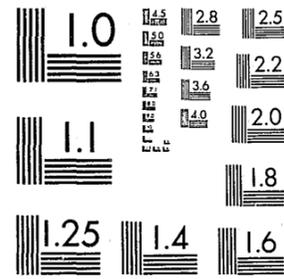


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**National Institute of Justice  
United States Department of Justice  
Washington, D. C. 20531**



State of Michigan

Report of the Task Force  
on the Mentally Ill  
Adolescent Offender

Departments of  
Management and Budget,  
Mental Health,  
and Social Services

Report of the Task Force  
on the Mentally Ill  
Adolescent Offender to  
the Michigan Departments of  
Management & Budget,  
Mental Health and Social Services

November 3, 1982

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Preface

It is with considerable satisfaction that we respectfully submit the following report to Gerald H. Miller, Ph.D. Director, Department of Management and Budget, C. Patrick Babcock, Director, Department of Mental Health, and Noble P. Kheder, Director, Department of Social Services.

Over the past nearly three years, we met, studied and discussed the problem of the serious mentally ill juvenile offender, and have come to appreciate the difficulty in identifying this offender group and providing them with appropriate services.

When we initially came together, some of us were of the view that there were no mentally ill juvenile offenders in the training school system, while others of us believed there were very many of these youth in that system. We now believe, on the basis of careful study, that there are a significant number of youth in our training schools who have serious mental health problems. We are convinced that these identified youth are not now receiving the best care the state can or should provide to them.

We further believe that through more appropriate services to these youth, such as those outlined in the following pages of this report, that these youth will have a better opportunity to become productive members of our state and less a threat to public safety.

We appreciate the difficulty of our state's present fiscal problems and have attempted to develop recommendations which maximize benefits to the target group while minimizing costs to the state.

While we feel some satisfaction in completing a difficult phase in this effort, we recognize that implementation will also be difficult. Many of us hope to be a part of that important effort as well. We appreciate and acknowledge the excellent input of some persons who were unable to complete

**Task Force Chairpersons** — Charles R. Davoli, Director, Office of Criminal Justice, Department of Management and Budget and Harley Stock, Ph.D. Psychologist, Center for Forensic Psychiatry, Department of Mental Health and the funding source credit.

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the present effort with us due to retirement or reassignment. Their assistance was invaluable as was that of the task force staff person William F. Andrews. We hope that the following will be helpful to the incoming legislature and new administration in better serving this difficult and important offender group.

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INTRODUCTION

The provision of mental health services to juvenile offenders is a longstanding and unresolved problem in the State of Michigan. The Department of Social Services retains primary public responsibility for providing for the service needs of all children, including youths adjudicated delinquent under Public Act 150. The department frequently reports difficulty in meeting what appears to be the growing need for mental health services to serious and violent juvenile offenders under their jurisdiction. Typically, these youths have personality disturbances which are complicated by psychological, behavioral, and emotional disorders. Their delinquent behavior in the community is so extreme that institutionalization is often the most appropriate alternative. Only small numbers of these youth are accepted for admission to the children's psychiatric hospitals. They are frequently placed in the State's training schools, where their mental health needs may be unmet. In response to an obvious need for services, the Department of Mental Health agreed to assist in the development of services and programming options.

In January of 1979, V.A. Stehman, M.D., then Acting Director of the Department of Mental Health, appointed a small committee, comprised of several experts in the legal and mental health fields, to study the needs of the mentally ill adolescent offenders. Recommendations emanating from this group defined the focus of future departmental activity concerning this population. In January of 1980, Sharon Miller, then Director of the DMH Bureau of Planning, Evaluation and Policy, convened two working groups to study the clinical and administrative aspects of this issue. Those groups were later combined to form the Task Force On The Mentally Ill Adolescent Offender. This group is composed of executive and line staff representatives of the Office of Criminal Justice, juvenile courts, and the State Departments of Mental Health, Social

Services, Corrections, and Management and Budget. The group's early activities included a statewide survey conducted by Joseph Avore, Ph.D., Diane Ramsey, and Gretchen Warwick, Ph.D., on adolescent psychiatric diagnostic classifications and the instruments used in the evaluation of juvenile offenders. In addition the committee heard presentations from nationally recognized experts in the field of juvenile forensics. They also made site visits to facilities operated by the departments of Social Services and Mental Health. As a result of these activities the committee recognized the need to clinically identify the population in question prior to making programmatic and administrative recommendations. Using research funds provided by the Department of Mental Health and the Office of Criminal Justice, this group, in cooperation with clinicians from the University of Michigan's Children's Psychiatric Hospital, under the leadership of Michael McManus, M.D., conducted an intensive clinical and demographic assessment/comparison of adolescents in both the State training schools and State mental health facilities. In total, 129 subjects received neuro-psychiatric evaluations, 71 from the DSS training schools and 58 from the DMH facilities. A report of clinical findings and recommendations regarding the State training school residents was completed in January of 1982. A similar report regarding youth in the Department of Mental Health facilities was completed by Dr. McManus in October 1982. Both reports are included as appendices to this document.

The Governor's 1982 State of the State Message referenced the work of the Task Force On The Mentally Ill Adolescent Offender and the state's commitment to providing services to this population. Thirty-four months of Task Force deliberations resulted in recommendations which not only considered the clinical findings discussed in the McManus reports, but also the realities of the State of Michigan's difficult economic situation. The Task Force

recognizes that its recommendations represent general parameters and will require additional development before they can be implemented.

RECOMMENDATIONS:

I. DIAGNOSTIC SCREENING OF YOUTH REFERRED FOR INSTITUTIONAL PLACEMENT

It is recommended that all youth scheduled for admission to the Training School undergo systematized gross clinical screening. Youth identified via the gross screening process as having special programming needs or characteristics shall be referred for comprehensive psychological or psychiatric assessment.

It is believed that current fiscal limitations preclude the provision of comprehensive psychiatric evaluations for all youth entering the training schools. At a minimum, however, all youngsters entering the state training school system should be screened prior to admission. Ideally, gross screening would be required for all youngsters who are made state wards.

The recommended approach appears to be the most economically feasible method of assuring that youth with complex service needs are identified. Programming/placement decisions would then be made based on the results of the subsequent more complete diagnostic assessments.

Gross clinical screening should minimally cover intellectual functioning, academic functioning and an examination of mental status. Further evaluation should be done if indicated. The screening should be supervised by a licensed psychologist.

It is recommended that the same core battery of instruments be administered to all youngsters screened.

Intellectual functioning will be assessed by means of the Culture Fair IQ test. If a nonvalid score is obtained, then a Wechsler Intelligence Scale for Children (WISC-R) or Wechsler Adult Intelligence Scale (WAIS-R) will be administered later. Academic functioning will be assessed by the Metropolitan Reading Test and the Wide Range Arithmetic (WRAT) subtest. The Benton Visual Retention Test will screen for possible visual-motor problems. The above screening tests will be done in groups. The Diagnostic Interview Schedule (DIS) will be administered individually by a trained limited licensed psychologist or a M.S.W. to assess mental status. If the DIS produces a Diagnostic Screening Manual III diagnosis, the youngster will be referred for a psychiatric interview.

#### Implementation Options

It is expected that the core battery screening can be essentially implemented within existing resources. The Wayne County Juvenile Court Clinic for Child Study will administer the tests to all Wayne County youth referred to the DSS institutional system. W.J. Maxey and Adrian training schools and the state operated Regional Detention Center will administer the tests to all other youth admitted to the system.

As a result of participation in this Task Force there has been an informal agreement between professionals at the Wayne County Juvenile Court Clinic for Child Study and the DSS institutional programs to share and accept each others testing. This has reduced the incidence and added cost of duplicate testing.

While other indicated testing instruments are well known and generally accepted, the DIS is relatively new. The group does not believe that a

superior instrument to the DIS has yet been devised. The DIS generates a diagnosis of mental illness based upon the Diagnostic Screening Manual (DSM III) endorsed by the American Psychiatric Association. To generate confidence in its use, it is proposed that the instrument be piloted for one years time. During the period of the pilot, no diagnosis generated solely by the DIS will be entered permanently in a child's record. All children identified by the DIS as having a mental disorder will be referred for further psychiatric evaluation. To further confidence in the DIS it is recommended that a random sample of children who did not generate a DSM III diagnosis in the DIS also be referred for psychiatric evaluation. At the end of the year, a decision will be made as to whether to install the DIS as a permanent part of the screening battery.

A trainer of trainers approach would be used for staff administering the DIS. The initial training costs for this purpose is not expected to exceed \$3,000. It is believed that this amount and subsequent DIS training costs could be handled within existing resources.

The DIS is designed for computer scoring. Computer programs for scoring are available. Details of the scoring process can also be accomplished within existing resources.

It is expected that use of the DIS will prove to be a cost-saving measure in additon to improving the prognosis for appropriate treatment for youth in the DSS institutional system. Once confidence in the DIS is established, it is expected that it may be possible to administer the DIS with trained paraprofessionals. Item analysis of the DIS may also reveal specific predictors which would identify potential behavior problems, short of a DSM III diagnosis, which would assist DSS staff in

determining appropriate treatment program placements.

## II. DMH CONSULTATION WITH TRAINING SCHOOL PROGRAMS

The training school system currently provides three primary programming modalities for boys: intensive treatment (individual counseling); positive peer culture (group interaction); and guided group interaction (group interaction with staff intervention). The girls are provided with positive peer culture programming only. Under the proposed approach, these programs will remain essentially unchanged.

It is recommended to better meet the needs of youth who can be maintained in regular training school programming, that mental health services be provided on a consultative basis to selected DSS training school youth. Those mental health services that are presently being provided to DSS youth placed into training schools are furnished by private consultants. It is proposed that these services be supplemented by the use of DMH professionals. This would enable more training school youths to receive mental health support services and serve as a means of facilitating services to any youth who may move from treatment in a DMH Facility to DSS training school placement. The mental health professionals could also assist in the implementation of inservice training programs for the training school staff. For example, the training school staff could be further trained in the recognition and management of adolescent psychological disorders.

### Implementation Options

As suggested in this section, the involvement of DMH professionals in regular DSS Training School programming could have a variety of

beneficial results. The extent and nature of that DMH involvement will clearly have a direct impact on the resulting benefits.

It is proposed that direct DMH involvement be provided to youth within the DSS training schools identified as being in need of mental health care. The impact of the involvement should be carefully monitored and assessed on a regular basis initially by both DSS and DMH. If this approach appears to be beneficial, and as both systems become more at ease in their collaboration, other youth populations may be involved in the DMH service group. DSS staff training and joint treatment program development may be future areas of DSS-DMH cooperation. Since it is desirable that the consultation be provided by experienced fully qualified professionals, recognition of the added work load should be considered in budget development for the mental health facilities involved in providing consultation.

The approach advocated in this section, as in the other areas of the report, is one of careful, moderate and gradual development of better DSS-DMH collaboration with youth.

## III. MENTAL HEALTH INPATIENT PROGRAMMING

If the Case Assessment Review (CAR) -- administrative review process identifies some youth as requiring mental health inpatient services, it is recommended that these youth be admitted to a mental health facility while remaining under leave of absence status from the training schools. They would remain at the appropriate Department of Mental Health facility until maximum benefit had been reached, whereupon the youth would either return to the community or to the training school. If the youth is returned to the training

school, the Department of Mental Health would provide continuing consultation. All youth would require youth parole and review board approval before release to the community.

Department of Mental Health consultation or hospitalization will be assigned for services in accordance with state hospital catchment areas. The committee endorses Administrative Directive FY 81-82-I-5 (see attachment C) which describes the catchment area plan for state facility services to youths residing in the state training schools.

It is recommended that the Department of Mental Health Central Office identify a person who will serve as liaison between the two departments in order to coordinate and facilitate the referral and DMH service delivery process.

The youth's DSS caseworker will monitor treatment progress and assume aftercare planning with the Department of Social Services retaining ultimate responsibility following release from the facility, and until state wardship is terminated.

It is also recommended that the Department of Mental Health provide inpatient beds for state delinquent wards who are diagnosed as being developmentally disabled at appropriate institutions or programs.

#### Implementation Options

The Department of Mental Health is currently funded for 140 beds at Fairlawn, 150 beds at Hawthorn and 70 beds at Yorkwoods. The 1980-81 cost per day at Fairlawn was \$200.53, Hawthorn \$210.97 and Yorkwoods \$226.26. Each of these facilities is accredited or expects to be accredited by the Joint Commission on Hospital Accreditation. As such,

the facilities are eligible for medicaid participation in the cost of care for eligible clients. As all state wards are medicaid eligible, the cost of serving children in the mental health facilities would be \$90.24, \$94.94 and \$101.82 respectively (90% state general fund and 10% local cost), for Fairlawn, Hawthorn and Yorkwoods. The cost to the county of residence would be \$10.03, \$10.55, or a \$11.31 respectively based upon the 90:10 state/county match split for mental health services. This compares to a current gross cost per day of \$83.86 in the training school facilities of which approximately 50% of which is a general fund obligation and 50% a local cost. It is recommended that the transfer of appropriate youth as recommended in this section be monitored carefully to determine the impact upon facility waiting lists and the need to make budgetary adjustments at either the DMH or the DSS facilities.

#### IV. INTENSIVE MENTAL HEALTH HOSPITALIZATION

It is recommended that a small (20 bed) secure intensive treatment unit be developed that services DSS institutional referrals.

This program should meet the treatment needs of adolescents whose behavioral and psychological problems make them unacceptable for integration into regular mental health inpatient programming or regular DSS institutional placement.

#### Implementation Options

In order to take advantage of federal medicaid participation it is recommended that this unit be developed in conjunction with one of the mental health children's facilities. The unit would also share administrative, food service, housekeeping, maintenance etc., with a parent facility to reduce the overhead costs.

It is believed that given the care needs of the individuals involved that the unit should not exceed 25 beds and that anything less than 20 beds would not be cost effective. It is believed that the need demand for these beds is sufficient to keep the beds fully and appropriately utilized.

It is expected that the cost per day will not exceed \$250.00 per day, as adjusted for inflation, with the non federal portion not exceeding \$125.00 per day. The annual cost for the unit at 25 beds would be approximately \$2.3 million dollars gross cost with \$1.15 million dollars of this federal funds, \$1.04 million state funds and 0.11 million county funds. This compares to an annual cost of approximately \$0.8 million cost to serve the youth in the training school facilities of which approximately 45% is state, 45% is county and 10% is federal. An alternative funding mechanism would be for DSS to contract for these beds from DMH. Under this approach federal medicaid funding would be maintained (\$1.15 million) but the non federal share would be split between the state (\$.575 million) and local (\$.575 million) governments. Whichever funding approach is used, the removal of these seriously disturbed and therefore disruptive youth from regular training school programs and placement in a special unit should improve the cost/benefit for those youth who remain in the training schools, and the cost/benefit of these youths in the specialized program.

#### V. AFTERCARE

The transfer of youth from one system of treatment to another, or one treatment setting to a second treatment setting should not be viewed as a termination of the responsibility, interest and involvement of the

transferring system or setting. The maintenance of progress may require the continued collaboration of the former system and that continued involvement should be encouraged. Moreover, as the success of the former system/setting is at least in part determined by subsequent behavior, the exchange of information is important in understanding the level of success and how, through modifying procedures and services, that success may be improved.

It is recommended that the Department of Mental Health participate in developing a suitable release plan for youth who received mental health services during a social services institutional stay.

It is recommended that feedback on the progress of these youth, subsequent to institutional release be provided to appropriate and designated persons in both the DSS institutional and mental health systems.

It is recommended that DMH develop a policy for local community mental health boards to consider the mental health needs of delinquent court and state wards.

#### Implementation Options

Aftercare for youth identified as in need of mental health services who enter mental health facilities through the DSS training school system, should be the same as for youth entering directly from the community. To ensure that adequate funding for children's services is available in the community or, at least, to be able to assess the relationship between the need/demand for children's services in the community and the level of funding for such services, it is recommended that a separate appropriation for children's services in community mental health programs

be established. Funding for children`s services in the Department of Social Services appropriation is clearly identifiable. Funding for children`s services in the Department of Mental Health appropriation is not clearly identifiable and in fact information relative to funding level is currently not even readily available. Without this information and without the ability to adjust the funding for children`s services in community mental health programs via the appropriations process, there is no possibility of achieving a balanced funding system for children`s services. If adequate funding for aftercare services are not available than the prior investment of institutional services is likely to be lost as the youth are very likely to regress without adequate aftercare supportive services. This point is especially pertinent for youth who are exiting the DSS system as a result of having reached their nineteenth birthday. Eventually, it is hoped that adequate community mental health services for children may prevent the necessity of entry of many youth into the DSS system.

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Appendix

- A. A REPORT TO THE STATE OF MICHIGAN:  
A PSYCHIATRIC STUDY OF SERIOUS JUVENILE OFFENDERS IN THE  
STATE TRAINING SCHOOL SYSTEM.
- B. A REPORT TO THE STATE OF MICHIGAN:  
A PSYCHIATRIC STUDY OF ADOLESCENTS IN DEPARTMENT OF MENTAL  
HEALTH FACILITIES.
- C. DEPARTMENT OF MENTAL HEALTH ADMINISTRATIVE DIRECTIVE FY81-82-  
I-5 DATED 4/12/82.

Note: In the studies conducted by Dr. McManus and his associates, Dr. McManus has indicated that the samples drawn from the state training school system and the Department of Mental Health Children's facilities are not comparable for purposes of statistical comparison. From the standpoint of the Task Force deliberations it is important to note, however, that as Dr. McManus points out, the fact that any youth with serious psychiatric disorders are found in the state training school system is significant. The fact that 48 such youth were found is a matter of serious concern. The DMH sample, while not randomly drawn, does not reveal individuals more seriously disturbed psychiatrically. It does reveal a population which is less delinquent. The probabilities are small that a true random sample would alter this finding. An important question raised by the McManus studies is whether whose training school youth identified as having serious psychiatric disturbances, would have become delinquent if they had received adequate earlier treatment.

A REPORT TO THE STATE OF MICHIGAN:  
A PSYCHIATRIC STUDY OF SERIOUS JUVENILE OFFENDERS  
IN THE STATE TRAINING SCHOOL SYSTEM

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Abstract

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ABSTRACT

This study was designed to evaluate psychiatric disturbance in a group of seriously, repetitively delinquent adolescents housed in the State Training School System. Male subjects were chosen from the Green Oak and Intensive Treatment Programs at W. J. Maxey while females were chosen from the program at Adrian Training School. Subjects were chosen for the study using a set of selection criteria designed to select the most seriously delinquent adolescents.

Seventy-one subjects were evaluated, forty male, thirty-one female. Thirty-nine subjects were white, twenty-six were black, three Hispanic, three of mixed racial origin. Average age for all subjects was 16.28, average SES 4.39 using the Hollingshead-Redlich two-factor scale and average time in program 9.07 months. Fifty-eight (81%) of subjects had committed one violent or three or more non-violent felonies. Twenty-five (35%) had previous training school placement and twenty-six (37%) had previous psychiatric hospitalizations. Average I.Q. was total 85.15, 84.9 verbal, 86.8 performance, indicating that the majority of subjects were in the low normal range of intelligence. Average WRAT scores were 6.9 reading, 5.6 spelling, 5.5 math; the

majority of subjects were significantly below grade level in school performance.

All subjects were evaluated in a structured interview format and assigned Axis I and II diagnoses using DSM-3. For each subject a primary diagnosis was made; all subjects had secondary (additional diagnoses as well. In addition, each subject was evaluated for gross and minimal neurological dysfunction. Finally, all subjects completed a self-rating scale of delinquency, the Delinquency Check List (DCL) and staff working with the subjects completed a rating of subjects' inprogram behavior, the Behavior Checklist (BCL).

Psychiatric evaluation revealed a wide spectrum of serious psychopathology. In all, 48 (68%) of the subjects had psychiatric disorders which involved a significant disturbance of mood or thought. Of these 48 subjects, 3 (4%) received a primary diagnosis of schizophrenia while 11 (15%) of subjects were diagnosed as having an active major affective disorder, and 9 (12%) were diagnosed as having a major affective disorder in remission. Twenty-six (37%) of subjects had borderline personality disorders, a diagnosis characterized by emotional (affective) instability, poorly controlled aggression directed at the self and others and highly

disturbed interpersonal relationships. Nineteen of the subjects whose primary diagnosis was borderline personality disorder also had intermittent psychotic symptomatology, with paranoid ideation the most common symptom. Five borderline subjects had major affective disorders in remission. Subjects with borderline personality disorder were significantly over represented in the group of subjects who had committed violent felonies. Four (6%) of subjects had paranoid or schizotypal personality disorder as a primary diagnosis. Of the 23 (32%) of subjects who were not considered to have a serious disturbance of thought or mood 3 (4%) received a primary diagnosis of mental retardation. The remaining subjects received a primary diagnoses of personality disorder (mixed, atypical or other) 8 (11%), substance abuse 6 (8%) and conduct disorder 5 (7%). Few subjects received substance abuse as a primary diagnosis, although 45 (63%) received it as a secondary diagnosis, indicating that substance abuse was widespread in these subjects prior to their training school placement. Similarly a total of 63 (89%) of subjects received a diagnosis of conduct disorder although it was an infrequent primary diagnosis.

No gross neurological disease was found in any of the subjects evaluated. Minimal neurological dysfunction

was found in a small number of subjects. No meaningful relationship between this and other variables (e.g., primary diagnosis) was found.

Data from the self report of delinquency (DCL) indicated that there was a clear and significant relationship between legally defined and self-reported delinquency. Staff report of subject's in-program behavior (BCL) indicated a relationship between conflicts with authority and serious psychopathology.

Conclusions were drawn based on the findings of this study about the nature and type of treatment which needs to be available to the subjects studied.

## I. INTRODUCTION

This study represents a part of the work of two committees set up jointly by the Department of Mental Health, Office of Criminal Justice and the Department of Social Services to investigate the psychiatric needs of delinquent adolescents housed in the State of Michigan Training School System. One committee, the Diagnostic Standards Committee chaired by Dr. Harley Stock, was mandated to evaluate and recommend changes in the process by which adolescents received psychiatric evaluation when entering the training school system. The second committee, the Treatment Standards Committee chaired by Charles Davoli, was mandated to evaluate and make recommendations regarding the psychiatric treatment needs of these adolescents.

Both committees found that the data needed to make informed and logical decisions about the diagnostic and treatment needs of these adolescents were not available. In fact, little if any reliable information was available about the nature and extent of psychiatric problems in this population. The data which were available suggested that psychiatric diagnosis was assigned after inadequate evaluation and for purposes unrelated to specific treatment planning.

The two committees established as their first goal, then, the generation of reliable psychiatric data for adolescents already in the training school system. By a joint decision of the two committees and the research group, the serious and repetitive juvenile offender was chosen as the focus for study. This decision was based on two considerations: 1) the degree and nature of psychiatric disturbance in this group is poorly understood, and 2) these adolescents are a highly visible and problematic segment of the delinquent population. In keeping with the aim of the study, it was decided that the most seriously delinquent male adolescents in the Green Oak and intensive treatment programs at W. J. Maxey and the most seriously delinquent female adolescents in the Adrian Training School would be evaluated.

The aims of the study were:

1. Selection of a group of seriously delinquent male and female adolescents.
2. Collection of relevant demographic information for each subject.
3. Evaluation of the nature and type of psychiatric illness in this population using structured, quantifiable diagnostic techniques.
4. Definition of current medical and neurological illnesses in this population.

5. Formulation of recommendations regarding the psychiatric treatment needs of these delinquent adolescents.

At the same time that this study was undertaken, a similar study of adolescents receiving treatment in State Department of Mental Health inpatient facilities was planned. This study of psychiatrically hospitalized adolescents was designed to provide a comparison population for adolescents in the training schools. Although this second study is currently underway, it is not completed and the results will not be included in this report.

The reader should fully understand both the strengths and limitations inherent in the study design. The strengths of the design are: 1) The use of a selective definition of delinquency, namely that of serious and repetitive delinquent behavior avoids the overly broad and often ambiguous definition of delinquent behavior found in other psychiatric studies; 2) the selection for study of a group of adolescents for whom new and more effective treatment approaches are desperately needed. The main limitation of the study design is that the group of adolescents chosen for study may not be fully representative of the adolescents in the training school system as a whole.

The investigators, as well as the members of both committees, felt that generation of reliable psychiatric data about serious and repetitive juvenile offenders housed in the State Training School System was an important first step in establishing a more logical and systematic basis for evaluating the psychiatric treatment needs of these adolescents.

## II. Review of the Literature

In order to place the methodology, findings and conclusions of this study in context, a pertinent review of the world literature on the subject of juvenile delinquency is helpful. This summary will focus particularly on the question of the relationship between behavior and psychopathology.

Historically, there has existed a school of thought which holds that delinquent adolescents do not carry with them significant psychiatric disturbance (Stubblefield, Offer, Gibbons, Robins). Most authors, however, have concluded that substantial pathology does exist in this population. Yet opinion has varied widely on where the difficulty lies. There are three basic theories, each of which warrants comment.

1. The first, championed by several early workers (Lombroso, Sheldon, Gleucks) has sought a link between delinquency and certain hereditary and constitutional factors. Recent studies of violent behavior in XYY males are an echo of this premise.

2. In the 1950s and 60s a theory emerged which ascribed the etiology of antisocial behavior to subcultures of society (Cavan, Cohen). Class status and learned behavior were seen as important variables.

Following this theory individually-focused therapy (which had been in vogue) began to give way to attempts at delinquency prevention at a community level.

3. The third major theory, one which has a rich tradition, assumes the presence of significant psychological and/or neuropsychological disturbances in this population.

The first important proponent of this idea was August Aichhorn, who in his classic text, Wayward Youth, (1925) voiced what at that time was a radically new idea. He suggested that delinquent behavior was a manifest sign of unconscious psychological conflict and believed that the treatment of choice for such adolescents was psychoanalytically-oriented psychotherapy. A wealth of writings supporting this theme followed (Eissler, A. Freud, Szurek, Johnson, Friedlander). Today, while this view of causation is regarded as probably too narrow, "dynamic" psychiatry continues to take an active interest in the juvenile offender. Marohn, using an analytical model, has defined four types of delinquent—impulsive, narcissistic, depressed and borderline. Important problems attend his otherwise relevant research. Firstly, his selection criteria were not well documented. Secondly, the exact delinquent nature of his population was not

clearly defined. Thirdly, the data base and diagnostic nomenclature used make replicability of his study difficult.

Similarly, workers in general psychiatry have sought to clarify the nature and extent of individual psychopathology in this population. Pioneering work was done by the McCords who, in the late 1950's, hypothesized that a diagnosis of "sociopathic personality" was common to most delinquent youth. This term not only lacked a clearly operationalized definition; it also carried a poor treatment prognosis. An era of therapeutic nihilism followed. Individual therapy was replaced by the concept of institutional management in which control of the incarcerated adolescents became a primary goal.

Within the last twelve years the field of psychiatry has benefited from important advances in psychopharmacology, neurobiology and descriptive psychiatry. Current research in delinquency reflects these changes. D. O. Lewis has written widely on the subject and has proposed two major ideas concerning the relationship between delinquent behavior and psychopathology. Firstly, she believes that many delinquents exhibit psychotic symptoms which contribute to their antisocial behavior. She refers to a "schizophrenic spectrum of disorders" in these youth.

This term, however, is neither clearly defined nor well operationalized. Still, her search for treatable problems in this population is appropriate. Lewis also refers to a large number of delinquent youth with central nervous system disorders (significant head injury, epilepsy). She believes that such CNS pathology frequently contributes to delinquent behavior. Evidence for such widespread abnormalities is, however, scanty.

Several recent workers have begun to redress many of the methodological problems which have plagued past research on the subject. Kashani and Chiles, working independently, have documented the existence of depression in populations of incarcerated youth. Importantly, they employed semi-structured interviews and widely used diagnostic criteria, thus ensuring replicability of their work. The findings of serious depression in 18% and 23% of their samples deserve serious attention.

In summary, past psychiatric research in juvenile delinquency has been complicated by three basic problems. Firstly, populations have not been adequately described behaviorally; thus, widely differing delinquent groups have been compared as though basically similar. Secondly, diagnostic data were generally not gathered in a systematic and replicable manner, and thirdly, commonly acceptable criteria for assigning psychiatric diagnosis

have been lacking. Recent workers have begun to address these methodological shortcomings. Importantly, they have also moved away from the premise that a causal relationship necessarily exists between delinquent behavior and psychopathology. In so doing they have begun to document the existence of a broad spectrum of serious disorders of thought and mood in this population, disorders which are amenable to psychiatric intervention. It is becoming clear that adolescent offenders are at high risk for psychiatric illness and that delinquent behavior and serious psychopathology frequently occur together. It is no longer a question of either/or. For many youth it is both.

### III. METHODS

Subjects in this study were seriously delinquent adolescents housed in the training school system in the State of Michigan. Males were chosen from two programs, Green Oak Center and the Intensive Treatment Program, designed for serious and highly problematic male delinquents. The total population of these programs at the time of the study was 120. Female subjects were chosen from the State's only residential facility for delinquent girls, the Adrian Training School, with a total female population of 60.

As illustrated in Table 1, the selection criteria emphasize violent and repeated delinquent acts, repeated legal contact, a prior history of psychiatric hospitalization and prior in-program adjustment. In addition to selecting a highly delinquent group for study, these criteria insured that all subjects would be comparable in terms of legally defined delinquency.

All subjects were seen by two of the researchers (an interviewer and an observer) in a structured interview format. The interview consisted of two parts, the first being the Social Adaptation and Interpersonal Relations section of the Diagnostic Interview for Borderlines (DIB), the second being the Schedule for Affective

Disorders and Schizophrenia (SADS). (For more detailed information about these instruments and the others described in METHODS, the reader should contact the researchers.) The use of the Social Adaptation and Interpersonal Relations sections of the DIB allowed the interviewer to obtain specific information about the subject's school performance and relationships with others, while the SADS permitted the interviewer to inquire about specific psychiatric symptomatology, both current and past. Following the interview, each subject was assigned appropriate DSM-III Axis I and Axis II diagnoses. In all cases, one diagnosis was designated as a Primary Diagnosis, indicating that, based on the judgment of the researchers, this diagnosis was the major contributor to the pattern of psychiatric symptomatology seen at the time of the evaluation.

Following the psychiatric interview, one of the psychiatrists reviewed the current medical status of the subject through questioning and record review and conducted a standard gross neurological exam and a Physical and Neurological Examination for Soft Signs (PANESS), an exam designed to evaluate non-progressive, non-focal evidence of minimal neurological dysfunction.

Each subject completed the Delinquency Check List (DCL) a 52-item self-rating instrument which contains

questions about delinquent behavior, substance abuse and social adaptation. The DCL was chosen with three aims in mind: 1) to allow a combination of self-rated and legally defined delinquent status, 2) to permit examination of measures of severity of delinquency with psychiatric diagnosis, and 3) to permit comparison of adolescents from the training school system with those from DMH inpatient facilities. The group leader working with each subject completed the Behavior Check List (BCL) a 16-item instrument containing questions about the subject's in-program adjustment. This instrument, which is a companion of the DCL, was chosen to allow comparison of a subject's level of psychiatric disturbance with his or her level of behavioral disturbance in-program.

TABLE I  
SELECTION CRITERIA

- I. TIME IN PROGRAM > I MONTH
- II. SERIOUS FELONIES
  - 1. VIOLENT - MURDER, CRIMINAL SEXUAL CONDUCT  
ARMED ROBBERY, ARSON, FELONIOUS ASSAULT,  
KIDNAPPING
  - 2. MULTIPLE NON-VIOLENT FELONIES
- III. PRIOR TRAINING SCHOOL PLACEMENT
- IV. PSYCHIATRIC HOSPITALIZATION
- V. ASSAULTIVE TRAINING SCHOOL BEHAVIOR

TABLE 2  
ASSESSMENT PROTOCOLS

PSYCHIATRIC INTERVIEW

- SCHEDULE FOR AFFECTIVE DISORDERS AND SCHIZOPHRENIA (SADS)
- DIAGNOSTIC INTERVIEW FOR BORDERLINES (DIB) SECTIONS ON:  
SOCIAL ADAPTATION  
INTERPERSONAL RELATIONS

RATING SCALES

- DELINQUENCY CHECK LIST (DCL)
- BEHAVIOR CHECK LIST (BCL)

NEUROLOGICAL EVALUATION

- GROSS NEUROLOGICAL EXAM
- PHYSICAL AND NEUROLOGICAL EXAMINATION FOR SOFT SIGNS  
(PANESS)

IV. RESULTS

A. Demographic:

After the selection process was complete, 84 subjects, 48 male and 36 female were chosen for evaluation using the criteria described in the Methods section. Of these, 71 (40 male, 31 female) were actually evaluated. Two subjects (both female) refused to participate and the other eleven were either truant or discharged before they could be evaluated.

Table 3 contains demographic data for the sample as a whole. The subjects ranged in age from 14-18 years, with an average age of 16.28 years. The average time in-program for all subjects was 9.07 months. The average S.E.S. of the group was 4.39 using the Hollingshead-Redlich two-factor scale, which ranges from 1 for the highest S.E.S. to 5 for the lowest S.E.S. Thirty-nine of the subjects (21 male, 18 female) were white, 26 (19 male, 7 female) were black, and 6 (2 male, 4 female) were of Hispanic or mixed racial origin. There are no significant sex or race differences in the data presented in this table, indicating homogeneity among the subjects on these measures.

Table 4 shows the distribution of subjects according to the criteria used for selection for the study. Of the

subjects evaluated, 45 (63%) had committed at least one violent felony, 29 (40%) had committed two or more violent felonies and 21 (30%) had committed three or more nonviolent felonies. Twenty-five (35%) had previous training school placement, 26 (37%) had a history of psychiatric hospitalization and 22 (31%) had a history of in-program assault. The selection criteria significantly distinguished subjects chosen for the study from other adolescents in their programs.

Table 5 gives a breakdown of the distribution of violent felonies for the sample. The number of offenses is not always the same as the number of subjects because some subjects committed more than one of the felonies listed. As the table demonstrates, felonious assault and armed robbery were the most frequently occurring of the violent felonies. Males committed proportionally more violent felonies than did females, but there was no significant difference in the distribution of the type of violent felonies listed by sex or by race.

Table 6 contains I.Q. data that was available for our subjects. Average I.Q. was Total-85.2, Verbal-84.9, Performance-86.8. While this information was not available for all subjects, the figures appear to be representative.

Table 7 lists the WRAT (Wide Ranging Achievement Test) for subjects who participated in the study. Average WRAT scores for all subjects were 6.9 Reading, 5.6 Spelling, and 5.5 Math. It is clear, based on this data, that the subjects as a group had severe academic problems and were significantly below expected grade level. Although not examined for statistical significance, the WRAT scores were below the averages for adolescents in the training school system as a whole.

Table 8 gives the DCL (Delinquency Check List) and BCL (Behavior Check List) scores for all subjects. As outlined previously, the DCL is a self-rating scale for delinquent behavior, the BCL a staff rating measure of in-program behavior of the subjects. There were no age, sex or race differences in the scores for either the DCL or BCL for the subjects studied.

In summary, Tables 3-8 demonstrate that the subjects chosen for evaluation were, as a group, seriously and repetitively delinquent. Male subjects were more likely to have committed violent felonies than were female subjects. As a group, the subjects were of low average intelligence and were significantly below grade level academically.

TABLE 3  
DEMOGRAPHIC DATA  
ALL SUBJECTS

	N	AGE	RACE			S.E.S.	TIME IN PROGRAM
			W	B	O		
MALE	40	16.38 S.D. = 0.95	21	17	2	4.30 S.D. = 1.04	9.03 S.D. = 7.44
FEMALE	31	16.16 S.D. = 1.00	18	9	4	4.48 S.D. = 1.03	9.13 S.D. = 6.20
ALL	71	16.28 S.D. = 0.97	39	26	6	4.39 S.D. = 1.03 N = 64	9.07 S.D. = 6.88

TABLE 4  
DISTRIBUTION OF SUBJECTS  
BY SELECTION CRITERIA

SELECTION CRITERIA	N (%)
ONE VIOLENT FELONY	45 (63%)
TWO OR MORE VIOLENT FELONIES	29 (40%)
THREE OR MORE NONVIOLENT FELONIES	21 (30%)
PREVIOUS TRAINING SCHOOL PLACEMENT	25 (35%)
PREVIOUS PSYCHIATRIC HOSPITALIZATION	26 (37%)
HISTORY OF IN-PROGRAM ASSAULT	22 (31%)
ONE OR MORE VIOLENT OR THREE OR MORE NONVIOLENT FELONIES	58 (81%)

TABLE 5  
DISTRIBUTION OF SERIOUS FELONIES

ALL SUBJECTS BY SEX

	TOTAL OF OFFENSES	MALE	FEMALE
MURDER/ MANSLAUGHTER	9	8	1
FELONIOUS ASSAULT	29	17	8
ARMED ROBBERY	15	8	5
CRIMINAL SEXUAL CONDUCT I & II	12	6	0
ARSON	4	2	2
KIDNAPPING	1	1	1

TABLE 6  
I.Q. SCORES  
ALL SUBJECTS

		N	SCORE
I.Q. VERBAL	MALE	22	85.91 S.D. 12.02
	FEMALE	15	83.53 S.D. 15.99
	TOTAL	37	84.95 S.D. 13.61
I.Q. PERFORMANCE	MALE	22	85.50 S.D. 14.90
	FEMALE	15	88.80 S.D. 16.58
	TOTAL	37	86.84 S.D. 15.46
I.Q. TOTAL	MALE	23	84.30 S.D. 11.62
	FEMALE	17	86.29 S.D. 16.34
	TOTAL	40	85.15 S.D. 13.66

TABLE 7  
WRAT SCORES  
ALL SUBJECTS

		MALE	FEMALE	ALL
	N	37	31	68
WRAT READING	SCORE	7.17 S.D. = 3.22	6.75 S.D. = 2.01	6.98 S.D. = 2.73
	N	33	31	64
WRAT SPELLING	SCORE	5.46 S.D. = 2.55	5.84 S.D. = 2.11	5.65 S.D. = 2.34
	N	37	31	68
WRAT MATH	SCORE	6.02 S.D. = 2.93	4.96 S.D. = 1.86	5.54 S.D. = 2.54

TABLE 8  
DCL/BCL SCORES

		MALE	FEMALE	ALL
	N	38	31	69
D C L	S C O R E	82.26 S.D. 40.94	91.74 S.D. 28.42	86.52 S.D. 39.82
	N	40	31	71
B C L	S C O R E	35.59 S.D. 9.23	32.50 S.D. 7.87	34.24 S.D. 8.74

## B. Diagnosis:

In order to place the psychiatric diagnoses in their proper context attention must be drawn to a number of considerations. Of importance is the identification of those diagnoses which collectively involve major disturbances in thought or mood. These disturbances include schizophrenia, major affective disorder (active and in remission) and borderline, paranoid, and schizotypal personality disorder. Psychiatric studies indicate that these disturbances are characterized by the presence of serious and incapacitating symptoms, and a poor prognosis if not treated.

Several authors have dealt with these disturbances in depth. Genetic studies by Kety, Wender, and Rosenthal have shown schizophrenia to be biologically related to schizotypal thought disorder. Weissman showed that following an episode of a major affective disorder subjects have marked impairment for years in both interpersonal relationships and vocational stability. In a ten year follow-up Masterson showed that a significant number of adolescents initially diagnosed as having borderline personality disorder while hospitalized had either developed schizophrenia, a major affective disorder or had committed suicide. These disturbances in thought or mood are of serious clinical importance.

Table 9 lists the primary diagnoses made for all subjects as well as their age, sex and race. Table 10 lists the secondary diagnoses made within each primary diagnostic category. For an explanation of the term primary diagnosis, and the diagnostic criteria used in this study see the Appendix.

Forty-eight (68%) of the youth had psychiatric disorders which involved a significant disturbance of thought or mood. Three (4%) subjects had a primary diagnosis of schizophrenia, 11 (15%) an active major affective disorder, 4 (6%) major affective disorder currently in remission, 26 (38%) a borderline personality disorder, and 4 (6%) a paranoid or schizotypal personality disorder. The average age and sex were not significantly different among these diagnostic groups. More whites had a borderline personality disorder than blacks or other racial groups.

Schizophrenia is a well recognized significant disorder involving the presence of delusions and hallucinations. Schizophrenia was the primary diagnosis in 3 (4%) cases.

Schizotypal disorders of thought, biologically related to schizophrenia, are characterized by magical thinking, ideas of reference, recurrent illusions, odd speech, and hypersensitivity to real or imagined criticism. These

abnormalities of thought are found in schizotypal, paranoid and borderline personality disorders. Schizotypal disorders of thought can be worsened by stress, resulting in a marked impairment of reality testing and the development of full-blown psychotic symptoms. Nineteen of the 27 subjects diagnosed as having borderline personality disorders had schizotypal thought disorders. Four (6%) of the subjects had either schizotypal or paranoid personality disorder as a primary diagnosis.

The major affective disorders include depression, mania and manic-depressive illness. While affective symptoms often occur in reaction to life stress, the presence of a diagnosable affective disorder, whether "reactive" in origin or not, indicates more than a transient episode of "sadness" or "feeling blue." In addition to a persistent and severe disturbance in mood are found impaired concentration, suicidal preoccupation, social withdrawal, and vegetative signs including weight loss and disturbance in sleep. Eleven (15%) of the subjects had active major affective disorders and at the time of the interview nine (13%) had major depressive disorders in remission. The subjects with active disturbances were experiencing serious impairment due to their illness, e.g., social withdrawal, disruptive behavior, and suicidal attempts. The diagnosis of a major affective disorder is

important for two additional reasons. They are: 1) there may be incomplete resolution of the symptom picture with continued impairment, and 2) the disorder may recur.

Twenty-six (38%) of the subjects had a primary diagnosis of borderline personality disorder. The major features of this disorder are affective instability, poorly controlled aggression directed at self or others, impulsivity, and highly disturbed interpersonal relationships. Because of these features, youth with a borderline personality disorder exhibit highly problematic day to day behavior in the training school units. Minor frustrations often lead to violent altercations, or suicidal gestures. The extent of the interpersonal difficulties in this group is most striking. Less obvious but equally important are the underlying disturbances of thought and mood. Nineteen of the 26 subjects with borderline personality disorders had schizotypal disorders of thought with paranoid ideation most prominent. Nine of these subjects were also found to have major affective disorders, either active or in remission.

The remaining 23 (32%) who were not diagnosed as having a serious disturbance of thought or mood had the following primary diagnoses: Mental retardation 3 (4%), substance abuse 6 (8%), conduct disorder 5 (7%), dysthymic disorder 2 (3%) and personality disorders (mixed, atypical

or other) 8 (11%).

Seven (10%) of the subjects received substance abuse as a primary diagnosis, and 44 (62%) as a secondary diagnosis. This diagnosis was made on historical information gathered from the youth. Table 11 shows the frequency of the substance abuse diagnosis. Since a number of subjects were poly-drug abusers the number of substance abuse diagnoses is greater than the 51 subjects diagnosed. Marijuana, hallucinogens, and alcohol were the substances most frequently abused. Patterns of substance abuse were not significantly related to the occurrence of serious disturbances in thought or mood among subjects studied. Substance abuse was an ubiquitous problem of serious proportions in this group.

In DSM-III, disorders of conduct are defined along two dimensions, socialization and aggression. The diagnostic criteria for socialization emphasize the degree to which the adolescent has formed positive relationships with others, while the criteria for aggression categorize the extent to which violence is involved in an adolescent's misconduct.

Sixty-four (90%) of subjects had diagnosable conduct disorders (see Table 12). Six (8%) received conduct disorder as a primary diagnosis, while 58 (82%) received it as a secondary diagnosis. As expected, male subjects

were significantly more likely than female subjects to be assigned an aggressive conduct disorder. There was no significant difference between males and females in the assignment of socialized conduct disorders.

Forty-four (70%) of subjects with conduct disorders had aggressive conduct disorders. This finding is consistent with the fact that the majority of subjects evaluated had been adjudicated for delinquent acts involving violence. In all, 28 (44%) of subjects with conduct disorders were found to be undersocialized. Of these, 24 of the 28 were subjects whose primary diagnosis was one of the serious disorders of thought or mood.

The diagnosis of aggressive conduct disorders in this population reflects information readily available in the juvenile record. For socialization, the data suggest that the diagnosis serves only as a further categorization of the impact of serious disorders of thought or mood on the behavior of the subjects studied. The diagnosis of conduct disorder contributes little to an understanding of the psychiatric disturbances present in this population.

In summary:

1. Forty-eight (68%) of the subjects had psychiatric disorders which involved a significant disturbance of thought or mood, including schizophrenia, major affective disorders and borderline, paranoid, and schizotypal personality disorders.
2. Substance abuse was a serious problem in this group with marijuana, hallucinogens, and alcohol being the substances most frequently abused.
3. Six (8%) of the subjects had a primary diagnosis of a conduct disorder, and 58 (82%) had conduct disorder as a secondary diagnosis. In this group of serious juvenile delinquents, the diagnosis of a conduct disorder contributed little to an understanding of the psychiatric disturbances present.

TABL. 3  
AXIS I & II DIAGNOSES  
AGE, SEX, RACE  
DSM-III

					MALE			FEMALE				
					TOTAL	WHITE	BLACK	OTHER	TOTAL	WHITE	BLACK	OTHER
		N	Avg. AGE	S.D.								
A X I S I	SCHIZOPHRENIA	3	15.0	1.00	3	1	2	0	0	0	0	0
	AFFECTIVE DISORDER	11	16.6	1.12	4	3	1	0	7	4	1	2
	DYSTHYMIC DISORDER	2	17.0	0	2	1	0	1	0	0	0	0
	MENTAL RETARDATION	3	15.0	0	2	0	2	0	1	0	1	0
	SUBSTANCE ABUSE	7	16.0	.82	5	1	3	1	2	1	0	1
	CONDUCT DISORDER	6	16.7	.52	4	2	2	0	2	0	2	0
A X I S I I	BORDERLINE PERSONALITY	26	16.2	1.02	15	11	4	0	11	7	3	1
	PARANOID/SCHIZOID/SCHIZOTYPAL	4	16.0	1.15	3	1	2	0	1	1	0	0
	OTHER PERSONALITY DISORDERS	9	16.6	.53	2	1	1	0	7	5	2	0

TABLE 10  
AXIS I & II DIAGNOSES: PRIMARY & SECONDARY  
DSM - III

		N	SCHIZOPHRENIA	AFFECTIVE DISORDER	BORDERLINE PERSONALITY	PARANOID/SCHIZOID SCHIZOTYPAL	OTHER PERSONALITY DISORDER	DYSTHYMIC DISORDER	MENTAL RETARDATION	SUBSTANCE ABUSE	CONDUCT DISORDER
A X I S  I	SCHIZOPHRENIA	3	3	0	0	0	0	0	0	1	2
	AFFECTIVE DISORDER	11	0	11	5	2	2	0	0	8	11
	DYSTHYMIC DISORDER	2	0	0	0	0	0	2	0	2	2
	MENTAL RETARDATION	3	0	0	0	0	0	0	3	0	2
	SUBSTANCE ABUSE	7	0	2*	0	0	0	0	0	7	7
	CONDUCT DISORDER	6	0	1*	0	0	0	0	0	0	6
A X I S  I	BORDERLINE PERSONALITY	26	0	5*	26	9	7	7	0	19	26
	PARANOID/SCHIZOID/SCHIZOTYPAL	4	0	0*	0	4	0	0	0	3	4
	OTHER PERSONALITY DISORDER	9	0	1*	0	0	9	0	0	5	9

\* IN REMISSION

TABLE 11  
CONDUCT DISORDERS  
DSM-III

	N	MALE	FEMALE
SOCIALIZED AGGRESSIVE	22	15	7
UNDERSOCIALIZED AGGRESSIVE	22	15	7
SOCIALIZED NON-AGGRESSIVE	14	4	10
UNDERSOCIALIZED NONAGGRESSIVE	6	4	2

TABLE 12  
SUBSTANCE ABUSE DISORDERS  
DSM-III

SUBSTANCE	NUMBER OF SUBJECTS
MARIJUANA	32
HALLUCINOGENS	24
ALCOHOL	23
AMPHETAMINE	15
BARBITURATES	8
COCAINE	7
OPIATES	6

C. Neurological Findings:

A neurological assessment was conducted on each youth in the study. It was hoped that such an evaluation would clarify questions, raised in the literature, about the possible relationships between delinquent behavior and neurological abnormalities. The assessment was of three parts: (1) a chart review and direct history of present and past medical and surgical illnesses, with special reference to central nervous system pathology and use of prescribed medication: (2) a standard, gross neurological examination to document evidence of focal or progressive neurological disease: (3) the administration of the PANESS protocol (Physical and Neurological Examination for Soft Signs), a standardized procedure for eliciting subtle neurological signs often missed in a more general examination.

Findings: Only three youth were on psychoactive medication at the time of interview. One subject was on Dilantin for undetermined reason, one was on thyroid supplement and one on low doses of p.r.n. Mellaril. No youth had a clear and positive history of central nervous system disease or injury and only one youth had a clearly positive medical history (the thyroid condition noted above.)

These medical findings should, however, be interpreted cautiously, since our review of available records revealed them to be markedly incomplete and lacking in organization.

No youth showed evidence, on examination, of focal or progressive neurological disease.

The results of the PANESS are noted in Table 13. Certain individuals in the study did have unusually high scores, connoting the presence of "soft" neurological signs. Such findings, however, occur quite frequently in otherwise "normal" populations and in the absence of psychopathology. What is significant is that the collective scores for each psychiatric diagnosis did not differ significantly from the range of results for normals in this age group. Further, with the possible exception of mental retardation, no diagnostic category was associated with a statistically significant high or low PANESS score. Finally, there were no notable differences in scores when the subjects were compared by race or sex. There is a tendency toward a decrease in the PANESS score with increasing age (Table 14), but this is as one would expect with advancing central nervous system maturity.

The absence of dramatic neurological findings is at variance with some reports in the literature. Yet we believe our results to be valid for the population studied.

TABLE 13  
PRIMARY PSYCHIATRIC DIAGNOSIS VS. PANESS SCORES BY SEX

	TOTAL			MALE			FEMALE		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
SCHIZOPHRENIA	3	57.0	5.57	3	57.0	5.57	0	-	-
AFFECTIVE DISORDER	10	54.2	8.87	3	52.7	9.86	7	54.8	9.15
BORDERLINE PERSONALITY	27	55.4	11.3	16	53.7	8.70	11	57.8	14.4
PARANOID/SCHIZOID/SCHIZOTYPAL	4	53.0	2.94	3	53.0	3.61	1	53.0	0
OTHER PERSONALITY DISORDER	9	54.7	7.43	2	56.0	4.24	7	54.3	8.36
DYSTHYMIC DISORDER	2	48.0	1.41	2	48.0	1.41	0	-	-
MENTAL RETARDATION	2	86.5	37.5	1	60.0	0	1	113.0	0
SUBSTANCE ABUSE	6	52.2	8.4	4	54.2	9.88	2	48.0	2.83
CONDUCT DISORDER	5	54.2	3.83	3	51.7	1.15	2	58.0	2.83

TABLE 14  
PANESS SCORES ACCORDING TO AGE

14	15	16	17	18	MALE	FEMALE	TOTAL
52.33	59.62	55.58	54.07	51.67	53.70	57.36	55.37
S. D. 4.93	S. D. 17.59	S. D. 11.59	S. D. 8.20	S. D. 4.73	S. D. 7.26	S. D. 14.61	S. D. 11.69

D. The DCL and BCL: Relationships with Adjudicated  
Delinquency and Psychiatric Diagnosis:

The DCL was administered with three purposes in mind:  
(1) to allow comparison of self-reported and legally  
defined levels of delinquency, (2) to examine relation-  
ships between self-reported and adjudicated levels of  
delinquency and psychiatric diagnosis and (3) to provide a  
comparison measure for delinquent subjects and subjects  
from DMH facilities. Because the DMH study is not  
complete, the third goal has not been accomplished.

The average score on the DCL for male subjects in  
this study was 82.26, for female subjects 91.74 and for  
the group as a whole 86.52. (See Table 8) These scores  
are much higher than those achieved by any other delin-  
quent group in which the DCL has been used. Because not  
all questions on the DCL relate specifically to delin-  
quent acts, a full understanding of the scores requires  
that factors be derived from the DCL. These factors are:

- (1) DCL Factor 1: Delinquent Acts
- (2) DCL Factor 2: Substance Abuse
- (3) DCL Factor 3: Defiance of Authority
- (4) DCL Factor 4: Delinquent Role

These factors were examined to determine what  
relationships existed between self-reported delinquency,

adjudicated delinquency, and psychiatric diagnosis.

Three measures of adjudicated delinquency—age of first felony, total number of offenses, and total number of violent felonies, were utilized. The results are presented in Tables 15 and 16.

Table 15 indicates that a strongly positive relationship exists between DCL Factor 1 (delinquent acts) and the three measures of adjudicated delinquency. This finding indicates that seriousness of delinquency was measured as well by self report as by juvenile record. Two other positive findings are presented in this table: (1) subjects with high numbers of offenses rated themselves as highly defiant of authority and (2) subjects with a strongly delinquent self image were first adjudicated at an earlier age than the remaining subjects.

Positive relationships emerged between two of the DCL factors and psychiatric diagnosis. As expected, subjects diagnosed as having substance abuse problems gave themselves high scores on the substance abuse factor of the DCL (Factor 2). Subjects who received diagnoses of major affective disorder and borderline personality disorder rated themselves as significantly more defiant of authority than the remaining subjects.

Table 16 shows that only one positive relationship

existed between the three measures of adjudicated delinquency and psychiatric diagnosis. Subjects with borderline personality disorders were overrepresented in the group who had committed multiple violent felonies.

The BCL was administered to allow examination of relationships between staff perceptions of subjects' behavior, adjudicated delinquency and psychiatric diagnosis. The average score on the BCL for male subjects was 35.59, for female subjects 32.50 and for the group as a whole 34.24. (See Table 8) Like the DCL, the BCL is best understood by examining factors derived from the questions. Two factors were derived from the BCL:

- (1) BCL Factor 1: Defiance of Authority
- (2) BCL Factor 2: Involvement in Program

Two positive relationships were found between the BCL factors and the other two measures (Table 17). First, subjects rated as highly defiant of authority (BCL Factor 1) were likely to have more adjudicated offenses than other subjects. This finding is consistent with subjects self-rating, where subjects with more adjudicated offenses rated themselves as highly defiant of authority (DCL - Factor 3). Second, subjects with a psychiatric diagnosis involving a serious disturbance of mood (major affective disorder and borderline personality disorder) were rated

as significantly more defiant of authority than were other subjects. Again this finding was consistent with the self ratings of subjects with serious disturbance of mood; they rated themselves significantly higher self ratings on DCL - Factor 3 than did other subjects.

Several conclusions can be drawn from this data:

(1) Subjects in this study were highly reliable informants.

(2) Subjects with borderline personality disorder, because their delinquent offenses were significantly more likely to be violent and because of their extreme defiance of authority as measured by self and staff ratings, represent an especially problematic group.

(3) Subjects with serious disorders of mood (major affective disorder and borderline personality disorder) experience themselves and are experienced by staff members as highly defiant of authority. This finding indicates that the interpersonal expression of the symptomatology of these serious disorders of mood is angry, hostile and defiant behavior.

(4) The severity of a subject's psychiatric disturbance was not always related to the seriousness of that subject's delinquency when measured either by adjudicated offenses or self report.

TABLE 15  
DCL FACTORS VERSUS ADJUDICATED DELINQUENCY  
AND PSYCHIATRIC DIAGNOSIS

	FACTOR 1 DELINQUENT ACTS	FACTOR 2 SUBSTANCE ABUSE	FACTOR 3 DEFIANCE OF AUTHORITY	FACTOR 4 DELINQUENT ROLE
AGE FIRST OFFENSE	++	--	--	++
TOTAL NUMBER OF OFFENSES	++	--	++	--
TOTAL NUMBER OF VIOLENT OFFENSES	++	--	--	--
PRIMARY OR SECONDARY PSYCHIATRIC DIAGNOSIS	--	++(A)	++(B)	--

(++) STATISTICALLY SIGNIFICANT.

(--) STATISTICALLY NONSIGNIFICANT.

(A) FOR SUBJECTS WITH DIAGNOSES OF SUBSTANCE ABUSE.

(B) FOR SUBJECTS WITH DIAGNOSES OF MAJOR AFFECTIVE DISORDER  
AND BORDERLINE PERSONALITY DISORDER.

TABLE 16  
ADJUDICATED DELINQUENCY VERSUS  
PRIMARY PSYCHIATRIC DIAGNOSIS

	PRIMARY PSYCHIATRIC DIAGNOSIS
AGE FIRST OFFENSE	--
TOTAL NUMBER OF OFFENSES	--
TOTAL NUMBER OF VIOLENT OFFENSES	++(A)

- (++) STATISTICALLY SIGNIFICANT.  
 (--) STATISTICALLY NONSIGNIFICANT.  
 (A) FOR SUBJECTS WITH BORDERLINE  
 PERSONALITY DISORDER.

TABLE 17  
BCL FACTORS VERSUS  
ADJUDICATED DELINQUENCY  
AND PSYCHIATRIC DIAGNOSIS

	FACTOR 1 DEFIANCE OF AUTHORITY	FACTOR 2 INVOLVEMENT IN PROGRAM
AGE FIRST OFFENSE	--	--
TOTAL NUMBER OF OFFENSES	++	--
TOTAL NUMBER OF VIOLENT OFFENSES	--	--
PRIMARY OR SECONDARY PSYCHIATRIC DIAGNOSIS	++(A)	--

- (++) STATISTICALLY SIGNIFICANT.  
 (--) STATISTICALLY NONSIGNIFICANT.  
 (A) FOR SUBJECTS WITH A DIAGNOSIS OF BORDERLINE  
 PERSONALITY DISORDER OR MAJOR AFFECTIVE DISORDER

## V. DISCUSSION

Our study was successful in selecting the most seriously and repetitively delinquent adolescents for psychiatric evaluation. The criteria (Table 1) which were utilized selected male and female subjects from the Green Oak, Intensive Treatment and Adrian programs who were significantly more delinquent than were the other adolescents in their programs.

As a group, the subjects chosen for study were of low socioeconomic status, of low average intelligence and significantly below grade level academically. Only one of the youth had a current major medical illness and all subjects were found to be free of gross neurological disease. While a number of subjects had signs of minimal neurological dysfunction as measured by the PANESS, these findings were not significantly related to other variables studied (e.g., psychiatric diagnosis, delinquent status). In marked contrast to other studies of seriously delinquent adolescents medical and neurological illnesses were not important contributory factors to the psychiatric disturbances found in our subjects.

All subjects received a psychiatric evaluation by two of the researchers (an interviewer and an observer) using standardized structured interview techniques.

DSM-III Axis I and II diagnoses were arrived at by consensus. The structured interview format and the method of diagnosis represent the most reliable and up-to-date techniques available in adolescent psychiatry.

Psychiatric evaluation revealed a wide range of serious psychopathology. Forty-eight (68%) of the youth had psychiatric disorders which involved a serious disturbance of thought or mood. This finding indicates that these subjects currently experience and are highly likely to continue to experience debilitating psychiatric symptomatology. Of the youth studied 3 (4%) had a primary diagnosis of schizophrenia, 11 (15%) an active major affective disorder, 4 (6%) a major affective disorder in remission, 26 (38%) a borderline personality disorder and 4 (6%) a paranoid or schizotypal personality disorder. In addition, nineteen of the subjects with borderline personality disorder had schizotypal disorders of thought, with paranoid ideation most common. The majority of subjects received secondary psychiatric diagnoses, with substance abuse, 44 (62%) of subjects, most significant. Many subjects were poly-drug abusers. Substance abuse was a serious and widespread phenomenon.

Our study documents the presence of serious disorders of thought and mood in a large group of highly delinquent adolescents. The findings raise questions

about the relationship between delinquency and psychopathology in these youth.

Delinquency is causally related to a number of factors. Disturbed family relationships, economic disadvantage, residence in urban environments and educational impoverishment have been repeatedly demonstrated to be related to delinquency. The presence of these factors, alone or in combination, puts adolescents at risk for delinquent behavior. Subjects in this study were at risk prior to their delinquent acts because of these factors. The high incidence of serious psychopathology found in the youth evaluated in this study indicates strongly that in serious and repetitive delinquency psychiatric illness is also an extremely important risk factor.

Although psychiatric illness is an important risk factor in serious delinquent behavior, our attempts to relate severity of delinquency to particular psychiatric diagnoses (see Results-DCL) met with limited success. Only one positive finding emerged. Subjects with borderline personality disorder were found to be more likely than other subjects to be repeatedly violent.

Together, these findings indicate that a positive but complex relationship exists between serious delinquency and serious psychiatric disturbances. To view

the adolescents studied as solely delinquent or solely psychiatrically disturbed is inadequate; they are clearly both. Failure to understand that adolescents may be both seriously delinquent and seriously psychiatrically disturbed has created major problems in the rehabilitation of these youth.

## VI. RECOMMENDATIONS

This study documents pervasive and serious psychopathology in a large group of highly delinquent adolescents within two training schools. The findings raise pertinent questions concerning the delivery of appropriate psychiatric care to these youth.

The organization of both Mental Health and Department of Social Service facilities reflects and perpetuates the myth that adolescents can be categorized as either delinquent or psychiatrically disturbed. Our study shows that a significant number of highly delinquent youth housed in the training school system have serious psychiatric disorders of thought or mood which require treatment.

Currently, the training schools are neither mandated nor prepared to take primary responsibility for the provision of comprehensive mental health services. Occasionally, grossly psychotic or persistently suicidal youth are transferred to Mental Health facilities. More often, however, seriously psychiatrically disturbed offenders remain in the Department of Social Service system where the extent of their psychiatric symptomatology is either grossly under-estimated or even denied. Because a standardized and systematic means of psychiatric assessment is lacking, staff ascribe problematic behaviors to "conduct disorders" or delinquency status rather than to the serious

psychopathology underlying the behavior.

For the mental health needs of these youth to be met an effective care delivery system must be operationalized. The goals of such a system should be integrated with current institutional aims of offering developmental essentials in education, vocation and rehabilitation (Easson) as well as the basic needs of living (P.A. 150, MI). The mental health delivery system in the training schools must provide the following:

1. Comprehensive psychiatric assessment: Upon entry into the training school system each youth must undergo a comprehensive psychiatric evaluation. This evaluation should allow for DSM-III diagnoses along Axes I through III. The major disturbances in thought and mood found in the majority of youth in our study are best documented using a structured interview format such as the SADS and the D.I.B. Such an initial assessment would serve two important functions. Firstly, it would clarify the need for further diagnostic evaluation (e.g., a search for biological correlates of specific psychiatric disturbance; more detailed neurological examination). Secondly, it would provide the basis for selecting appropriate psychiatric treatment.
2. Staff psychiatric training: A concerted effort must be made to augment staff training regarding the frequency,

severity and manifest expression of psychiatric illness in this population. A training program should be established which would instruct staff in distinguishing signs and symptoms of major disturbances in thought and mood from those behaviors which are primarily delinquent in nature.

3. Psychiatric Treatment Delivery: In order to treat the seriously psychiatrically disturbed youth found in our study the training school system must be both mandated and prepared to take primary responsibility for the provision of comprehensive mental health services to this population. Until a decision is made on this basic issue, discussion of the many specific treatment modalities available to these disturbed youth would be premature.

## VII. CONCLUSIONS

This study documents the presence, within the training school system, of a large number of youth with serious disorders of thought and mood. The current organization of Department of Social Service institutions precludes the delivery of effective psychiatric treatment to these youth. It is incumbent upon appropriate agencies of the State of Michigan to work toward correcting this important deficiency in the overall care of incarcerated adolescents.

December, 1981

Appendix  
Diagnostic System

The Diagnostic and Statistical Manual of Mental Disorders (Third Edition) of the American Psychiatric Association (DSM-III) was chosen as the diagnostic system for our study. The use of the DSM-III with the SADS has been shown by a number of research groups involved in evaluating adolescents to allow the diagnosis of psychiatric disturbance with significant inter-rater reliability (Robins, 1979 and Strober, 1981). The DSM-III, descriptively based, has a number of unique features, including a multiaxial system, specific diagnostic criteria, and the potential for making multiple diagnoses. These features will be discussed further below.

I. Multiple Axes

In this study Axes I, II and III were utilized. These are: Axis I - Clinical Syndromes, Axis II - Personality Disorders and Developmental Disorders, and Axis III - Physical and Neurological Disorders. List A contains the Axis I diagnoses made on subjects in this study:

List A - Clinical Syndromes

Schizophrenic Disorders	Mental Retardation
Affective Disorders	Adjustment Reaction
Substance Abuse Disorders	Attention Deficit Disorder
Conduct Disorders	Psychosexual Disorder

List B contains the Axis II diagnoses made on subjects in this study:

List B - Personality and Development Disorders

Passive-aggressive	Borderline	Schizotypal
Atypical	Schizoid	Histrionic
Mixed, other	Paranoid	Narcissistic

Developmental Disorders

II. Diagnostic Criteria

Forty-eight (68%) of the delinquents assessed had psychiatric disturbances involving a major disturbance in mood or thought. The diagnostic criteria for these disorders, which include Schizophrenia, Major Affective Disorder, Borderline Personality Disorder, Paranoid Personality Disorder and Schizotypal Personality Disorder are outlined below. In addition to these psychiatric disturbances the diagnostic criteria for Conduct Disorders will be described due to their direct relevance to this juvenile delinquent population, as well as their presence.

**CONTINUED**

**1 OF 2**

A. Schizophrenia

(subjects must meet criteria in all sections, 1-6)

1. At least one of the following during a phase of the illness:
  - a. bizarre delusions
  - b. somatic, grandiose, religious and nihilistic delusions without persecutory or jealous content
  - c. delusions with persecutory or jealous content with hallucinations
  - d. auditory hallucinations - running commentary
  - e. auditory hallucinations - without reference to depression
  - f. incoherence, marked loosening of associations, markedly illogical thinking.
2. Deterioration from a previous level of functioning.
3. Duration: Continuous signs of the illness for at least six months with both an active and residual phase.
4. The full depressive or manic syndrome developed after the psychotic symptoms, or brief in duration relative to symptoms listed in 1.
5. Onset before age 45.
6. Not due to any organic mental disorder or mental retardation.

B. Major Depressive Disorder

(subjects must meet criteria in all sections, 1-6)

1. Distinct period with Dysphoric Mood or pervasive loss of interest in pleasure.
2. At least four of the following symptoms have each been present nearly every day for a period of at least two weeks:
  - a. poor appetite, weight change
  - b. sleep difficulty or sleeping too much
  - c. loss of energy, fatigability or tiredness
  - d. psychomotor agitation or retardation
  - e. loss of interest of pleasure in usual activities
  - f. feelings of self-reproach or excessive guilt
  - g. diminished ability to think or concentrate
  - h. suicidal thoughts or behavior
3. Duration: At least two weeks.
4. Sought help, took medication, impairment in functioning during depressive period.
5. Not schizophrenic.
6. Not schizophrenic, residual type.

C. Borderline Personality Disorder

(subjects must meet criteria 1 and 2)

1. At least five of the following are required:
  - a. impulsivity or unpredictability in at least two areas that are potentially self-damaging, e.g., spending, sex, gambling, substance abuse, shoplifting, over-eating, physically self-damaging acts
  - b. a pattern of intense and unstable relationships
  - c. intense, inappropriate anger or lack of control of anger
  - d. identity disturbance
  - e. affective instability
  - f. intolerance of being alone
  - g. physically self-damaging acts
  - h. chronic feelings of emptiness or boredom
2. If under eighteen, does not meet criteria for identity disturbance.

D. Schizotypal Personality Disorder

(subjects must meet criteria 1 and 2. Also, the following are characteristics of the individual's current and long-term functioning and are not limited to periods of illness)

1. At least four of the following:
  - a. magical thinking
  - b. ideas of reference
  - c. social isolation
  - d. recurrent illusions
  - e. odd speech, e.g., speech that is digressive, vague, over-elaborate, or circumstantial
  - f. inadequate rapport in a face-to-face interaction due to constricted or inappropriate affect
  - g. Suspiciousness or paranoid ideation
  - h. undue social anxiety or hypersensitivity to real or imagined criticism
2. Does not meet the criteria for schizophrenia.

E. Schizotypal Disorder of Thought

(subject must have at least two of the following features)

1. Recurrent illusions, suspected hallucinations, periods of dissociation, depersonalization or derealization.
2. Odd or bizarre ideation or magical thinking.
3. Ideas of reference.
4. Odd communication, e.g., tangential speech, over-elaborate or circumstantial.
5. Social isolation due to hypersensitivity to real or imagined criticism.

Note: Adapted from the Research Diagnostic Criteria, third edition.

F. Paranoid Personality Disorder

(subject must meet criteria 1-4)

1. Pervasive, unwarranted suspiciousness and mistrust of people as indicated by at least three of the following:
  - a. expectation of trickery or harm
  - b. hypervigilance
  - c. guardedness or secretiveness
  - d. avoidance of accepting blame even when warranted
  - e. questioning the loyalty of others
  - f. intense searching for bias with loss of total context
  - g. overconcern with hidden motives and special meanings
  - h. pathological jealousy
2. Hypersensitivity indicated by at least two of the following:
  - a. tendency to be easily slighted
  - b. exaggeration of difficulties
  - c. readiness to counterattack when threat is perceived
  - d. inability to relax
3. Restricted affectivity indicated by at least two of the following:
  - a. appearance of being "cold" and unemotional
  - b. pride taken in always being objective, rational and unemotional
  - c. lack of a true sense of humor
  - d. absence of passive, soft, tender and sentimental feelings
4. Not due to another mental disorder.

G. Conduct Disorders

The four types of conduct disorders, undersocialized-aggressive, undersocialized-nonaggressive, socialized-aggressive and socialized-nonaggressive, will only be described in brief here. (subject must meet criteria 1-4 in all types)

Undersocialized, Aggressive

1. Repetitive and persistent pattern of aggressive conduct in which the basic rights of others are violated, e.g., vandalism, rape, breaking and entering, fire-setting and mugging.
2. Failure to establish a normal degree of affection, empathy or bond with others.
3. Duration of aggressive conduct: at least six months.
4. If eighteen or older, does not meet criteria for Antisocial Personality Disorder.

Undersocialized, Nonaggressive

1. Repetitive and persistent pattern of nonaggressive conduct, e.g., repeated runaways, persistent serious lying or stealing.
2. Failure to establish a normal degree of affection, empathy, or bond with others.
3. Duration: at least six months.
4. If eighteen or older, does not meet the criteria for Antisocial Personality Disorder.

#### Socialized, Aggressive

1. Repetitive and persistent pattern of aggressive conduct in which the basic rights of others are violated, e.g., vandalism, rape, breaking and entering, fire-setting and mugging.
2. Evidence of social attachment.
3. Duration of aggressive conduct: at least six months.
4. If eighteen or older, does not meet the criteria for Antisocial Personality Disorder.

#### Socialized, Nonaggressive

1. A repetitive and persistent pattern of nonaggressive conduct.
2. Evidence of social attachment.
3. Duration: at least six months.
4. If eighteen or older, does not meet the criteria for Antisocial Personality Disorder.

#### III. MULTIPLE DIAGNOSES

Multiple diagnoses can be made when necessary to describe the conditions of the subject being examined. This applies especially to Axis I in which, for example, a subject may be found to have a substance abuse disorder, a conduct disorder and an affective disorder present. Multiple diagnoses reflect the true complexity of the problem.

#### IV. PRINCIPAL (PRIMARY) DIAGNOSES

In all cases a primary diagnosis was designated, indicating that, based on the judgement of the researchers, this diagnosis was the major contributor to the pattern of psychiatric symptomatology seen at the time of the evaluation. The principal diagnosis may be either on Axis I or Axis II and may or may not be accompanied by secondary diagnoses.

#### Examples:

- Subject A: Axis I - Undersocialized-aggressive  
Conduct Disorder
- Major Depressive Disorder (Active)  
(Principal Diagnosis)
- Axis II - Borderline Personality Disorder
- Subject B: Axis I - Socialized-aggressive Conduct  
Disorder
- Alcoholism (In remission)

Axis II - Borderline Personality Disorder  
(Principal Diagnosis)

All 71 subjects evaluated had secondary diagnoses made,  
as well as principal diagnoses.

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A REPORT TO THE STATE OF MICHIGAN  
A PSYCHIATRIC STUDY OF ADOLESCENTS  
IN THE DEPARTMENT OF MENTAL HEALTH INPATIENT FACILITIES

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## I. INTRODUCTION

This report represents the completion of a study of psychiatrically disturbed adolescents in the State training school system and in DMH inpatient facilities. The study was commissioned by two committees: The Diagnostic Standards Committee chaired by Dr. Harley Stock, and the Treatment Standards Committee chaired by Charles Davoli. These two committees were set up jointly by the Department of Mental Health, Social Services and the Office of Criminal Justice to investigate the psychiatric needs of delinquent adolescents housed in the State of Michigan Training School System. This report contains the results of the evaluation of adolescents hospitalized in DMH inpatient facilities. The results of the psychiatric evaluation of delinquent adolescents in the State Training School System has been reported previously<sup>1</sup>.

The study of adolescents hospitalized in DMH facilities was designed with one basic aim in mind. That aim was to create a comparison group for the delinquent adolescents in the training school system. The comparison was designed to be made along two lines; the first severity of delinquency, the second the nature and degree of psychiatric disturbance.

The study of adolescents hospitalized in DMH facilities has been unsuccessful in achieving its aims. The data do not permit a logical

<sup>1</sup>A report to the State of Michigan: A Psychiatric Study of Serious Juvenile Offenders in the State Training School System, December, 1981.

objective comparison of adolescents in DMH inpatient facilities with those in residential placement in the training school system.

There are several important reasons why the DMH sample is inadequate as a comparison group. These include:

- (1) The DMH sample does not represent a random sample of the DMH facilities from which it was drawn for the following reasons:
  - (a) high rates of refusal to participate in the study (estimated at 30-50%) biased the sample.
  - (b) the extended period (over 1 1/2 years) in which the sample was collected.
  - (c) lack of evidence that the three institutions from which subjects were drawn serve the same populations. In the case of Hawthorne Center, there is evidence they serve a different population.
- (2) Problems inherent in the original design of the study, e.g., comparing a group of highly selected delinquent adolescents with a group of randomly selected adolescents from DMH facilities.

## II. METHODS

The methodology used in the study of adolescents in DMH inpatient facilities was essentially the same as that employed in the study of delinquent adolescents, and will not be repeated here. One difference in methodology was that subjects were not chosen for study based on a set of selection criteria; instead an attempt was made to insure that DMH adolescents would be comparable to the delinquent adolescents

in terms of age, sex and race. Additionally, since inter-rater reliability in the making of psychiatric diagnoses was achieved early in the study of DMH adolescents, the majority of subjects were interviewed by only one researcher.

As was true in the study of the delinquent adolescent population, each DMH subject was assigned appropriate DSM-III diagnoses on Axis I - III. In each case, one diagnosis was designated as a primary diagnosis, indicating that, based on the clinical judgement of the researcher, that diagnosis was the major contributor to the pattern of psychiatric symptomatology seen at the time of evaluation.

The data presented in this report will focus on five areas of the investigation: basic demographic information, primary psychiatric diagnosis, secondary psychiatric diagnosis, diagnosis of substance abuse, and diagnosis of conduct disorders.

### III. RESULTS

In all 58 adolescents in DMH facilities were evaluated, 30 male and 28 female. Of these subjects 25 were from Yorkwoods (14 male, 11 female), 22 were from Hawthorne (11 male, 11 female) and 11 were from Fairlawn (6 male, 5 female). Table 1 contains demographic data for the sample as a whole. The subjects ranged in age from 14-18 years, with an average age of 15.8 years. The average SES of the subjects was 3.8, using the Hollingshead-Redlich two factor scale, which has a range of 1 for the highest SES to 5 for the lowest. Forty-five of the subjects (18 male, 27 female) were white, ten

(8 male, 2 female) were black, and three (3 male, 0 female) were of Hispanic or mixed origin.

Table 1 contains the primary psychiatric diagnoses of the 58 subjects evaluated. Borderline personality disorder, characterized by affective instability, poorly controlled aggression directed at self and/or others, impulsivity and highly disturbed interpersonal relationships was the most frequently made diagnosis. This diagnosis was made in 16 (28%) of subjects. Major affective disorder in the form of unipolar major depressive disorder was the primary diagnosis of 8 (14%) of subjects. Four (7%) of subjects received a primary diagnosis of schizphrenia. One (2%) of subjects were diagnosed as having schizotypal personality disorders. In addition, 10 (17%) of subjects were found to have one or more of the schizotypal features of thought. Of these subjects, 8 received a primary diagnosis of borderline personality disorder, 1 major affective disorder and 1 conduct disorder.

There was a group in the sample who demonstrated signs and symptoms of early and gross psychiatric impairment. These subjects were all diagnosed prior to age 5 and had spent the majority of their lives in residential care. Of these 5 subjects, 4 were diagnosed as having chronic organic brain syndrome and 1 infantile autism. The 4 subjects with chronic organic brain syndromes were characterized by gross deficits in language, cognition and interpersonal relatedness. These subjects also had DSM-III, Axis III diagnoses. These diagnoses were congenital rubella, lead poisoning,

post encephalitic syndrome and tuberous sclerosis. None of the remaining subjects in the study had Axis III diagnoses.

Finally, 4 (7%) of subjects received a primary diagnosis of anorexia nervosa or bulimia. Bulimia, like anorexia, is an eating disorder and involves repetitive episodes of gorging, followed by self-induced vomiting. All subjects who received this diagnosis were female.

Subjects with borderline personality disorder, major affective disorder, active and in remission, schizophrenia, schizotypal personality disorder, chronic organic brain syndrome, infantile autism and anorexia/bulimia represent the group of subjects in the DMH sample who exhibit serious disturbances in mood and/or thought. This group consists of 38 subjects, who represent 66% of the sample. In the study of seriously delinquent adolescents in the state training school system, 48 (68%) of subjects were found to have serious disturbances of mood and/or thought.

The remaining 20 (34%) of subjects in the DMH sample who did not have serious disturbances of mood or thought had the following primary diagnoses: conduct disorder, 12 (21%); dysthymic disorder, 3 (5%); adjustment reaction, 4 (7%); and other personality disorders (mixed, atypical or other), 1 (2%).

Secondary psychiatric diagnoses are presented in Table 3. The two most frequent secondary diagnoses, substance abuse and conduct disorder, will be discussed separately. Five (8%) of subjects were

found to have major affective disorders (unipolar depressions) in remission.

Eighteen (31%) of subjects received substance abuse as a secondary diagnosis. The diagnosis of substance abuse was made on the basis of historical information gathered from the subjects. Table 4 gives the frequency of substance abuse in the sample by type of substance. Because some subjects abused more than one drug, the sum of the individual drugs abused is greater than the number of subjects who received diagnoses of substance abuse. Marijuana and alcohol were the most frequent substances abused. For comparison, it should be noted that in the sample of seriously delinquent adolescents, 45 (63%) received a primary or secondary diagnosis of substance abuse.

Conduct disorders are defined along two dimensions, socialization and aggression. Current psychiatric opinion is divided about the relative importance of these two factors. Jenkins, in his studies, found that the most important factor in the adult outcome of adolescents identified as delinquent was the degree to which they were socialized. Robins, in her study, found that in children initially identified as psychiatrically disturbed, antisocial (aggressive) behavior itself was the best predictor of adult anti-social behavior. The only firm conclusion that can be drawn from these studies is the fact that in combination, aggressivity and under-socialization produce a poor outcome.

Twenty-four (41%) of subjects had diagnosable conduct disorders (see Table 5). Twelve received conduct disorder as a primary diagnosis, while 12 received as a secondary diagnosis. Males were much more likely than females to be assigned an aggressive conduct disorder. There was little difference between males and females in the assignment of socialized conduct disorders.

Thirteen (54%) of subjects with conduct disorders had aggressive conduct disorders, and 8 (33%) were found to be undersocialized. These figures compare with 44 (70%) aggressive, 28 (44%) undersocialized, 22 (49%) both in the delinquent adolescent group.

In the DMH sample, fewer subjects had conduct disorders (41% versus 90%), fewer subjects were either aggressive (54% versus 70%) and fewer were undersocialized and aggressive (25% versus 49%), than in the training school sample. DCL (self ratings of delinquency) were also much lower in the DMH group (mean 28.4 versus 86.5) than in the training school sample, suggesting that the DMH sample was much less delinquent than the training school sample.

#### IV. CONCLUSION

The study of adolescents hospitalized in DMH facilities was unsuccessful primarily because the sample drawn from the DMH facilities was non representative of the DMH facilities from which it was drawn.

The difficulties with the DMH portion of the study should not obscure the importance of the overall findings of the study. These

findings are:

- (1) Large numbers of delinquent adolescents in the Green Oaks and Adrian Training School programs are seriously psychiatrically disturbed.
- (2) Admission to the training schools is based on the repeated commission of delinquent acts. Because identification of psychiatric illness in delinquent adolescents is likely to have little impact on the placement of the vast majority of these adolescents, they will continue to be placed in the training school—a program of systematic psychiatric assessment and treatment, combined with staff training, needs to be implemented in the training school system. Transfer of youth to DMH facilities and placement of youth in a secure psychiatric facility (Juvenile Forensic Center) would be valuable options for small numbers of youth in the training school system, but these options are an inadequate substitute for the development of a program of psychiatric diagnosis and treatment for the training school itself.

		Total	Male	Female
A X I S I	Schizophrenia	4	2	2
	Major Affective Disorder	8	2	6
	Chronic Organic Brain Syndrome	4	4	0
	Infantile Autism	1	1	0
	Anorexia/Bulimia	4	0	4
	Conduct Disorder	12	9	3
	Dysthymic Disorder	3	2	1
	Adjustment Reaction	4	2	2
A X I S II	Borderline Personality Disorder	16	8	8
	Schizotypal Personality Disorder	1	0	1
	Other Personality Disorder	1	0	1

DSM-III PRIMARY DIAGNOSES

Table 1

		N	Major Affective Disorder (Remission)	Mental Retardation	Conduct Disorder	Substance Abuse	Dysthymic Disorder	Attention Deficit Disorder	Borderline Pers.	Schizotypal Pers.	Other Pers.
A X I S I	Schizophrenia	4			2	1					
	Major Affective Disorder	8			4	3		1	1	1	1
	Chronic Organic Brain Syndrome	4		4	2						
	Infantile Autism	1		1							
	Anorexia/Bulimia	4			1	1	1				
	Conduct Disorder	12	1			2	2			1	1
	Dysthymic Disorder	3				1		1			
	Adjustment Reaction	4									
A X I S II	Borderline Personality Disorder	16	3		8	9	1	1		4	
	Schizotypal Personality Disorder	1			1	1					
	Other Personality Disorder	1	1		1						

DSM-III PRIMARY AND SECONDARY DIAGNOSES

Table 2

	Total	Male	Female
Alcohol	16	8	8
Marijuana	15	9	6
Amphetamines	12	5	7
Hallucinogens	11	6	5
Barbituates	3	2	1
Cocaine	2	0	2

SUBSTANCE ABUSE

Table 3

	Total	Male	Female
Socialized, Nonaggressive	.9	5	4
Socialized, Aggressive	7	6	1
Undersocialized, Nonaggressive	2	0	2
Undersocialized, Aggressive	6	5	1

CONDUCT DISORDERS

Table 4

STATE OF MICHIGAN



WILLIAM G. MILLIKEN, Governor

## DEPARTMENT OF MENTAL HEALTH

LEWIS CASS BUILDING  
LANSING, MICHIGAN 48926  
FRANK M. OCHBERG, M.D.  
Director

April 12, 1982

ADMINISTRATIVE DIRECTIVE FY 81/82 - I- -5

IMMEDIATE EFFECT

TO: Walter G. Brown, Ph.D.  
Joseph FarrellFROM: Albert L. Meuli *A.L.M.*  
Chief Deputy DirectorSUBJECT

## STATE FACILITY SERVICES TO DSS TRAINING SCHOOLS

As the attached memo indicates, there has been some re-thinking related to consultative services and hospital admissions provided to state training schools by the Department of Mental Health. Please inform the appropriate facilities of their service obligations:

1. Fairlawn will provide services to W. J. Maxey Training School for all county residents with the exception of Wayne County.
2. York Woods will provide services to Adrian Training School for all county residents with the exception of Wayne County.
3. Hawthorn will provide services to W. J. Maxey and Adrian Training Schools for Wayne County residents.

Representatives from the above-mentioned facilities will be present at the forthcoming meeting to discuss and develop the DSS/DMH interagency agreement concerning this issue.

ALM/FG

UNTIL INSTRUCTIONS ARE ISSUED REVISING THE STRUCTURE OF THE ADMINISTRATIVE MANUAL, THIS LETTER SHOULD BE FILED IN A SEPARATE SECTION OF YOUR MANUAL.

cc: All Public Mental Health Manual Holders

**END**