



ADOLESCENT
SUBSTANCE ABUSE
ASSESSMENT PROGRAM
(ASAP)

1989

HARRIS COUNTY
JUVENILE PROBATION
DEPARTMENT
HOUSTON, TEXAS

PROGRAM MATERIALS

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*The Adolescent Substance Abuse Assessment Program (ASAP)
is funded by the Criminal Justice Division, Office of
the Governor, State of Texas, Grant JA-87-C04-2830.*

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ABSTRACT

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ADOLESCENT SUBSTANCE ABUSE ASSESSMENT PROGRAM (ASAP)

ABSTRACT

The Adolescent Substance Abuse Assessment Program (ASAP) was a pilot project conducted in 1989 by the Harris County (Houston) Juvenile Probation Department. Under a grant awarded by the Criminal Justice Division of the Texas Governor's Office, the project investigated issues relating to the urine drug testing of juveniles in detention. The program addressed significant legal issues, e.g. reliability of tests and testing methods, fully informed consent, voluntary or court-ordered (mandatory) testing, confidentiality of results, and privacy in obtaining urine specimens. Extensive medical questions were answered, including what type of specimen to test, what drug tests were available and most suitable, how to conduct the test, and what self-assessment instrument would be used. The legal review resulted in a decision to implement the pilot project on a voluntary (fully informed consent) basis. A final review analyzed the data collected by this urine drug testing project. An implementation manual for use by other juvenile justice agencies was produced as well as reference materials, an executive summary, and an evaluation. For copies of ASAP Program materials, write to: Mr. Jim Kester, Criminal Justice Division, Texas Governor's Office, P.O. Box 12428, Capitol Station, Austin, Texas 78711.

ADOLESCENT SUBSTANCE ABUSE ASSESSMENT PROGRAM (ASAP)

EXECUTIVE SUMMARY

**HARRIS COUNTY JUVENILE PROBATION
DEPARTMENT**

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ADOLESCENT SUBSTANCE ABUSE ASSESSMENT PROGRAM (ASAP)

EXECUTIVE SUMMARY

This study, carried out under the auspices of the Criminal Justice Division, Office of the Governor of Texas, focuses on major concerns of those seeking remedies to the increasing use of illicit substances by youths. The project studies the legalities of drug testing a population under the age of 18, and the various types of drug screening products available on the market. Then a pilot program was implemented based on the information gleaned from legal and medical research.

Drug screening in the juvenile justice system has frequently encountered problems. Claims have been made that current products are unreliable and, where drug screening has been implemented, law suits have charged violation(s) of constitutional rights. The focus of the Adolescent Substance Abuse Assessment Program (ASAP) was to determine if these problems were insurmountable and how they might be addressed in a drug screening program.

A review of the law found that most cases contesting the legal efficacy of drug screening cite Constitutional law. Texas law was examined to determine explicit and implicit mandates. Conclusions of the legal review determined that drug screening is permissible for youths over the age of 13 and at any stage of the juvenile justice process when ordered by a judge.

The review also determined that pre-adjudication court-ordered testing could be upon admission to intake or detention. Random or routine testing could be made a condition of release. Pre-adjudication testing could occur without a judicial order only by written consent after the child is fully informed about the program's goals, requirements, and use of the test results. And mandatory post-adjudication testing may be imposed as a condition of probation. The judge and/or the program guidelines would determine the timing of the testing.

The medical review included laboratory and field tests. Laboratories, working with the criminal justice system, have established chain-of-custody procedures that, if followed, produce findings that are valid in a court of law. Whether or not these procedures are adopted is generally a result of how the test findings are used. Thus, it is of critical importance that a decision be made up front as to the use of the test findings. If the program findings are to be used in any way other than originally planned, chain-of-custody procedures need to be re-evaluated.

The accuracy of field tests varies because each manufacturer sets different tolerance levels for the drugs tested. What you wish to accomplish and your budget will determine the test you decide to use. A field test is an acceptable means of screening youths for drugs but should not be regarded as proof positive that a youth is using drugs. If the results are to be used in any type of legal proceeding, positive results must be confirmed by a laboratory using EMIT or Thin Layer Chromatography (TLC) and Gas Chromatography/Mass Spectrometry (GC/MS).

One of the goals of this pilot program was to determine how cumbersome drug testing would be. Testing programs most often are designed for adjudicated youth. Few have been set up for pre-adjudicated youth. Such programs, in all probability, will require additional staff, the designation of a coordinator, on-going training and program reviews.

Our experience confirmed the need for increased staff time for the paperwork required to process cases and to follow the chain-of-custody procedures. Training of staff, the development of procedures for each step of the process, and routine process evaluation all required additional staff time. Each, however, is crucial for successful program operation.

Program experience also showed that for the most effective control a single individual needs to be assigned the task of coordinating all activities for the program. Where possible, a support committee should be set up to assist the individual coordinating the program. The committee should include members of the legal, medical, and academic community, each with expertise in the areas of drug screening.

To operate a drug screening program, care must be taken to regularly update the program. An annual review will keep staff knowledgeable about changes in legal and medical developments.

If a data base is desired, attention needs to be given to the type of information to be collected prior to program start-up. Individual interviews, pen-and-pencil tests, and questionnaires all have positive and negative aspects. Knowing the information you want, how you want to use it, and how it is to be tabulated is very important prior to collection. Knowing what information is being collected by other jurisdictions and whether or not your information can be compared to others is also an important consideration.

These points and others are addressed in the 28-page, step-by-step implementation manual. Each chapter talks briefly about a specific program aspect and is followed by a checklist to ensure that basic requirements are met. The separate appendices contain detailed information on legal issues, medical testing methodologies, and in another volume, the pilot project evaluation looks at the results of the process and the data collected. A research brief provides a succinct description of the overall program.

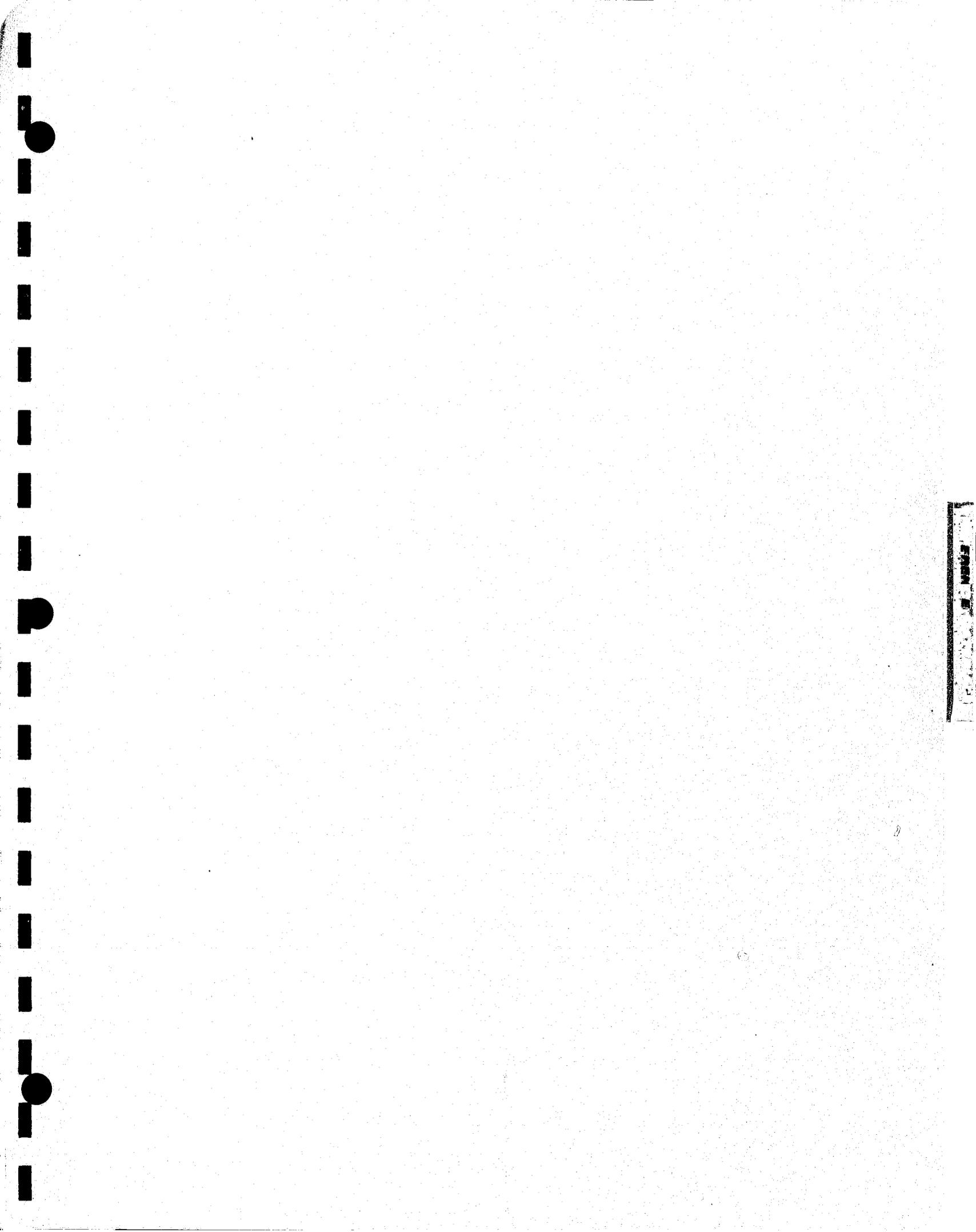
The ASAP pre-adjudication pilot project was implemented at the Harris County Juvenile Detention Center. Youths admitted to detention may be held until parents or a responsible adult can be contacted and arrangements can be made for releasing the child into their custody or until the youth goes to court or to placement, etc. The program was organized as a full consent, voluntary participation program for youths admitted to detention. Many agencies have been able to operate post-adjudication drug screening programs, but few have been able to set up pre-adjudication programs that have not been challenged on violation of constitutional rights issues.

The pilot project operated for five weeks. During that time a total of 596 youths were admitted. A total of 37 youth were found to be under the age of 13. These youth were excluded from the study. Other youths excluded from the study included those who refused to participate in the testing. Total assessments reached 493. Two-hundred and nineteen (219) youths agreed to urine testing and 386 youths agreed to a pen-and-pencil test during the total testing period.

A quarter of the youths providing a urine sample tested positive; the SASSI identified half of the children surveyed as being "at risk"; and nearly three-fourths reported some drug use via the questionnaire completed in conjunction with the SASSI. The conclusion was that at least a quarter of the youths admitted to detention are under the influence of an illegal substance at the time that they are booked into detention. If the intent is to provide treatment to youths who are referred to an agency or admitted to a facility, then urine testing is appropriate, as it provides the basis for the action taken. But where there is a need to determine the extent of the problem, consideration should be given to interviewing or pen-and-pencil questionnaires. Research shows self-reporting to be a valid means of securing information.

A pre-adjudication urine screening program might be used best for releasing drug involved youths from detention on the condition that: they agree to undergo routine testing for drugs until they go to court; if tested positive they agree to drug treatment programs upon release from detention; if tested positive they and their parents agree to drug counseling prior to release from detention. The use of the urine test must be clearly understood at the outset of the program.

Establishing primary goals is of utmost importance. For example, if one desires to establish the extent of the drug problem, the program must be mandatory. If one desires to provide treatment or act as an intermediary to those operating treatment programs, a full consent, voluntary program is appropriate.



ADOLESCENT SUBSTANCE ABUSE ASSESSMENT PROGRAM (ASAP)

REFERENCE MATERIALS

HARRIS COUNTY JUVENILE PROBATION DEPARTMENT

1989

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I. Introduction

In May, 1989, the Criminal Justice Division of the Texas Governor's Office awarded a grant to the Harris County Juvenile Probation Department to conduct a pilot project to investigate the many issues relating to drug testing of juveniles in detention. The project, Adolescent Substance Abuse Assessment Program (ASAP), was approved by County Commissioners in June, 1989.

The primary objectives of the project were:

- 1. to address legal issues and ramifications associated with drug screening juveniles in the juvenile justice system**
- 2. to explore medical accuracy and feasibility issues of such testing and to establish an effective protocol for such**
- 3. to develop a reliable data base on the percentages of arrested/detained youths using drugs and to determine the drug of choice**
- 4. to implement a 30-day pilot test by drug screening up to 500 detained youths**
- 5. to develop and produce a step-by-step manual for use by other juvenile justice agencies.**

In meeting these objectives, and completing the initial work, much detailed scientific and technical data was collected. That material has been organized in this "ASAP Reference Materials" volume. It is the source from which parts of the step-by-step "ASAP Implementation Manual" were derived.

In the course of using the Implementation Manual, questions may arise, especially in the legal and medical areas. The materials herein will answer many of those questions. A work of this nature - a pilot project - is the beginning. Here is a base upon which to build a successful juvenile drug testing program in either a small or large agency.

II. Appendix A - Legal Issues

- A. *Legal Issues and Considerations***
- B. *Questions and Answers Regarding Legal Issues***
- C. *Recommendations***

APPENDIX A

A. Legal Issues and Considerations

1. Federal and State Constitution Provisions and Texas Statutes

The major legal considerations in the development of a testing program are the applicable provisions of the United States Constitution and the Texas Constitution. The principal federal constitutional issues are:¹

- * Fourth Amendment right to be free from unreasonable searches**
- * Fifth Amendment right not to be compelled to incriminate oneself**
- * Eighth Amendment right that excessive bail not be required**
- * Fifth and Fourteenth Amendments due process clauses guaranteeing the right to be free from punishment prior to adjudication of guilt**
- * Fourteenth Amendment equal protection clause guaranteeing the right to be free from arbitrary discrimination as a result of governmental action**
- * Fifth and Fourteenth Amendments due process clauses guaranteeing the right to procedural due process including:**
 - an accurate testing methodology;**
 - adequate chain-of-custody of urine specimens;**
 - notice and an administrative hearing prior to imposition of sanctions for non-compliance and;**
 - confidentiality of test results.**

The primary Texas Constitution issues found in the Bill of Rights, Article I are:²

- * Section 3 equal protection guaranteeing the right to be free from arbitrary discrimination as a result of governmental action**
- * Section 9 right to be free from commensurable searches and seizures**
- * Section 10 right not to be compelled to give evidence against oneself**

¹Eric Wish, Identification of Drug Abusing Offenders: A Guide fo Practitioners, Draft Report - November 11, 1986, pp. 19-20.

²Tex. Const. Art. I, Sec. 3, 9, 10, 13, & 19.

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- * **Section 13 right that excessive bail not be required**
- * **Section 19 due course of law clause guaranteeing the right to procedural due process including:**
 - **the right to be free from punishment prior to adjudication of guilt;**
 - **an accurate testing methodology;**
 - **adequate chain-of-custody of urine specimens and;**
 - **notice and an administrative hearing prior to the imposition of sanctions for non-compliance and;**
 - **confidentiality of test results.**

In addition to the constitutional provisions, Texas statutes concerning juvenile drug treatment are relevant.

Section 35.03 of the Texas Family Code provides for the consent to treatment by a minor. This provision authorizes consent by a minor for examination and treatment for chemical addiction, chemical dependency or any other condition directly related to chemical use. Additionally, a minor may consent to counseling or counseling in conjunction with treatment by a physician, psychologist, counselor or social worker licensed or certified by this state within the scope of the professional's license, if the treatment and/or counseling is for chemical addiction, dependency or abuse.³

Article 4447i of the Texas Statutes provides that a person thirteen (13) years of age or older has the capacity to consent to examination and treatment by a licensed physician for any drug addiction, drug dependency or any condition directly related to drug use.⁴

2. Policy

The Legal Department personnel and/or consultants to the agency must have in-depth knowledge of the constitutional and legal issues surrounding drug-testing programs specifically because they are currently in the developmental phase.

3. Purpose

To ensure that the administrator charged with the operation of the program and all staff are aware of the major constitutional and legal issues as they apply to the development of juvenile drug testing programs in Texas.

³Tex. Fam. Code Sec. 35.03.

⁴Tex. Rev. Civ. Stat. Ann. art. 4447 (Vernon 1976).

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4. **Rationale in Stages of Proceedings in Juvenile Urine Testing**

In light of the constitutional guidelines, urine testing of juveniles can only be accomplished by programs based upon fully informed consent or by judicial order.⁵ The following stages are set forth with a discussion of urine testing considerations:⁶

- a. **Arrest/Initial Counseling:** Upon arrest or initial counseling, testing can only be achieved by fully informed consent.
- b. **Informal Adjustment:** Periodic or random testing could be made a condition of an informal adjustment contract with a juvenile since the participation would be consensual and voluntary. The contract should specify not only that it is a violation to use controlled substances but it is also a violation to fail to submit to the giving of a sample.
- c. **Pre-Adjudication Condition of Release by Court:** A court may determine that urine testing is necessary as a condition of release from custody (detention) prior to an adjudication of guilt. The court may impose conditions of release following a detention hearing or upon a petition being filed in the court.
- d. **Post-Adjudication Testing - Condition of Probation:** Once a juvenile is adjudicated and placed on probation the court may order testing as a condition of probation. Failure to provide a sample or detection of an illegal substance in a sample could be grounds for revocation of the probation by the court.

5. **SPECIFIC ISSUES IN TESTING**

- a. **Fully Informed Consent:** In order for consent to be legally sufficient, it must fully inform the juvenile of the nature and consequences of giving the specimen. It should state all of the uses of the results of the testing. Statements concerning privacy and confidentiality should be included.⁷
- b. **Reliability of Test:** The most important consideration in a drug testing program always should be the reliability of the results. Once the sample has been obtained, a chain-of-custody must be maintained. Basically, the sample must be preserved from the collection of the sample through the analysis of the sample. In the event the test results will be used as evidence in court, such as for revocation of probation cases, a proper chain-of-custody is necessary. The primary purpose of the chain-of-custody is to insure that the results are the true results for the sample given.

⁵See, Skinner v. Railway Labor Executives Association, 44 Cr L 3178 (1989); National Treasury Employees Union v. Von Raab, 44 Cr L 3192 (1989).

⁶Eric D. Wish, Mary A. Toborg and John P. Bellassai, Identifying Drug Users and Monitoring them During Conditional Release, National Institute of Justice, February, 1988.

⁷Tex. Fam. Code Sec. 35.03(a)(6).

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The method of analyzing the sample should be accurate. A quick test or testing methods which are not 100% accurate are going to create problems. Obviously, a false positive result could be damaging to an innocent person.⁸

- c. Privacy: Care should be taken to allow privacy for the juvenile providing the sample while at the same time preventing any altering of the sample. Permissible collection can either be achieved by actual observation by a witness (preferably two) or by providing a secure area with colored toilet water.⁹**

B. Questions and Answers Regarding Legal Issues:

Question: If a child can be penalized for refusing to take a test, what are the penalties?

A child can not be penalized for refusing to take a test unless the test was court-ordered. The penalties for refusing to take a court-ordered test would be determined by the court. If the test was a condition of probation, it could result in probation being revoked.¹⁰

Question: Should parental consent be required?

Parental consent should be required in informal adjustment contracts. Also, parental consent should be required if the juvenile is under thirteen (13) years of age.¹¹

Question: What are the liabilities if a child doesn't cooperate with services?

It is difficult to imagine how an agency could be liable for the acts of a child who doesn't cooperate.

Question: Are any recommendations for legislative change indicated as a result of this project?

As a result of this project, it is recommended that the Texas Family Code be amended to specifically authorize drug testing, if found to be in the best interest of the juvenile by the court and a necessity to a drug treatment program either as a condition of release from detention or informal adjustment or probation.

⁸ Arizona's Preadjudication Drug Detection Program, Committee on Drug Testing, January 26, 1988.

⁹ Committee opinion based upon general privacy rights in light of medical and legal considerations.

¹⁰ U.S. Const. 14th Amend. (equal protection clause and due process clause).

¹¹ Tex. Fam. Code Sec. 35.01.

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Question: *Has the U.S. Supreme Court made a ruling regarding the Fourth Amendment as it pertains to drug testing? Are there any other decisions pending that may affect drug testing?*

The United States Supreme Court has ruled that the Fourth Amendment applies to drug testing programs. Berry v. District of Columbia is the major pending case concerning drug testing.¹²

Question: *Will the court order testing? Will the court order follow-up treatment? At whose expense?*

The court will order testing and treatment generally as conditions of probation. The juvenile and family should pay for the treatment unless the family is indigent, in which case the treatment should be provided by the State.

Question: *In jurisdictions where drug screening occurs, what legal questions have been posed?*

The legal questions that have been asked in jurisdictions where drug screening occurs are the basic issues which are dealt with in this Appendix: constitutional questions, reliability, consent, etc.¹³

Question: *Who can have access to the results of the test (i.e. court, treatment facilities, placements, service providers, parents)?*

The access to the results of tests will depend upon the test. Generally, a pre-adjudication test result should be more confidential than a post-adjudication test. The results should be confidential as is the majority of information concerning juveniles. The results should, however, be released if necessary to the court, treatment facilities, placements, service providers and parents.¹⁴

¹²Skinner v. Railway Labor Executives Association, 44 Cr L 3178 (1989), National Treasury Employees Union v. Von Raab, 44 Cr L 3192 (1989).

¹³See, Berry v. District of Columbia; Arizona's Preadjudication Drug Detection Program, Committee on Drug Testing, January, 1988.

¹⁴See, Arizona's Preadjudication Drug Detection Program, Committee on Drug Testing, pp. 35, 36, 47, January, 1988.

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Question: Would any disclaimers be required prior to administering urinalysis or assessment forms?

A disclaimer is not required; however, an oral or written statement should be given prior to administering urinalysis or assessment forms. Full disclosure should be made concerning the purpose, nature and result of the activity.¹⁵

Question: What questions could be asked on an assessment form?

Questions relevant to assessment and treatment could be asked on an assessment form. (Check Appendix E for samples of forms and appropriate questions.)

Question: What type of training is available to those who work with children and families regarding drug testing issues?

Organizations can contact the National College of Juvenile and Family Court Judges, Sam Houston State University Criminal Justice Center, Texas Corrections Association, Texas Probation Association, or Texas Juvenile Probation Commission, for information concerning drug evaluation and treatment training programs.¹⁶

Question: If a child tests positive for drugs that are commonly injected can/should AIDS testing be done?

AIDS testing should be done at any time medical personnel believe the juvenile has symptoms indicating s/he may have the virus. Probably testing positive for a drug which is injected alone would not be sufficient. However, if coupled with additional indicators the testing may be appropriate.

Question: If a child ends up being certified as an adult, how will/can the results of drug testing be used?

The results of drug testing, if the child becomes certified as an adult, probably will be used only for purposes of additional conditions of probation to include drug testing and treatment.

Question: If a child is dually adjudicated, who will have access to testing results?

If a child is dually adjudicated, the court, as well as Children's Protective Services, would have access to the testing results.

Basically, the results should be confidential as is the majority of information concerning juveniles. Pre-adjudication test results should be released, if necessary, to the court,

¹⁵See, Arizona's Preadjudication Drug Detection Program, Committee on Drug Testing, p. 79, January, 1988.

¹⁶See also, "Drugs - The American Family in Crisis: A Judicial Response", *Juvenile & Family Court Journal*, Vol. 39, No. 4, 1988.

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placement providers, treatment facilities, other service providers, and parents, only if the child gave his/her voluntary fully informed consent.

In regard to post-adjudication testing, any court that ordered the testing would have access to the results.

Question: What are the legal definitions for "confidentiality" and "infringement of privacy"?

The legal definition for "confidentiality" is "to be intrusted with the confidence of another or with his secret affairs or purposes; to be intended to be held in confidence or kept secret." The legal definition for "infringement of privacy" as it applies to the results of drug testing, would be "the unauthorized release of the results to any person."¹⁷

Question: Should the legal consultant be available to answer any additional questions that arise during the course of testing and evaluation?

Yes.

Question: What tests will the court accept?

The courts will accept any test which has proven to be reliable. Generally, the courts have found the Enzyme-Immunoassay (EMIT) and Gas Chromatography/Mass Spectroscopy (GC/MS) methods to be acceptable.¹⁸

Question: What are the differences between pre- and post-adjudication testing?

The distinctions between pre- and post-adjudication testing are discussed at length in this Appendix. The basic distinction is that consent or probable cause is needed prior to adjudication and a court order afterwards.¹⁹

Question: Do the American Correctional Association standards which prohibit testing on incarcerated individuals apply?

The American Correctional Association standards which prohibit experimental medical testing on incarcerated individuals do not apply to drug testing programs.

¹⁷Black's Law Dictionary, Black, Henry Cambell, West Publishing Co. (1968).

¹⁸Most recent Texas case is Bolieu v. State, _____ S.W. 2d _____ (Tex. App. [Austin] - No. 3-88-173-CR, October 11, 1989).

¹⁹Eric D. Wish, Mary A. Toborg and John P. Bellasai, Identifying Drug Users and Monitoring them During Conditional Release, National Institute of Justice, February, 1988.

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Question: **What is the status of Berry v. District of Columbia as it pertains to pretrial testing? Will the outcome have any effect on juvenile drug testing?**

The Berry v. District of Columbia decision is being awaited by all since it will set the standards for drug testing programs.

Question: **Have any legal questions been raised regarding confirmation of positive test results with Gas Chromatography/Mass Spectrometry (GC/MS) method?**

The Gas Chromatography/Mass Spectrometry is one of the most reliable tests used in drug testing. No questions have been raised regarding confirmation of positive test results with the GC/MS method.²⁰

Question: **At what point in the system can juveniles be tested?**

Pre-adjudication testing of juveniles shall only occur upon the voluntary consent of the juvenile.

Post-adjudication testing shall only occur upon written order by the court.²¹

Question: **Who can be tested? All youth placed in the Detention Center? Youth with drug charges only? Felonies?**

All who are fully informed and consent, and all who are court ordered, may be tested.

Fourth Amendment Rights Against Illegal Search and Seizure:

Question: **Do we have the right to impose mandatory testing on a person in the absence of individualized suspicion?**

No.²²

²⁰See, Jones v. State, 716 S.W. 2d 142 (Tex. Crim. App. 1986).

²¹Eric D. Wish, Mary A. Toborg and John P. Bellassai, Identifying Drug Users and Monitoring them During Conditional Release, National Institute of Justice, February, 1988.

²²See, Skinner v. Railway Labor Executives Association, 44 Cr L 3178 (1989); National Treasury Employees Union v. Von Raab, 44 Cr L 3192 (1989).

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Fourteenth Amendment Due Process Rights:

Question: Can punitive actions be taken against a person on the basis of a single unconfirmed urine test?

No punitive action may be taken against a person unless the test results are reliable and the testing was ordered by a court.

Question: If results are used for prosecution can experts agree on the amount of time specific drugs can be detected in urine.

Yes. Cocaine and opiates are eliminated from the body within days after ingestion; PCP and marijuana may be stored and released weeks after use. For a detailed Table, see Appendix B.

Question: Has chain-of-custody been established to assure absolute assurance that a given sample belongs to a given defendant?

In the event test results are to be used for prosecution, a chain-of-custody must be established and thoroughly documented.²³

Question: Does the testing program result in additional harm to the youth? (Can a youth who is arrested for a minor offense be in more trouble by testing positive?)

No.

Question: Can test results be used elsewhere in the juvenile or criminal justice system?

No. The confidentiality of juvenile files and records is established, and access to those same files and records is governed, protected and controlled by Section 51.14 of the Texas Family Code.

Question: Would a specific warning and written consent be required for juveniles, if results will be used in a prosecution capacity?

Yes.

Question: Can test results be available elsewhere in the judicial process such as in contested custody cases or dependency and neglect cases?

No.

²³ Arizona's Preadjudication Drug Detection Program, Committee on Drug Testing, January 26, 1988.

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Question: Will positive tests be confirmed by a second test using the same or alternate technology or by a self-assessment screening?

Yes.

If not, is one positive valid?

No. Positive tests obtained with the EMIT (Enzyme Immunoassay) or with OnTrak (Roche) will be confirmed by Gas Chromatography/Mass Spectrometry (GC/MS). Without the confirmation or second test, the initial results may not be valid, and cannot be used in court.²⁴

Question: If drug testing is integrated into the framework of conditions of release or probation, how will violations be enforced?

By violations being reported to the court and the court determining what action should be taken.

Question: What are the liabilities if a youth is assessed as a "drug abuser", but treatment services are not available? If youth dies? If youth harms others?

Medical treatment is mandatory if the youth is in need of immediate action. Thereafter, the youth must consent to treatment or counseling. While in custody, liability is clear if a youth dies. Additionally, precautions must be taken if a youth is violent and may harm other youths while in custody. Once released from custody, the issue of liability is unclear if the youth dies or harms others, assuming treatment was needed but not available.

See Appendix E for samples of appropriate consent forms.

²⁴Most recent Texas case is Bolieu v. State, _____ S.W. 2d _____ (Tex. App. [Austin] - No. 3-88-173-CR, October 11, 1989).

C. Recommendations

As a result of this pilot program, it is recommended that:

- a. The Texas Family Code be amended to specifically authorize drug testing, if it is found to be in the best interest of the juvenile by the court, and a necessity to a drug treatment program either as a condition of release from detention, or as a condition of informal adjustment, or probation.**
- b. Positive urine tests obtained with the EMIT (Enzyme Immunoassay) or with OnTrak (Roche) be confirmed by Gas Chromatography/Mass Spectrometry (GC/MS) test. Without this confirmation or second test (GC/MS), the initial results may not be valid.**
- c. Those professionals in the juvenile justice system charged with the responsibility of establishing and conducting a drug testing program, remain aware of and become well informed on five major subjects:**
 - 1) reliability of tests and testing methods**
 - 2) fully informed consent**
 - 3) voluntary and court-ordered testing**
 - 4) confidentiality of results**
 - 5) privacy in obtaining urine specimens.**

III. Appendix B - Medical Issues

- A. Questions and Answers Regarding Medical Issues***
- B. Procedures for Testing***
- C. Consultant's Activities, Summary and Evaluation***
- D. Manufacturer Contact Information***
- E. Useful List of Drugs***

APPENDIX B

A. Questions and Answers Regarding Medical Issues²⁵

QUESTION: *What is the specimen of choice for "drug testing" and why is one more effective than another?*

Urine is the most widely used source as a sample for testing for many reasons. It is a cost efficient choice, it is highly accurate and its use casts a wide net. An individual using drugs will test positive for some time after use. When drugs are taken in any form, traces end up in the urine within a few hours. Depending on the drug taken, they will remain in the urine for days or weeks.

Alternatives to urine as a specimen source are as follows:

Blood: Another alternative is whole blood, blood plasma, or blood serum. The blood stream is the primary pathway for drug distribution no matter how a drug is taken in. When a blood test is performed for the drug itself, the test indicates recent use of the drug, especially when it is found in relatively high concentrations.

Blood, although highly accurate, is not recommended as a specimen mainly because of the precautions necessary to ensure sterile conditions. Collection is an invasive process requiring penetration into the body. A doctor or other qualified personnel is necessary to take blood to avoid or limit the possibility of infection or other health problems. Finally, testing for substances using blood as a specimen is not only an obviously invasive procedure, it is also more expensive.

Breath: Breath is an alternative specimen source that can show recent use of a drug, and can be used to determine impairment. Breath is the preferred specimen source to determine if someone is driving or currently under the influence of alcohol because alcohol in the breath is closely correlated to alcohol in the brain. It is of no use in determining whether someone has been using drugs within the past few days or even hours.

Saliva: Another source that can be related to recent drug use or impairment is saliva. Saliva has been shown to be an appropriate specimen for determining alcohol use. However, research for the presence of drugs is still in its early states.

Hair: Hair has been shown to be able to demonstrate exposure to drugs and other substances. Hair provides an historical record that can show a record of drug intake, when drug use occurred and whether it was continued or interrupted by abstinence.

Testing of hair is done by radioimmunoassay (RIA); thus the level of accuracy is equivalent to an unconfirmed screening test. Hair tests can be used by people who claim that a positive urine test is inaccurate. It can also be used to show that drug use was a one-time or passive or accidental exposure.

²⁵ Much of the materials presented here were taken directly from correspondences between Harris County Juvenile Probation Department and Lee E. Hill, President of Team Building Systems, Inc, with basic information collected, organized and prepared by Devaney McNeill of Team Building Systems. Mr. Hill provided this information in his letter of July 19, 1989 to Nancy Baird who had previously posed a list of questions to him about drug testing.

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QUESTION: What level of drug in the urine indicates that a juvenile is impaired?

Urinary drug tests can demonstrate the use of drugs. Such tests do not indicate impairment except in the case of alcohol where a legal definition exists.

QUESTION: How reliable are urinalysis methods?

A very large number of drugs and their metabolites may be encountered in urine. No simple method exists to detect all members of this universe of substances. Classical methods of chromatography and color reactions are laborious and require sophisticated instrumentation. Some drugs, such as LSD, are extremely potent and their detection requires a high technology radioimmunoassay. Another drug, haldol, is occasionally abused, is very potent, difficult to detect and frequently is missed by the analytical system. Because of problems, such as mentioned above, it is not practical to screen a urine sample for all possible drugs.

Alcohol, marijuana and cocaine are by far the most frequently abused substances. Phencyclidine (PCP) or angel dust, is probably the next most common substance. Alcohol is easily detected by immunochemical methods. EMIT and OnTrak provide excellent detection of alcohol in urine. The quantitative determination of blood alcohol by alcohol dehydrogenase has frequently been entered into evidence in court. Marijuana metabolite(s) are easily detected by EMIT and OnTrak. There is a body of anecdotal statements that these methods cross-react with a number of other substances. In our experience, we do not confirm cross-reactivities between marijuana metabolite and other substances. The common GC/MS confirmation procedure has a sensitivity cut-off of around 10 ng/ml of urine, which is substantially below the cut-off of the screening method. Under these conditions, problems of cross reactivity have not been encountered. The immunochemical methods are highly effective in detecting cocaine metabolite, benzoyllecognine and PCP. The reaction is very specific. GC/MS confirmation has, in our experience, fully confirmed the specificity of the immunochemical reactions. The opiates, morphine and heroin, are similarly detected by EMIT. Morphine and heroin (diacetyl morphine) are excreted in urine as glucuronide conjugates. The Roche OnTrak procedure does not make a claim for the detection of heroin or for morphine metabolites. Their claim is for the detection of "morphine". Questions with the other OnTrak procedures have not been encountered. OnTrak is practical for on site detection of a limited number of drugs/drug groups in urine. EMIT is a laboratory procedure in contrast to OnTrak which can be used in the field. These procedures provide presumptive evidence for the presence of drugs. The breathalyzer test for alcohol is in widespread use by law enforcement agencies.

The legal use of urine testing for drugs requires a more rigorous approach. In this case, false positive identification(s) are not permissible. A positive urine test must be confirmed by a second, independent method. The most commonly accepted method is GC/MS. The Gas Chromatography/ Mass Spectrometry method can only be carried out in an advanced laboratory setting. Even then, the method requires a high degree of expertise by the technologist.

In all cases, on-site or laboratory testing, a quality assurance program must be in place. For on-site testing, the OnTrak procedure provides a control with the test materials. The OnTrak negative control must be run and recorded to fully validate the procedure.

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If drug testing is to have any value, it must be carried out so that the results are unequivocal. OnTrak and EMIT have accepted performance records. These methods require the use of quality assurance procedures to validate the immediate results. OnTrak requires the use of the negative controls. EMIT must also be carried out by a fully licensed and approved laboratory. The screening procedure must be followed by a positive demonstration with a second method based on different chemical principles and be conducted with quality assurance by a licensed laboratory. The most common method for confirmation is GC/MS. In certain cases additional testing may be required. Confirmation is a reference laboratory procedure. Under these conditions, the quality of evidence obtained is acceptable in court.

QUESTION: What does laboratory quality assurance mean?

Quality assurance is those measures which assure the successful analysis of specimens by an analytical laboratory. It includes laboratory administration, personnel policies, written and approved laboratory procedures, and the proper use of control test substances. Clinical laboratories engaged in commerce must be approved by appropriate regulatory agencies. These agencies include the College of American Pathologists, Medicare, the Joint Institute for Drug Abuse (NIDA, for drug testing). These agencies have overlapping jurisdictions and their use is determined by the particular situation.

QUESTION: The validity of many test results have been challenged. Does this mean that the assay methods are not reliable?

Any test can be challenged. It is incumbent on the testing agency to demonstrate proficiency in the test procedure. Drug testing is a challenging analytical problem. In times past the methodology has not always been adequate for the particular question. False positive results have been reported where adequate quality assurance was not in place. For these reasons, the regulatory agencies have become very critical, and with justification. Drug testing results are entirely acceptable where "courtroom-quality evidence" is produced.

QUESTION: What is the preferred method for confirmation of presumptive positives from initial urine screens?

The preferred method, that is, the test used most often for confirmation is Gas Chromatography/Mass Spectroscopy (GC/MS).

QUESTION: What do assay "sensitivity" and assay "cutoff" mean?

The sensitivity of a method is usually taken to mean the least amount that can be detected that is different from zero. For marijuana, the sensitivity might be 5 or 10 ng/ml of urine. For EMIT the marijuana cut-off is commonly 50 or 100 ng/ml. This means that samples containing marijuana at a concentration below 50 or 100 ng/ml (depending on the standard used in the method) would test negative by the EMIT method. Such samples would obviously be positive by the GC/MS method. In this case, the cut-off must be tempered against the desire to demonstrate marijuana use versus a false accusation deriving from passive inhalation. Another example of mistaken use can be seen with nicotine testing. GC/MS methods have been developed which can detect nicotine in the urine of a person who has simply been around another person who has been smoking.

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QUESTION: What are the limits of detection (lowest concentration of a drug that the test is able to detect)?

Cut-off values for confirmation have been recommended for the following compounds in each of the drug classes (see Table below). Any value at or above the GC/MS cut-off level confirms the positive EMIT screening test and indicates use of a drug within that drug class. It is important to note, however, that because results are determined on a single sample taken at a single point in time, they cannot be correlated either with elapsed time since use, or with the level of consumption. The GC/MS methodology is much more sensitive than the EMIT procedure.

Table 1: Recommended Cut-off Limits for Drug Testing

<i>Amphetamine</i>	<i>Amphetamine</i>	300*
	<i>Methamphetamine</i>	300
<i>Barbiturates</i>	<i>Amobarbital</i>	200
	<i>Buobarbital</i>	200
	<i>Penobarbital</i>	200
	<i>Phenobarbital</i>	200
	<i>Secobarbital</i>	200
<i>Benzodiazepines</i>	<i>N-desmethyldiazepam</i>	300
	<i>Oxazepam</i>	300
<i>Benzoylcegonine (Cocaine Metabolite)</i>	<i>Benzoylcegonine</i>	150*
<i>Cannabinoids (THC)</i>	<i>Delta-9-carboxyl-tetra- hydrocannabinol</i>	20*
<i>Methadone</i>	<i>Methadone</i>	300
<i>Methaqualone</i>	<i>Methaqualone</i>	100
<i>Opiates</i>	<i>Morphine/Codeine</i>	300*
<i>Phencyclidine(PCP)</i>	<i>Phencyclidine (PCP)</i>	25*

*Cut-off limits recommended by the Department of Health and Human Services in "Scientific and Technical Guidelines for Drug Testing Programs."

QUESTION: How often do false positives occur?

The false positive result is the great hazard in drug testing. How often a false positive result occurs cannot be answered in a simple manner because of the considerable number of factors involved in producing a result and the unique peculiarities of many different drugs. The methods in use can be categorized as immunochemical, spectroscopic, simple chromatographic and those which depend on the physical-chemical parameters of the individual molecule. For courtroom-quality evidence it is necessary to combine several analytical methods, all of which must agree, to produce a definitive answer. The OnTrak

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test for amphetamines, cocaine or marijuana is highly specific and in nonprosecutorial cases these tests provide excellent information. Most methods produce only a tentative identification. GC/MS produces data yielding a definitive identification and this method combines the great resolving power of capillary gas chromatography with the structural information deriving from mass spectrometry. However, GC/MS must still be qualified. Even though the method has great power, it can be misused and give erroneous information if the interpretations of the data are not made by a scientist who is fully qualified. In such hands it is a definitive method.

In summary, the question becomes moot as to how often a false positive is encountered. Individual drugs and methods must be individually considered with respect to the desired end result. For a definitive identification only a lockstep (a first test followed by a second test) method may be employed in which a variety of chemical principles are involved. The method must be recognized by analytical scientists as being adequate for the particular drug. The analytical laboratory must have an approved quality assurance program in place and must be approved (licensed) by appropriate regulatory agencies. Under those conditions, the identification is definitive.

QUESTION: Can other medications or foods produce a positive result in someone who is not abusing drugs?

Yes. A very important problem regarding screening tests, especially immunoassay tests, is the problem of cross-reactions (i.e. a substance in the body testing as if it were a misused drug).

Some medications can produce false positive results. Over-the-counter medications commonly contain amphetamine-like substances. These substances can show on a one step procedure as an amphetamine-type positive reaction. Part of the drug testing procedure should include questions as to medications, self- or doctor-prescribed, which are being taken. A prescribed drug can then be ruled out in the testing procedure. In addition to this, it must be stated that there is a great deal of misinformation in circulation concerning false positive reactions. The immunochemistry of today has produced high quality antibodies. For example, ibuprofen and melanin substances do not cross-react in the marijuana test. For a legally definitive identification, the lockstep procedure must be used.

The critical point regarding cross-reactivity is that all positive test results must be confirmed by an alternative method that is highly specific. Generally, the only acceptable confirmation test at this time is Gas Chromatography/Mass Spectrometry (GC/MS).

The following prescription and over-the-counter medications have been said to produce false positive results on the EMIT screening test:

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Table III: Drugs Said to Cause a False Positive

Generic Drug	Brand Name	Elicits Drug Falsely Detected
Ibuprofen*	Advil Motrin Datril Rufen	Marijuana
Fenoprofen	Nalfon	Marijuana Amphetamines Barbiturates Benzodiazepines Methaqualone
Naproxen	Anaprox Navonaprox Naprosyn Apr-Naproxen	Marijuana
Ephedrine	Acet-AM Amesec Bronkaid Bronkotabs Estasule Minus Ephedrol Morax Nyquil Quadrinal Queldrine Quelichine Quibron Plus Tedral	Amphetamines
Phenylpropanolamine	Allerest Caldecon Coffee-Break Contac Control Dietac Dimetapp Tussagesic Alka-Seltzer Plus 4-way Nasal Spray Naldecon Sinarest Sine-off Sinubid Triaminicin Trimocol	Amphetamines
Codeine	Acetaminoph w/codeine A.P.C. w/codeine Ascriptin w/codeine Empirin w/codeine Fiorinal w/codeine	Heroin Morphine
Dextromethorphan	Dristan Cough Formula Vick's Formula 44-D Hold Cough Suppressant Nyquil Robitussin-DM Romilar St. Joseph's Cough Syrup Silexin Trucal Tussaminic Vicks Cough Syrup	Heroin Morphine

NOTE: Ephedrine and phenylpropanolamine are amphetamine-like substances discussed previously. Codeine is an opium compound and should react in a morphine-type test. Dextromethorphan does not cross-react as an opiate.

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QUESTION: *How long after use can cocaine, heroin, phencyclidine, marijuana, barbiturates, amphetamines and alcohol be detected by urinalysis? Does detection time vary by test?*

Drugs are metabolized and excreted at very different rates. Cocaine has a half life of four hours and so the native drug can be detected for only a few hours after its use. The cocaine metabolite, benzoylecognine, is more stable in the body and is excreted over a period of several days. A small dose of cocaine could be detected for one day or a little longer. A large dose of cocaine can be detected for three days. The "cocaine test" most often is designed to detect benzoylecognine because this substance is derived from cocaine. Alcohol is metabolized at a rapid rate and so can be detected only on the day of use. The next day is usually too late to detect alcohol. Most other drugs such as heroin, phencyclidine, barbiturates and amphetamines are metabolized at an intermediate rate and can be detected for several days after use. Marijuana is an exception because of its physicochemical properties. Marijuana is very fat soluble and is stored in the fat deposits of the body. It is slowly removed from storage, metabolized and excreted. Marijuana metabolite can be detected in the urine for perhaps one week after smoking a single joint. A heavy user of marijuana can give a positive urine test for a month. Because of varying metabolic states, fat deposition with eating or fat mobilization with starvation, the marijuana urine test can become negative and then later become positive. Athletes who may use massive quantities of anabolic steroids represent a special case. Such steroids also are stored in fat. They can be detected for as long as a year after use by the highly sensitive GC/MS method.

QUESTION: *How are the results of a urine drug assay expressed?*

The results of urine drug tests are expressed in several different ways. The initial screening tests are rather approximate. OnTrak yields a positive or negative result. If positive, the manufacturer provides a cut-off level. For example, a positive marijuana test has a cut-off of 100 ng/ml (nanograms per milliliter), a level far above any possible passive inhalation level. This means that the marijuana metabolites are at a concentration of at least 100 ng/ml. The cut-off value for the EMIT test is under the control of the laboratory. The manufacturer provides standards at several levels for marijuana. A laboratory always provides the cut-off value, or interpretation, for the test with the reported results.

Thin Layer Chromatography (TLC) is more approximate than OnTrak or EMIT. The immunochemical methods act with high specificity within a complex matrix of many other substances. TLC depends for its specificity on first isolating the drug or its metabolite from other substances via the chromatogram and then, second, on revealing the presence of the drug/metabolite with specific color reactions. The method has problems in that the separations are often not completed. Metabolites from food materials can overlay and confuse the colors and so considerable skill is needed to interpret the chromatograms to yield the first answer which is the presence or absence of a drug. The TLC method has its own cut-off values which are generally a little higher than EMIT or OnTrak. The results, as with the other tests, are reported as negative or positive. Quantitation is not possible. The advantage of TLC is the great variety of drugs that can be detected.

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GC/MS is the most sensitive and specific of the methods that are commonly used. The method is generally run against known standards and so along with the identity of the substance the method can yield a level or concentration. The results are commonly expressed as ng/ml.

Concentration units are interconvertible. A nanogram is a thousandth part of a milligram. Multiplying by the appropriate conversion factor permits the interconversion of concentration units.

QUESTION: What adverse health effects can be correlated with the presence of cocaine, heroine, phencyclidine, marijuana, barbiturates, amphetamines and alcohol in the urine?

The physiological and pharmacological effects of drugs is a broad subject. For a introduction to the literature see Section VII. Bibliography.

QUESTION: Will urine test results establish the extent of the individual's problem?

Urine drug testing can only establish the presence or absence of drugs which are in the testing protocol. It is important not to overinterpret the results. A positive result can yield certain definite information. Excepting marijuana and nicotine, the presence of drug(s) in the urine indicates near term use of the drug or its parent compound. The test protocols, or the cutoff points, have been designed to demonstrate definite use by the subject. The levels are such that a trace encounter will not give a positive result. But the extent or degree of use cannot be reliably determined for these reasons. The amount of drug in the urine is dependent on the amount of drug that was used, the time of use compared to the time of testing, the rate of metabolism of the drug, i.e., a short half life compared to a long half life, the considerable variations in the rate at which different individuals metabolize a given drug and the amount of fluid an individual has ingested shortly before giving a urine specimen (the dilution effect). None of the above factors can be controlled by the testing personnel.

Marijuana represents a special case in establishing use. Elsewhere in this document the question of passive inhalation of marijuana has been raised. In the work referred to, the experimental conditions represent a special case. The experiment was conducted in a small, completely enclosed room. The subjects were required to breathe air containing a heavy concentration of marijuana smoke. In fact, such a concentration would be found only under deliberate conditions of marijuana use. Even so, the level of marijuana metabolites found in the test urines was well below the cut-off used by the OnTrak test (100 ng/ml) or by the usual EMIT test (100 or 50 ng/ml). Thus, under the conditions of testing that are proposed, passive inhalation of marijuana does not pose a problem in falsely establishing use.

Crack cocaine is inhaled from a cocaine pipe after vaporizing the free base cocaine with an open flame. Little cocaine escapes into the room. In addition, an effective dose of cocaine is much larger than that of marijuana. There is essentially no chance of passively inhaling cocaine so as to give a positive urine test.

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QUESTION: Is urine testing enough or should self-assessment screening instruments be used in conjunction with urine testing?

Urine testing should be used in conjunction with other screening instruments.

QUESTION: How should urine specimens be collected to insure validity?

Urine specimens must be collected under very strict chain-of-custody conditions.

QUESTION: Is any one test method recommended for general field use?

The only method recommended at this time for general field use is OnTrak. It is sufficiently straight-forward to be generally useful. The details of the procedure are fully described in the literature which is included in each kit. It should be emphasized here that the quality assurance provisions of the kit should be followed. This means that the negative urine control in the kit should be used to assure the quality of the reagents and their proper reactions.

The EMIT and Thin Layer Chromatography (TLC) procedures are not field methods. They are to be used only by fully qualified laboratories.

QUESTION: How important is confirmation on a second test?

The OnTrak (field testing), EMIT and TLC methods (laboratory testing) are recommended as stand-alone procedures only where the information will not be used in any courtroom. These methods are deemed to be useful only in providing advisory information to case workers.

If information is to be used in court proceedings, then only the most complete and exacting confirmation testing will suffice. OnTrak and EMIT provide only a group test for amphetamine, methamphetamine and other amphetamine-like substances which may be in over-the-counter drug preparations. Definitive identification by additional procedures, such as GC/MS are necessary. A simple TLC procedure can resolve its group of substances into individual components but still does not provide courtroom-quality evidence.

The initial screening methods, OnTrak and EMIT, are useful only in detecting the most common substances. These substances include by far the biggest volume of drug abuse cases.

Other drugs, such as methylenedioxy amphetamine, a designer drug, are best detected by a TLC procedure. The long list of drugs listed at the conclusion of this Appendix indicates the vast number of possible cases beyond OnTrak and EMIT testing. The volume of these cases is small compared to alcohol, marijuana and cocaine abuse.

QUESTION: If test results become the subject of litigation, will a testing laboratory back findings with expert testimony?

Only if the initial screens (EMIT, OnTrak) are backed up with a definitive second test (GC/MS).

B. Procedures for Testing

1. **On-site testing**
2. **Technical test procedures**
3. **ASAP Juvenile Detention Center - Medical Department
Procedures for Drug Screening**
4. **ASAP Procedures for Administering the SASSI**

B. Procedures for Testing

1. On-Site Testing

a. General Requirements

If drug testing is to be useful, a successful quality assurance program must be operating in an effective manner. The assurance program for this program must address specimen collection, facility test location, personnel conducting the tests, and the adequacy of the reagents and test protocol.

b. Specimen Collection

This project utilized the most benign of procedures for the collection of urine; voluntary, unwitnessed specimen collection. The other end of the scale is the fully secured, witnessed, body-to-cup collection with full chain-of-custody procedures. Each facility must determine the appropriate procedure for its purposes. Considerations are the legal rights of the subject and the intended use of the test results. In general, the following will apply:

- * Collection should be under the supervision of medical personnel.**
- * Collection should be at a single site where the collection protocol can be followed in a uniform manner. The rigor with which the sample will be collected is determined by the individual jurisdiction. As a minimum, the temperature of the sample should be taken to guard against dilution of the urine specimen with water.**
- * The collection protocol must specify in advance the needs of the jurisdiction for proper use of the test results.**
- * Proper sample identification must be assured. The urine sample must be correctly labeled immediately on receipt from the subject. A log should also be kept which records the subject's identity, the date and time, and the approximate volume of the sample. The double entry of specimen I.D. on the urine cup and into the log provides a superior mode of operation. The supervisory personnel are safeguarded against making inadvertent mistakes by using this simple double-entry system. The entire operation of the facility can be reviewed and supervised by reviewing the log. Evidence is developed for using the test results in the future.**

2. Technical Test Procedures

a. EMIT Procedures other than Alcohol

The EMIT procedure is a two-reagent immunochemical competition reaction. An antibody, Ab, is developed for a particular drug. The antibody must have a very high affinity for the drug in question. It must also have a very low affinity for other drugs. In other words, it must be very specific for the drug in question. A solution of the antibody is one of the reagents. The other reagent (this is a two-reagent test) contains the drug in question in a special form and biochemicals which are necessary for the reaction. The special form of the drug is that in which it is covalently linked to an enzyme, glucose-6-phosphatedehydrogenase, GPDH, to form a reagent, Dr-GPDH. GPDH transfers a hydrogen atom from glucose-6-phosphate (part of the reagent) to NAD, a biochemical which is part of the reagent, to form NADH, the reduced form of NAD. The formation of NADH can be conveniently observed in the spectrophotometer at a wave length of 340 nanometers. Thus, the rate of appearance of NADH is a measure of the rate of the reaction. If the antibody, reagent 1, reacts to form Ab-Dr-GPDH, the enzymatic reaction to form NADH is largely inhibited. If a drug is present in the sample urine, the Ab will preferentially react with the drug to form Ab-Dr and some of the Dr-GPDH will be available for the formation of NADH and this will be seen as a greater rate of reaction. The reaction is curvilinear and so sophisticated mathematics and instrumentation are needed to make the reaction useful.

In brief, the EMIT reaction is as follows. Urine sample, biochemicals, and a specific antibody reagent are mixed together. The reaction is observed in a spectrophotometer. An answer is obtained for the particular drug content of the sample from a calibration curve. The instrument is calibrated by running known samples. Unknowns are run along with quality control samples to assure the validity of the results. The test is interpreted as present (drug present above the cut-off) or absent (drug below the cut-off or entirely absent).

b. EMIT Test for Alcohol

The EMIT test for alcohol requires the enzyme, alcohol dehydrogenase AlcDH and NAD. AlcDH transfers a hydrogen atom from ethanol in the sample to NAD to form NADH. The reaction is monitored in the spectrophotometer. The reaction is linear and so the rate of reaction is proportional to the alcohol content of the sample. The answer is obtained from a standard curve. Controls are run with the reaction.

Thin Layer Chromatography, T.L.C, is carried out on glass fiber paper, "grams", about 5 x 14 cm. in size. The paper is impregnated with silicic acid and with reagents which aid in the identification of drugs. Two lanes on each side of the strip carry standards (four lanes total) and two lanes in the middle can carry an extract of the unknown sample. All substances, standard and unknown, are spotted in their individual areas about two centimeters from the bottom of the gram. The gram is placed in a small jar along with a little appropriate solvent. The solvent creeps up the gram by capillary action. The drugs are carried with the solvent. Individual

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drugs are carried at different rates. So, after migration up the gram, standards and unknown drugs may be found at different locations in their lanes on the gram. Four different procedures, color reactions and fluorescence, are applied to visualize the drugs. For a drug to be identified all of these points must be satisfied. The unknown must have migrated up the gram to the correct location as compared to the standards. All color reactions must correspond to the appropriate standard. Thus, for an identification, five check points (migration plus four color reactions) must all be in agreement with the appropriate standard. If any of the check points do not agree, an identification is not achieved.

TLC is a little less sensitive than the EMIT procedure so, generally, a little higher level of drug is required for a positive detection. EMIT is very specific for a drug or a particular class of drugs. EMIT detects only a limited number of drugs. TLC is a little less sensitive than the EMIT procedure so, generally, a little higher level of drug is required for a positive detection. TLC is extremely broad in its application and can detect a very large number of compounds (drugs). TLC and EMIT are therefore complimentary to each other in detecting the presence of drugs in a sample. One of the EMIT tests detects barbiturates as a class. Therefore, the TLC procedure for barbiturates is not utilized in this project because it would be a redundant result. TLC is used here to reveal drugs which are not detected by the EMIT procedure. No lockstep procedure exists to detect all positive drugs. Based on a large amount of past experience by workers in this field, the procedures which have been adopted are considered to be entirely adequate for this project. The objective of the project is to develop a data base concerning drug use. The drug detection methods being used will do this. It is not an objective of the project to absolutely hammer down the identity of a detected drug beyond all reasonable doubt. For that reason, the expensive and time consuming Gas Chromatography/Mass Spectrometry confirmation of a drug has not been employed.

c. OnTrak

OnTrak is a product of the Roche company. It is one of Roche's familiar latex agglutination tests. An OnTrak test is specific for a given drug. The test utilizes a colloidal suspension of latex particles carrying the drug in question. If the antibody directed against that drug is added to the milky suspension of latex, the antibody will react with the drug causing a cross linking of the latex particles. The result will be a clotting of the latex particles. That result is a negative test. If the sample, which is first placed in the reaction vessel, contains the particular drug, the antibody will be neutralized, the latex particles will remain in the colloidal state, the appearance will remain milky and the test will be scored as positive.

d. InstaScreen

InstaScreen is manufactured by Drug Screening Systems, Inc. The kit type being evaluated is specifically for cannabinoids. The test is based on solid phase extraction of a marijuana metabolite followed by a color reaction. The extracting agent is a paper disk, chemically modified to absorb the metabolite. About 20 ml of urine is filtered through the disk. The disk is then treated with chemical reagents which develop a specific color with the marijuana metabolite. The test is scored against a color chart provided with the kit as being positive or negative.

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e. **Vocalyzer (Voice Test)**

The voice test is designed to determine if a subject's normal abilities are impaired by chemical agents. In other words, is a subject "under the influence"? The test is totally computer driven. The phone number of the computer is dialed into the phone system. The computer answers and asks the subject to say certain words which are recorded after the beep. The test is completed after several such responses. The computer then analyzes the responses and makes a determination of the status of the subject. It is assumed that a sophisticated computer program analyzes the data to obtain the answer. The answer is a number from 0 to 10 indicating the degree of influence of the presumed drug(s). The author would not divulge the nature of the analysis because of a pending patent application.

3. **ASAP Juvenile Detention Center - Medical Department Procedures for Drug Screening**

All children, 13 years and older, who are admitted to the Juvenile Detention Center between September 5, 1989 to October 4, 1989, and from October 12 through October 19, 1989 will be asked to provide a urine specimen. Please follow the following procedures in obtaining the specimen:

1. **The urine specimen will be obtained by the medical department during the administration of the routine medical assessment.**
2. **Prior to collection of the specimen, the medical department will:**
 - a. **On the "Ongoing Communication Log", write the child's name, juvenile number, and information about the urine collection - either "urine sample collected", "urine sample refused", or "urine sample attempted" and the reason for failure to obtain sample (child too intoxicated, out of control, etc.);**
 - b. **Do not document urine collection in the juvenile's medical chart;**
 - c. **Place one teaspoon of the preservative in each specimen cup; and**
 - d. **The juvenile number, on the urine specimen only, will be altered. The month (number 09 for September and 10 for October) will be added before each juvenile number and the day (05, 06, 07, etc.) will be added at the end of each juvenile number.**

Ex. The juvenile number 112359 would be 09011235905 if the test was obtained on September 5, 1989.

The juvenile number 99365 would be 10009936502 if the test was obtained on October 2, 1989.

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Write the altered juvenile number on the white label (provided with the specimen cups) and insert the label inside the cup.

If a child does not have a juvenile number at the time the urine is obtained, write the child's name on a blue label (provided by Juvenile Detention Center Medical Unit) and attach this label to the specimen cup. Upon receipt of the juvenile number, write the altered juvenile number on the white label, insert this label inside the cup and seal cup.

3. Obtaining the sample:

- a. Inform the child that his or her urine will be tested as part of the medical assessment.**
- b. Provide a consent form to the child and provide whatever additional information is needed to ensure the child understands the consent form. (read it verbally, answer specific questions, etc.).**
- c. Ask the child to sign the consent form.**
- d. If the child refuses to sign the consent form, indicate his or her refusal on the consent form. Urine samples will not be obtained on children who refuse to sign the consent form.**
- e. Forward all completed consent forms, through Intra-departmental mail, to the Administrator of the Research, Planning and Evaluation Unit.**
- f. Provide a specimen cup, which has been labeled accordingly, to the juvenile and instruct him or her to go to the designated area and furnish the specimen.**

The collection of the specimen does not need to be witnessed by medical or other Detention Center staff.

4. After the sample is obtained:

- a. Medical staff should practice caution and use disposable gloves when handling specimen;**
- b. Obtain the temperature of the specimen with the thermometer provided by Medical Department. Write the temperature at the bottom of the Nurse's Data Collection Form;**
- c. Seal the specimen cup, only if the completed white label is inside. Once the cap has been placed on the specimen cup it cannot be removed. If the specimen cup has a blue label, lightly place the top on the cup. Seal the specimen cup when the juvenile number has been written on the white label and inserted inside the bottle;**

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8. Go through the tunnel to the detention intake area on the third floor. Ring the buzzer for admittance.
9. Request to speak with the supervisor on duty and inform him/her of the purpose of your visit.
10. Request a copy of the "pop" list. Using the names on your copy of the intake log, find the names of test subjects on the "pop" list and locate their floor designation. (Column at the far left of the "pop" list)
11. Group test subjects by floor, testing no more than six at a time in the floor libraries.

NOTE: On some days, you may find you have less than six test subjects on a floor. For example, you may have three on the fourth floor and two on the third floor. Plan to do your testing on the floor that has the most test subjects and ask the supervisor to call the test subjects from the other floor to join the test group. (It is important to minimize the number of test subjects traveling between floors since it creates additional monitoring responsibility for the child care workers.)

12. Ask the supervisor/child care worker of each floor to allow the test subjects to come to the floor libraries to be evaluated.
13. Explain the evaluation procedure to test subjects. Explain to them that you will read the questions aloud and each of them will pencil in their answer.

If a child refuses to take the SASSI, ask the child to sit quietly while the other children finish the instrument.

If a child indicates that English is not his or her primary language, do not administer a SASSI to that child.

14. Provide each subject with a SASSI instrument, with ASAP/SASSI DATA COLLECTION FORM attached and a pencil. In cases where there is not enough table area, supplement with clipboards.
15. Put the child's altered juvenile number (see note below) in the top right hand corner of the SASSI instrument and in the space provided on the Data Collection Form. The juvenile number can be found on the Intake Log.

Note: To ensure confidentiality the juvenile number will be altered. Do not write the juvenile's name on either the SASSI or the Data Collection Form. To alter the juvenile number the month (09 for September and 10 for October) will be added before each juvenile number and the day (05, 06, 07...11, 12, etc.) will be added at the end of each juvenile number.

Example: The juvenile number 112359 will become 09011235905 if the test was administered on September 5, 1989.

The juvenile number 99365 will become 10009936502 if the test was administered on October 2, 1989.

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16. **Read each item on the SASSI slowly and clearly, watching to make sure that test subjects are marking in the appropriate spaces. After completing the SASSI, read each data collection item, clarifying any items that are unclear to the juveniles.**
17. **Collect evaluation instruments and ALL PENCILS. (Young people are not allowed to have pencils in their rooms in the Detention Center.)**
18. **Thank test subjects for their cooperation.**
19. **Notify the supervisor that the evaluations are complete so young people can be returned to their rooms.**
20. **Repeat the procedure on each floor as needed.**
21. **When all evaluations have been completed, return to the Intake desk on the second floor. (Not detention intake.)**
22. **Locate the intake log and place a check mark in GREEN ink above the intake date by the names of those having completed the SASSI. If a child refused to take the SASSI, indicate by writing NO in the same space.**
23. **In the green folder - SASSI ADMINISTRATION LOG - provide the necessary information of the SASSI instruments you have just administered.**
24. **Place completed evaluations in an inter-office envelope (found at the intake desk) and address to the training co-ordinator in the Training Unit. Ask that it be put in inter-office mail.**
25. **Replace name tag and pencils in the appropriate drawer at the intake desk.**
26. **Notify the Intake supervisor that you have completed the evaluations for that time period.**
27. **Request that receptionist "buzz you through" the exit.**

C. Medical Consultant

1. **Activities**
2. **Summary**
3. **General Evaluation of OnTrak and EMIT**
4. **Technical Evaluation of OnTrak and InstaScreen with EMIT**

C. Medical Consultant

1. Activities

a. Planning and Consultation

Planning sessions were held each Friday throughout the project. Issues were discussed which related to authority to test, mode of testing and mechanics within the Juvenile Detention Center for testing. Staff and consultants formulated plans appropriate to their responsibilities.

b. Specimen of Choice for Testing

Urine was designated as the specimen of choice. Breath will detect only alcohol and will not satisfy the objectives. Blood requires a venipuncture, is invasive and entails a risk (small) to the subject. The resulting serum sample is suitable for therapeutic drug testing but is not suitable for general drug screening for drugs of abuse. Urine is the sample of choice. Drugs are excreted primarily in the urine where they are concentrated by renal mechanisms. Urine is easy to obtain without any harm to the subject. Even with unwilling subjects, if deemed necessary, time will produce a sample.

c. Drug Screening and Self Assessment

In the best of all situations, a self assessment instrument would replace laboratory drug testing or be given in conjuncture with urine screening. Claims have been made that an instrument exists which is 98 percent effective in assessing adult drug use (SASSI). One objective of this study was to gain information on the possible validity of such an instrument by using the instrument and laboratory drug testing.

d. Drug Testing Program

1. Sample collection. *A simple procedure is the best procedure. In-house activities were kept to a minimum. The main action by the medical staff was urine collection. The collection was a standard procedure familiar to all medical practitioners so no training was required. Special urine cups were provided which prevented tampering with the specimen once the top of the container has been put onto the cup. Near the end of this study, a short session was held to determine the practicality of a simplified in-house test procedure.*

2. Drug Analysis. *The agency to conduct the testing was selected on the basis of capability to do the testing, length of experience, quality of credentials and reputation, willingness to work with this group on an experimental protocol and on a cost per test consideration. The Harris County Medical Examiner's laboratory was selected for the project.*

3. Reporting of results. *The Medical Examiner reported results on a customized basis for this project.*

e. Analysis of Results

Results of the self assessment instrument, the drug testing and other appropriate factors were conducted by an independent consultant. The medical consultant validated results of drug testing for the project and the input to the data base.

2. Summary

a. Rapid Assays

InstaScreen Cannabinoid Kit (Drug Screening Systems, Inc.). The InstaScreen is estimated to require about 20 minutes per test. The InstaScreen requires 20 ml of urine per test. Frequently only enough urine is present to complete the OnTrak, EMIT and TOXILAB (thin layer chromatography) screens, which are our primary methods. Arrangements have been made to utilize this kit where possible with the urine samples post EMIT and TLC testing. Additional arrangements have been made for further evaluation, as need, with urine samples which are being screened in the Harris County Hospital District Pathology Laboratories.

InstaScreen C.H.A.P. Kit. This kit screens for cocaine, heroin, amphetamines and phencyclidine. The manufacturer is unable to supply these kits in sufficient time to permit evaluation within this project.

OnTrak (Roche). Roche manufactures the OnTrak system for several different drugs using a separate kit for each drug. The system requires only a drop of urine and perhaps three minutes for a test. These kits will be evaluated in the Medical Examiner's Office.

b. Training of Intake Personnel

As indicated above, effective evaluation of drug testing procedures requires a good volume of urine and a fair amount of time for each sample. Because of the workload of Intake and the evaluation requirements, it was deemed *unadvisable* to evaluate at Intake. The objective of this part of the project then became to evaluate the kits outside of Intake, to determine the ability of Intake to utilize the kits and then to provide to the project information on kit performance and possible uses by Intake. To this end, the above described evaluations are being carried out. A completion date is set for 10/13/89. Brief kit utilizations will be undertaken with Intake personnel with pre-screened urine samples provided by the Medical Consultant. Observations will be made with respect to correct utilization of the kits and correctness of answers. These observations will permit statements to be made in the final report concerning the utility of the kits for drug screening and the cost effectiveness of that screening.

c. Alcohol Assays

Prior discussions have centered on drugs such as marijuana, cocaine and PCP. Alcohol, which is legal in adults, has been neglected but should be addressed in this study. All urine samples from the study have been retained in the frozen state by the Medical Examiner. At the time when the various rapid assays will be evaluated, the urine samples will be thawed and alcohol will also be determined. The urine samples have all been preserved with sodium azide and under these circumstances all of the evaluations are valid.

3. General Evaluation of OnTrak and EMIT

The only method recommended for general field use which we reviewed is OnTrak. It is sufficiently straight forward to be generally useful. The details of the procedure are fully described in the literature which is included in each kit. It should be emphasized here that the quality assurance provisions of the kit should be followed. This means that the negative urine control in the kit should be used to assure the quality of the reagents and their proper reactions.

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The EMIT and Thin Layer Chromatography (TLC) procedures are not field methods. They are to be used only by fully qualified laboratories.

Confirmation: The OnTrak (field testing) and EMIT and TLC methods (laboratory testing) are recommended as stand-alone procedures only where the information will not be used in any courtroom. These methods are deemed to be useful only in providing advisory information to case workers.

If information is to be used in court proceedings, then only the most complete and exacting confirmation testing will suffice. OnTrak and EMIT provide only a group test for amphetamine, methamphetamine and other amphetamine-like substances which may be in-over-the counter drug preparations. Definitive identification by additional procedures, such as GC/MS, are necessary. A simple TLC procedure can resolve a group of substances into individual components but still does not provide courtroom-quality evidence.

The initial screening methods, OnTrak and EMIT, are useful only in detecting the most common substances. These substances include by far the biggest volume of drug abuse cases.

Other drugs, such as methylenedioxy amphetamine, a designer drug, are best detected by a TLC procedure. The long list of drugs listed elsewhere in this document indicates the vast number of possible cases beyond OnTrak and EMIT testing. The volume of these cases is small compared to alcohol, marijuana and cocaine abuse.

4. Technical Evaluation of OnTrak and InstaScreen with EMIT

EMIT has been used in our laboratories and in the Medical Examiner's laboratory with excellent success. The EMIT method is run in an automated mode and under the circumstances has been entirely reproducible. The confirmation of the EMIT positive samples by GC/MS has been uniformly successful. However, for this study, amphetamines and THC require a special comment.

Both EMIT and OnTrak methods require only drops of urine for testing. The InstaScreen test requires approximately 20 ml. of urine for a test. EMIT, OnTraK and InstaScreen all have a 100 mg. cut-off for THC. Because of the larger volume of urine required for InstaScreen, it is considered to be about 400 times less sensitive than the other two assays.

The EMIT amphetamines test is a group test. It is sensitive to amphetamine, methamphetamine and to some over-the-counter drugs found principally in cold medications. A positive EMIT amphetamines test can be taken only by a preliminary screen. Illicit drug use can be determined only by further testing.

The confirmation of the EMIT THC test (100 ng. cut-off) has been uniformly successful in our hands. However, the confirmed level of the delta-9- tetrahydrocannabinol metabolite has often been approximately 10 mg. The sensitivity of our GC/MS procedure is approximately 10 mg. of the delta-9 metabolite per ml. of urine, a level that has been approached in some samples. In one sample, the delta-9 isomer was encountered rather than the delta-9 metabolite. The EMIT test is a group test for the various cannabinoids which are produced by the hemp plant and are psychoactive. Usually, delta-9 parent compound is the predominant isomer. It is also our experience that the marijuana metabolites are not stable in urine, even when preserved with sodium azide and stored in the cold. It is common to see urines testing positive for marijuana failing to give a positive test at the 100 ng. cut-off with EMIT after being stored for a few days in the freezer. Two samples, numbers 1370 and 30835, were on the border-line

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after being stored in the freezer for five days. Each OnTrak kit was tested successfully with the negative control. Sample number 1414 was negative by both EMIT and OnTrak and thus served as a patient urine negative control. OnTrak is a latex agglutination test in which negative samples are recognized by the full agglutination of the latex suspension by the antibody reagent. Therefore the negative control demonstrates the desired activity of the reagents. Under these conditions, the OnTrak method was considered to have 100% correlation with the EMIT procedure for fresh urine.

Table VI: Evaluation of OnTrak and InstaScreen with EMIT

SAMPLE =====	METHOD =====	COCAINE =====	BARBS. =====	THC. ===
1353	EMIT	POS	NEG	NEG
	OnTrak	POS	NEG	NEG
	INSTSCRN			NEG
1323	EMIT	POS	POS	NEG
	OnTrak	POS	POS	NEG
	INSTSCRN			NEG
1370	EMIT	POS	NEG	POS
	OnTrak	POS	NEG	CUTOFF
	INSTSCRN			NEG
1327	EMIT	POS	NEG	NEG
	OnTrak	POS	NEG	NEG
	INSTSCRN			NEG
1328	EMIT	NEG	NEG	POS
	OnTrak	NEG	NEG	POS
	INSTSCRN			NEG
1319	EMIT	POS	NEG	NEG
	OnTrak	POS	NEG	NEG
	INSTSCRN			NEG
30835	EMIT	NEG	NEG	POS
	OnTrak	NEG	NEG	CUTOFF
	INSTSCRN			NEG
30847	EMIT	POS	POS	NEG
	OnTrak	POS	POS	NEG
	INSTSCRN			NEG
1434	EMIT	POS	NEG	NEG
	OnTrak	POS	NEG	NEG
	INSTSCRN			NEG
1436	EMIT	POS	NEG	NEG
	OnTrak	POS	NEG	NEG
	INSTSCRN			NEG
1415	EMIT	POS	NEG	NEG
	OnTrak	POS	POS	NEG
	INSTSCRN			NEG
1414	EMIT	NEG	NEG	NEG
	OnTrak	NEG	NEG	NEG
	INSTSCRN			NEG
1359	EMIT	NEG	NEG	POS
	OnTrak	NEG	NEG	POS
	INSTSCRN			NEG

InstaScreen is a chemical color reaction. It is specific for the delta-9 metabolite. The InstaScreen requires a relatively large volume of urine, a filtration step and then the color reaction. It requires an extended period of time to run. Urine pigments can lengthen the filtration time and obscure the color reaction. Since subjects are usually encountered serially, both time and interference factors are serious drawbacks. The data shows that of 13 samples, four were positive for THC by EMIT but no positive reactions were obtained by InstaScreen. While the number of samples is not large, it is sufficient to make InstaScreen suspect as a mode of testing. InstaScreen is not recommended for this type of work.

D. Manufacturer Contact Information

D. Manufacturer Test Information²⁷

1. **EMIT Amphetamine Assay**
SYVA a Company, Technical Consultation Department, 900 Arastradero Road, P. O. Box 10058, Palo Alto, CA 94304. For assistance, call a Syva technical consultant toll-free at (800) 227-8994.
2. **Abuscreen OnTrak Rapid Assays for Drug Abuse,,**
Clara Puccini, Technical Services Department, Roche Diagnostic Systems, Inc, 1 Sunset Avenue, Montclair, NJ 07042-5199. Telephone (800) 526-1247.
3. **Abbott ADx System**
Mark Fisher, Product Manager, Abbot Labs, Abused Drugs and Tixicology Systems, P.O. Box 15202, Irving, TX 75015, Telephone (214) 257-6553 and (800) 527-2547.
4. **InstaScreen (Cannabanoid and C.H.A.P.)**
Drug Screening Systems, Inc., P.O. Box 579, Blackwood, NJ 08012.
5. **SASSI (Substance Abuse Subtle Screening Inventory)**
Dr. Glenn Miller, The SASSI Institute, 4403 Trailbridge Road, Bloomington, IN 47408, (812-333-6434). For information about the "Adolescent Form", and staff training sessions in effectively administering the questionnaire.
6. **Vocalyzer Test**
Dr. Harb S. Hayre, Impairment Measures, Inc., P. O. Box 19756, Houston, Texas 77224-9756. (713) 747-6753.

²⁷This is not a complete list of available tests.

E. Useful Lists of Drugs

DRUGS DETECTED BY EMIT

(1-Phenylcyclohexyl) Morpholine
 1-(1-Phenylcyclohexyl) Pyrrolidine
 1-(4-Hydroxypiperidino) Phenylcyclohexane
 1-Amphetamine
 1-[1-(2-Thienyl)-Cyclohexyl] Morpholine
 1-[1-(2-Thienyl)-Cyclohexyl] Piperidine
 1-[1-(2-Thienyl)-Cyclohexyl] Pyrrolidine
 11-Hydroxy-8-THC
 11-Hydroxy-9-THC
 11-nor-delta-8-THC-9-carboxylic acid
 11-nor-delta-9-THC-9-carboxylic acid
 3,4-methylene-dioxy methamphetamine
 3,4-methylenedioxy amphetamine
 4-Hydroxypiperidine PCP
 4-Phenyl-4-Piperidinocyclohexanol
 8-B-11-diol-delta-9-THC
 8-B-OH-Delta-9-THC
 alphenal
 amobarbital
 benzoyleogonine
 butabarbital
 butalbital
 Cannabidiol
 chlordiazepoxide
 clonazepam
 codeine
 cyclopentobarbital
 d,1-amphetamine
 d,1-methamphetamine
 d,1-ephedrine
 d-amphetamine
 d-methamphetamine
 demoxepam
 desalkiflurazepam
 diazepam
 dihydrocodeine
 ethanol
 flunitrazepam
 flurazepam
 hydrocodone
 hydromorphone
 isometheptene
 Isoxsuprine
 levorphanol
 lorazepam
 mephentermine
 morphine-3-B-D-glucuronide
 N-Desmethyldiazepam
 n;n-Diethyl-1-Phenylethylamine
 Nitrazepam
 Nulidrin
 pentobarbital
 phencyclidine
 phenmetrazine
 phenobarbital
 phentermine
 phenylpropanolamine
 pOH-Amphetamine
 secobarbital
 talbutal

GENERIC DRUGS DETECTED BY TOXILAB (TLC)

6-monoacetylmorphine	flurazepam	pheniramine
acetaminophen	glutethimide	phenmetrazine
amantadine	guaifenesin	phenobarbital
amitriptyline	haloperidol	phenolphthalein
amobarbital	hydrocodone	phenothiazine metabolites
amoxapine	hydrocortisone	phentermine
amphetamine	hydromorphone	phenylbutazone
antipyrine	hydroxyzine	phenylpropanolamine
aprobarbital	ibuprofen	phenytoloxamine
artifacts	imipramine	phenytoin
atropine	indomethacin	pindolol
barbital	isometheptene	polyethylene glycol
benzquinamide	ketamine	prednisolone
benztropine	lidocaine	procainamide
benzyl alcohol	loxapine	procaine
butabarbital	maprotiline	promethazine
butalbital	meclofenamic acid	propoxyphene
caffeine	mefenamic acid	propranolol
carbamazepine	menthol	propyxphene
carisoprodol	meperidine	pseudoephedrine
chlordiazepoxide	mephobarbital	psilocin
chlorphenesin carbamate	meprobamate	psilocybin
chlorpromazine	methadone	pyridoxine
cimetidine	methamphetamine	pyrilamine
clindamycin	methapyrilene	quinidine
cocaine	methaqualone	quinine
codeine	methocarbamol	ranitidine
cyclobenzaprine	methoxyphenamine	salicyclamide
dehydrocodeine	methylenedioxyamphetamine	secobarbital
deminhydrinate	methylprednisolone	spironolactone
desipramine	methyprylon	strychnine
dextromethorphan	metoprolol	temazepam
diacetylmorphine	molindone	terpin hydrate
diazepam	morphine sulfate	theophylline
diethylpropion	N-methyl- methylenedioxyamp	thioridazine
diflunisal	nadolol	thiothixeme
dihydrocodeine	nafcillin	thymol
diltiazem	naltrexone	timolol
dimenhydrinate	naproxen	trazodone
diphenhydramine	nicotine	triamterene
diphenhydramine	nomifensine	trifluoperazine
dipyridamole	nortriptyline	triflupromazine
disopyramide	orphenadrine	trihexyphenidyl
diltiazem	oxycodone	trihexyphenidyl metabolite
doxepin	papaverine	trimethobenzamide
doxylamine	pentazocine	trimethoprim
emetine	pentobarbital	trimipramine
erythromycin estolate	perphenazine	verapamil
erythromycin	phenacetin	zomepirac
ethylsuccinat	phenazopyridine	
ethchlorvynol	phencyclidine	
ethinamate	phendimetrazine	
fenoprofen	phenethylamine	

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DRUG INFORMATION

<u>NAME</u>	<u>TRADE NAME</u>	<u>TRIVIAL NAME</u>
ALPRAZOLAM	Xanax	
AMANTADINE	Symmetrel	
AMITRIPTYLINE	Elavil, Endep, Etrafon, Amitid, Limbitrol, Triavil	
AMOBARBITAL	Amytal, Tuinal	Amytal, barbs, blue angels, blue birds, downers, goofballs, stumblers, christmas trees, double trouble, jelly beans, tooies.
AMOXAPINE	Asendin	
AMPHETAMINE	Benzedrine, Obetrol	Speed, uppers, whites, cartwheels, white crosses, bennies
ANTIPYRINE/ PHENAZONE	Midrin, Auralgan Otic Solution	
BENZQUINAMIDE	Emete-Con	
APROBARBITAL	Alurate	Barbs, downers, etc.
ATROPINE	Atropine	
BENZTROPINE	Cogentin	
BARBITAL	None	
BUTABARBITAL	Butabell, HMB Tablets Pyridium Plus, Quibron Plus, Tedral-25, Butisol, Buticaps	Barbs, candy, goofballs, nerve pills, peanuts, stoppers, stumbler
BUTALBITAL	APC with Butalbital, Buff-A-Comp, Esgic, Fiorinal, Medigesic	Barbs, candy, goofballs, peanuts, sleepers, stoppers, stumblers
CAFFEINE	No-Doz, Cafecon, Cafacetin Cafergot, Cafermine, APC, Synalgos	
CARBAMAZEPINE	Tegretol	
CARISOPRODOL	Rela, Soma, Soma Compound	

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CHLORDIAZEPOXIDE	<i>Librium, Libritabs, SK-Lygen, Limbitrol, Librax, Menrium</i>	<i>Downs, nerve pills, tranks</i>
CHLORPHENESIN CARBAMATE	<i>Maolate</i>	
CLORAZEPATE	<i>Tranxene</i>	<i>Downs, nerve pills, tranks</i>
COCAINE		<i>Snow, blow, coke, big C,lady, nose candy, toot, base, etc.</i>
CODEINE	<i>Empirin, Tylenol</i>	<i>Painkiller, pain reliever, syrup, rabo, schoolboy</i>
CYCLOBENZAPRINE	<i>Flexeril</i>	
DEXTROMETHORPHAN	<i>Dristan Cough Formula, Vick's Formula 44D, Nyquil, Robitussin-DM and many others.</i>	
DESIPRAMINE	<i>Nopramine, Pertofrane</i>	
DIAZEPAM	<i>Valium, D-Tran E-Pam, Erital, Meval</i>	<i>Downs, nerve pills, tranks</i>
DIETHYLPROPION	<i>Tenuate, Tepanil, Dietec, D.I.P., Nobesine</i>	<i>Diet pills</i>
DIFLUNISAL	<i>Dolobid</i>	<i>Pain pill</i>
DILTIAZEM	<i>Cardizen</i>	<i>Heart medication</i>
DIHYDROCODEINE	<i>Synalgos-DC</i>	
DIMENHYDRINATE	<i>Dramamine</i>	<i>Seasick pills</i>
DIPHENHYDRAMINE	<i>Ambenyl, Benadryl</i>	<i>Allergy pills</i>
DISOPYRAMIDE	<i>Norpace</i>	<i>Heart medication</i>

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DOXYLAMINE	Vick's Formula 44 Cough Mixture, Nyquil, Unisom	Allergy pills
DOXEPIN	Sinequan, Adapin	
EMETINE	Ipecac	
EPHEDRINE	Bronkaid, Bronkotabs Nyquil, Quibron, Tedral	Asthma pills
ERYTHROMYCIN	Erythrocin, Ilosone E-Mycin, Robimycin	
ETHCHLORVYNOL	Placidyl	Dyls
ETHINAMATE	Valmid	
FENOPROFEN	Nalfon	Arthritis medicine, aspirin substitute
FLURAZEPAM	Dalmane	Sleeping pills, tranks
GLUTETHIMIDE	Doriden	CB, cibas, gibeas, "d", gorilla pills, loads, four doors
GUAIFENESIN	Robitussin, Dimetane Novahistine, etc.	Cough medicine
HALOPERIDOL	Haldol	
HEROIN		Horse, H, Harry, skag, brown, Mexican brown, smack, etc.
HYDROCORTISONE	Solu-Cortef, Hydrocortisone Tablets, etc.	Cortisone medicine
HYDROMORPHONE	Dilaudid	
HYDROXYZINE	Atarax, Vistaril Cartrax, Marax, Vistrax	Nerve pills
IBUPROFEN	Motrin, Rufen	Arthritis medicine, aspirin substitute

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ISOMETHEPTENE	Midrin, Migralam	
KETAMINE	Ketalar, Ketaject	
LIDOCAINE	Xylocaine	
LORAZEPAM	Ativan	Downs, nerve pills, tranks
LOXAPINE	Loxitane	Nerve medicine
MAPROTILINE	Ludiomil	
MEPERIDINE	Demerol	Demies, painkiller, pain reliever
MEPHOBARBITAL	Mebaral	
MEPROBAMATE	Equanil, Miltown, SK-Bamate	Downs, nerve pills, tranks
METHADONE	Dolophine	Dollies, meth, painkiller, pain reliever
METHAMPHETAMINE	Desoxyn	Speed, crystal, uppers, whites, cartwheels, white crosses, bennies, black beauties, black cadillacs
METHAPYRILENE		Sleeping or allergy pills
METHAQUALONE	Quaalude, Sopor, Mequin	Love drug, ludes, Qs, quads, 714s, sopers, sopes, wallbangers
METHOCARBAMOL	Robaxin, Robaxisal	
METHYLENEDIOXY-AMPHETAMINE		Mellow drug of America, love drug, love pill, MDA
N-METHYL-METHYLENEDIOXYAMPHETAMINE		Ecstasy (XTC), Adam
METHYLPREDNISOLONE	Medrol, Depo-Medrol, Depo-Predate, Mepred-40	Cortisone medicine
METHYPRYLON	Noludar	Downers, sleeping pills

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METOPROLOL	Lopressor, Betaloc	Blood pressure pills
MOLINDONE	Moban	
MORPHINE		
NORTRIPTYLINE	Aventyl	
NALTREXONE	Trexan	
NOMIFENSINE	Merital	
NAPROXEN	Naprosyn	Arthritis medicine, aspirin substitute
NICOTINE	3-Pyridine	
OXAZEPAM	Serax	Downs, nerve pills, tranks
OXYCODONE	Percodan, Percocet, Tylox	Painkiller, pain reliever, perkies
PAPAVERINE	Pavabid, Pavabid HP, Cerespan, Cerebid, Pavacap	Heart medication
PENTAZOCINE	Talwin, Talwin Compound	Painkiller, pain reliever, TS
PENTOBARBITAL	Nembutal, Carbrital, WANS	Barbs, downers, goofballs, nembles, nemmies, yellow jackets, sleepers, stumblers, yellow submarines
PHENACETIN	Empirin, Fiorinal, Midol, Norgesic	Painkiller
PHENAZOPYRIDINE	Axo-Sulfisoxazole, Azotrex, Urobiotic, Azo Gantanol, Azo Gantrissin, Pyridium, Suladyne	Bladder pills, cystitis pills

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PHENCYCLIDINE	PCP	Angel dust, PCP, crystal log, peace pill, sherns
PHENDIMETRAZINE	Bontril, Plegine, Bacarate, Trimstat, Prelu-2, Melfiat	Uppers, diet pills
PHENIRAMINE	Triaminic, Fiogestic, Ru-Tuss	Allergy or cold medication
PHENOBARBITAL	Antrocol, Mudrane, Quadrinal, etc.	Barbs, downers, goofballs, phennies, phenos, sleepers, stumblers, etc.
PHENMETRAZIN	Preludin	
PHENOLPHTALEIN	Agoral, Ex-lax, etc.	
PHENOTHIAZINE METABOLITES	Chlorpromazine (Thorazine), Vesprin, Temaril, Stelazine, Phenergan, Compazine	
PHENTERMINE	Fastin, Ionamin, Teramine	Diet pills
PHENYLBUTAZONE	Butazolidin, Azolid	Butes
PHENYLPROPANO-LAMINE	Sinutab, Allerest, Contact, Ornade, Triaminic, Dexatrim, Prolamine, Hungrex, etc.	Diet pills, PPA
PHENYLTOLOXAMINE	Sinubid	
PHENYTOIN	Dilantin	Epilepsy medicine
PINDOLOL	Visken	
PREDNISOLONE	Acetate, Predate, etc.	Cortisone medicine
PROCAINAMIDE	Pronestyl	Heart regulator
PROCAINE	Novacaine	

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PROPOXYPHENE	Darvon, Darvocet-N, Darvon Compound	Painkiller, pain reliever
PROPRANOLOL	Inderal	Blood pressure pills, heart pills
PSEUDOEPHEDRINE	Sudafed	
PSILOCIN		Magic mushrooms, shrooms
PYRILAMINE	Excedrin, Somnex, Triaminic, Napril	Allergy pills, sleeping pills
RANITIDINE	Zantac	
SECOBARBITAL	Seconal	Barbs, bullets, candies, downers, goofballs, pink ladies, reds, seccy, sleepers, stumblers, etc.
SPIRONOLACTONE	Aldactone	Water pills
STRYCHNINE		Rat poison
TERPIN HYDRATE	Codeine Elixer, etc.	G.I. gin
THEOPHYLLINE	Bronkaid, etc.	Asthma medicine
THIORIDAZINE	Mellaril, Thioril	
TRIAMTERENE	Dyrenium, Dyazide	Water pills
THIOTHIXENE	Navane	
TRIAZOLAM	Halcion	Sleeping pill, sedative
TRAZODONE	Desyrel	
TRIMETHOBENZAMIDE	Tigan	Nausea medicine
TRIMETHOPRIM	Bactrim, Proloprim, Septra, Trimplex	
TRIMIPRAMINE	Surmontil	
TRIPLENNAMINE	PBZ, PBZ-SR, etc.	Allergy pills, B's, blues

***IV. Appendix C - Glossary of Substance
Abuse Program Terms***

APPENDIX C

GLOSSARY

Substance Abuse Program Terms

- Chain-of-Custody -** *the process by which every step in the collection of a urine sample, transporting it to the lab, placing it on testing equipment and recording and reporting the result, is initiated by a specific procedure and documented to provide absolute assurance that a given sample belongs to a given individual.*
- Collection Facility -** *the place established for the purpose of gathering the urine sample(s), usually a lavatory.*
- Confidentiality -** *"to be intrusted with the confidence of another or with his secret affairs or purposes; to be intended to be held in confidence or kept secret." (Legal definition).*
- Confirmation of results -** *All urine samples reported positive with one test should be analyzed by at least one other and different method. Both tests must give a positive result before the results can be used in legal proceedings.*
- Cross-reaction -** *the possibility for substances other than the drug in question to give a positive result in a screening assay.*
- Data Collection Instrument -** *the form(s) used to collect all pertinent demographic information about persons either volunteering or not submitting to a urine test.*
- Detection or Retention Period -** *the length of time a drug or metabolite (product of the process of metabolism) can be found in bodily fluids.*
- Drug Urinalysis -** *the examination of urine samples by various technical methods to determine the presence or absence of specified drugs or their metabolized traces.*
- Eligibility Criteria -** *those factors which determine who will and who will not be included in a drug testing/screening program.*

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**False Positive/
False Negative -**

false positive means that a drug-free sample is reported positive for drugs due to either a testing or an administrative error. A false negative means that such errors cause a positive sample to be reported as drug free.

**Fully Informed
Consent -**

a program client has been told of the nature and consequences, including all the uses of the testing, of giving a urine specimen and agrees to provide the specimen.

Identification -

the act of establishing whether an offender is eligible to participate in the drug testing program.

Informal Adjustment - is a program aimed at self-rehabilitation, short-term supervision, diversion and prevention from further involvement in the juvenile justice system. Entered into voluntarily, it provides a second chance for those children with limited police contact.

**Infringement of
Privacy -**

the legal definition as it applies to the results of drug testing would be the "the unauthorized release of the results to any person."

Limits of Detection - the lowest concentration of a drug that a test is able to detect.

Lockstep Method - a first test followed by a second test procedure.

**Metabolite
Metabolism -**

after a drug is taken, it is soon distributed throughout the bloodstream. As the blood passes through the liver and other parts of the body again and again, the drug encounters numerous enzyme (complex protein) systems that convert most of the drug into one or more end products called metabolites.

**Periodic or Random
Testing -**

collecting client urine specimens for testing without the client's prior knowledge of when a specimen will be requested.

Screening -

the systematic examination of all offenders at particular points in the justice system process to determine their potential suitability or eligibility for a drug testing program.

**Secondary
Confirmation -**

the second testing using a different method of urine test, used to confirm the positive results of a first urine test.

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**Self-assessment
Instruments -**

surveys, questionnaires or tests by which program clients respond to questions and/or statements and assess the level of their own and their family's use, abuse or non-use of drugs.

**Specification (of
specimen
collection) -**

**being able to distinguish one drug from another
and thus correctly identify the drug(s) in each and every urine specimen.**

Test Documentation - complete test results are recorded on an appropriate reporting form.

Testing Frequency - how often the client will be asked (voluntary) or required (mandatory) to participate in a urine specimen test.

Urine Drug Assay - the analysis of a urine sample to determine the presence, absence or quantity of one or more drugs.

*V. Appendix D - A Brief Description
of Drug Tests Reviewed*

A. Laboratory Tests

B. On-Site Tests

A Brief Description of Drug Tests Reviewed

1. Laboratory Tests

a. Immunoassay (Use of antibodies or proteins to detect the presence of drugs).

1. **Enzyme Immunoassay (EMIT):** The EMIT drug abuse assays are rapid, semi-quantitative immunochemical tests which, by assay of the respective urinary drug or drug metabolites, detect the use of the following drug categories (see Table below). These assays are designed as a primary screening test to detect positive samples in a given population. A negative result is strong evidence that the drugs in question are not present in excess of the detection limit of the assay.

<u>DRUG</u>	<u>CUT-OFF LIMITS</u>
<i>Amphetamines</i>	300 mg/ml
<i>Barbiturates</i>	300 mg/ml
<i>Benzodiazepine</i>	300 mg/ml
<i>Benzoylcegonine (Cocaine Metabolite)</i>	300 mg/ml
<i>Cannabinoids (THC, Marijuana)</i>	100 mg/ml
<i>Methadone</i>	300 mg/ml
<i>Methaqualone (Quaaludes)</i>	300 mg/ml
<i>Opiates</i>	300 mg/ml
<i>Phencyclidine (PCP, Angel Dust)</i>	75 mg/ml

Other than Alcohol

The EMIT procedure is a two reagent immunochemical competition reaction. An antibody, Ab, is developed for a particular drug. The antibody must have a very high affinity for the drug in question. It must also have a very low affinity for other drugs. In other words, it must be very specific for the drug in question. A solution of the antibody is one of the reagents. The other reagent (this is a two-reagent test) contains the drug in question in a special form and biochemicals which are necessary for the reaction. The special form of the drug is that in which it is covalently linked to an enzyme, glucose-6-

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phosphatedehydrogenase, GPHD, to form a reagent, Dr-GPDH. GPDH transfers a hydrogen atom from glucose=6=phosphate (part of the reagent) to NAD, a biochemical which is part of the reagent, to form NADH, the reduced form of NAD. The formation of NADH can be conveniently observed in the spectrophotometer at a wave length of 340 nanometers. Thus, the rate of appearance of NADH is a measure of the rate of the reaction. If the antibody, reagent 1, reacts to form Ab-Dr-GPDH, the enzymatic reaction to form NADH is largely inhibited. If a drug is present in the sample urine, the Ab will preferentially react with the drug to form Ab-Dr and some of the Dr-GPDH will be available for the formation of NADH and this will be seen as a greater rate of reaction. The reaction is curvilinear and so sophisticated mathematics and instrumentation are needed to make the reaction useful.

In brief, the EMIT reaction is as follows. Sample, biochemicals, and a specific antibody reagent are mixed together. The reaction is observed in a spectrophotometer. An answer is obtained for the particular drug content of the sample from a calibration curve. The instrument is calibrated by running known samples. Unknowns are run along with quality control samples to assure the validity of the results.

For Alcohol

The EMIT test for alcohol requires the enzyme, alcohol dehydrogenase, AlcDH and NAD. AlcDH transfers a hydrogen atom from ethanol in the sample to NAD to form NADH. The reaction is monitored in the spectrophotometer. The reaction is linear and so the rate of reaction is proportional to the alcohol content of the sample. The answer is obtained from a standard curve. Controls are run with the reaction.

- 2) **Fluorescence Polarization Immunoassay (FPIA) - uses a substance that "glows" or fluoresces under polarized light to indicate drug presence.**
- 3) **Radio Immunoassay (RIA) - uses a radioactive substance to react with drugs present and, following the reaction, measures the amount of radioactivity.**

b. Chromatography - (separates substances such as drugs in urine by causing them to attach to some type of material or particles.)

- 1) **Gas Chromatography/Mass Spectrometry (GC/Ms) - uses a gas such as helium or nitrogen to transport a urine sample to a column where the materials are to be measured and separated. The gas then transports the separated components onto a detector (mass spectrometer) for identification and measurements. This test is reported and acknowledged to be the most sensitive, specific, accurate and reliable method of confirming the presence of drugs of abuse in biological samples.**
- 2) **Thin Layer Chromatography (TLC): Thin Layer Chromatography, TLC, is carried out on glass fiberpaper, grams, about 5x14 cm. in size. The paper is impregnated with silicic acid and with reagents which aid in the identification of drugs. Two lanes on each side of the strip carry standards (four lanes total) and two lanes in the middle can carry an extract of the unknown sample. All substances, standard and unknown, are spotted in their individual areas about two centimeters from the bottom of the gram. The gram is placed in a small jar along with a little appropriate solvent. The solvent creeps up the gram by capillary action. The drugs are carried with the solvent. Individual drugs are carried at different rates. So after migration**

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up the gram, standards and unknown drugs may be found at different locations in their lanes on the gram. Four different procedures, color reactions and fluorescence, are applied to visualize the drugs. For a drug to be identified all of these points must be satisfied. The unknown must have migrated up the gram to the correct location as compared to the standards. All color reactions must correspond to the appropriate standard. Thus for an identification, five check points must all be in agreement with the appropriate standard. If any of the check points do not agree an identification is not achieved.

TLC is a little less sensitive than the EMIT procedure so, generally, a little higher level of drug is required for a positive detection. EMIT is very specific for a drug or a particular class of drugs. EMIT detects only a limited number of drugs. TLC is extremely broad in its application and can detect a very, very large number of compounds (drugs). TLC and EMIT are therefore complementary to each other in detecting the presence of drugs in a sample. One of the EMIT tests detects barbiturates as a class.

3) High Pressure Liquid Chromatography is another laboratory test which may be used.

2. On-Site Tests

a. Urinalysis Test

- 1) **Roche (OnTrak):** OnTrak is a product of the Roche Company. It is one of Roche's familiar latex agglutination tests. An OnTrak test is specific for a given drug. The test utilizes a colloidal suspension of latex particles carrying the drug in question. If the antibody directed against that drug is added to the milky suspension of latex, the antibody will react with the drug causing a cross linking of the latex particles. The result will be a clotting of the latex particles. That result is a negative test. If the sample, which is first placed in the reaction vessel, contains the particular drug, the antibody will be neutralized, the latex particles will remain in the colloidal state, the appearance will remain milky and the test will be scored as positive.
- 2) **InstaScreen (C.H.A.P)** - a test kit method which screens for cocaine, heroin, amphetamines and phencyclidine (PCP), using a chemical color reaction. Manufactured by Drug Screening System, Inc.

b. Psychometric or Self-Assessment Test

- 1) **SASSI** - the "Substance Abuse Subtle Screening Inventory" is an 80-question pencil test that collects both an individual and family social history related to substance use, abuse, etc. For the procedures to use in administering the SASSI, see Appendix B; for a sample SASSI form, see Appendix E.

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3. New Technology

Vocalizer (Voice Test): The voice test is designed to determine if a subject's normal abilities are impaired by chemical agents. In other words, is a subject "under the influence"? The test is totally computer driven. The phone number of the computer is dialed into the phone system. The computer answers and asks the subject to say certain words which are recorded after the beep. The test is completed after several such responses. The computer then analyzes the responses and makes a determination of the status of the subject. It is assumed that a sophisticated computer program analyzes the data to obtain the answer. The answer is a number from 0 to 4, with anything under 2 being considered non-impaired. The developer would not divulge the nature of the analysis because of a pending patent application.

The tests listed in this Appendix offer a number of options: however, this is not a complete description of what is available for your use.

A REMINDER: When you select a test or tests to be used either on site or in a laboratory, remember to consider the impact on: program cost, response time, and staffing.

*VI. Appendix E - Samples of
Suggested Forms*

APPENDIX E

IV. APPENDIX: FORMS

A. Used in ASAP

- Exhibit A - Harris County Juvenile Probation Department Drug Testing Consent Form**
- Exhibit B - Agreement of Participation and Medical / Psychological / Psychiatric Authorization Form**
- Exhibit C - ASAP Weekly Summary (Daily)**
- Exhibit D - ASAP Weekly Summary (Monthly)**
- Exhibit E - Harris County Juvenile Detention Center Medical Department Drug Testing Log**
- Exhibit F - ASAP/Nursing Data Collection Instrument**
- Exhibit G - ASAP/SASSI Data Collection Instrument**
- Exhibit H - SASSI Adolescent Form & Risk Prediction Scales**
- Exhibit I - SASSI Administration Log**
- Exhibit J - ASAP Data Collection Instrument (Booking Form)**
- Exhibit K - ASAP Data Collection Instrument/Vocalyzer**
- Exhibit L - Harris County Juvenile Probation Drug Testing Study Codebook**
- Exhibit M - Intake Log Sheet**

HARRIS COUNTY JUVENILE PROBATION DEPARTMENT
DRUG TESTING CONSENT FORM

As part of my medical examination I have been requested to provide a urine specimen. By signing this form I am agreeing to provide a urine specimen. I have been informed verbally and by this writing of the following:

1. I understand that as a minor I may consent to examination, treatment and counseling for chemical addiction, dependency, or abuse if I choose to do so.
2. I am voluntarily providing a specimen for drug testing purposes.
3. The results of the test will be confidential and secret. The results will never be used against me in any way.
4. The urine specimen will be given by me in private and no one will observe me.

SIGNED this _____ day of _____, 1989.

JUVENILE

HARRIS COUNTY JUVENILE DEPARTMENT
REPRESENTATIVE

JUVENILE NUMBER

**AGREEMENT OF PARTICIPATION AND
MEDICAL/PSYCHOLOGICAL/PSYCHIATRIC AUTHORIZATION**

This agreement is offered in the recognition that a family is a social system. It is believed by this Department that resolution of problems within a family can come about effectively when the family works together toward solutions.

I/we, therefore, agree to cooperate with all phases of treatment or services which are recommended to my/our child by the Juvenile Court, including counseling and educational programs.

I hereby give my consent for the County Juvenile Probation Department to administer or to have administered to _____, date of birth _____, the following services:

- 1. Medical - Including but not limited to physical examinations, blood and urine tests and treatment necessary due to illness or accident.
- 2. Psychiatric - Evaluation and treatment.
- 3. Psychological - Evaluation and treatment.
- 4. Drug Testing - Evaluation and treatment.

I understand that a copy of this authorization is as valid as the original. I also designate the following telephone numbers at which I may be contacted in the event of an emergency:

Signature of Parent/Guardian

Signature of Child

Date

Witness

Witness

ASAP WEEKLY SUMMARY
WEEK

	SUN	MON	TUES	WED	THUR	FRI	SAT
CURRENT OFF:							
PERSONS							
PROPERTY							
DRUGS							
RUNAWAY							
OTHER							
DRUGS: YES							
NO							
PRIOR REF: YES							
NO							
PRIOR OFFENSE:							
PERSONS							
PROPERTY							
DRUGS							
RUNAWAY							
OTHER							
PROBATION: YES							
NO							
CONSENT: YES							
REFUSED							
NOT ABLE TO TEST							
DRUG: YES							
NO							
UNDER INFL: YES							
NO							
INSTASCREEN 1:							
YES							
NO							
INSTASCREEN 2:							
YES							
NO							

	SUN	MON	TUES	WED	THUR	FRI	SAT
AGE: 13							
14							
15							
16							
17							
SEX: MALE							
FEMALE							
RACE: WHITE							
BLACK							
HISPANIC							
ORIENTAL							
OTHER							
SCHOOL PERF:							
AT GRADE							
UNDER GRADE							
DROPPED OUT							
STUDENT: GOOD							
AVERAGE							
BELOW AVER.							
FAILING							
PARENTS' MARITAL STAT:							
MARRIED							
DIVORCED							
SEPARATED							
SINGLE							
WIDOW/WIDOWER							
LIVING ARRANG:							
BIO PARENTS							
MOTHER							
FATHER/STEPM							
FATHER							
MOTHER/STEPF							
RELATIVES							

	SUN	MON	TUES	WED	THUR	FRI	SAT
GUARDIAN/FOST							
OTHER							
MOTHER:EMPL							
NOT EMPLOYED							
FATHER:EMPL							
NOT EMPLOYED							
FAMILY:							
DETEN/PRISON							
PROB/PAROLE							
FRIENDS:							
DETEN/PRISON							
PROB/PAROLE							
ALCOHOL USE:							
NEVER							
ONCE OR TWICE							
WEEKLY							
DAILY							
DRUG USE:NEVER							
ONCE OR TWICE							
WEEKLY							
DAILY							
LANGUAGE:ENG							
SPANISH							
OTHER							
SASSI:FINE							
ANN DYED							
PROTEST							
FAM DRINK:YES							
NO							
FAM DRUG:YES							
NO							
EMIT:ALCOHOL							
AMPHETAMINES							
BARBITURATES							

Appendix E

EXHIBIT C

	SUN	MON	TUES	WED	THUR	FRI	SAT
COCAINE							
MARIJUANA							
PHENCYCLIDINE							
OPIATES							
BENZODIAZEPINE							
OTHER							
THIN LAYER: YES							
NO							

**ASAP WEEKLY SUMMARY
MONTH:**

	WEEK1	WEEK2	WEEK3	WEEK4	WEEK5	TOTAL
CURRENT OFF:						
PERSONS						
PROPERTY						
DRUGS						
RUNAWAY						
OTHER						
DRUGS: YES						
NO						
PRIOR REF: YES						
NO						
PRIOR OFFENSE:						
PERSONS						
PROPERTY						
DRUGS						
RUNAWAY						
OTHER						
PROBATION: YES						
NO						
CONSENT: YES						
REFUSED						
NOT ABLE TO TEST						
DRUG: YES						
NO						
UNDER INFL: YES						
NO						
INSTASCREEN 1:						
YES						
NO						
INSTASCREEN 2:						
YES						
NO						

		*****SASSI*****					
		WEEK1	WEEK2	WEEK3	WEEK4	WEEK5	TOTAL
AGE:	13						
	14						
	15						
	16						
	17						
SEX:	MALE						
	FEMALE						
RACE:	WHITE						
	BLACK						
	HISPANIC						
	ORIENTAL						
	OTHER						
SCHOOL PERF:							
	AT GRADE						
	UNDER GRADE						
	DROPPED OUT						
STUDENT:	GOOD						
	AVERAGE						
	BELOW AVER.						
	FAILING						
PARENTS'							
MARITAL STAT:							
	MARRIED						
	DIVORCED						
	SEPARATED						
	SINGLE						
	WIDDOW/WIDOWER						
LIVING ARRANG:							
	BIO PARENTS						
	MOTHER						
	FATHER/STEPM						
	FATHER						
	MOTHER/STEPF						
	RELATIVES						

	WEEK1	WEEK2	WEEK3	WEEK4	WEEKS	TOTAL
GUARDIAN/FOST						
OTHER						
MOTHER:EMPL						
NOT EMPLOYED						
FATHER:EMPL						
NOT EMPLOYED						
FAMILY:						
DETEN/PRISON						
PROB/PAROLE						
FRIENDS:						
DETEN/PRISON						
PROB/PAROLE						
ALCOHOL USE:						
NEVER						
ONCE OR TWICE						
WEEKLY						
DAILY						
DRUG USE:NEVER						
ONCE OR TWICE						
WEEKLY						
DAILY						
LANGUAGE:ENG						
SPANISH						
OTHER						
SASSI:FINE						
ANNOYED						
PROTEST						
FAM DRINK:YES						
NO						
FAM DRUG:YES						
NO						
EMIT:ALCOHOL						
AMPHETAMINES						
BARBITURATES						

Appendix E

EXHIBIT D

	WEEK1	WEEK2	WEEK3	WEEK4	WEEK5	TOTAL
COCAINE						
MARIJUANA						
PHENCYCLIDINE						
OPIATES						
BENZODIAZEPINE						
OTHER						
THIN LAYER: YES						
NO						

ASAP/NURSING DATA COLLECTION INSTRUMENT

JUVENILE NUMBER: _ _ - _ _ - _ _ - _ _ - _ _

DATE TESTED: _ _ - _ _ - _ _ **TIME:** _ _ : _ _ : _ _
(MILITARY TIME)

I. Juvenile Consent:

- 1. Consent given
 - 2. Refused
 - 3. Not able to test at all. Please state reason not able to test. _____
-

II. Was youth on a prescription drug at the time of the test?

- 1. Yes
- 2. No

III. Was youth under the influence of an illegal substance, at the time of admission?

- 1. Yes
- 2. No

IV. Instascreen 1 results:

- 1. Yes
- 2. No

V. Instascreen 2 results:

- 1. Yes
- 2. No

VI. Temperature of specimen: _____

ASAP/SASSI DATA COLLECTION INSTRUMENT

JUVENILE NUMBER: _____

DATE TESTED: _____ TIME: _____ (MILITARY TIME)

THANK YOU FOR YOUR COOPERATION IN THE COLLECTION OF THIS DATA. YOUR RESPONSES WILL BE KEPT STRICTLY CONFIDENTIAL.

1. Please indicate in the spaces provided: Age ___ Sex ___
2. What is your race? ___ Black ___ Hispanic ___ Oriental ___ Other ___ White
3. How would you describe your school performance?
___ At grade level ___ Not at grade level ___ Dropped out
4. What kind of student are you? ___ Good ___ Average ___ Below Average ___ Failing
5. What is the marital status of your parents?
___ Married ___ Divorced ___ Separated ___ Single ___ Widow/Widower
6. Which of these items best describes your living arrangement?
___ Living with biological parents ___ Living with mother only
___ Living with father/stepmother ___ Living with father only
___ Living with mother/stepfather ___ Living with relative
___ Living with guardian or foster care
7. Is your mother: ___ Employed ___ Not employed
8. Is your father: ___ Employed ___ Not employed
9. How many people are living in your house? ___
10. Are any members of your family:
___ In detention or in prison ___ On probation/parole
11. Are any of your friends: ___ In detention or in prison ___ On probation/parole
12. In the past 60 days have you used alcohol?
___ Never ___ Once or twice ___ Weekly ___ Daily
13. In the past 60 days have you used drugs?
___ Never ___ Once or twice ___ Weekly ___ Daily
14. What is the language most frequently used in your home?
___ English ___ Spanish ___ Other
15. How did you feel about the Sassi Test that you just completed?
___ Fine ___ Annoyed ___ No response
16. Does anyone in your family have a drinking problem?
___ Yes ___ No
17. Does anyone in your family have a drug problem?
___ Yes ___ No

ADOLESCENT FORM

SASSI

Appendix E

If a statement is TRUE or MOSTLY TRUE for you, fill in the square in the column headed T, that is, T F
 If a statement is FALSE or MOSTLY FALSE for you, fill in the square in the column headed F, that is, F T
 Please try to answer all questions

Fill in this way.
 Not like this.



- | T | F | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | PEOPLE USUALLY LIKE TO HELP OTHERS. |
| <input type="checkbox"/> | <input type="checkbox"/> | I USUALLY "GO ALONG" AND DO WHAT OTHERS ARE DOING. |
| <input type="checkbox"/> | <input type="checkbox"/> | AT LEAST ONE OF MY PARENTS WAS OFTEN VERY SAD, ANXIOUS, OR UNHAPPY WHEN I WAS A CHILD |
| <input type="checkbox"/> | <input type="checkbox"/> | I HAVE NEVER BEEN IN TROUBLE WITH THE PRINCIPAL OR WITH THE POLICE. |
| <input type="checkbox"/> | <input type="checkbox"/> | I AM ALWAYS WELL BEHAVED IN SCHOOL. |
| <input type="checkbox"/> | <input type="checkbox"/> | MY TROUBLES ARE NOT ALL MY FAULT. |
| <input type="checkbox"/> | <input type="checkbox"/> | I HAVE NOT LIVED THE WAY I SHOULD |
| <input type="checkbox"/> | <input type="checkbox"/> | I CAN BE FRIENDLY |
| <input type="checkbox"/> | <input type="checkbox"/> | I DO NOT LIKE TO |
| <input type="checkbox"/> | <input type="checkbox"/> | SOMETIMES I HAVE |
| <input type="checkbox"/> | <input type="checkbox"/> | AT TIMES I FEEL WOR |
| <input type="checkbox"/> | <input type="checkbox"/> | EVERYTHING SEEMS |
| <input type="checkbox"/> | <input type="checkbox"/> | MY FATHER USUALLY |
| <input type="checkbox"/> | <input type="checkbox"/> | I HAVE HAD DAYS, WEEKS, OR MONTHS WHEN I FEEL WORSE BECAUSE I JUST WASN'T |
| <input type="checkbox"/> | <input type="checkbox"/> | I ALWAYS LISTEN CAREFULLY. |
| <input type="checkbox"/> | <input type="checkbox"/> | I LIKE TO OBEY THE RULE |
| <input type="checkbox"/> | <input type="checkbox"/> | I HAVE WANTED TO RUN AWAY |
| <input type="checkbox"/> | <input type="checkbox"/> | I OFTEN FEEL THAT STRANGERS |
| <input type="checkbox"/> | <input type="checkbox"/> | I OFTEN FEEL SICK TO MY STOMACH |
| <input type="checkbox"/> | <input type="checkbox"/> | I HAVE TRIED TO STAY AWAY FROM |
| <input type="checkbox"/> | <input type="checkbox"/> | SOME CROOKS ARE SO CLEVER |
| <input type="checkbox"/> | <input type="checkbox"/> | MY SCHOOL TEACHERS HAVE |
| <input type="checkbox"/> | <input type="checkbox"/> | I HAVE NEVER DONE ANYTHING |
| <input type="checkbox"/> | <input type="checkbox"/> | I HAVE SOMETIMES DRUNK TOO MUCH |
| <input type="checkbox"/> | <input type="checkbox"/> | MUCH OF MY LIFE IS BORING. |
| <input type="checkbox"/> | <input type="checkbox"/> | SOMETIMES I WISH I WERE MORE INTERESTING |
| <input type="checkbox"/> | <input type="checkbox"/> | SOMETIMES I AM NO GOOD FOR ANYONE |
| <input type="checkbox"/> | <input type="checkbox"/> | I BREAK MORE RULES THAN MOST PEOPLE MY AGE. |

- | T | F | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | IF SOME FRIENDS AND I WERE IN TROUBLE TOGETHER, I WOULD RATHER TAKE ALL THE BLAME THAN TELL ON THEM. |
| <input type="checkbox"/> | <input type="checkbox"/> | SWEEPING STATEMENTS HAVE BECOME A SERIOUS PROBLEM IN OUR COUNTRY. |
| <input type="checkbox"/> | <input type="checkbox"/> | IT IS ALWAYS WRONG WITH MY MEMORY. |
| <input type="checkbox"/> | <input type="checkbox"/> | SOMEONE IS ALWAYS |
| <input type="checkbox"/> | <input type="checkbox"/> | LEADING ME |
| <input type="checkbox"/> | <input type="checkbox"/> | TO BREAK THE MOST IMPORTANT RULE. |
| <input type="checkbox"/> | <input type="checkbox"/> | I HAVE DONE THINGS I DIDN'T REMEMBER LATER. |
| <input type="checkbox"/> | <input type="checkbox"/> | EVERYTHING I DO. |
| <input type="checkbox"/> | <input type="checkbox"/> | IS DONE TOO MUCH OR TOO OFTEN. |
| <input type="checkbox"/> | <input type="checkbox"/> | IS THE CAUSE OF MY TROUBLE. |
| <input type="checkbox"/> | <input type="checkbox"/> | REPUTATIONS. |
| <input type="checkbox"/> | <input type="checkbox"/> | IS WHAT THEY WANT. |
| <input type="checkbox"/> | <input type="checkbox"/> | IS |
| <input type="checkbox"/> | <input type="checkbox"/> | THAT I FELT I DIDN'T NEED SLEEP |
| <input type="checkbox"/> | <input type="checkbox"/> | WHEN I SHOULD HAVE BEEN WORKING. |
| <input type="checkbox"/> | <input type="checkbox"/> | YOU DON'T TREAT ME RIGHT. |
| <input type="checkbox"/> | <input type="checkbox"/> | AS I AM SUPPOSED TO. |
| <input type="checkbox"/> | <input type="checkbox"/> | FOR A STOMACH ACHE. |
| <input type="checkbox"/> | <input type="checkbox"/> | IS RESTLESS OR JUMPY. |
| <input type="checkbox"/> | <input type="checkbox"/> | I HAVE NEGLECTED SCHOOL WORK BECAUSE OF DRINKING OR USING DRUGS. |
| <input type="checkbox"/> | <input type="checkbox"/> | I HAVE TAKEN A DRINK IN THE MORNING TO STEADY MY NERVES OR TO GET RID OF A HANGOVER. |
| <input type="checkbox"/> | <input type="checkbox"/> | I HAVE OFTEN FELT BAD OR SCARED BECAUSE OF THE DRINKING OR DRUG USE OF SOMEONE IN MY FAMILY. |
| <input type="checkbox"/> | <input type="checkbox"/> | SOMETIMES I FEEL THAT MY DRUG USE OR DRINKING IS KEEPING ME FROM GETTING WHAT I WANT OUT OF LIFE. |
| <input type="checkbox"/> | <input type="checkbox"/> | I RARELY TALK ABOUT MY REAL FEELINGS OR WORRIES WITH EITHER MY FRIENDS OR MY FAMILY. |

NOTE

TO OBTAIN SASSI MATERIALS AND FURTHER INFORMATION, PLEASE CONTACT:
 DR. GLENN MILLER
 THE SASSI INSTITUTE
 4403 TRAILBRIDGE ROAD
 BLOOMINGTON, INDIANA 47408
 (812) 333-6434

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EXHIBIT H

Name _____ Age _____ Sex _____ Marital Status _____

Last school grade completed _____

(PLEASE CONTINUE ON)
 REVERSE SIDE

IT IS ILLEGAL TO REPRODUCE THIS FORM

*These items are taken from the Psychological Screening Inventory Copyright © 1968 by Richard I. Lanyon, Ph.D. and are used here by permission.

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EXHIBIT J

APPENDIX E

ASAP DATA COLLECTION INSTRUMENT (BOOKING)

(PLEASE PROVIDE THE FOLLOWING INFORMATION AT THE TIME OF BOOKING.)

JUVENILE NUMBER: _____

DATE: _____ TIME: _____ (Military Time)

Residential Location Code (Keymap): _____

OFFENSE HISTORY:

I. Current referral's most serious offense (Please Check one):

- | | |
|--|-------------------------------------|
| <input type="checkbox"/> 1. Crime against Persons | <input type="checkbox"/> 4. Runaway |
| <input type="checkbox"/> 2. Crime against Property | <input type="checkbox"/> 5. Other |
| <input type="checkbox"/> 3. Drugs | |

II. For the current referral please indicated whether or not drugs were involved in any way? Yes No

III. Number of prior referrals (do not include administrative referrals): _____

IV. Count the total number of offenses listed on all referrals and report the totals by the following categories (do not include administrative actions):

- | | |
|--|-------|
| <input type="checkbox"/> 1. Crime against Persons | _____ |
| <input type="checkbox"/> 2. Crime against Property | _____ |
| <input type="checkbox"/> 3. Drugs | _____ |
| <input type="checkbox"/> 4. Runaway | _____ |
| <input type="checkbox"/> 5. Other | _____ |

.....
If at the time of booking you are unable to secure the child's juvenile number please provide the child's name where indicated below. When this form is complete please forward to research.

Juvenile's Name: _____

ASAP DATA COLLECTION INSTRUMENT (BOOKING-VOCALYZER)

(PLEASE PROVIDE THE FOLLOWING INFORMATION AT THE TIME OF BOOKING.)

JUVENILE NUMBER: _____

DATE: _____ TIME: _____ (Military Time)

Residential Location Code (Keymap): _____

OFFENSE HISTORY:

I. Current referral's most serious offense (Please Check one):

- 1. Crime against Persons
- 2. Crime against Property
- 3. Drugs
- 4. Runaway
- 5. Other

II. For the current referral please indicated whether or not drugs were involved in any way? Yes No

III. Number of prior referrals (do not include administrative referrals): _____

IV. Count the total number of offenses listed on all referrals and report the totals by the following categories (do not include administrative actions):

- 1. Crime against Persons _____
- 2. Crime against Property _____
- 3. Drugs _____
- 4. Runaway _____
- 5. Other _____

VOCALYZER TESTING (IDENTIFICATION NUMBER _____)

(All children being booked into detention over age of 13 eligible)

CHILD REFUSED TEST _____ CHILD AGREED TO TEST _____ IMPAIRMENT _____

If at the time of booking you are unable to secure the child's juvenile number please provide the child's name where indicated below. When this form is complete please forward to research.

Juvenile's Name:

HARRIS COUNTY JUVENILE PROBATION
DRUG TESTING STUDY CODEBOOKASAP INTAKE INSTRUMENT

<u>Description</u>	<u>Var-name</u>	<u>Code</u>	<u>Column</u>	<u>Data</u>
1. ID Number	id	7-digit juvenile number	1-7	_____
2. Date tested (Day and month at intake)	datei	4 digits (Example: <u>0 9 0 5</u> or <u>1 0 0 5</u>)	8-11	_____
3. Time tested at intake	timei	24 hours (military)	12-13	_____
4. Residential location	loc		14	_____
5. Current most serious	coff	1=persons 2=property 3=drugs 4=runaway 5=other	15	_____
6. Were drugs involved?	drugi	0=no 1=yes	16	_____
7. Number of prior referrals	prev	actual number	17-18	_____
8. Number of offenses - persons	per	actual number	19	_____
9. Number of offenses - property	prop	actual number	20-21	_____
10. Number of offenses - drugs	drug	actual number	22	_____
11. Number of offenses -- runaway	runa	actual number	23-24	_____
12. Number of offenses - other	oth	actual number	25-26	_____
13. Currently on probation?	prob	0=no 1=yes	27	_____

26. Used alcohol?	alc	1=never 2=once or twice 3=weekly 4=daily 5=weekends only	43	_____
27. Used drugs?	drugg	1=never 2=once or twice 3=weekly 4=daily 5=weekends only	44	_____
28. Language in home	lang	1=English 2=Spanish 3=other	45	_____
29. Feel about SASSI	atts	1=fine 2=annoyed 3=no response	46	_____
30. Family drinking problem	famal	0=no 1=yes	47	_____
31. Family drug problem	fam dr	0=no	48	_____
32. SASSI raw score	SARS	raw score	49-50	_____
33. SASSI code score	SASSI	1=abuser 2=probable abuser 3=not likely	51	_____

ASAP NURSING INSTRUMENT

34. Date of urine test	dateu	4 digits (Example: <u>0 9 0 5</u>)	52-55	_____
35. Time of urine test	timeu	24 hours	56-57	_____
36. Type of consent	cons	1=consent given 2=refused 3=not able to test (intoxicated) 4=not able to test at first, tested after washout with consent given	58	_____
37. Prescription drug	pdrug	0=no 1=yes	59	_____
38. Illegal substance	ileg	0=no 1=yes	60	_____
39. Intrascreen drug1	I1	0=no 1=yes	61	_____
40. Vocalyzer	I2	0=no 1=yes	62	_____
41. Temperature of specimen	temp	3 digits	63-65	_____

ASAP/SASSI INSTRUMENT

14. Current age	age	actual age	29-30	_____
15. Sex	sex	1=male 2=female	31	_____
16. Race	rae	1=black 2=hispanic 3=oriental 4=white 5=other	32	_____
17. School performance	sch	1=at grade level 2=not at grade level 3=dropped out	33	_____
18. Kind of student	kstu	1=good 2=average 3=below average 4=failing	34	_____
19. Marital status of parents	mart	1=married 2=divorced 3=separated 4=single 5=widow/widower	35	_____
20. Living arrangement	liv	1=living with biological parents 2=living with father/stepmother 3=living with mother/stepfather 4=living with guardian or foster care 5=living with mother only 6=living with father only 7=living with relative 8=other	36	_____
21. Employment - mother	moth	0=not employed 1=employed	37	_____
22. Employment - father	fath	0=not employed 1=employed	38	_____
23. Number living in house	nhous	actual number	39-40	_____
24. Members of family	fam	1=in detention or prison 2=on probation/parole 3=neither	41	_____
25. Any friends	frie	1=in detention or prison 2=on probation/parole 3=neither	42	_____

VII. BIBLIOGRAPHY

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Recognition is also due to the staffs of the Intake Screening and Nursing Units of the Harris County Juvenile Probation Department for their dedication of time and effort in support of this program.

EVALUATION

**ADOLESCENT SUBSTANCE ABUSE ASSESSMENT PROGRAM (ASAP)
EVALUATION**

Prepared

by

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Research, Planning and Evaluation Unit**

1989

**The Adolescent Substance Abuse Assessment Program (ASAP)
is funded by the Criminal Justice Division, Office of
the Governor, State of Texas, Grant JA-87-C04-2830.**

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**ADOLESCENT SUBSTANCE ABUSE ASSESSMENT PROGRAM (ASAP)
EVALUATION**

- * ***Summary***
- * ***Introduction***
- * ***Table of Contents***
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- * ***Summative Evaluation***
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Adolescent Substance Abuse Assessment Program Evaluation

SUMMARY

The evaluation of the Adolescent Substance Abuse Assessment Program (ASAP), was designed to study program implementation procedures as well as to establish the number of juveniles using drugs admitted to detention. A secondary concern centered around the drugs used. Informal assessments by intake staff led us to believe that we have a large number of youths using drugs, and a large number of youths being admitted to detention under the influence of an illegal substance. But we had not been able to validate our beliefs. The funding of the Adolescent Substance Abuse Assessment Program by the Criminal Justice Division, Office of the Governor, permitted us to examine drug use among youths admitted to detention.

The testing periods were from September 5 through October 4, 1989, and October 12 through October 19, 1989. The second testing period was added so staff could evaluate the Vocalyzer¹. A total of 596 youths were admitted during the two testing periods, of that number 493 were evaluated using one or more of the tests reviewed.

Of the 493 youths evaluated, a total of 219 youths agreed to participate in the urine screening for drugs (EMIT and TLC), and 386 agreed to take the SASSI, an 80-question self-reporting substance abuse assessment test. Of the 219 youth agreeing to a medical drug screening 24% were identified by the EMIT test as being under the influence; the SASSI showed 51% (of 386) of those tested as being at risk, that is, having a high probability of using drugs.

The following insights and highlights of the program operations and an analysis of the collected data respectively, were gleaned in implementing and completing the project.

Formative Evaluation

This evaluation looked at the program's procedures and operations in drug testing juveniles in the Harris County Juvenile Detention Center during the ASAP pilot project. The following insights are provided:

- 1. Two project coordinators were responsible for major program areas: one handled data collection, and the other, staff training and program procedures.**
- 2. In-house training staff developed explicit testing procedures and produced a high level of staff commitment to the project.**
- 3. Procedures, data collection forms and a form-tracking system were tested in actual practice and succeeded well.**
- 4. A data base codebook was developed so information on the data collection forms could be entered correctly into the computer.**
- 5. The urine drug screening testing was made part of the children's routine physical to minimize staff disruption.**

¹For a description of the Vocalyzer test see page 19.

6. **Staff recognized quickly that the children tended to move more quickly through the system than their papers.**
7. **Consent forms for a fully informed voluntary drug testing program were developed and participants assured of the confidentiality of test results.**
8. **The legal consultant indicated that pending cases would have strong impact and clarify the direction of future mandatory drug testing.**
9. **Chain-of-custody procedures were less strict because the test results would not be used in any legal proceedings.**
10. **InstaScreen EMIT, OnTrak and TOXILAB (Thin Layer Chromatography) were used as the first urine drug test, with TLC used as a confirmation test.**
11. **Gas Chromatography/Mass Spectrometry (GC/MS) was not used as a second or confirmation test due to its high cost.**
12. **Urine drug testing of admitted youths was done immediately or as soon as possible so drugs would not have time to leave the system or fall below minimum detection limits.**
13. **The program coordinators received staff feedback throughout the course of the project and made requested adjustments when and where possible.**
14. **Using a fully informed voluntary drug testing program, about half of all juveniles can be expected to participate in a voluntary program, and about three-fourths can be expected to take a pen-and-pencil test.**

Summative Evaluation

This evaluation addressed the use of four major indices (urine drug screen, juvenile self-report, intake worker assessment and SASSI) of drug abuse in a sample of juveniles in the Harris County Juvenile Detention Center.

ASAP TOTALS AND PERCENTAGES

596 youths were admitted to detention
493 of 596 were evaluated using one or more of the tests
386 of 493 (78%) took the SASSI
219 of 493 (44%) were urine drug screened
195 of 386 (51%) tested "at risk" on SASSI
53 of 219 (24%) tested positive with drug screen

The following highlights are given. However, the reader should keep in mind that the sample size varies between the components of the study. There is missing data on almost all of the variables because a fully informed, voluntary program allows a youth to refuse to participate in any part of the program. When two variables are compared to each other, only matched cases are used so that missing information for one results in the dropping of both from the analysis.

- 1. The SASSI (Substance Abuse Subtle Screening Inventory) showed little relationship to the EMIT urine drug testing. The SASSI identified 51% (of 386) at risk for drug abuse while the urine drug testing identified 24% (of 219).**
- 2. Forty-eight percent (48% of 236) of the 493 adolescents surveyed gave permission for urine drug testing. However, when comparing them to those who did not give consent, there were no differences on any of the study variables between these two groups.**
- 3. A very high percentage of juveniles reported a family member(s) (73% of 225) and friends (91% of 320) were in the penal system.**
- 4. Twenty-nine percent (29% or 114) of juveniles self-reported drug use and 53% (or 204) reported alcohol use with (16% or 64) using alcohol regularly. Self-report of drug and alcohol use, family problems with drugs and alcohol, school problems, families in the penal system, and history of running away were all related to the SASSI.**
- 5. The SASSI was reasonably sensitive in identifying self-reporting drug users (76% or 69), and self-reporting alcohol use (81% or 43).**
- 6. Positive EMIT urine drug testing showed a relationship to self-reported alcohol (46% or 13) and self-reported drug use (46% or 20).**
- 7. The key main predictors of juvenile drug problems are family dysfunction, running away, and school performance.**

INTRODUCTION

This Evaluation consists basically of two major parts - the formative and summative evaluations of the voluntary (fully informed consent) Adolescent Substance Abuse Assessment Program or ASAP which was conducted by the Harris County Juvenile Probation Department in September and October, 1989.

The Formative Evaluation presents a review of the the program's development, the special services and systems involved, and the process of the project as it relates to drug screening/testing, data collection and self-reporting instruments. The text is followed by a list of the sample forms, and recommendations.

The Summative Evaluation provides an analysis of the data collected during the implementation of the pilot program. The introduction is followed by a statement about sampling and a description of the data. The findings are presented in a question-and-answer format along with some implications as well as a number of recommendations.

The two sub-sections of recommendations are a compilation of suggestions which presented themselves during ASAP's implementation.

The bibliography covers the parenthetical references in this evaluation. For those who will continue to be involved with or will be introduced to drug testing of juveniles in detention, there in an expanded bibliography in "Section VII, ASAP Reference Materials".

The text makes reference to the "ASAP Implementation Manual" and the "ASAP Reference Materials" volume which are products of the combined efforts of many who made ASAP a working reality.²

The overall goals of the ASAP project were successfully met. The achievements of the program were:

- **that it identified those laws that allow for drug testing of juveniles**
- **that it examined four types of drug screens (InstaScreen, OnTrak, EMIT and TLC) and determined the feasibility of each one's use**
- **that it defined a methodology for drug testing**
- **that it designed and developed data collection instruments to be used in drug testing programs**
- **that it documented a reliable data base for statistical analysis of the profile of drug abuse**
- **that it developed a drug testing program implementation manual that can be used by other juvenile justice agencies**

²For copies of the ASAP Implementation Manual and/or Reference Materials, write to: Mr. Jim Kester, Criminal Justice Division, Texas Governor's Office, P.O. Box 12428, Capitol Station, Austin, Texas 78711.

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I. FORMATIVE EVALUATION

A. PROGRAM DEVELOPMENT

The Harris County Juvenile Probation Department implemented a pilot drug testing program for juveniles who were admitted to the Detention Center from September 5 through October 4, and from October 12 through October 19, 1989. Five hundred and ninety-six youths, ages 13 to 17, were admitted during this time.

The Department administers services to approximately 18,000 youths who are referred each year. One of its goals is to prevent and reduce juvenile crime. Protecting the public safety while serving the best interests of each individual child is the agency's mandate. And within that broad mission is a more specific goal of preventing juvenile drug abuse where it does not already exist, and offering drug-involved children and families every possible opportunity to build successful, drug-free futures.

In May, 1989, the Criminal Justice Division, Office of the Governor, awarded the Harris County Juvenile Probation Department a grant to conduct a pilot project to investigate the many issues relating to drug testing of juveniles in detention. The project, Adolescent Substance Abuse Assessment Program (ASAP), was approved by Harris County Commissioners in June, 1989.

Its stated purposes were:

- 1. to address legal issues and ramifications associated with drug screening juveniles in the juvenile justice system,**
- 2. to explore medical accuracy and feasibility issues of such testing and to establish an effective protocol for such,**
- 3. to develop a reliable data base on the percentages of arrested/detained youths using drugs and to determine the drug of choice,**
- 4. to implement a 30-day pilot test by drug screening up to 500 detained youths, and**
- 5. to develop and produce a step-by-step manual for use by other juvenile justice agencies.**

An internal committee was organized consisting of administrative, research, training, and public information and a sub-committee responsible for implementation. The committee met weekly to formulate policy and monitor progress.

The initial phase also included the designation of a project coordinator and the hiring of professional consultants from the medical and legal fields. Drug abuse specialists were hired to administer the SASSI's. Evaluators from the academic community were hired to provide the formative and summative evaluations. The tasks of the medical and legal consultants were to identify and answer the most pertinent questions impacting the drug testing of juveniles within their respective areas. With program design work underway, medical, legal and methodological plans for sample testing were completed by the end of August.

This project was set up to determine whether or not there would be agreement between the proposed tests. This design is sometimes referred to as an assessment of concurrent validity. The project consisted of the analysis of available data collected from agency records and survey data collected at the time of intake for 596 juveniles who were brought to the Juvenile Detention Center during the testing periods.

On September 5, 1989, the first youths in the Harris County Juvenile Detention Center were tested. Children, ages 13-17, were brought to the Center by police. They came from all racial and economic backgrounds and from all parts of the County. Roughly three-fourths were male. Youths were charged with offenses ranging from shoplifting to murder.

In conducting the testing three distinct goals were identified: to test four types of available drug screens; to validate a pen-and-pencil test; and to analyze variables such as offense history, family status, educational status, and peer and family associates with crime and drug use from interviews and self-reports.

Program Design

The drug screening program was made part of the children's routine physical to minimize staff disruption.

Youths referred to the Probation Department were first seen at Intake. The worker interviewed the youth, attempted to contact the parents or those pertinent to the decision to release or detain. The intake worker was responsible for collecting demographic information on the child during the course of the interview. This information was transferred into an automated child-tracking data file. For the duration of the project the intake worker was asked to complete the Booking Form. This form collected basic information about the type of offense that the child was charged with at the time of his referral to the Department (see Exhibit J). Upon the decision to detain, the intake worker saw the child admitted to detention.

Upon admittance to detention the youth was given a routine physical by the nursing staff. As part of the child's physical, a urine sample was requested. As children had a right to refuse participation in the voluntary drug screening the program was explained, and each youth who agreed to participate was asked to sign a consent form. This was read to the child and signed before urine collection. The child had complete privacy during urine collection. No information was entered into the child's record.

All youths over the age of 13 admitted to detention were also requested to complete an 80-question pen-and-pencil substance abuse screening instrument administered by staff from the Houston Council on Alcoholism and Drug Abuse. The ability of the questionnaire to reliably identify those who tested positive as abusers was being examined in this project. The test was given to small groups, and the children had a right to refuse to complete the questionnaire.

English-speaking youths were administered the questionnaire and asked to provide a urine specimen. Children who did not speak English were not asked to complete the questionnaire.

Information as to the child's drug involvement was collected through interviews, laboratory tests and the use of a psychometric test. All information was kept confidential.

Drugs to be identified in the Medical Examiner's laboratory included cocaine, heroin, opiates, marijuana, phencyclidine, barbiturates, methamphetamine and ethanol.

The final phases included data evaluations and the production of an implementation manual, designed to serve as a step-by-step handbook for drug testing youths in the juvenile justice system throughout Texas. Also produced were a volume of reference materials containing appendices with more detailed legal, scientific, medical and technical data, suggested forms and a bibliography.

B. SPECIAL ISSUES AND SYSTEMS

1. Legal Issues

The legal issues were investigated and the legal parameters were decided upon. A detailed review of these issues and other legal considerations will be found in "Appendix A, ASAP Reference Materials."

2. Medical Issues

The medical questions to be answered included determining the type of specimens to test, what drug tests were available and most suitable, how to conduct the test and what self-assessment tool would be used. An extensive treatment of the medical issues will be found in "Appendix B, ASAP Reference Materials".

3. Project Coordination

One of the most important considerations in designing and implementing of a drug screening program is the designation of a project coordinator. This individual should be identified at the beginning of the program. They should assist in the design of the program, the identification of issues and the resolution of these issues. Once the implementation date is set, the project coordinator should work with the various individuals involved to see that all components are in place, and all program deadlines are met.

Two project coordinators were designated for the ASAP project, one to handle data collection and one to handle training and procedures. Administrative decisions were made by the sub-committee for the duration of the project. This approach worked well as it permitted committee members to develop an in-depth understanding of the kinds of problems associated with the implementation and administration of such a project on a day-by-day basis.

4. Staff Training

The Training Division of the Harris County Juvenile Probation Department conducted in-house training for the Intake and Nursing staffs in the procedures required to conduct the various methods of testing. Training classes provided staff with basic information about the goals and objectives of the program, as well as operational procedures. Providing this information at the onset of implementation encourages staff participation. It also provides a forum for questions about the program. This time can also be used to encourage staff feedback as staff often provide program insights, suggestions for improved program operating efficiency.

Pre-program training is crucial. When program workers were given an overview of the entire project, a high level of cooperation and enthusiasm was fostered. For example, the individuals who attended the SASSI training or who were doing SASSI testing felt they had an excellent grasp of the project.

The intake process worked well. Interviews with intake workers and observations of the process indicated that it did not create unacceptable disruption to the normal intake process.

5. The Evaluators and Data Collection Issues

The consultants were selected to conduct the formative and summative evaluations of the pilot program. They were also responsible for designing the data collection instruments, an important element in the design process.

Data to be collected from the 30-day pilot program included:

- **number of juveniles tested**
- **number of juveniles who tested positive for drugs**
- **number of juveniles who tested negative for drugs**
- **number of juveniles (all) with a prior delinquent referral**
- **percent of juveniles admitted and on probation who tested positive**
- **average age of juveniles tested positive for drugs**
- **ratio of whites to non-whites testing positive for drugs**
- **percent admitted for non-drug related offenses who tested positive**

The consultants assisted in identifying the variables to be used in developing a profile of the drug user. The types of variables were based on the committee's decision to work only with those variables that obviously relate to drug use.

6. Management Information Systems

The computer program SPSS_x was used for the collection and analysis of the data base. SPSS_x software is used by researchers and students because of the simplicity of its English-like commands. A similar system found in business that would accomplish the same purpose is the SAS operating system. Personal computer software packages that would accomplish this task for the smaller organization could include SCSS, SPSS_x, SPSS, SAS, Statgraph, and Lotus 1-2-3.

The data collection can be done manually by small jurisdictions. A sample of weekly and monthly summary forms are provided for use in a manual system (see Exhibits C and D).

The goals of the evaluation and data collection were:

- **to design appropriate data collection instruments for use with the computer**
- **to accurately input data into computer system**
- **to design manual data collection reports**
- **to statistically analyze the data collected**

- to submit a formative and summative evaluation within four weeks of the conclusion of data collection

A basic approach to data collection and program evaluation can be found on pages 14 and 15 of the "ASAP Implementation Manual," and additional information in Section C.2. of this Evaluation.

C. THE PROCESS

1. Drug Screening/Testing

a. Pre-adjudication Drug Screening

Youths are usually referred to the Detention Center after having been apprehended by the police. They are not brought immediately to the Detention Center but may spend several hours at the police station. In which case, drugs which are quickly eliminated from the body's system will not be detected. (See Appendix B, ASAP Reference Materials.)

A goal was established to test the youths within eight hours of intake. This goal was met for 100 percent of the population.

In the decision to implement a drug screening program, outcome expectations need to be considered. A voluntary fully informed pre-adjudication testing program cannot be expected to produce the information that a court-ordered testing program is capable of producing.

About half of all juveniles can be expected to participate in a voluntary medical drug screening program; and about three-fourths can be expected to take a pen-and-pencil test. If the goal is to secure information on the prevalence of drug use then a pen-and-pencil test may provide better information than medical screening. If, however, the goal is to determine how many youth are booked into a facility under the influence then there is no substitute for medical drug screening.

Judges or referees could utilize court-ordered drug testing, for a youth who is known as a drug user or for a suspected drug user, as random testing or consider testing as a condition of release.

Several programs use non court-ordered drug testing as a condition of release, that is, youths are not released from detention without a drug screening. These types of mandatory drug screening program have encountered problems. For example, Berry v. District of Columbia charges that the drug screening program operating in the District of Columbia violates the individual's constitutional right³.

b) Post-Adjudication Drug Testing

Post-adjudication drug screening encounters fewer problems than pre-adjudication testing. Drug testing may be ordered by the court as a condition of probation. Testing may be scheduled at regular intervals or ordered on a random basis.

³See the "Question and Answers" section, Appendix A, ASAP Reference Materials.

c) Drug Screens

The program was initially designed to examine four separate types of drug screen. The EMIT and Thin Layer Chromatography (TLC) are laboratory evaluated tests. The InstaScreen I and II are tests that can be analyzed at a given facility and positive samples verified by laboratory analysis.

The EMIT is perhaps the most widely used drug screen. EMIT is reported to have an accuracy rate of 90-95 percent. The EMIT tested for alcohol, amphetamines, barbiturates, cocaine, marijuana, phencyclidine (PCP), opiates and benzodiazepines. The TLC tested for similar drugs.

The TLC was thought to be a means to confirm positive test results as confirmation is a legal requirement where test results are to be used in legal proceedings. However, the TLC as mentioned is complementary to the EMIT. The GC/MS (gas chromatograph/mass spectrograph) tests are considered highly reliable and have been successfully used in legal matters to confirm positive results. However, the test is expensive and was not used in this study.

A fifth field test called OnTrak was located. OnTrak is an on-site test and was advertised as easy to use and reliable. All urine samples, which had been frozen, were subsequently tested. Using the frozen urine, positive EMIT results were used to confirm the reliability of the OnTrak system. Some samples, which had not tested positive using EMIT, were used as controls. This phase of the testing was in response to the possibility of using drug screens as a means of supervising the adjudicated youth who has a drug problem.

The National Institute on Drug Abuse conducted a study in 1987 of the testing facilities across the country and found an error rate of 31 percent. This would appear to indicate that the processing of drug screens reduces the rate of accuracy. This study is frequently cited in opposition to the use of drug testing (Rhodes, ACLU, 1988). Stone and Thompson cite an even higher error incidence for the EMIT of a 25 percent false positive rate and a 50 percent false negative rate. False positives occur when a test falsely indicates a drug is present. False negatives indicate there is not a drug present when, in fact, it is. (Stone and Thompson, 1989). Because of the error rate, first tests must have second test confirmations.

The "chain-of-custody" is a series of procedures designed to protect the reliability of the results. For the purposes of the study, the chain-of-custody procedures required for court cases were not used. The decision to use modified chain-of-custody command procedures was made by the Committee to facilitate the research project. It was felt that the approved procedures were sufficient for the purposes of the project.

During the pilot program the youths were not directly observed giving urine. This procedure was permitted since there was no intent to use the test result in a legal proceeding.

Where there is no direct observation of sample collection, alternative precautions to reduce sample tampering should be implemented. The method used in the program to ensure the validity of the sample was that the temperature of the urine sample was taken by the nurses. All of the urine samples fell within the stipulated temperature range. Other alternative precautions are to color the water in the toilet bowl and to turn off sink faucets. Some of the difficulties experienced by urine testing programs are the dilution of the urine and the substitution of drug-free urine for the test sample. Controls must be established in a drug testing program to eliminate a "clean urine" sample being carried into the facility and substituted for an actual urine sample. Addicts are known to use these methods. Without observation or precautions, there is no guarantee that a sample is that of a given youth's.

Daily the refrigerated urine was placed in an ice chest prior to being transported to the Medical Examiner's laboratory. The urine was to be refrigerated at a temperature between 36 and 46 degrees centigrade, while residing in the ice chest did not affect the quality of the samples.

Some consideration should be given to the specimen cup to be used. These cups must be tamper resistant. Sometimes these cups require special equipment to cap.

2. Data Collection

A. Code Book, Forms and Procedures

The initial procedure for a research project of this nature is the development of a code book (see Exhibit L). The code book provides the information on how to enter information on the data collection forms developed for the project. If the project utilizes an automated system, as ASAP did, the code book identifies the variables' location in the data file and the values associated with each variable.

For ASAP, the agency made the decision to collect the data using three separate forms. The justification for this method was the delay experienced in acquiring new juvenile numbers and in the problems associated with moving both child and paperwork through the system simultaneously. The forms used by the Intake and Nursing Units will be treated in this section; the SASSI data collection form will be addressed in the section following (see Exhibits F, G and I).

Intake Assessment ASAP Data Collection

Intake is a 24-hour process. The youth who has been determined to be a threat to self or the community is referred to the Detention Center by the various police, sheriff or community agencies. There the youth is interviewed and is either released, diverted to another source of help, or enters the juvenile system. The collection of data during intake booking was the first step in the ASAP project.

The intake worker completed the ASAP/Data Collection Booking Instrument (see Exhibit J) as part of the intake process. This portion of the data collection process was designed to capture data on current and past offenses. The form included a tear sheet where the juvenile's name was noted until the juvenile's number was obtained. Due to the desire to minimize routine case processing, the decision to use the tear sheet was thought to be a viable solution to the problem of not always having a juvenile number immediately available for first offender cases. This procedure allowed the case to be processed in a timely manner and did not violate confidentiality.

The Intake Unit maintains a monthly "Intake Log Sheet" (see Exhibit M). This log includes information on the juvenile, the offense, the disposition of the case, as well as other information. Part of the information collected is the drugs that the juvenile admits to using. During the intake process, 44% of the juveniles admitted to some type of drug use.

Nursing Assessment ASAP Data Collection

This was the second step in the data collection process (see Exhibit F). Here the youths, ages 13 to 17, were asked to voluntarily submit to a urine test. Gaining the consent of the youth for drug testing was a key factor in the ASAP project. Our experience suggests that consent is more likely to be given in a less hectic and threatening environment than either the detention area or the nurse's station.

Currently, Intake and Detention staff collects data on substance abuse. Both question youths as to the kinds of drugs used during the unit's admission process. Each tallies the information collected during the month and reports on the percentage of admitted drug use by youths interviewed. The Psychological and Social Services Department located in the Detention Center also collects information about drug use as part of their admission referral screening interviews.

Consideration should be given to the non-duplication of information. However, some duplication is necessary and increases the likelihood of gathering information. The information from the Nursing Report and the Intake Log were compared. Sometimes the youth told one source but not the other. A consolidation of this self-reporting showed that more than 70% of all youths admitted to detention reported having used alcohol and drugs.

B. Management Information System (MIS)

Social agencies have the capacity to collect considerable data in the course of their daily activities, and William Reid, a researcher and clinical practitioner, suggests that social agencies can become a "research machine" (Reid, 1974; Manette, et. al, 1983). Building a management information system by developing adequate but ever-expanding data collection methods enables an agency to acquire firsthand information in order to make management decisions. A research project such as ASAP reinforces this concept.

An effective Management Information System (MIS) needs to take the following into consideration:

- **standardized reports required by administration**
- **standardized updates required by administration**
- **clearly define the information to be collected and the procedures for the collection including**
 - **number of juveniles referred to program**
 - **client profile, i.e., demographic and socio-economic characteristics, such as age, race, sex, education, parents' employment status, parents' marital status, parents' income (verified) at time of admission**
 - **other characteristics at admission, such as prior delinquent behavior, drug-dependent status, primary drug of abuse or other diagnosis, urinalysis or other diagnostic testing results**
- **analysis of the data collected to assist with**
 - **program effectiveness**
 - **problem resolution**
 - **public information**
 - **management planning**

- **program evaluation**
- **quality control**
- **documented evidence that the collected data are reported to the appropriate individuals**

It has become increasingly more important for an agency to organize the data which it collects so that it can generate information about current program effectiveness and future needs. The design of collection instruments and the integration of all systems is very important (Reid, 1974). An example in this project was that a manual collaboration of self-reported drug use identified during booking and during the nursing assessment resulted in documenting that 74% of the youths admitted to drug use which is a higher percentage than appeared in analysis of any one source of information.

Consideration should be given to inputting this additional information into the data bases compiled during this project to more accurately determine the general use of alcohol and drugs. Building computerized information systems requires planning and forethought. The methods of collection must be addressed so that the outcome of the data collection achieves the results wanted.

The undertaking of a project of the magnitude of ASAP requires checks and balances in order to insure the internal validity of the data. First booking forms, nurse's data collection forms, consent forms, the demographic forms and later the SASSI results were routed to the research unit. Each form was logged in before it was released to the evaluator. Following this documentation procedure, the evaluator signed for the release of the information.

A revised list of the data collection forms was justified using the evaluator's statistical run which identified duplications and any missing data. An independent coder was employed to validate the accuracy of the input data using the collection forms. Revisions and corrections were made accordingly.

The final step was to justify the evaluator's printout against the agency's printout. Any discrepancies were then reviewed and corrected. Therefore, the data has a high level of internal validity.

While time frames did not allow for pre-testing of the data collection forms and procedures, it is strongly recommended that such time be allotted when beginning a juvenile drug testing program. In this manner, the most effective data collection form will be more easily administered, require less time and produce greater amounts of useful data.

3. Self-Reporting

a. The SASSI

One methodology used in this concurrent evaluation was that of self-reporting. The youths were asked to complete the SASSI Data Collection Instrument⁴ (see Exhibit H). This method effectively provides information on alcohol use and drug use.

The SASSI is a prediction of use and the results were classified as 1) at risk or 2) not at risk. However, prior to implementation of the SASSI as an assessment tool, other instruments should be examined.

The SASSI was administered by the juvenile probation officers or by paid staff from the Houston Council on Alcoholism and Drug Abuse. The testing procedure was on a voluntary basis and those who agreed to be tested were assured of the confidentiality of the results. The procedure used was group testing of up to six youths. The questions were read aloud to those tested. Non-English-speaking youths were not asked to take the test.

Three hundred eight-six youths admitted to the Detention Center agreed to take the SASSI and completed the self-reporting form. In addition to the SASSI test, the juveniles were asked to complete a demographic form (see Exhibit G). However, the demographic form can be completed at the time of intake.

The questions were developed to test the effect of the variables on self-reporting drug use, positive test results, and validation of the SASSI results. They also were designed to gather the data listed in Section I.B.4 of this evaluation.

The inclusion of variables in the data collection process was predicated on the research relating to alcohol and drug abuse in juveniles. Although these variables with regard to the SASSI Data Collection Form are identified here, the actual analysis is included in Section II.

School Performance-Questions 3 & 4.

This variable was addressed by asking the youths' perception of their school performance and if they saw themselves at grade level or not. A question needed to be included asking the youths if they had ever failed. Staff identified that youths tended to report themselves currently at grade level when in fact they were one or two years behind for their age group. Research has repeatedly established that substance abuse relates to school performance (Stiffman, et. al., 1978). What is uncertain is the cause, (Miller, 1988; Hendleby, 1987). The effect on school performance is unclear. The effect is present when youths abuse drugs but is it either the result of drug use or one of the causes of drug use?

Family Status - Questions 5 through 9

Since the ASAP time frame did not allow for family interviews, the variables on marital status, living arrangement and employment status of the parents, and number of people in the household were used to approximate this data.

⁴The Substance Abuse Subtle Screening Inventory (SASSI) is an assessment instrument used to predict drug abuse. It consists of 80 questions that ask the youth to select the most appropriate answer. It was developed by Dr. Glenn Miller (The SASSI Institute, 4403 Trailbridge Road, Bloomington, Indiana 47408, (812) 333-6434), who supplied copies of the test to the agency in exchange for research data to assist in receiving qualified validation of the instrument.

Criminal Activity - Questions 10 & 11

These questions address the influence of criminal activities of the family and peers on the youth. Acceptance of deviance is thought to be present in substance abusers. (Mott and Haurin, 1988; McLaughlin, 1984; Hendleby et. al., 1987).

Individual Alcohol and Drug Usage - Questions 12 & 13

These questions were included to assess the individual's use of alcohol and drugs. The number of questions would need to be increased to include the various types of drugs used.

Parental and Peer Alcohol and Drug Usage - Questions 16 & 17

These two variables are felt to be primary predictors of adolescent drug usage. Research strongly points to the attitude of the youth towards substance abuse as being a significant predictor of substance abuse. These attitudes are initially developed within the family, so that parents drinking behavior affects the younger adolescents just as peers' drinking behavior affects older adolescents (Forney, et. al., 1989; Hassin, et. al., 1985).

b. Other Instruments

The decision to use a pen-and-pencil test to determine extent and frequency of substance abuse should include a review of such instruments. A brief review of the instruments examined is given below. Consideration should be given to pilot testing the self-reporting capabilities of pen-and-pencil tests, as well as further developing agency-designed data collection forms.

Adolescent Alcohol Involvement Scale (AAIS)

An instrument that has been validated as a tool for assessing alcohol misuse in adolescents is the Adolescent Alcohol Involvement Scale (AAIS). This instrument enables the youth to be classified as 1) nonuser/normal use, 2) misuser and 3) abuser or alcohol-dependent. This allows the user of the instrument to determine how to handle the problem user, misuser or abuser (Robertson, 1989).

Primary Prevention Awareness, Attitude and Usage Scale

The Primary Prevention Awareness Attitude and Usage Scales -- Form 9 -- is another instrument designed "to measure the constructs of negative behavior to the amount of self-reported substance use". The instrument was designed so that awareness of attitudes toward alcohol and drug use could be predictors of amounts of self-reported use. It has been used by the State Department of Education of Pennsylvania (Grimes and Swisher, 1989).

Pretreatment and Diagnostic Assessment Battery

The total administration of these instruments requires 120 minutes of participation time of the client-subject. They fall under three methods of administration: 1) an interview by the research examiner -- The Addiction Severity Index (ASI), Youth Needs Assessment and Kirk's Reasons for Using drugs and Alcohol, and the Philadelphia Psychiatric Center Client Interview Form; 2) Self-administered -- Rosenberg Self-Esteem Scale, Brief Symptom Inventory (SI), Beverly-Grant Opinion Schedule (BGOS), The Family Role Task Behavior Scale, and Parent Adolescent Communication Form; 3) The interviewer rates the client: CODAP (Client Oriented Data Acquisition Process) Admission Form, and the Friedhoff Rating Scale (Friedman, 1987).

Criminal Activity - Booking Form

The questions listed on this form helped define the nature of the present offense and prior history of offenses when appropriate. The purpose of the questions was to analyze the relationship, if any, between the types of criminal offense and alcohol or drug use. The conclusions can be found in Section III (see Exhibit J).

Nursing Data Collection Instrument

This form enables the user to document the individual's consent to drug testing and information that might have affected the results, such as current medications (see Exhibit F). It offered the opportunity to document on-site testing which was expected to be achieved using InstaScreen I and II but was actually effected using InstaScreen II and OnTrak. Later, the form was revised to collect data on the week-long Vocalyzer test.

The temperature of the urine was also documented on this data collection form in order to ensure that the urine sample was that of the individual.

Vocalyzer

This was a system that used the voice of the individual and a computer interpretation to identify the presence of alcohol or drugs. The results of the week-long test were inconclusive as only one positive resulted in 106 tests (see Exhibit K).

c. Reliability

The reliability of self-reporting instruments is always a cause of concern, particularly when the adolescent is asked to report illegal or socially unacceptable behavior. For these questions consent is necessary to avoid self-incrimination. It is important that self-reporting not be perceived as punishment. If perceived as punishment, the information given may be inaccurate. In our project, we could assure the youth that the information was strictly confidential. A statement to this effect was even incorporated into the data collection form (see Exhibit G).

It is most important that the youth perceive that reporting alcohol and drug use will be beneficial (Needle, et. al., 1989). However, self-reporting is still a controversial issue. If care is not taken to deal with the youth's concerns about self-reporting, the results will be less valid. An issue is developing means to ensure that test results are an accurate reflection of use.

A longitudinal study (1982-1987) of self-reported, adolescent drug-using behavior found that adolescents did provide reliable data. Two approaches were used to evaluate the consistency. One approach was descriptive statistics and the other was a four-question test to examine the changes in self reports of substance abuse (Needle, et. al., 1989). One method used to determine the honesty in answering self-reporting instruments is the inclusion of bogus substances, i.e., menotropins, bindro (Grimes and Swisher, 1989).

The ASAP project evaluates self-reporting against the other variables of drug screening methods and can be used in conjunction with other methods or independently. A self-reporting instrument should be given strong consideration as a means of identifying alcohol and drug use.

D. FORMS⁵

1. Used in ASAP

- Exhibit A - Harris County Juvenile Probation Department Drug Testing Consent Form**
- Exhibit B - Agreement of Participation and Medical / Psychological / Psychiatric Authorization Form**
- Exhibit C - ASAP Weekly Summary (Daily)**
- Exhibit D - ASAP Weekly Summary (Monthly)**
- Exhibit E - Harris County Juvenile Detention Center Medical Department Drug Testing Log**
- Exhibit F - ASAP/Nursing Data Collection Instrument**
- Exhibit G - ASAP/SASSI Data Collection Instrument**
- Exhibit H - SASSI Adolescent Form & Risk Prediction Scales**
- Exhibit I - SASSI Administration Log**
- Exhibit J - ASAP Data Collection Instrument (Booking Form)**
- Exhibit K - ASAP Data Collection Instrument/Vocalyzer**
- Exhibit L - Harris County Juvenile Probation Drug Testing Study Codebook**
- Exhibit M - Intake Log Sheet**

⁵All Samples of forms will be found in Appendix E, ASAP Reference Materials.

E. RECOMMENDATIONS

I. Program Development

- **A coordinator needs to be identified and designated for coordinating all project activities.**
- **Staff needs to be fully informed of the purpose of the programs.**
- **Staff must be provided adequate training at all stages of the program. This is essential to the success of the program.**
- **When an agency operates on a 24-hour basis, day and evening training session might be offered to the staff.**
- **The program coordinator needs to analyze staff feedback continually in order to make adjustments either following start-up or at a later date.**
- **Drug testing is an expensive proposition. The implementation of such a program over an extended period of time, will more than likely cause an increase in staff. The cost effectiveness of the program can be increased by a careful design and the identification of the populations to be tested.**

2. Special Issues and Systems

- **The legal consultant or advisor should stay abreast of current legislative results and cases, especially the case of Berry v. District of Columbia. This case will have a major impact on mandatory drug testing, and provide direction when consideration is given to a pre-adjudication versus a post-adjudication testing program.**
- **A voluntary (fully informed consent) drug testing program for youths admitted to detention must assure participants that all information on drug usage will be kept confidential and will not be used in any legal proceedings.**
- **The drug testing of juveniles should adhere to strict chain-of-custody procedures if the results are intended to be used in court or for treatment recommendations.**
- **Built-in incentive can be used to increase participation in voluntary testing. One jurisdiction in Florida increased participation by offering a stipend of \$10.00 (Dembo, et. al. 1987).**
- **Consideration should be given to hiring a consultant who is directly involved in a substance abuse treatment program that conducts urine testing to enhance development of a drug screening program.**

3. The Process

- **Drug testing should be done immediately or as soon as possible so drugs do not leave the youth's system or fall below minimum detection limits.**
- **InstaScreen, OnTrak, or a laboratory test (EMIT or Thin Layer Chromatography/TLC) are recommended as the first urine test.**
- **Gas Chromatography/Mass Spectrometry (GC/MS) is recommended as the most reliable second test to confirm a first test positive, especially if the results are to be used in court.**
- **All test kits should be pre-studied carefully. Procedures must insure that instructions are followed explicitly.**
- **Taking the temperature of urine samples should be included in the program to increase the validity of a sample.**
- **Specimen containers may be difficult to handle. Therefore, specific training and practice prior to implementation will make the process more effective.**
- **Freezing preserves the sample for additional testing at a later date. Freezing results in only minimum deterioration of the specimen. Only those samples containing trace amounts of drugs will test negative as a result of freezing.**
- **Facilities need to be inspected to assure "clean urine" samples.**

4. Forms and Data Base

- **Forms need to be developed and tested; procedures for the use of the forms should be clear and simple; a central tracking system for all forms must be identified.**
- **Generally questions should be asked once. However, information on drug use collected at different processing points within the system will validate each other.**
- **Careful attention must be given to how paper flows through the system versus how people move through the system so that the project can be truly integrated into the routine work schedule.**
- **The consent form for testing should be handled in the least hectic and coercive environment, i.e., in the intake area rather than the more intimidating detention area or nurse's station.**
- **Available psychometric instruments which have been validated should be studied thoroughly before they are incorporated into a drug testing program.**

◦ ***When the data collected by a drug testing program will be used within the juvenile justice system, specific individual drug data requires each drug to be identified separately by its own code (the symbolic characters used to represent and identify data).***

II. Summative Evaluation

A. INTRODUCTION

This evaluation is designed to provide information on the relationship between various indices of drug abuse among juveniles referred to Harris County Juvenile Probation during the period of September 5 through October 18, 1989. These indices consist of a scale, The SASSI (Miller, 1985), urine drug screen, juvenile self-report, and intake worker assessment. These indices are compared to one another and other client characteristics such as demographic, family, and intake variables.

This evaluation will be organized in several sections. First, a complete description of the data will be provided in order to examine the characteristics of the juveniles studied. The evaluation will summarize these characteristics; however, a full description of each variable will be provided in table form. The second part will consist of the findings of the study. This will be presented in a question and answer format in order to highlight which indices were statistically significant and of practical importance. Finally, the implications and recommendations will be presented.

Because the sample size varied greatly between the variables measured, a brief description of sample will be presented before the description of the data.

B. SAMPLING

The sample size varies greatly between the components of the study, hence there is missing data on almost all the variables because a fully informed, voluntary program allows a youth to refuse to participate in any part of the project. The first section, Intake Instrument, has a general sample that ranges from 465 to 493 cases. For the SASSI instrument there are 386 cases. The demographic behavioral self-report data have a range of 225 to 388 cases. The Nursing Instrument has a range of 474 to 480 cases. Urine Drug Testing, using EMIT, has 219 cases. Thin Layer Chromatography has 219 cases. Vocalyzer has 106 cases. When variables are compared to each other for statistical significance, only matched cases are used so that missing pairs are dropped from the analysis. Thus caution must be exercised in interpretation of the data.

C. DESCRIPTION OF DATA

In order to present this description in a meaningful way, some terminology will be used. The description will use a mean or average when interval data is presented, a standard deviation (S.D.) which describes variability from the mean, and a range which gives the lowest and highest score. After this information is provided, the sample size (n) is given. The majority of the variables used for the rest of the study are nominal (categories), and will be presented as the sample size (n) for each category followed by the percentage (%) in parentheses. Since this description is lengthy, it is summarized. A complete description of all variables is given in the Tables.

Intake Instrument

Date and Time

This data was collected on 496 juveniles between September 5, 1989 and October 18, 1989. Thirty-four percent came in between the hours of 8 a.m. to 5 p.m., 35% came in between 6 p.m. to 12 p.m., and 31% came in between 1 a.m. to 7 a.m. (n=470).

Current Most Serious Offense

The current most serious offenses indicated that property offenses were recorded the most frequently 202 (41%), followed by persons 93 (19%), other 87 (18%), runaway 66 (13%), and drugs 45 (9%), (n=494).

Involvement of Drugs

The probation (intake) worker reported that drugs were involved in some way in 69 (15%) of the cases of the above offenses (n=465).

Prior Referrals

The mean number of prior referrals was 3.26, S.D.=3.78, range 0 to 25. One hundred seventeen (25%) had no prior referral (n=473).

Type of Prior Offenses

The mean number of prior offenses for persons was .434, S.D.= .685, range 0 to 4, (n=493). Three hundred twenty-six juveniles (66%) had no prior offenses for persons.

The mean number of prior offenses for property was 1.92, S.D. = 2.46, range 0 to 24 (n=493). One hundred fifty juveniles (30%) had no prior offense for property.

The mean number of prior offenses for drugs was .310, S.D.=.881, range 0 to 9, (n=493). Three hundred ninety-seven (81%) had no prior offenses for drugs.

The mean number of prior offenses for runaway was 1.15, S.D.=2.26, range 0 to 17, (n=493). Two hundred ninety-two (59%) had no prior offenses for runaway.

The mean number of prior offenses for other was .929, S.D.=1.51, range 0 to 11, (n=493). Two hundred seventy-one juveniles (55%) had no prior offenses for other.

Ten juveniles were on probation.

Table I: Description of Intake Instrument Variables

<u>VARIABLE NAME</u>	<u>SAMPLE SIZE & PERCENTAGE</u>	<u>MEAN</u>	<u>S.D.</u>	<u>RANGE</u>
<u>Current Serious Offense</u>				
Persons	93 (19%)			
Property	202 (41%)			
Drugs	45 (9%)			
Runaway	66 (13%)			
Other	87 (18%)			
	n = 493			
<u>Were Drugs Involved?</u>				
No	396 (85%)			
Yes	69 (15%)			
	n = 465			
<u>Number of Prior Referrals</u>	(n=473)	3.26	3.78	0 to 25
<u>Number of Offenses - Persons</u>	(n=493)	.434	.685	0 to 4
<u>Number of Offenses - Property</u>	(n=493)	1.92	2.46	0 to 24
<u>Number of Offenses - Drugs</u>	(n=493)	.310	.881	0 to 9
<u>Number of Offenses - Runaway</u>	(n=493)	1.15	2.26	0 to 17
<u>Number of Offenses - Other</u>	(n=493)	.929	1.51	0 to 11

SASSI Instrument

The SASSI instrument contained the score on the SASSI, demographic variables, and self-report behavioral information.

Table II: SASSI

<u>SASSI</u>	
Abuser	195 (51%)
Not Likely	<u>191 (49%)</u> 386

The SASSI

One hundred ninety-five juveniles (51%) were classified as drug abusers by the SASSI, while one hundred ninety-one (49%) were classified as not likely to be an abuser (n=386).

Demographics

Age, Sex, Race, and Language: The mean age of the juveniles was 15.1, S.D.=.983, range 13 to 17, n=382. There were 320 (84%) males, and 60 (16%) females. One hundred sixty-one (42%) were Black, 107 (28%) were Hispanic, 25 (6%) were Oriental, 5 (1%) were other, and 89 (23%) were white (n=387). English was spoken in 325 (84%) of homes, Spanish in 55 (14%), and other languages in 8 (2%), (n=388).

Table III: Demographic Variables

Age	Mean	15.12	
	S.D.	.983	
	Range	13 to 17	
Sex	Male	320	(84%)
	Female	60	(16%)
		<u>380</u>	
Race	Black	161	(42%)
	Hispanic	107	(28%)
	Oriental	25	(6%)
	White	89	(23%)
	Other	5	(1%)
		<u>387</u>	
Language at Home	English	325	(84%)
	Spanish	55	(14%)
	Other	8	(2%)
		<u>388</u>	

School Performance: Two hundred nine (54%) reported they were at grade level, 145 (37%) reported they were not at grade level, and 34 (9%) reported they had dropped out of school (n=388). Eighty-four (22%) reported they were good students, 227 (59%) reported they were average, 44 (11%) reported they were below average, and 29 (8%) reported they were failing students (n=384).

Table IV: School Performance Indicators

School Performance		
At Grade Level	209	(54%)
Not at Grade Level	145	(37%)
Dropped out	34	(9%)
	<u>388</u>	
Kind of Student		
Good	84	(22%)
Average	227	(59%)
Below Average	44	(11%)
Failing	29	(8%)
	<u>384</u>	

Family Characteristics

Marital Status of Parents, Living Arrangements, Employment of Parents: Only 114 (30%) juveniles reported their parents were married. The rest reported divorce, 107 (28%); separated 66 (17%); single 70 (18%); or widowed 24 (6%), (n=381). Juveniles lived in a wide range of living situations. The most common was living with mother only, 131 (35%), followed by living with mother/stepfather, 78 (21%), and living with biological parents, 71 (19%). The rest were living with other family members, 73 (19%), or with a guardian or foster care, 25 (7%), (n=378).

The mean number living in the home was 4.42, S.D.=1.95, range 0 to 13 (n=373).

Two hundred twenty (55%) of the juveniles' mothers were employed, and two hundred seventy-one (74%) of the fathers were employed (n=399; n=366, respectively).

Table V: Family Characteristics

Parents Marital Status	
Married	114 (30%)
Divorced	107 (28%)
Separated	66 (17%)
Single	70 (18%)
Widow/Widower	24 (6%)
	<u>381</u>
Living Arrangement	
Living with biological parents	71 (19%)
Living with father/stepmother	17 (5%)
Living with mother/stepfather	78 (21%)
Living with guardian or foster care	25 (7%)
Living with mother only	131 (35%)
Living with father only	25 (7%)
Living with relative	30 (8%)
Other	1 (0)
	<u>378</u>
Number Living in Household (n=373)	
Mean	4.42
S.D.	1.95
Range	0 to 13
Employment - Mother	
Not Employed	158 (42%)
Employed	220 (58%)
	<u>378</u>
Employment - Father	
Not Employed	85 (25%)
Employed	261 (75%)
	<u>346</u>

Behavioral Self-Report

Penal System and Alcohol Drug Use: A very high number of juveniles reported both family and friends were in the penal system. One hundred sixty-six (74%) reported there were family members in detention or prison or on probation/parole (n=225). Two hundred ninety-two (91%) reported the same for friends (n=320). Alcohol use was reported by 204 (53%) juveniles with 64 (16%) reporting regular use (n=406). Drug use was reported by 114 (29%) juveniles with 48 (12%) reporting regular use (n=389). Family drinking problems was reported by 97 (25%) juveniles and family drug problems were reported by 74 (19%) juveniles (n=389; n=388, respectively).

Table VI: Behavioral Self Report

Member of Family in Penal System	
In Detention/Prison	81 (36%)
On Probation/Parole	85 (38%)
Neither	59 (26%)
	<u>225</u>
Friends in Penal System	
In Detention/Prison	173 (54%)
On Probation/Parole	119 (37%)
Neither	28 (9%)
	<u>320</u>
Alcohol Use	
Never	181 (47%)
Once or Twice	140 (36%)
Weekly	48 (12%)
Daily	16 (4%)
	<u>385</u>
Drug Use	
Never	275 (71%)
Once or Twice	66 (17%)
Weekly	26 (7%)
Daily	22 (6%)
	<u>389</u>
Family Drinking Problems	
No	292 (75%)
Yes	97 (25%)
	<u>389</u>
Family Drug Problems	
No	314 (81%)
Yes	74 (19%)
	<u>388</u>

Attitude Toward SASSI: Although not part of the SASSI, juveniles were asked how they felt about taking this test. Two hundred thirty-five (61%) reported "fine," 34 (9%) reported "annoyed" and 116 (30%) gave no response, (n=385).

Table VII: Attitude toward SASSI

Attitude Toward SASSI	
Fine	235 (61%)
Annoyed	34 (9%)
No Response	116 (30%)
	<u>385</u>

Nursing Instrument

Urine Testing and Consent: Urine collection occurred between 8 a.m. and 5 p.m. (33%), 6 a.m. to 12 p.m. (39%) and 1 p.m. to 7 p.m. (28%), (n=486). This is a very close approximation to the time of intake entry. Consent to testing was given by 231 (48%), 238 (50%), refused and 11 (2%) were too intoxicated to test (n=480).

Urine Temperature: The mean urine temperature was 92.47, S.D.=1.50, range 90 to 96 (n=218). This indicated all were in the acceptable range for valid samples.

Prescription Drug and Observation of Illegal Drug Use by Nurses: Very few juveniles were on prescription drugs, 15 (3%), n=467 or were viewed by the nurses as having taken illegal substances, 6 (1%), n=464.

Urine Drug Testing

Two types of drug testing were used, the EMIT drug screen and Thin Layer Chromatography (TLC). The EMIT screened for 8 substances and an "other" category while the TLC screened for caffeine, nicotine, both, and "other". Both these had sample sizes of 219 cases. The EMIT drug screening showed a negligible incidence for all drugs with the exception of cocaine, 21 (10%), and cannabis (marijuana) 29 (13%).

TLC showed that 49 (22%) used caffeine, 56 (26%) used nicotine, 17 (8%) used both, and 9 (4%) use "other."

Of the total 219 cases, the EMIT identified 53 cases of drug abuse (24%) with 43 using at least 1 drug, 9 using 2 drugs, and 1 using 3 drugs.

Vocalyzer

A pilot of 106 juveniles were tested using a voice test. One case was identified as positive.

Table VIII: Nursing Instrument Variables

VARIABLE NAME	SAMPLE SIZE & PERCENTAGE	MEAN	S.D.	RANGE
<u>Consent</u>				
Given	231 (48%)			
Refused	238 (50%)			
Not Able to Test	11 (2%)			
	480			
Urine Temperature	(n=218)	92.47	1.50	90 to 96
<u>Thin Layer Chromatography</u>				
None	88 (40%)			
Caffeine	49 (22%)			
Nicotine	56 (26%)			
Both	17 (8%)			
Other	9 (4%)			
	219			

Table IX: Vocalyzer Results

Vocalyzer	
No	105 (99%)
Yes	1 (1%)
	106

D. FINDINGS

The part of the evaluation explored the interrelationships between the components of the study. Two types of statistical tests were used for examining relationships. T-tests (t) are used when the means of two groups are compared and chi-square (X²) is used when comparisons are made between categories of data. The t values and X² values will be given after data is presented and the appropriate probability (p) or significance of the findings. Since many relationships between variables were explored, only the ones that are significant and of practical importance will be presented. For ease of interpretation, this section will be presented as a series of questions and answers. The statistical data used will be presented in the Tables.

Q: WERE THERE ANY DIFFERENCES BETWEEN THOSE WHO WERE REPORTED BY THE INTAKE PROBATION OFFICER AS HAVING DRUGS INVOLVED IN THE CURRENT OFFENSES AND THOSE WHO DID NOT?

A: There were no differences on any of the other intake characteristics, demographics, behavioral self-report, SASSI or urine drug screen between these two groups.

Q: WERE THERE ANY DIFFERENCES BETWEEN THE JUVENILES WHO CONSENTED TO URINE DRUG TESTING AND THOSE WHO REFUSED?

A: No. None were statistically significant.

Q: WERE THERE ANY DIFFERENCES FOUND BETWEEN THOSE WHO SCORED AS ABUSERS ON THE SASSI AND THOSE WHO SCORED AS NOT LIKELY TO BE AN ABUSER?

A: First, differences on the SASSI and Intake characteristics will be examined. The following significant differences were found: (a) The group that scored as abusers had a higher mean of previous referrals, 3.67, S.D. 3.68, than those who scored as non-abusers, 2.75, S.D. 2.97, t=2.43, p < .02; (b) The group that scored as abusers had a higher mean number of runaway offenses, 1.41, S.D. 2.43 compared to those who scored as non-abusers, 0.660, S.D. 1.70, t=3.28, p = .001.

Table X: SASSI Score Differences

VARIABLES	SASSI ABUSER	SASSI NON-ABUSER	t	p
	Mean (SD)	Mean (SD)		
Prior Referrals	3.67 (3.68)	2.75 (2.97)	2.43	.02
Runaway Offenses	1.41 (2.43)	.660 (1.70)	3.28	.001

Q: WERE THERE ANY SIGNIFICANT RELATIONSHIPS BETWEEN THE SASSI AND BEHAVIORAL CHARACTERISTICS OF JUVENILES?

A: Yes. The SASSI was related to the following behavioral characteristics.

- (a) Of the 90 juveniles classified as drug abusers by the SASSI, 75 (83%) reported their families were in the penal system compared to 57 (65%) of the 88 juveniles classified as non-abusers ($X^2 = 8.10, p = .02$).**
- (b) Juveniles who reported alcohol drinking on a weekly or daily basis ($n=53$) were more likely to be classified as drug abusers by the SASSI, 43 (81%) compared to juveniles who reported none or little alcohol drinking ($n=266$), with 119 (45%) being classified as abusers by the SASSI ($X^2 = 21.98, p = .0000$).**
- (c) Juveniles who reported drug use ($n=91$) were more likely to be classified as drug abusers by the SASSI, 69 (76%) than juveniles who reported no drug use ($n=230$) with 93 (40%) classified as abusers by the SASSI ($X^2 = 31.26, p = .0000$).**
- (d) Juveniles who reported family drinking problems, ($n=84$) were more likely to be classified as a drug abusers by the SASSI, 62 (74%) compared to 101 (42%) of the 238 juveniles who reported no family drinking problems ($X^2 = 23.20, p = .0001$).**
- (e) Juveniles who reported family drug problems ($n=66$) were more likely to be classified as a drug abuser by the SASSI, 48 (73%) compared to juveniles who reported no family drug problems with 113 (44%) of 254 being classified as drug abusers ($X^2 = 15.60, p = .0001$).**
- (f) While for both Black (43%) and Hispanic juveniles (52%), the SASSI showed a similar percent of drug abusers, Oriental juveniles, 15 (79%) were classified as non-abusers and white juveniles 48 (70%) were classified as drug abusers ($X^2 = 20.69, p = .0004$).**
- (g) Juveniles whose current offense was runaway ($n=43$) were more likely to be classified by the SASSI as drug abusers, 29 (17%) than a non-drug abuser, 14 (9%), ($X^2 = 12.30, p = .03$).**

Table XI: Relationship between SASSI and Behavioral Characteristics

VARIABLES					x ²	P
FAMILY IN THE PENAL SYSTEM						
<u>SASSI</u>	<u>Family in Detention/Prison</u>	<u>On Probation or Parole</u>	<u>Neither</u>		8.10	.02
Abuser	36 (55%)	39 (58%)	15 (33%)			
Non-Abuser	29 (45%)	28 (42%)	31 (67%)			
SELF-REPORTED ALCOHOL USE						
<u>SASSI</u>	<u>None, Once, or Twice</u>	<u>Weekly/Daily</u>			21.98	.0000
Abuser	119 (45%)	43 (81%)				
Non-Abuser	147 (55%)	10 (18%)				
SELF-REPORTED DRUG USE						
<u>SASSI</u>	<u>None</u>	<u>Once/Weekly/Daily</u>			31.26	.0000
Abuser	93 (40%)	69 (76%)				
Non-Abuser	137 (60%)	22 (24%)				
FAMILY DRINKING PROBLEMS						
<u>SASSI</u>	<u>No</u>	<u>Yes</u>			23.20	.0000
Abuser	101 (42%)	62 (74%)				
Non-Abuser	137 (58%)	22 (26%)				
FAMILY DRUG PROBLEMS						
<u>SASSI</u>	<u>No</u>	<u>Yes</u>			15.60	.0001
Abuser	113 (44%)	48 (73%)				
Non-Abuser	141 (56%)	18 (27%)				
RACE						
<u>SASSI</u>	<u>Black</u>	<u>Hispanic</u>	<u>Oriental</u>	<u>White</u>	<u>Other</u>	20.69 .0004
Abuser	58 (43%)	48 (52%)	4 (21%)	48 (70%)	3 (75%)	
Non-Abuser	77 (57%)	45 (48%)	15 (79%)	21 (30%)	1 (25%)	
CURRENT OFFENSE						
<u>SASSI</u>	<u>Persons</u>	<u>Property</u>	<u>Drugs</u>	<u>Runaway</u>	<u>Other</u>	12.30 .03
Abuser	26 (38%)	69 (49%)	12 (50%)	29 (67%)	31 (60%)	
Non-Abuser	43 (62%)	72 (51%)	12 (50%)	14 (33%)	21 (40%)	

Q: WHAT WAS THE RELATIONSHIP BETWEEN THE SASSI AND EMIT URINE DRUG SCREEN?

A: The SASSI did not distinguish between those juveniles who tested positive on urine drug screen and those who tested negative. Of the 36 juveniles who tested positive on drugs, the SASSI identified only 21 (58%) as drug abusers. There was a high rate of false positives on the SASSI. Of the 122 juveniles who tested negative on the EMIT urine drug screen, the SASSI classified 60 (49%) as drug abusers.

Q: HOW WELL DID THE SASSI IDENTIFY ABUSERS FOR EACH OF THE NINE EMIT URINE DRUG SCREENS?

Table XII: Identification of Abusers: SASSI compared to EMIT

VARIABLE NAME	SAMPLE SIZE & PERCENTAGE
EMIT	(n=219)
Alcohol	
No	214 (98%)
Yes	5 (2%)
Amphetamines	
No	218 (100%)
Yes	1 (-)
Barbiturates	
No	218 (100%)
Yes	1 (-)
Cocaine	
No	198 (90%)
Yes	21 (10%)
Cannabis	
No	190 (87%)
Yes	29 (13%)
Phencyclidine	
No	219 (100%)
Yes	- (-)
Opiates	
No	218 (100%)
Yes	1 (-)
Benzodiazides	
No	217 (99%)
Yes	2 (1%)
Other	
No	215 (98%)
Yes	4 (2%)

A: Although the numbers are very small, the following information is given:

(a) The EMIT identified two people with alcohol abuse and both were identified as abusers by the SASSI.

(b) The EMIT identified one person with amphetamine use and that juvenile was identified as a non-abuser on the SASSI.

(c) The EMIT identified one juvenile with barbiturates and that person was classified as a non-abuser on the SASSI.

(d) The EMIT identified 15 juveniles with cocaine and the SASSI classified 8 as abusers.

(e) The EMIT identified 20 juveniles with cannabis and the SASSI identified 10 of them as drug abusers.

(f) No one was identified as using phencyclidine.

(g) The EMIT identified 1 juvenile as using opiates and the SASSI classified that juvenile as a non-drug abuser.

(h) The EMIT identified 2 juveniles as using benzodiazides and the SASSI classified both as a drug abusers.

(i) The EMIT identified 3 juveniles on "other" drugs and the SASSI classified all three as abusers.

Q: WAS THERE A RELATIONSHIP BETWEEN JUVENILES' SELF-REPORTING ALCOHOL USE AND FAMILY ALCOHOL PROBLEMS?

A: Yes. Of the 97 juveniles who reported family drinking problems, 25 (26%) also self-reported alcohol use compared to 38 (13%) of these juveniles who had no reported family alcohol problems (n=287), ($X^2 = 7.41$, $p = .006$).

Table XIII: Relationship between Juveniles' Self-Reporting Alcohol Use and Family Alcohol Problems

FAMILY ALCOHOL PROBLEMS			$\underline{X^2}$	\underline{P}
Self-Reporting Alcohol Use	<u>No</u>	<u>Yes</u>	7.41	.006
	No	249 (87%)		
Yes	38 (13%)	25 (26%)		

Q: WAS THERE A RELATIONSHIP BETWEEN JUVENILES' SELF-REPORTING DRUG USE AND FAMILY DRUG PROBLEMS?

A: Yes. Of the 74 juveniles who reported family drug problems, 31 (42%) self-reported drug use compared to 83 (26%) of the juveniles who reported no family drug problems (n=313), ($X^2 = 6.088$, $p = .01$).

Table XIV: Relationship between Juveniles' Self-Reporting Drug Use and Family Drug Problems

FAMILY DRUG PROBLEMS			$\underline{X^2}$	\underline{P}
Self-Reporting Drug Use	<u>No</u>	<u>Yes</u>	6.088	.01
	No	230 (74%)		
Yes	83 (26%)	31 (42%)		

Q: WAS THERE A RELATIONSHIP BETWEEN SELF-REPORT OF DRUG USE AND ALCOHOL USE?

A: Yes. Of the 64 juveniles who self-reported alcohol, 39 (61%) also reported drug use compared to 25 (39%) of the juveniles who reported no drug use ($X^2 = 35.91, p = .0000$).

Table XV: Relationship between Self-Report of Drug Use and Alcohol Use

Self-Reporting Drug Use	SELF-REPORTING ALCOHOL USE		χ^2	P
	No	Yes		
No	248 (77%)	25 (39%)	35.91	.0000
Yes	73 (23%)	39 (61%)		

Q: WAS THERE A RELATIONSHIP BETWEEN EMIT URINE DRUG SCREEN AND SELF-REPORT ALCOHOL USE?

A: Yes. Of the 28 juveniles who reported regular alcohol use, 13 (46%) tested positive on the EMIT Urine compared to 15 (54%) who tested negative ($X^2 = 6.887, p = .008$).

Table XVI: Relationship between EMIT and Self-Reported Alcohol Use

EMIT Drug Screen	SELF-REPORTED ALCOHOL USE		χ^2	P
	No	Yes		
Yes	26 (21%)	13 (46%)	6.88	.008
No	101 (79%)	15 (54%)		

Q: WAS THERE A RELATIONSHIP BETWEEN EMIT URINE DRUG SCREEN OR SELF-REPORT DRUG USE?

A: Yes. Of the 43 juveniles who reported drug use, 20 (46%) tested positive on the EMIT Urine Screen compared to 20 (17%) who tested negative ($X^2 = 12.53, p = .0004$).

Table XVII: Relationship between EMIT and Self-Report Drug Use

EMIT Drug Screen	SELF-REPORTED DRUG USE		χ^2	P
	No	Yes		
Yes	20 (17%)	20 (46%)	12.53	.0004
No	95 (83%)	23 (54%)		

Q: WERE THERE ANY DIFFERENCES BETWEEN JUVENILES WHO SELF-REPORTED ALCOHOL USE AND THOSE WHO DID NOT ON SCHOOL PERFORMANCE?

A: Yes. Of those who reported they were at grade level or below (n=350), 52 (15%) reported alcohol use compared to 12 (36%) who had dropped out of school ($\chi^2 = 10.02$, $p = .006$).

Table XVIII: Differences between Juveniles who Self-Reported Alcohol Use and those who did not on School Performance

School Performance	SELF-REPORTED ALCOHOL USE		χ^2	P
	No	Yes		
At Grade Level	178 (56%)	31 (48%)	10.02	.006
Not at Grade Level	120 (38%)	21 (33%)		
Dropped Out	21 (6%)	12 (19%)		

Q: WERE THERE ANY DIFFERENCES BETWEEN JUVENILES WHO SELF-REPORTED DRUG USE AND THOSE WHO DID NOT ON SCHOOL PERFORMANCE?

A: Yes. Of those who reported they were at grade level or below (n=353), 97 (28%) reported drug use compared to 16 (47%) of those who dropped out ($\chi^2 = 8.88$, $p = .01$).

Table XIX: Differences between Juveniles who Self-Reported Drug Use and those who did not on School Performance

School Performance	SELF-REPORTED DRUG USE		χ^2	p
	No	Yes		
			8.88	.01
At Grade Level	159 (58%)	50 (44%)		
Not at Grade Level	97 (35%)	47 (42%)		
Dropped Out	18 (7%)	16 (14%)		

Q: WERE THERE ANY DIFFERENCES BETWEEN EMIT URINE DRUG SCREEN AND RESULTS SCHOOL PERFORMANCE?

A: Yes. Of the 147 juveniles who were at or below grade level, 33 (22%) tested positive to drugs compared to 7 out of 11 students (64%) who had dropped out of school ($\chi^2 = 9.40$, $p = .009$).

Table XX: Difference between Testing Results and School Performance

School Performance	EMIT DRUG SCREEN		χ^2	p
	No	Yes		
			9.40	.009
At Grade Level	19 (47%)	71 (60%)		
Not at Grade Level	14 (35%)	43 (37%)		
Dropped Out	7 (18%)	4 (3%)		

Q: WERE THERE ANY DIFFERENCES BETWEEN JUVENILES WHO SELF-REPORTED ALCOHOL USE AND RACE?

A: Yes, 21 (24%) of white and 22 (21%) of Hispanic self-reported alcohol use compared to 19 (12%) of Black, and 1 (4%) of Oriental juveniles ($\chi^2 = 9.50$, $p = .05$).

Table XXI: Difference between Juveniles who Self-Reported Alcohol Use and Race

Self-Reported Alcohol Use	RACE					χ^2 9.50	P .05
	Black	Hispanic	Oriental	White	Other		
No	139 (88%)	84 (79%)	23 (96%)	68 (76%)	4 (80%)		
Yes	19 (12%)	22 (21%)	1 (4%)	21 (24%)	1 (20%)		

Q: WERE THERE ANY DIFFERENCES BETWEEN JUVENILES WHO SELF-REPORTED DRUG USE AND RACE?

A: Yes, 46 (51%) of white and 46 (43%) of Hispanics self-reported drug use compared to 14 (9%) of Blacks and 6 (24%) of Oriental juveniles ($X^2 = 64.13, p = .0000$).

Table XXII: Differences between Juveniles who Self-Reported Drug Use and Race

Self-Reported Drug Use	RACE					χ^2 64.13	P .0000
	Black	Hispanic	Oriental	White	Other		
No	146 (91%)	61 (57%)	22 (76%)	43 (48%)	3 (60%)		
Yes	14 (9%)	46 (43%)	6 (24%)	46 (52%)	2 (40%)		

Q: WERE THERE ANY DIFFERENCES BETWEEN THOSE WHO SELF-REPORTED DRUG USE AND KIND OF STUDENT?

A: Yes. Of the group that self-reported drug use, $n=115$, 83 (72%) reported they were good or average students compared to 229 (76%) of juveniles who reported no drug use, $n=270$ ($X^2 = 10.96, p = .02$).

Table XXIII: Differences between those who Self-Reported Drug Use and Kind of Student

Self-Reported Drug Use	KIND OF STUDENT				χ^2	P
	<u>Good</u>	<u>Average</u>	<u>Below Average</u>	<u>Failing</u>		
No	67 (80%)	162 (72%)	24 (54%)	17 (59%)	10.92	.02
Yes	17 (20%)	66 (28%)	20 (46%)	12 (41%)		

Q: WHAT WERE THE DIFFERENCES BETWEEN THOSE WHO DID AND DID NOT SELF-REPORT DRUG USE AND RUNAWAY OFFENSES?

A: Yes, the juveniles who self-reported drug use had a higher mean number of prior offenses for runaway, 1.92, S.D. 3.04 vs. 0.695, S.D. 1.71 of those who did not self-report drug use ($t=3.78$, $p = .000$).

Table XXIV: Difference between those who did and did not Self-Report Drug Use and Runaway Offenses

	<u>NOT SELF-REPORTED DRUG USE</u>	<u>SELF-REPORTED DRUG USE</u>	t	P
	Mean (SD)	Mean (SD)		
Runaway Offenses	0.695 (1.71)	1.90 (3.04)	-3.78	.000

Q: WERE THERE ANY DIFFERENCES ON THOSE WHO TESTED POSITIVE ON THIN LAYER CHROMATOGRAPHY AND THOSE WHO DID NOT?

A: Yes. (a) For those juveniles who tested positive on nicotine use ($n=45$), the SASSI classified 29 (36%) as abusers compared to 16 (21%) as non-abusers ($\chi^2 = 13.61$, $p = .008$); and (b) Of those 67 juveniles who tested negative on TLC, 57 (50%) reported no drug use compared to 10 (23%) who did self-report ($\chi^2 = 17.99$, $p = .001$).

Table XXV: Differences on those who Tested Positive on Thin Layer Chromatography and those who did not

Thin Layer Chromatography	SASSI		χ^2 13.91	P .008
	Abuser	Non-Abuser		
None	26 (32%)	37 (48%)		
Caffeine	17 (21%)	16 (21%)		
Nicotine	29 (36%)	16 (21%)		
Both	9 (11%)	3 (4%)		
Other	- (-)	5 (6%)		

Thin Layer Chromatography	SELF-REPORTED DRUG USE		17.99	.001
	No	Yes		
None	57 (50%)	10 (23%)		
Caffeine	26 (23%)	6 (14%)		
Nicotine	22 (19%)	19 (44%)		
Both	5 (4%)	6 (14%)		
Other	5 (4%)	2 (5%)		

Q: WERE THERE ANY DIFFERENCES BETWEEN THOSE WHO TESTED POSITIVE ON VOCALYZER AND THOSE WHO DID NOT?

A: No. Only one juvenile tested positive on Vocalyzer. This juvenile did report regular alcohol use, but not drug use.

E. IMPLICATIONS

In summary, the SASSI was not a validator of urine drug screening. Probably the major reason is that the SASSI relates to general predictions of drug abuse while the urine drug screen is a temporal measure, positive for a short period of time when the drugs are still in the body. Thus, relating an inventory such as SASSI to a time limited drug test, does not seem feasible. Behavior self-report of drug and alcohol use showed some relationship to urine drug testing, but this relationship was weak.

However, using self-report of drug and alcohol use, the sensitivity of the SASSI increases. Of the 53 cases of alcohol abuse, the SASSI identified 82%, and of the 91 juveniles who identified themselves as drug abusers, the SASSI identified 76%. Both the SASSI and self-report of drug and alcohol use were related to family histories of drug and alcohol problems, and runaway offenses.

It appears that the relationships that need further exploring are juveniles self-reporting drug and alcohol use, family behavior patterns, and pen-and-pencil tests. Concurrent validity studies using the SASSI and other standardized drug inventories need to be done.

One of the problems with the SASSI is the potentially high rate of false positives. Across all the variables measured, the sensitivity of the SASSI was greater than its specificity. This means while it may be useful in correctly identifying those who are abusing drugs, it has an equally high chance of incorrectly identifying those who are not abusers. That is one reason why it is essential in evaluations of this kind, that other measures be used to control for this potentially harmful error.

Because age, sex, intake characteristics, and demographic patterns were not distinguishable between SASSI abusers, self-report abusers, consent status and drug screen, caution needs to be taken in interpretation of data. The numbers of subjects changes dramatically for many variables. Although there were no differences on the SASSI, self-report of drugs and alcohol, or other family history variables between those who consented to urine drug testing and those who did not, the sample size for urine drug testing is small compared to other variables.

Almost half the juveniles queried were below grade level and/or dropped out of school. Many children lived in single parent households. A large number (73%) of juveniles reported family in the penal system and an even higher percent (91%) reporting friends in the penal system.

Self-reporting of alcohol and drug abuse was high. Almost a third (29%) of the juveniles reported drug abuse, and over half (53%) reported alcohol use. Juveniles also reported family drinking problems (25%) and family drug problems (19%).

Additionally, juveniles who tested positive on the SASSI had more runaway offenses, higher rates of family members in the penal system, higher rates of self-reported drug and alcohol abuse, and higher rates of family drug and alcohol abuse.

In summary, it is not surprising that many juveniles come from dysfunctional family homes where drugs and alcohol may contribute to running away behaviors. Thus, the most significant implication from this study is that juveniles at risk for drug abuse, experience stressful home environments with not just the juvenile experiencing problems, but the entire family system. For this reason, it is beneficial in studies such as this to have self-report family variables as part of the overall evaluation of drug abuse in juveniles.

F. RECOMMENDATIONS

The following recommendations are made:

- (1) Using urine drug testing will only yield a small percent of drug positives, about 24% mainly from two drugs, cocaine (10%) and cannabis (13%). Resources can be used to identify the most consistently used drugs.*
- (2) Self-reported data of drug use (29%) and regular alcohol abuse (16%) were related to the SASSI abuser score, family drug problems, school performance, family in the penal system, and runaway offenses. For this reason, the juvenile can be a good source of information about their problems with drugs, coupled with adequate intake or social service assessment.*
- (3) The SASSI is not a good indicator of current drug use since it is used as a risk predictor and not for concurrent validation of a drug test. Its strength is in its use with self-report and family history variables.*
- (4) The most potent variable related to drug abuse is family dysfunction. This includes families in the penal system and alcohol and drug abuse problems themselves. Running away behavior appears to be directly linked to those problems. Therefore, evaluating the potential for drug abuse must include asking questions about the home environment.*
- (5) Since the SASSI, urine drug screening, juvenile self-report and intake worker assessment yield different rates, it is difficult to determine which is the best indicator of drug problems in juveniles. It is recommended that the SASSI or a similar instrument be used in combination with a complete assessment of variables (including measures of drinking and drug behavior, family violence, peer pressure, and situations in which the juveniles feel the need to abuse drugs) that the juveniles can self-report and that can be ascertained by appropriate intake instruments.*

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ADOLESCENT SUBSTANCE ABUSE ASSESSMENT PROGRAM (ASAP)

RESEARCH BRIEF

**HARRIS COUNTY JUVENILE PROBATION
DEPARTMENT**

***The Adolescent Substance Abuse Assessment Program (ASAP)
is funded by the Criminal Justice Division, Office of
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**THE ADOLESCENT SUBSTANCE ABUSE
ASSESSMENT PROGRAM (ASAP)**

RESEARCH BRIEF

Background

In May, 1989, the Criminal Justice Division of the Governor's Office awarded the Harris County Juvenile Probation Department a grant to conduct a pilot project to investigate the many issues relating to drug testing of juveniles in detention. The project, was approved by Harris County Commissioners in June, 1989.

Its stated purposes were:

1. to address legal issues and ramifications,
2. to explore medical accuracy and feasibility issues,
3. to develop a reliable data base,
4. to implement a 30-day pilot test,
5. to produce a step-by-step implementation manual.

The Chief Officer organized an internal committee consisting of the Assistant Chief Officer and the Deputy Chiefs of Administrative Services, Intake Court Services, Field Services and Institutional Services. Other administrative staff who were to be involved in the project were also included. The committee met weekly to formulate policy and monitor progress.

A project coordinator was designated and the initial phase began with the hiring of medical, legal, drug abuse and research specialists as consultants. Their task was to identify and answer the most pertinent questions impacting the drug testing of juveniles. With research and program design work underway, medical, legal, and methodological plans for sample testing were completed by the end of August.

On September 5, 1989, the first youths in the Harris County Juvenile Detention Center were tested. Children ages 13-17, brought to the Center by police, came from all racial and economic backgrounds and from all parts of the County. Approximately three-fourths were male. They were charged with offenses ranging from shoplifting to murder.

As part of the child's routine physical, a urine sample was requested. Children had a right to refuse. A consent form was read to the child by a member of the nursing staff and signed by the child before urine collection.

The child had complete privacy during urine collection. All youths over the age of 13 admitted to Detention were also requested to complete a written, drug screening survey, which consisted of an 80-question test. This survey was administered by professional drug and alcohol abuse counseling staff. The ability of a written survey instrument to reliably identify the abuser from the non-abuser was being tested in this project. The survey was administered to small groups of youths. Test periods ran from September 5 to October 4, 1989 and from October 12 to October 19, 1989, in order to test an estimated 500 youths. Upon agreement english-speaking youths were administered the urinalysis test and asked if they would be willing to complete the written drug screening instrument; non-english-speaking children were not asked to complete this instrument.

Precautions were taken throughout the process to protect the civil rights, confidentiality and dignity of each child. The procedures and their purposes were fully explained. Children were not coerced to participate. No information about drug testing was entered into the children's medical records, court reports or case records.

Absolute anonymity was provided.

Legal Issues

One of the most important tasks of the committee was the consideration of the legal issues. The five most important issues were assessed as:

1. reliability of tests and testing methods;
fully informed consent;
2. voluntary or court-ordered (mandatory) testing;
3. confidentiality of results; and
4. privacy in obtaining urine specimens.

The legal consultant established that Section 35.03 of the Texas Family Code and article 4447i of the Texas Statutes allows for the drug testing of youths 13 years old or older, who were referred to the juvenile system. Legally, when a youth is referred, the Juvenile Probation Department is considered the guardian and this also supports the use of drug screening.

In spite of the agency's strong legal position it was decided that drug screening would be on a voluntary basis. The youths, ages 13 and over, would be asked by the nurse to voluntarily take a drug screen, and a consent form was drafted for this purpose.

Medical Issues

The medical questions to be answered were extensive. They included determining the type of specimens to test, i.e., blood, urine, hair, etc.; what drug tests were available and most suitable; how to conduct the test and what self-assessment tool would be used.

It was determined that urine was the most reliable specimen to use under the conditions present in the Detention Center. There are two basic types of drug screens; one requires laboratory analysis and the other can be analyzed at the test site. This project looked at both types. The EMIT and Thin Layer

Chromatography (TLC) were selected as tests using laboratory analysis. InstaScreen I and InstaScreen II were selected as products for on-site testing and analysis; however, only InstaScreen I was actually administered. Later, the product OnTrak was added to the on-site testing component.

The Medical Department was designated as the appropriate area for conducting testing in the Detention Center. Procedures were defined. Several private laboratories were reviewed to determine the feasibility of using them for specimen analysis but the decision was made to use the Harris County Medical Examiner's Office. This was the most accessible and least expensive source for analysis.

The written drug screening survey instrument selected as the self-assessment tool was designed to identify the youth as an abuser, a potential abuser, or not at risk for drug abuse. The developer of the test was brought to Houston to train both staff and volunteers in the procedures for administering the questionnaire.

Chain-of-Custody

The "chain-of-custody" is a series of procedures designed to protect the reliability of the results. For the purposes of the study strict chain-of-custody procedures were not used. This was a decision made by the committee to facilitate the research project. To institute a strict chain-of-custody procedure that would hold up in court would have resulted in additional staff and expense.

The following areas were explored because of their potential impact on any drug testing program:

- direct observation of youth giving sample;
- inspection of facilities to assure "clean urine" samples;
- immediacy of handling so drugs do not leave the system or fall below minimum detection limits;

- taking temperature of urine samples;
- proper transportation of samples to lab.

admitted to detention agreed to urine drug testing;

Conclusions

The pilot drug testing program was subjected to an ongoing as well as a final review. The ongoing review, or the formative evaluation, helped to identify those areas that would require the most concentration during the start-up phase of a program. The most pertinent findings of the formative evaluation are:

- one person should be assigned before the project begins to coordinate all the activities involved with the project,
- careful attention must be given to how paper flows through the system versus how people move through the system so that the project can be truly integrated into the routine work schedule,
- forms need to be developed and tested; procedures for the use of the forms should be clear and simple; a central tracking system for all forms must be identified,
- staff needs to be fully informed of the purpose of the program,
- staff must be provided adequate training at all stages of the program. This is essential to the success of the program.

The final review or summative evaluation showed that:

- a voluntary drug testing program for youths admitted to detention has limitations:
 - * the total assessment of the problem in a facility is not possible;
 - * while 493 youths were screened by the various testing methods, less than half of the youths

* the pen-and-pencil test showed strong potential only as an aid in establishing the extent of the problem.

- the written, drug screening survey instrument was not a validator of the urine drug test. The drug screening instrument identified 51% as drug abusers while the urine drug testing identified 24%.
- there were no differences on any of the study variables between those youths who agreed to be tested and those who did not;
- a very high percentage of juveniles reported family members (73%) and friends (91%) were in the penal system;
- 29% of juveniles self-reported drug use and 53% self-reported alcohol use with 16% using alcohol regularly. Self report of drug and alcohol use, family problems with drugs and alcohol, school problems, families in the penal system, and history of running away were all related to the drug screening survey responses;
- the drug screening survey instrument was reasonably sensitive in identifying self-reporting drug users (76%), and self-reporting alcohol use (81%);
- positive urine drug testing showed a relationship to self reported alcohol (46%) and self-reported drug use (46%);
- the key predictors of juvenile drug problems are family dysfunction, running away, and school performance.