an empirically derived risk classification. (They have all been categorized as medium- or medium-high risks of rearrest and/or failure-to-appear.) Second, one might also safely assume that, through self-selection, a large portion of the likely court absconders would be included among the defendants referred but never arriving at assessment. If that is so, then the task for prediction at the assessment stage is now to predict the likely court absconders among those who did in fact show-up, the self-selected assessment attendees. Conceptually, searching for likely absconders within this "skimmed" population should be tantamount to finding a needle in the haystack.

Figure 11 Predictive Classification: Failure to Appear during One Year Follow-up: CHAID Analysis



Charge category 1: burglary, robbery, forgery, DUI, retail theft, aggravated assault, conspiracy to mfg/del controlled substance, and other (see footnote 12).
Charge category 2: mandatory and nonmandatory possession with intent to deliver, possession, attempted theft, carrying firearm, criminal trespass, obstructing highway, FOJ.
Charge category 3: theft, receiving stolen property, simple assault, prostitution.

Figure 11 displays the results of the multivariate (predictive) analysis of failure-to-appear among the pooled Treatment Court and FOCIS defendants reaching the assessment stage. In fact, a reasonable classification can be constructed ranking treatment candidates according to their relative probabilities of failure-to-appear in court. CHAID first partitions defendants on the basis of three charge groups,[12] with the first showing an FTA rate (21 percent) about half the overall rate of 42 percent for the criminal justice treatment population as defined at theassessment stage, the second showing an FTA rate (49 percent) slightly above the overall rate, and the third showing an FTA rate slightly below the overall rate (38 percent). The first group of defendants is further partitioned on the basis of employment status and adult prior arrest history. Open cases, prior adult drug convictions, lifetime cocaine use, and age (21-25 or not) further differentiate the second charge group. The third charge group is not further divided.

Table 7 summarizes the results of the FTA analysis. The CHAID analysis identified 12 subgroups of assessment-stage defendants ranging from a low FTA probability of 10 percent (end group 3: persons with charges including burglary and attempted burglary, robbery, conspiracy to manufacture or deliver a controlled substance, DUI, retail theft, forgery, theft by deception (or attempt), aggravated assault, less infrequently a variety of other charges, and a history of irregular part-time employment) to a high FTA probability of 79 percent (end group 10, made up of persons with charges including, most notably, mandatory and non-mandatory possession with intent to deliver a controlled substance, possession of a controlled substance, attempted theft, and firearms violations, as well as other open cases and a history of substance

[12]Charge group 1 includes burglary, robbery, forgery, conspiracy to manufacture or deliver a controlled substance, DUI, retail theft and aggravated assault, theft by deception (or attempt), witness intimidation, reckless endangerment, tampering with evidence, interfering with the custody of a child, perjury, criminal conspiracy, causing or risking a catastrophe, attempted burglary, terroristic threats and arson. Charge group 2 includes mandatory and non-mandatory possession with intent to deliver a controlled substance, attempted theft by unlawful taking, possession of a controlled substance, carrying a firearm, obstructing the highway, criminal trespass, and prostitution. Charge group 3 includes theft/receiving stolen property, theft by unlawful taking, simple assault, and prostitution.

abuse treatment). These 12 groups can be further grouped on the basis of similar FTA probabilities to produce a simplified four-part predictive classification consisting of lowest FTA risk defendants (10 percent probability), low-medium risk defendants (24 percent), medium risk defendants (44 percent) and highest FTA risk defendants (70 percent). Although some very low risk and relatively high risk defendant groups can be identified, the difficulty of distinguishing risk within a homogeneous treatment population is illustrated by the large proportion of defendants (66 percent) who are classified in the medium FTA risk group, expected to fail to appear at around the overall population average.

Table 7 Predictive Classification: Failure to Appear (FTA) in Court

Model 16: Relative Probabilities of Failure to Appear: CHAID End Groups

End Group	N	Percentage of All Assessed	Percentage with FTA	Risk Classification
3	183	10.8	9.8	Low
2	69	4.1	23.2	Medium
8	81	4.8	24.7	
5	253	14.9	35.2	Medium high
12	146	8.6	39.0	
1	89	5.2	42.7	
7	121	7.1	47.9	
4	428	25.2	48.1	
11	78	4.6	48.7	
9	111	6.5	64.0	High
6	79	4.6	72.2	
10	62	3.6	79.0	
Total	1,700	100.0	42.2	Total

Simplified Predictive Classification: Failure to Appear (FTA)

Risk Group	N	Percentage of All Assessed	Percentage with FTA
Low	183	10.8	9.8
Medium	150	8.8	24.0
Medium-high	1,115	65.6	43.6
High	252	14.8	70.2
Total	1,700	100.0	42.2

Model 17: Relative Probability of Failure to Appear among Assessed Defendants: Males Only

End Group	Number	Percentage of Males Assessed	Percentage with FTA	Risk Classification
13	268	32.8	40.3	Low
12	310	38.0	50.0	Medium
11	64	7.8	64.1	High
14	174	21.3	68.4	
Total	816	100.0	51.8	Total

Simplified Predictive Classification: Failure to Appear: Males Only

Risk Group	N	Percentage of Males Assessed	Percentage with FTA
Low	268	32.8	40.3
Medium	310	38.0	50.0
High	238	29.2	67.2
Total	816	100.0	51.8

Model 18: Relative Probability of Failure to Appear among Assessed Defendants: Females Only

End Groups	N	Percentage of Females Assessed	Percentage with FTA	Risk Classification
5	63	7.1	4.8	Low
10	96	10.9	10.4	
1	80	9.0	23.8	Medium
4	65	7.4	26.2	
9	81	9.2	27.2	
2	163	18.4	33.7	
6	65	7.4	36.9	
7	142	16.1	50.0	High
3	58	6.6	51.7	
8	71	8.0	60.6	
Total	884	100.0	33.3	Total

Simplified Predictive Classification: Failure to Appear: Females Only

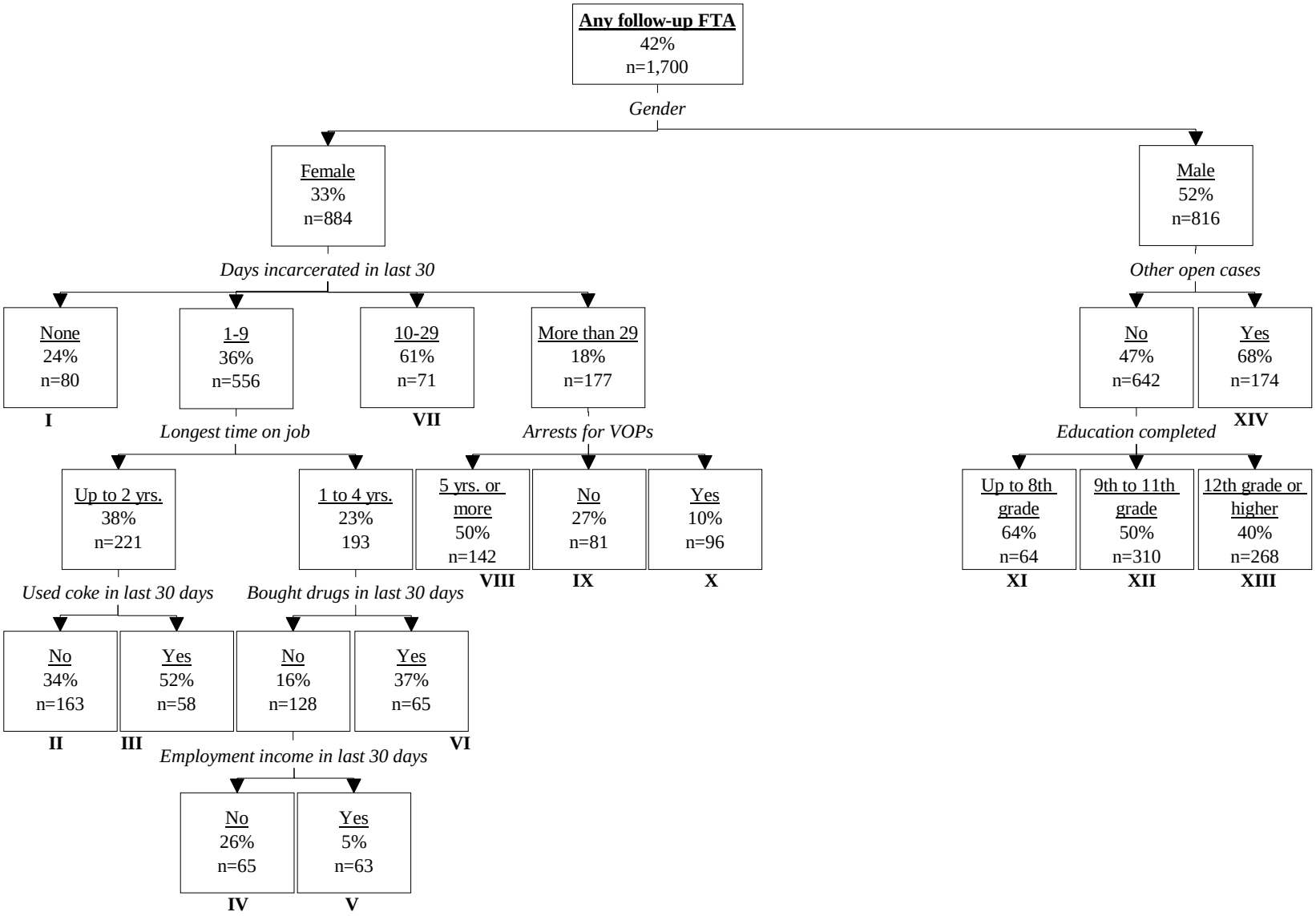
Risk Group	N	Percentage of Females Assessed	Percentage with FTA
Low	159	18.0	8.2
Medium	454	51.4	30.2
High	271	30.7	53.1
Total	884	100.0	33.3

The Role of Gender in Assessment-Stage Estimates of Failure to Appear

Figure 12 repeats the analysis of FTA separating male and female assessment-stage defendants. The results suggest that different factors are predictive of failure-to-appear for males and females. First, female defendants overall showed a lower FTA rate (33 percent) than male defendants (51 percent). Among males, further classes were identified on the basis of open cases and prior education. Males with open cases showed higher rates (68 percent) than those without (47 percent). Among those without open cases, years of schooling were inversely related to the probability of FTA: 64 percent of those with less than an eighth grade education failed to appear, compared to 50 percent of those with eighth through 12th grade educations, and 40 percent of those with more years in schooling.

Different types of attributes classified female assessment-stage defendants according probability of failure to appear: number of days incarcerated in the last 30 days, longest time on a job, use of cocaine in the last 30 days, money spent on drugs in the last 30 days, and number of probation violation arrests. Table 6 shows that three group classifications can be constructed for each gender group with the female classification ranging from a low-risk group (8 percent FTA) to a high-risk group (53 percent FTA), and a male classification differentiating among medium to high rates of FTA: lowest-risk males showed a 40 percent FTA, medium-risk males 50 percent FTA and highest-risk males 67 percent FTA.

Figure 12 Predictive Classification: Failure to Appear during One Year Follow-up: CHAID Analysis, by Gender



VII. Predicting Rearrest

Just as public safety concerns play a role in arrest and pretrial release determinations, assessment of treatment candidates in the criminal justice population cannot avoid considering the likelihood that defendants might reoffend and, if so, how. Clearly, the criminal justice treatment process cannot be fostering the release of persons to the community who will pose a serious threat of harm to the public or any individuals. At the same time, treatment assessors fully recognize the close connection between substance abuse and property and drug crime. In short, in both considering need for treatment and the type of treatment setting and services that may be appropriate, implicitly or explicitly public safety risk is an important dimension in treatment decisions.

For the purposes of this study, we employed rearrest of defendants in the year from preliminary arraignment as a measure of public safety outcome, recognizing that other measures could also serve as appropriate indicators of subsequent criminal involvement. Rearrest suffers in obvious ways as a measure of criminal activity, for it mainly provides a measure of reinvolvement in the criminal justice system and may poorly reflect actual criminal activity. Moreover, one might argue that public safety threat might better be measured by rearrests for different types of offenses. Arguably, the officials screening candidates for treatment need would have different concerns in anticipating crimes against persons than in predicting recurrence of low-level drug or theft offenses.

Figure 13 Predictive Classification: Rearrest during One Year Follow-up: CHAID Analysis, by Gender

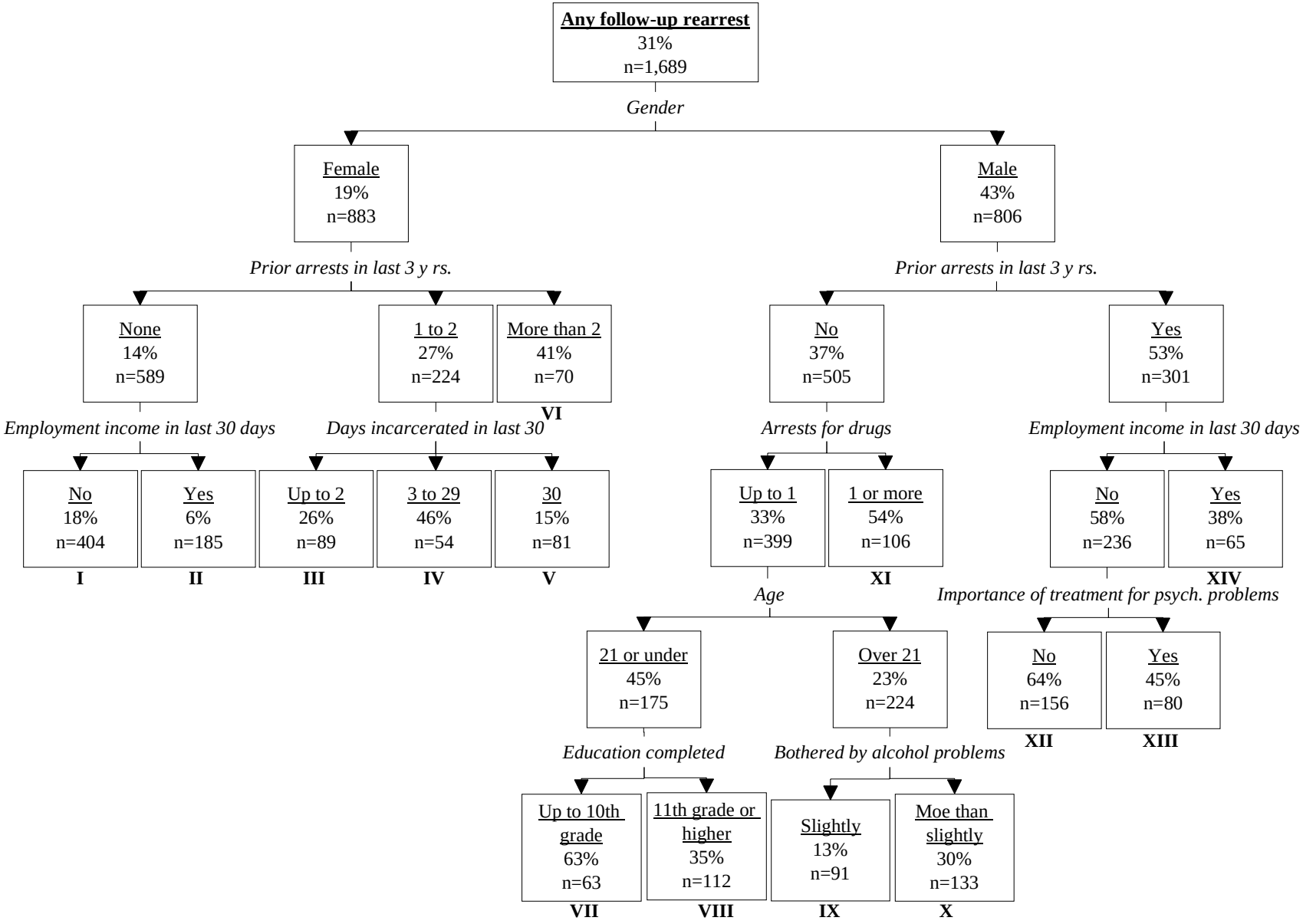


Figure 13 displays the CHAID analysis seeking to identify groups of assessment-stage defendants based on relative likelihood or rearrest over the next year.[13] Gender is identified as the first useful predictor of rearrest in the CHAID analysis. About 19 percent of assessment-stage females compared to 43 percent of males would be rearrested in the next year. Among women, prior arrests (within the last three years), income earned from employment in the last 30 days, and number of days incarcerated in the last 30 days predict rearrest probability. Male defendants were further partitioned on the basis of number of prior arrests (in the last three years), number of prior arrests for drug offenses, income from employment in the last 30 days, age, education, and whether the men indicated in the interview that psychological treatment was an important need and whether they were bothered by alcohol problems.

Table 8 shows that 14 groups of assessment-stage defendants could be identified that varied according to probability of rearrest, from a lowest risk group consisting of women with no prior arrests in the last three years and reporting income from employment in the last month (seven percent) to a highest risk group consisting of men with prior arrests, reporting no income in the last month, and not ranking treatment for psychological problems as important. These endgroups could in turn be combined to form a simplified five group rearrest risk classification consisting of a lowest-risk group (seven percent rearrest), a low-medium risk group (17 percent rearrest), a medium group with a probability around the base rate for all defendants (32 percent), a medium-high group (47 percent rearrest), and a highest risk group (64 percent rearrest probability). This assessment-stage rearrest risk classification does indeed allocate all defendants well across the five categories.

[13] It is worth noting in this analysis as well that we are seeking to separate groups of defendants differing in probability of rearrest from assessment-stage defendants from whom many of the higher risk defendants have already been screened—simply because they failed to attend the assessment stage.

Table 8 Predictive Classification: Rearrest among Assessed Defendants during One Year Follow-up

Model 19: Relative Probability of Rearrest: CHAID End Groups

End Group	N	Percentage of All Assessed	Percentage Rearrested	Risk Classification
2	185	11.0	6.5	Low
9	91	5.4	13.2	Medium low
5	81	4.8	14.8	
1	404	23.9	17.6	
3	89	5.3	25.8	Medium
10	133	7.9	30.1	
8	112	6.6	34.8	
14	65	3.8	38.5	
6	70	4.1	41.4	Medium high
13	80	4.7	45.0	
4	54	3.2	46.3	
11	106	6.3	53.8	
7	63	3.7	63.5	High
12	156	9.2	64.1	
Total	1,689	100.0	30.8	Total

Simplified Predictive Classification: Probability of Rearrest

Risk Group	N	Percentage of All Assessed	Percentage Rearrested
Low	185	11.0	6.5
Medium low	576	34.1	16.5
Medium	399	23.6	31.8
Medium high	310	18.4	47.4
High	219	13.0	63.9
Total	1,689	100.0	30.8

Model 20: Relative Probability of Rearrest: Males Only

End Groups	N	Percentage of Males Assessed	Percentage Rearrested	Risk Classification
9	91	11.3	13.2	Low
10	133	16.5	30.1	Medium
8	112	13.9	34.8	
14	65	8.1	38.5	
13	80	9.9	45.0	Medium-high
11	106	13.2	53.8	
12	156	19.4	64.1	High
7	63	7.8	65.3	
Total	806	100.0	43.3	Total

Simplified Predictive Classification: Probability of Rearrest: Males Only

Risk Group	N	Percentage of Males Assessed	Percentage Rearrested
Low	91	11.3	13.2
Medium	310	38.5	33.5
Medium high	186	23.1	50.0
High	219	27.2	63.9
Total	806	100.0	43.3

Model 21: Relative Probability of Rearrest: Females Only

End Group	N	Percentage of Females Assessed	Percentage Rearrested	Risk Classification
2	185	21.0	6.5	Low
5	81	9.2	14.8	Medium
1	404	45.8	17.6	
3	89	10.1	25.8	
6	70	7.9	41.4	High
4	54	6.1	46.3	
Total	883	100.0	19.5	Total

Simplified Predictive Classification: Probability of Rearrest: Females Only

Risk Group	N	Percentage of Females Assessed	Percentage Rearrested
Low	185	21.0	9.5
Medium	574	65.0	18.5
High	124	14.0	43.5
Total	883	100.0	19.5

The Role of Gender in Rearrest

The fact that gender entered the predictive analysis as a first partitioning variable suggests that, in fact, gender plays an important role in anticipating public safety risk, at least as measured by rearrest for any offense. Thus, the predictive model starts with the finding that female defendants being screened for substance abuse treatment needs overall pose a lower threat of reoffending than their male counterparts. After gender, males and females share risk attributes: prior arrests, recent income, and prior incarcerations figure as predictors in both groups. They also differ: predictors for males include prior drug arrests, importance of psychological and alcohol problems, age, and education, while they are not predictors of rearrest among females.

The separate risk classifications developed for males and females shown in Table 8 appear to group defendants well according to risk, indicating that a larger proportion of males than females is ranked as higher risk. The separate classification of female defendants does identify a very low risk (10 percent) group and a medium-high risk group (44 percent). However, the female rearrest risk classification is not so useful in one respect: it places the large majority (65 percent) of the women in the low-medium category with a rearrest probability around the base rate (19 percent) for women.

VIII. Anticipating Criminal Justice and Treatment Outcomes: Implications for Improving Treatment Intervention in the Criminal Justice Population

This study has built upon two large studies of treatment innovations designed to address the substance abuse problems of Philadelphia's criminal justice population. Once amplified, updated and modified for analysis, the data from studies of Philadelphia's Treatment Court (Goldkamp et al., 1999a and 2001) and Criminal Justice Treatment Network (FOCIS) (Goldkamp et al., 1999c and 2002) offered a rich source of information about substance abusing men and women in the criminal justice population. We have noted above that, while separately each data set is representative of the populations studied, their different designs do not permit them to be pooled for inferences about the Philadelphia population overall.

However, they do represent an unusual opportunity to draw inferences about male and female treatment candidates in the Philadelphia urban justice setting. For the purposes of predictive analyses, these datasets offer a unique source of a full range of data relevant treatment process decisions in the criminal justice context. The analyses we have presented were exploratory, in the sense that they gauge the feasibility of developing predictive schemes relating to important treatment process concerns in the criminal justice population. Thus, the purpose of the study is not to present fully formed, field-tested and validated prediction instruments, but rather to make use of the special treatment data to explore the possibility of more fully developed classification schemes.

The matter of screening and prediction in the treatment process in non-criminal justice settings is challenging enough. Many instruments have been developed to identify candidates in need of treatment and to array appropriate treatment services with treatment needs and risks. In the criminal justice setting, these same treatment aims face even greater challenges. The special

assignment of this research was to ask whether and how information could be employed to anticipate treatment concerns in the special circumstances of the criminal justice population. The attempt to develop predictive approaches relating to treatment decisions and outcomes is premised on recognition that the treatment challenge in criminal justice is related to but also different from challenges faced by treatment outside of the justice context. Improved information capacity addressing treatment concerns is critical to the development of effective treatment approaches in criminal justice.

As important as development of information resources for treatment in criminal justice may be, the challenges for prediction are difficult. Because of the attrition associated with the treatment process in criminal justice—as candidates move from roughly determined potential eligibility through the assessment process and to treatment—treatment candidates form an increasingly homogeneous subset of the criminal justice population. At each successive stage, either because of screening criteria that identify eligible candidates at the early stages of the criminal process in Philadelphia (e.g., certain medium- to high-risk categories of the pretrial release guidelines or persons considered for release from the Philadelphia Prisons' population) or because of self-selection (high risk candidates fail to enter the process or leave it early), the prediction is statistically difficult.

In these exploratory analyses, the study was reasonably successful in identifying predictors of the treatment process outcomes selected for examination, including attendance at assessment, determination of treatment need, level of care recommendation (residential treatment), attending treatment (first appointment), and treatment retention (30 days or longer). In addition, we sought to model rearrest and failure-to-appear in court among treatment candidates. Implicitly, the exploratory analyses considered the relative utility of criminal justice-

versus assessment-interview derived information. The analyses suggest overall that both were helpful in certain circumstances and that the development of the predictive classifications would not have been as successful using only on type of information.

We believe the analyses presented in this report support the notion that predictive classification could usefully be developed to assist in treatment decision making when dealing with the substance abusing criminal justice population. That said, a next question is "In what way?" What sort of tool(s) would be most helpful? The answer to that question depends on the decision aims being addressed at various stages of processing.

Court Absconding and Lack of Continued Attendance at Treatment

One might argue that the treatment process is weak in its assessment of the risks that treatment candidates pose of failing to attend either the court itself (e.g., as in Treatment Court) or the treatment program once placed. Table 9 shows in a matrix how the 1,020 assessment-stage criminal justice treatment defendants who made it into treatment would have been ranked simultaneously on these two dimensions: probability of court absconding (FTA) and probability of attending treatment less than 30 days after intake.

Table 9 Dual Classification of Defendants on Risk of Court Absconding (FTA) and Treatment Retention (30 days or more)

	Probability of Failure to Appear				
Likely Treatment Retention	Highest FTA			Lowest FTA	[Total]
Least Likely	12	115	13	7	147
	13	209	60	35	317
	24	116	30	37	207
Most Likely	72	224	33	20	349
[Total]	121	664	136	99	1,020

If staying in treatment (30 days or longer) and attending court as required involved the same behaviors, then the separate predictive classifications for FTA and retention would categorize defendants in very similar ways. That is, persons seen as least likely to attend court would also be least likely to attend treatment—according to this reasoning. If the two rankings agreed precisely, all cases would fall on the diagonals of the four-by-four matrix. In fact, only about 26 percent of cases are classified similarly by both schemes. Or more generally, one might expect that a large portion of those ranked in the two highest FTA groups on one scale would also fall in the two least likely groups to complete 30 days of treatment. In fact, about 57 percent of those classified as most likely to fail to appear are also classified as least likely to make it 30 days in treatment. Nearly half (49 percent) of those ranked as least likely to FTA are also ranked as most likely to stay in treatment for at least 30 days. In short, there is considerable conceptual and empirical correspondence in predicting flight from court or dropping out of treatment; though, clearly the overlap is less than complete. Future research might wish to develop one (rather than two separate) attendance-oriented predictive classifications.

Treatment Need and Public Safety Risk

Questions have been raised about the role of criminal justice factors in the determination of treatment need and about the relation of drug problems and criminality. Typical assessment instruments include criminal justice measures—though often in self-report form—along with other clinical and more subjective information. Perhaps criminal justice treatment screening for need and level of care could benefit from a classification that considers treatment need and public safety risk conjointly. Table 10 displays the classification of the Philadelphia defendants reaching the assessment stage within a matrix reflecting both concerns.

Table 10 Dual Classification of Defendants on Treatment Need and Public Safety Risk

	Probability of Rearrest				
Likely Treatment Need	Lowest Risk			Highest Risk	[Total]
Least Likely in Need	87	22	31	46	186
	136	65	137	241	579
	24	74	50	261	409
	12	45	50	205	312
Most Likely in Need	0	23	26	173	222
[Total]	259	229	294	926	1,708

Is the predictive classification estimating the probability of treatment need different or very closely similar to that designed to estimate the likelihood of rearrest? Would a treatment candidate be ranked similarly on each scale? Of the 926 defendants ranked as showing highest risk of rearrest, 378 or about 41 percent are ranked in the two categories of defendants most likely to be found in need of treatment. Of the 186 grouped as least likely to be in need of treatment, 87 or about 47 percent were also classified as showing the lowest risk of being rearrested. Of the 222 most likely to be in need of treatment, 173 or fully 78 percent were in the highest risk of rearrest category. Relatively few defendants who were ranked as most likely to be in need of treatment, were classified as having low probabilities of rearrest.

Admittedly, despite the great correspondence between the two classifications, the conjoint classification of public safety risk and treatment does show some disjuncture between the two concerns. For example, the matrix shows that 287 defendants in the highest rearrest risk category are also placed in the two categories least likely to be found in need of treatment. For about 30 percent of the high risk defendants, public safety risk did not overlap at all with treatment need probability.

Overall, then, the predictors of treatment need and the predictors of rearrest show some overlap in the way they classify defendants in the potential treatment population. Does this make conceptual sense? Should they be so similar—should the treatment staff's determination of treatment need correspond to estimates of public safety risk? Are they indeed the same thing? Should decisionmakers have both sorts of classifications available in treatment planning to note both the correspondence and non-overlap between the two rankings.

There are several possible explanations that research should consider. First, the correspondence between predictors of crime and predictors of treatment need determination may make perfect sense—to the extent that drug use and crime are related in a causal way. Or, second, the treatment need (assessment) determination may in practice amount to a re-digestion of public safety risk in its reliance on criminal justice information, albeit often in self-reported form. This same question can be asked of level of care determinations: an important predictor of residential care recommendation for women was whether they were incarcerated at or immediately preceding assessment (male Treatment Court candidates by design were generally not), in a sense replacing one form of secure, controlled environment with another. In short, however, the correspondence, empirical and conceptual, between public safety and treatment need determinations should be investigated in more depth in the interests of a more effective criminal justice treatment process.

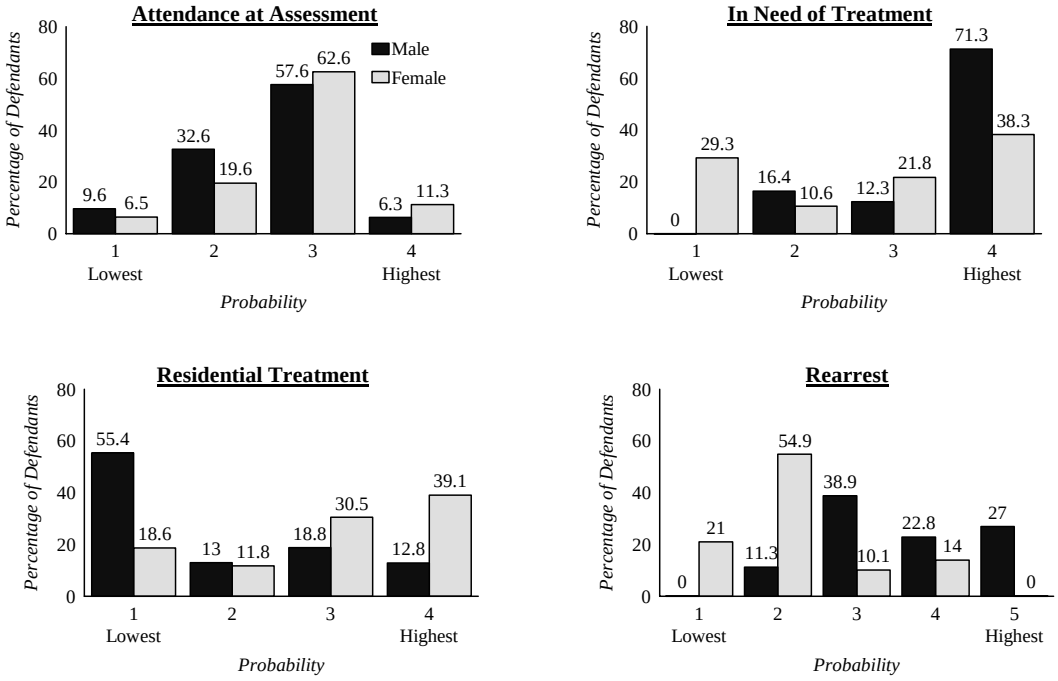
Differential Classification of, or Different Classifications for Men and Women in the Criminal Justice Treatment Population

The gender-balanced Philadelphia data set offers a special opportunity to consider the differences between male and female treatment candidates in the criminal justice population. The evidence of gender-based difference in attributes and outcomes is ample, both in previous work (Goldkamp et al., 1999a, 1999b; and 2002) and in this study. In fact, we have two versions

of differences with different possible implications for treatment practice: a) similar predictive classifications classify men and women differently based on the same criteria; b) different classifications can and should be developed for each gender group.

The implications are different because, in the first instance, we have a common (reasonably acceptable) classification framework which points to the differences in how men and women are categorized. Using the common yardstick we would adjust treatment resources based on the knowledge that male treatment candidates are ranked as higher risk, etc., while women will generally be lower risk, etc. In the second instance, the common classification approach is jettisoned based on the argument that a) men and women are different in important ways (have different problems and needs) and b) a common classification classifies both groups based on an aggregate or averaged treatment candidate that resembles neither males nor females very well. From this perspective, those managing treatment in the criminal justice population should base classification of needs and predictive classification of likely outcomes on analysis of each group separately.

Figure 14 Differential Predictive Classification of Male and Female Treatment Candidates in Philadelphia's Criminal Justice Population



Regarding the first problem—differential classification of gender groups using a common framework—Figure 14 contrasts the classification of male and female defendants in the Philadelphia treatment data in four areas of prediction based on the pool (male and female) samples: attendance at assessment, treatment need determination, level of care recommendation (residential), and rearrest. This figure shows that:

- male defendants would be classified more often in categories less likely to attend assessment than their female counterparts;
- males were much more likely to be classified as in need of treatment than females: 71 percent of males fall in the high probability treatment need category, compared to only 38 percent of females and no males fall within the lowest probability treatment need group, compared to 29 percent of the females;

- the classification predictive of level of care recommendation ranks males and females differently: a larger proportion (39 percent) of females are classified in the category with the highest likelihood of residential treatment than of males (13 percent). A much larger share of the males (55 percent) than of females (19 percent) was ranked in the least likely to be assigned residential care; and finally,
- Figure 13 males and females are classified very differently using the rearrest classification derived from analysis of the overall sample of treatment candidates in criminal justice: nearly twice the proportion of males (46 percent) as females (24 percent) were classified in the two highest rearrest risk groups.

In short, men and women were classified differently under each of the predictive classifications developed from the overall population of Philadelphia treatment candidates.

This research presented above has demonstrated that, in most of the analyses as well, separate classifications based on sometimes partly and sometimes greatly different predictors could be developed for males and females. These analyses were intended as illustrations of differential prediction. Further work, larger samples, and validation would be needed to incorporate any of the classifications into an actual programmatic use.

Conclusion

In response to the basic question posed by this research, we believe that these findings suggest that information resources of the type illustrated in these analyses could provide important tools for enhancing the development, efficacy and impact of treatment approaches addressing the criminal justice population. Drawing on criminal justice, general background, and treatment/assessment data, such approaches can help improve targeting of candidates (better predicting actual treatment need), enrolling (and not losing) candidates in treatment, anticipating

treatment need and public safety risk. Such information can serve as a sound basis for developing effective criminal treatment mechanisms.

The role of gender in criminal justice treatment is, of course, tied to larger questions about gender in criminal justice and in society more generally. These data provide strong evidence to support the argument that the attributes, needs and risks of the men and women in the criminal justice treatment population differ in important ways, even though they may share important other themes at the same time. Thus, all-purpose classifications relating to treatment derived from overall populations of males and females will fully reflect the attributes, risks and needs of neither gender and will allocate them to different categories for disposition. Unlike the criminal justice population, these data consisted of nearly half male and half female defendants. Normally in Philadelphia, females represent from about five to 15 percent of the population, depending on the stage of processing. Thus, the impact of using criteria or even well-developed decision classifications based on the overall population will derive disproportionately from the male subset of the population. So, while in our data we can say that a classification will treat the "composite" defendant and neither the male nor female accurately, in the real population it will be the female substance abuser that will disproportionately be made to fit in the male-based classification approach.

The argument that, in appropriate circumstances or decision stages, decision making could be greatly improved by use of classifications derived from separate study of the attributes, needs and risks of the men and women in the criminal justice population seems particularly compelling given the different predictors we found in our exploratory analyses of treatment concerns and outcomes when we were able to "equalize" the make-up of the criminal justice treatment population. Without the roughly equal representation of male and female treatment

candidates reflected in our data, the issue of gender-specific predictors of treatment aims and outcomes could not have been addressed. There simply would not have been enough women to study.

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Appendix

Table A1 Identifying Predictor Variables Used in Classification Models of Treatment and Criminal Justice Outcomes for Combined Male and Female Criminal Justice—Treatment Data

	Outcomes						
	Assessment attendance (referred only) (n=2,891)	Treatment need (assessed only) (n=1,708)	Residential treatment (assessed and in-need only) (n=1,288)	Attendance at intake (in-need and tracked only) (n=1,020)	30 days in treatment (in-need and tracked only) (n=1,020)	FTA during follow up (assessed only) (n=1,708)	Rearrest during follow up (assessed only) (n=1,708)
Pool of Predictor Variables							
Demographic							
Age at assessment	X		X			X	X
Race			X			X	X
Sex	X	X	X	X	X	X	X
Criminal history							
Prior arrests, 0,1,2,3+	X	X	X			X	X
Serious person			small n			X	X
Property							
Theft		X	small n				X
Drug	X	X	X			X	X
Drug possession	X	X	X			X	X
Drug sale	X	X	X		Marginal	X	X
Weapons		Marginal	small n				X-marginal
Felony	X	X	X				X
Misdemeanor	X	X	X			X	X-marginal
Most serious charge	X	X	X			X	X
In past 3 years	X	X	X		X	X	X
Prior VOPs		Small n			Marginal	X	
Prior VOPs, in past 3 years		Small n				X	
Prior FTAs	X	X					X
Prior FTAs, in past 3 years	X	X	X		Marginal		X
Prior jail stays	X	X	X			X	X
Prior jail stays, in past 3 yrs		X					X
Prior convictions		X	X	X	X	X	
In past 3 years		X	X			X	X
Serious person							
Property							
Theft				X	X		

	Outcomes						
	Assessment attendance (referred only) (n=2,891)	Treatment need (assessed only) (n=1,708)	Residential treatment (assessed and in-need only) (n=1,288)	Attendance at intake (in-need and tracked only) (n=1,020)	30 days in treatment (in-need and tracked only) (n=1,020)	FTA during follow up (assessed only) (n=1,708)	Rearrest during follow up (assessed only) (n=1,708)
Pool of Predictor Variables							
Drug	small n	Small n					X
Drug possession		Small n		X			X-marginal
Drug sale		Small n			X	X	
Weapons							
Felony					X	X	
Misdemeanor	X				X	X	
Most serious charge		X					
Misdemeanor or felony	small n	X					
Prior diversion sentences		Small n					
Prior probation sentences						X	
Prior juvenile petitions							
Serious person							
Property							
Theft							
Drug							
Drug possession							
Drug sale							
Weapon							
Felony							
Misdemeanor							
Current Arrest							
Most serious charge	X	X	X	X		X	X
Felony or misdemeanor		Small n			Small n	X	X
Serious person		Small n				X	
Property		Small n				X	
Theft		X	X	X	X	X	X
Drug		X	X	X	X	X	X
Open Cases							
Any	X	X	X			X	X
Felony or misdemeanor							
Most serious							
Serious person		Small n					

	Outcomes						
	Assessment attendance (referred only) (n=2,891)	Treatment need (assessed only**)** (n=1,708)	Residential treatment (assessed and in-need only) (n=1,288)	Attendance at intake (in-need and tracked only) (n=1,020)	30 days in treatment (in-need and tracked only) (n=1,020)	FTA during follow up (assessed only) (n=1,708)	Rearrest during follow up (assessed only) (n=1,708)
Pool of Predictor Variables							
Property							
Theft	X	Small n				X	
Drug	X	X	X			X	X
Weapons	x-small n	Small n					
Prior FTAs							
Prior FTAs, past 3 year							
Case Processing and Treatment Related Variables							
Assessed							
Release type	X						
Treatment group	X						
Post conviction referral	X	Marginal	X	X	X	X	
Incarcerated. at assessment			X				
Made it to treatment intake						Used in CHAID analyses	Used in CHAID analyses
At least 30 days in treatment						Used in CHAID analyses	Used in CHAID analyses
Assessment (ASI)							
Time at current address			Marginal				
In controlled environment			Marginal	X	X		
Days in controlled eviron.		X	X			X	X
Chronic med. condition			X				
Taking any RX meds.			X			X	
Days bothered by medical probs, of past 30							
How bothered by medical probs.			X				
Importance of medical TX			X			X	
Self-reported arrests:							

	Outcomes						
	Assessment attendance (referred only) (n=2,891)	Treatment need (assessed only**)** (n=1,708)	Residential treatment (assessed and in-need only) (n=1,288)	Attendance at intake (in-need and tracked only) (n=1,020)	30 days in treatment (in-need and tracked only) (n=1,020)	FTA during follow up (assessed only) (n=1,708)	Rearrest during follow up (assessed only) (n=1,708)
Pool of Predictor Variables							
Retail theft							
VOPs		Small n				X	
Drug charges		X	X			X	X
Forgery		Small n				X	
Weapons							
Burglary		X	Marginal			X	
Robbery		Small n					
Assault			Small n			X	
Arson							
Prostitution		Small n					
Contempt of court							
Disorderly conduct							
DUI							
Traffic violations							
Months incarcerated lifetime		X	X				
Days incarcerated, past 30		X		X	X	X	X
Illegal activity, days in past 30			X				X
Seriousness of legal probs.		X					
Importance of help w/ legal probs		X					
Marital status		X	X				
Usual living arrangements		X	X	X	X		X
Living with alcohol abuser		Small n	X				
Living with drug user		Small n	X				
History of physical abuse		Marginal	X			X	X
History of sexual abuse		X	X			X	X
History of any abuse			X			X	X
Bothered by family prob.		X	X	X	X		X
Importance of help for family probs.		X	X	X	X		

	Outcomes						
	Assessment attendance (referred only) (n=2,891)	Treatment need (assessed only**)** (n=1,708)	Residential treatment (assessed and in-need only) (n=1,288)	Attendance at intake (in-need and tracked only) (n=1,020)	30 days in treatment (in-need and tracked only) (n=1,020)	FTA during follow up (assessed only) (n=1,708)	Rearrest during follow up (assessed only) (n=1,708)
Pool of Predictor Variables							
Number of times hospitalized for psychological problems			X				
Number of times treated outpatient for psychological problems		X					
Psychological problems, past 30 days							
Depression		X	X				
Anxiety		X	X			X	X
Hallucinations		Small n					
Poor concentration		X					
Violent behavior					Small n		
Suicidal ideation		Small n					
Suicide attempts		Small n					
On medication		Small n				X	
Psychological problems, lifetime							
Depression		X	X	X	X	X	X
Anxiety		X	X	X		X	X
Hallucinations		X					
Poor concentration		X	X			X	
Violent behavior		X					
Suicidal ideation		X	X			X	
Suicide attempts		Small n					
On medication							
Days of psychological prob.							
How bothered by psychological problems		X	X	X	X	X	X
Importance of psychological treatment		X	X			X	
Years of education		X	X			X	X
Technical education							X

	Outcomes						
	Assessment attendance (referred only) (n=2,891)	Treatment need (assessed only**)** (n=1,708)	Residential treatment (assessed and in-need only) (n=1,288)	Attendance at intake (in-need and tracked only) (n=1,020)	30 days in treatment (in-need and tracked only) (n=1,020)	FTA during follow up (assessed only) (n=1,708)	Rearrest during follow up (assessed only) (n=1,708)
Pool of Predictor Variables							
Someone else contributes to support		X					X
Employment pattern		X	X			X	X
Days paid for working in last 30					X		
Recoded days paid in last 30					X		
Income from employment							
Income from unemployment							
Income from DPA		X		X-high missing	X		
Income from pension							
Other income				X			
Money from illegal activities							
Primary income, past 30 days			X	X	X	X	
Total income, past 30 days							
Number of dependents		X	X			X	X
Importance of employment help			X				
Drug use, past 30 days							
Days, alcohol use		X	X	X	X		
Days, intoxication				X	X		
Any alcohol use		X	X	X	X		
Days, opiate use							
Days, heroin use		X					
Any opiate use		X					
Days, amphetamine use							
Days, methadone use					X		
Any amphetamine use		X					
Days, cannabis use		X	X	X	X	X	X
Any cannabis use		X	X			X	X
Days, cocaine use		X	X			X	
Any cocaine use		X	X	X	X	X	
Days, sedative use							

	Outcomes						
	Assessment attendance (referred only) (n=2,891)	Treatment need (assessed only**)** (n=1,708)	Residential treatment (assessed and in-need only) (n=1,288)	Attendance at intake (in-need and tracked only) (n=1,020)	30 days in treatment (in-need and tracked only) (n=1,020)	FTA during follow up (assessed only) (n=1,708)	Rearrest during follow up (assessed only) (n=1,708)
Pool of Predictor Variables							
Days, barbiturate use							
Any sedative use		X					Marginal
Days, hallucinogen use							
Any hallucinogen use		Small n					
Days, inhalant use							
Any inhalant use							
Any other drug use		X					
Number of drugs		X	X	X	X	X	X
Drug combinations		X		X	X	X	X
Drug use, lifetime[14]							
Alcohol		X					
Heroin		X					
Methadone							
Opiates		X					
Barbiturates							
Sedatives		X					
Cocaine		X	X				
Amphetamines							
Cannabis		X					
Hallucinogens							
Inhalants							
Number of drugs		X					
Drug combinations		X					
Times in alcohol treatment		X					
Times in drug treatment			X				
Any prior treatment		X		X	X		
Money spent on alcohol, last 30 days							
Spent money on alcohol in last 30 days		X		X	X		

[14] Note: Most years of use variables were omitted because of questionable entries that suggested confusion with *days of use* questions.

	Outcomes						
	Assessment attendance (referred only) (n=2,891)	Treatment need (assessed only) (n=1,708)	Residential treatment (assessed and in-need only) (n=1,288)	Attendance at intake (in-need and tracked only) (n=1,020)	30 days in treatment (in-need and tracked only) (n=1,020)	FTA during follow up (assessed only) (n=1,708)	Rearrest during follow up (assessed only) (n=1,708)
Pool of Predictor Variables							
Money spent on drugs. Last 30 days							
Spent money on drugs in last 30 days		X		X	X	X	
Days treated in outpatient in last 30 days							
Days in last 30 experiencing alcohol problems		X			X		X
Days in last 30 experiencing drug problems		X		X	X		X
Bothered by alcohol prob.		X		X		X	X
Bothered by drug prob.		X		X	X	X	X
Importance of alcohol tx		X		X	X		
Importance of drug tx		X		X	X	X	X
Technical education				Marginal			X
Longest time employed						X	X
Recoded days experiencing medical problems							
Recoded days involved in illegal activities					X		X
Recoded days with family conflicts							
Recoded days with other personal conflicts							
Psychological problems, ever							
Depression		X		X	X		X
Anxiety		X		X		X	X
Hallucinations							
Poor concentration		X				X	Marginal
Violent behavior					X		
Suicidal ideation		X				X	
Attempted suicide		X					

	Outcomes						
	Assessment attendance (referred only) (n=2,891)	Treatment need (assessed only**)** (n=1,708)	Residential treatment (assessed and in-need only) (n=1,288)	Attendance at intake (in-need and tracked only) (n=1,020)	30 days in treatment (in-need and tracked only) (n=1,020)	FTA during follow up (assessed only) (n=1,708)	Rearrest during follow up (assessed only) (n=1,708)
Pool of Predictor Variables							
Ever prescribed psychotropic medication						X	
Number of psych. prob. In past 30		X					
Number of psych problems, lifetime		X		X	X	X	X
Recoded days exp. psych. problems							
Any employment income		X		Marginal		X	X
Any unemployment income							
Any DPA income		X		X	X		X
Any pension income							
Any other income						X	X
Any income, illegal activities					X		
Income from all sources					X		X
Sources of income last 30 days					X		
Primary income source					X		X
Number of dependents							
Days used alcohol, past 30					X		
Days used heroin, past 30							
Days used cocaine, past 30						X	
Days used cannabis, past 30					X	X	X
Days used drug combination, past 30					X	X	
Used drug combinations, past 30		X			X	X	X
Recoded days used drug combinations						X	
Times treated for alcohol abuse		X					
Times treated for drug abuse		X			X		

	Outcomes						
	Assessment attendance (referred only) (n=2,891)	Treatment need (assessed only**)** (n=1,708)	Residential treatment (assessed and in-need only) (n=1,288)	Attendance at intake (in-need and tracked only) (n=1,020)	30 days in treatment (in-need and tracked only) (n=1,020)	FTA during follow up (assessed only) (n=1,708)	Rearrest during follow up (assessed only) (n=1,708)
Pool of Predictor Variables							
Money spent on alcohol in last 30 days							
Money spent on drugs in last 30 days							
Any outpatient SAT in last 30 days							
Recoded number days exp. alcohol problems							
Recoded number days exp. drug problems						X	