U.S. Department of Justice
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Office of Juvenile Justice and Delinquency Prevention

Working for Youth Justice and Safety

JUVENILE JUSTICE BULLETIN

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Beyond Detention

Even though research indicates that the majority of youth in the juvenile justice system have been diagnosed with psychiatric disorders, reports issued by the Surgeon General and the President's New Freedom Commission on Mental Health show that juvenile detainees often do not receive the treatment and services they need.

This bulletin series presents the results of the Northwestern Juvenile Project, the first large-scale, prospective longitudinal study of drug, alcohol, and psychiatric disorders in a diverse sample of juvenile detainees. Individual bulletins examine topics such as suicidal behaviors in youth in detention, posttraumatic stress disor der and trauma among this population, functional impairment in youth after detention, and barriers for youth who need to receive mental health services.

Nearly all detained youth eventually return to their communities and the findings presented in this series provide empirical evidence that can be used to better understand how to meet youth's mental health needs and provide ap propriate services while in detention and after their release. The Office of Juvenile Justice and Delinquency Prevention hopes this knowledge will help guide innovative juvenile justice policy and create a better future for youth with psy chiatric disorders in the justice system.

The Northwestern Juvenile Project: Overview

Linda A. Teplin, Karen M. Abram, Jason J. Washburn, Leah J. Welty, Jennifer A. Hershfield, and Mina K. Dulcan

Highlights

The Northwestern Juvenile Project (NJP) studies a randomly selected sample of 1,829 youth who were arrested and detained in Cook County, IL, between 1995 and 1998. This bulletin provides an overview of NJP and presents the following information about the project:

- NJP is a longitudinal study that investigates the mental health needs and long-term outcomes of youth detained in the juvenile justice system.
- This study addresses a key omission in the delinquency literature. Many studies examine the connection between risk factors and the onset of delinquency. Far fewer investigations follow youth *after* they are arrested and detained.
- The mental health needs of youth detained in the juvenile justice system are far greater than those in the general population.
- The mental health needs of youth in detention are largely untreated. Among detainees with major psychiatric disorders and functional impairment, only 15 percent had been treated in the detention center before release.

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The Northwestern Juvenile Project: Overview

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The Northwestern Juvenile Project (NJP) is the first large-scale, prospective longitudinal study of mental health needs and outcomes of juvenile detainees. The Office of Juvenile Justice and Delinquency Prevention (OJJDP) and a consortium of eight other federal agencies and five private foundations have funded NJP. Data from large-scale studies such as NJP provide an empirical basis for decision-making in the juvenile justice system.

NJP includes a diverse sample of 1,829 youth who were arrested and detained between 1995 and 1998 in Cook County, IL, the metropolitan area that includes Chicago and its surrounding suburbs. At baseline, the participants were between 10 and 18 years old.

NJP continuously tracks and reinterviews participants. Following participants over time allows for the study of patterns and sequences of disorders, the impact of these disorders on functioning, and the important risk and protective factors in this population. Researchers interview participants where they are living (either in their communities or in correctional facilities). In addition to conducting face-to-face interviews with participants, NJP also obtains records from 16 correctional and service agencies to cross-validate self-reported data on criminal justice involvement and to confirm the use of mental health and substance use services.

ABOUT THIS SERIES

Studies in this series describe the results of statistical analyses of the Northwestern Juvenile Project, a longitudinal study of youth detained at the Cook County Juvenile Temporary Detention Center in Chicago, IL, between 1995 and 1998. The sample included 1,829 male and female detainees between ages 10 and 18. The data come from structured interviews with the youth.

Topics covered in the series include the prevalence of suicidal thoughts and behaviors among juvenile detainees, posttraumatic stress disorder and trauma within this population, functional impairment after detention (at work, at school, at home, or in the community), psychiatric disorders in youth processed in juvenile or adult court, barriers to mental health services, violent death among delinquent youth, and the prevalence of psychiatric disorders in youth after detention. The bulletins can be accessed from the Office of Juvenile Justice and Delinquency Prevention's (OJJDP's) Web site, ojjdp.gov.

In addition to the funding that OJJDP provided, the research also was supported by the National Institute on Drug Abuse, the National Institute of Mental Health, the National Institute on Alcohol Abuse and Alcoholism, the Substance Abuse and Mental Health Services Administration (Center for Mental Health Services, Center for Substance Abuse Prevention, and Center for Substance Abuse Treatment), the Centers for Disease Control and Prevention (National Center for Injury Prevention and Control and National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention), the National Institutes of Health Office of Research on Women's Health, the National Institute on Minority Health and Health Disparities, the Office of Rare Diseases, the Office of Behavioral and Social Sciences Research, the U.S. Departments of Labor and Housing and Urban Development, the William T. Grant Foundation, and the Robert Wood Johnson Foundation. The John D. and Catherine T. MacArthur Foundation, the Open Society Foundations, and the Chicago Community Trust provided additional funds.

Background

A significant proportion of the nation's youth are involved in the juvenile justice system. In 2009, approximately 1.9 million arrests were made of persons younger than age 18; juveniles accounted for 12 percent of all Violent Crime Index arrests and 17 percent of all Property Crime Index arrests nationwide (Puzzanchera and Adams, 2011). In 2010, nearly 71,000 juveniles were in custody on an average day (Sickmund et al., 2011). Because of the large number of juvenile detainees, it is important to gather accurate epidemiologic data on psychiatric disorders.

Comprehensive, accurate, and reliable data are needed to guide the development of innovative juvenile justice policy. NJP provides empirical evidence that communities can use to develop and provide appropriate services within detention centers. Because the study is longitudinal, it also provides information about the long-term outcomes of these youth after they leave detention. Findings from NJP, to be presented briefly in this bulletin and in greater detail in subsequent bulletins, provide important information on how to facilitate successful reentry into the community and successful transition to adulthood for youth in the juvenile justice system.

Differences Between NJP and Other Longitudinal Studies of Psychiatric Disorder Among Detained Youth

Many excellent cross-sectional studies have examined mental disorders among detained youth (Atkins et al., 1999; Lewis et al., 1987; McCabe et al., 2002; Steiner, Garcia, and Mathews, 1997; Timmons-Mitchell et al., 1997). Far fewer studies, however, have examined how youth fare *after* they leave detention. Only two large-scale longitudinal studies of juvenile detainees, in addition to NJP, have examined psychiatric disorders among youth in the juvenile justice system. Table 1 lists key characteristics of these longitudinal studies and NJP. The Youth Support Project (Dembo et al., 2000), an intervention study, reported on substance *use,* not substance use *disorder* or other psychiatric disorders. The Pathways to Desistance study (Mulvey, 2004) (also funded by OJJDP) sampled only serious offenders; that is, those who were adjudicated delinquent for felonies or serious misdemeanors. Thus, the Pathways to Desistance study provides data on an important subgroup, but one that comprises a relatively small fraction of youth in the juvenile justice system (Stahl, 2003; Puzzanchera and Kang, 2011).

NJP's Overall Approach and Goals

NJP was designed to investigate the mental health needs and long-term outcomes of youth in the juvenile justice system. NJP has three primary goals:

1. **Assess the prevalence, development, and persistence of psychiatric disorders as youth in the juvenile justice system become adults.** As part of this goal, the researchers do the following:

   - Assess affective, anxiety, psychotic, disruptive behavior, and substance use disorders; and patterns of comorbid disorders.

Table 1. Longitudinal Studies of Youth in the Juvenile Justice System[1]

Study Name and Location	Sample[2]								Years Followed
					Race/Ethnicity[3]				
	Type	*N*	Age	Female	W	A	H	O	
Northwestern Juvenile Project (Chicago, IL) (Teplin et al., 2002)	Detainees	1,829	10–18	36%	16%	55%	29%	0.2%	16
Pathways to Desistance Study (Philadelphia, PA, and Phoenix, AZ) (Mulvey, 2004)	Serious adjudicated offenders[4]	1,354	14–18	14%	25%	44%	29%	2%	7
Youth Support Project (Tampa, FL) (Dembo et al., 2000)	Arrestees entering an intervention program	164	10–18	39%	59%	39%	30%	0%	3

[1] This table includes studies that (1) were conducted in the United States, (2) had at least a 3-year followup period, (3) had a sample size of at least 100, (4) examined psychiatric disorder or substance use at two or more points in time, and (5) had one or more publications in a peer-reviewed journal.

[2] Demographic characteristics are based on the baseline sample. The sample size at followup(s) may be smaller. Percentages are rounded to the nearest whole number and may not add to 100 percent.

[3] W = Non-Hispanic white, A = African American, H = Hispanic, O = Other racial/ethnic group(s).

[4] Participants were predominantly adjudicated of felonies.

- Examine functional impairment and outcomes associated with these disorders.
- Focus on gender and racial/ethnic disparities in psychiatric and substance use disorders.
- Examine how well community mental health and justice systems respond to the needs of these youth.

2. **Examine the dynamic relationships among patterns of psychiatric disorders, risky behaviors, mortality, and other long-term outcomes in adulthood.** As part of this goal, the researchers do the following:
   - Examine the development and persistence of risky behaviors such as gang involvement, criminal activity, risk behaviors related to sexual activity and drug use, involvement in the drug trade, and perpetration of violent crimes.
   - Focus on the antecedents of these risky behaviors (e.g., exposure to violence, abuse, and neglect) and how different types of risky behaviors are interrelated.
   - Determine the consequences of these behaviors on adult social role performance: educational attainment, employment, residential independence, intimate relationships, parenting, and desistance from crime.
3. **Examine how patterns of incarceration during adolescence and adulthood affect long-term outcomes in adulthood.** As part of this goal, the researchers do the following:
   - Collect data on age at incarceration, number of incarcerations and releases, length of incarcerations, time spent in the community between incarcerations, terms of release, and experiences with community corrections (parole, probation, and community supervision).
   - Examine how incarceration during adolescence affects subsequent psychiatric disorders, gang involvement, criminal behaviors, involvement in the drug trade, violent perpetration and victimization, and mortality.
   - Study the consequences of incarceration on adult social role performance, as defined in goal 2 above.
   - Examine how factors in adolescence and young adulthood influence disproportionate minority contact with the justice system in adulthood.

Sampling and Interview Methods

The following section discusses how the researchers carried out the study, including the demographic characteristics of the sample, the interview design, and the methods they used to track and retain sample participants.

Demographic Characteristics of the Sample

NJP recruited a stratified random sample of 1,829 youth at intake to the Cook County Juvenile Temporary Detention Center (CCJTDC) in Chicago, IL, between November 20, 1995, and June 14, 1998. CCJTDC is used for pretrial detention and for offenders sentenced for fewer than 30 days. To ensure adequate representation of key subgroups, researchers stratified the sample by gender, race/ethnicity (African American, non-Hispanic white, Hispanic, or other), age (10–13 years or 14 years and older), and legal status (processed in juvenile or adult court).

All detainees awaiting the adjudication or disposition of their case were eligible to participate in the study. Among them, the researchers randomly selected 2,275 detainees; 4.2 percent (34 youth and 62 parents or guardians) refused to participate. There were no significant differences in refusal rates by gender, race/ethnicity, or age. Twenty-seven youth left the detention center before an interview could be scheduled, 312 left while the researchers attempted to locate their caretakers for consent, and 11 others were excluded from the sample because they were unable to complete the interview. The final sample size was 1,829. It was composed of 1,172 males and 657 females; the ethnic breakdown was 1,005 African Americans, 296 non-Hispanic whites, 524 Hispanics, and 4 "other race/ethnicity." The age range was 10 to 18 years old with a mean of 14.9 years and a median of 15 years. Sample weights are used in statistical analyses; therefore, findings reflect CCJTDC's population rather than the stratified sample. Table 2 presents unweighted sample characteristics and figure 1 (page 6) presents information about sample stratification.

The sample has several strengths:

- **Size.** The sample is large enough to investigate uncommon risk factors and outcomes.
- **Large subsample of females.** There are enough females (657, more than one-third of the sample) to examine gender differences. It is critical to study females because they comprise a substantial proportion of persons in the juvenile and adult justice systems: 30 percent of juvenile arrests, 14 percent of juveniles in residential placement, 25 percent of adult arrests, and 9 percent of incarcerated adults (Puzzanchera, 2009; Snyder, 2011; Sickmund et al., 2011; Glaze, 2010).
- **Racial/ethnic diversity.** The sample is racially and ethnically diverse; it is composed of 1,005 African Americans (54.9 percent), 524 Hispanics (28.7 percent), 296 non-Hispanic whites (16.2 percent), and 4 from other racial/ethnic groups (0.2 percent).
- **Wide age range.** At baseline, the age range was 10 to 18 years old (a mean of 14.9 years). Youth 10 to 13 years old were oversampled to provide adequate numbers to examine age differences.
- **Inclusion of youth processed in juvenile and adult court.** The sample includes youth processed as juveniles and oversampled those who were transferred to adult court.

Interviews

Baseline interviews began in November 1995; 13 waves of followup interviews, spanning 16 years, began in November 1998 and are ongoing.

Researchers conduct followup interviews with participants where they are living when their interview is due (in the community or in a correctional facility). A small proportion of participants are interviewed by telephone if face-to-face interviews are not feasible.

Sample Retention

Sample retention is critical to the integrity of longitudinal data. NJP participants are highly mobile and can be difficult to locate. The researchers developed an extensive tracking system to maintain the sample. Participants receive thank-you notes, birthday cards, and routine mailings with gifts throughout the year. All mailings include

Table 2. Unweighted Sample Characteristics of Study Participants

Characteristic	Northwestern Juvenile Project (NJP)		CCJTDC Population[2]	National Residential Placement (1997)[3]
	Sample Size	Percentage of Participants[1]		
Gender				
Male	1,172	64.1%	93.4%	86.4%
Female	657	35.9%	6.6%	13.6%
Race/Ethnicity				
African American	1,005	54.9%	82.7%	39.9%
Hispanic	524	28.7%	11.2%	18.4%
Non-Hispanic White	296	16.2%	5.6%	37.5%
Other	4	0.2%	0.5%	4.2%
Age				
10–13	372	20.3%	8.6%[4]	6.5%
14 and older	1,457	79.7%	91.4%[4]	93.5%
Mean	14.9			
Median	15			
Mode	16			
Legal Status				
Juvenile court	1,554	85.0%	93.1%[5]	
Adult court	275	15.0%	6.9%[5]	

CCJTDC = Cook County Juvenile Temporary Detention Center

[1] Percentages may not add to 100 percent due to rounding.

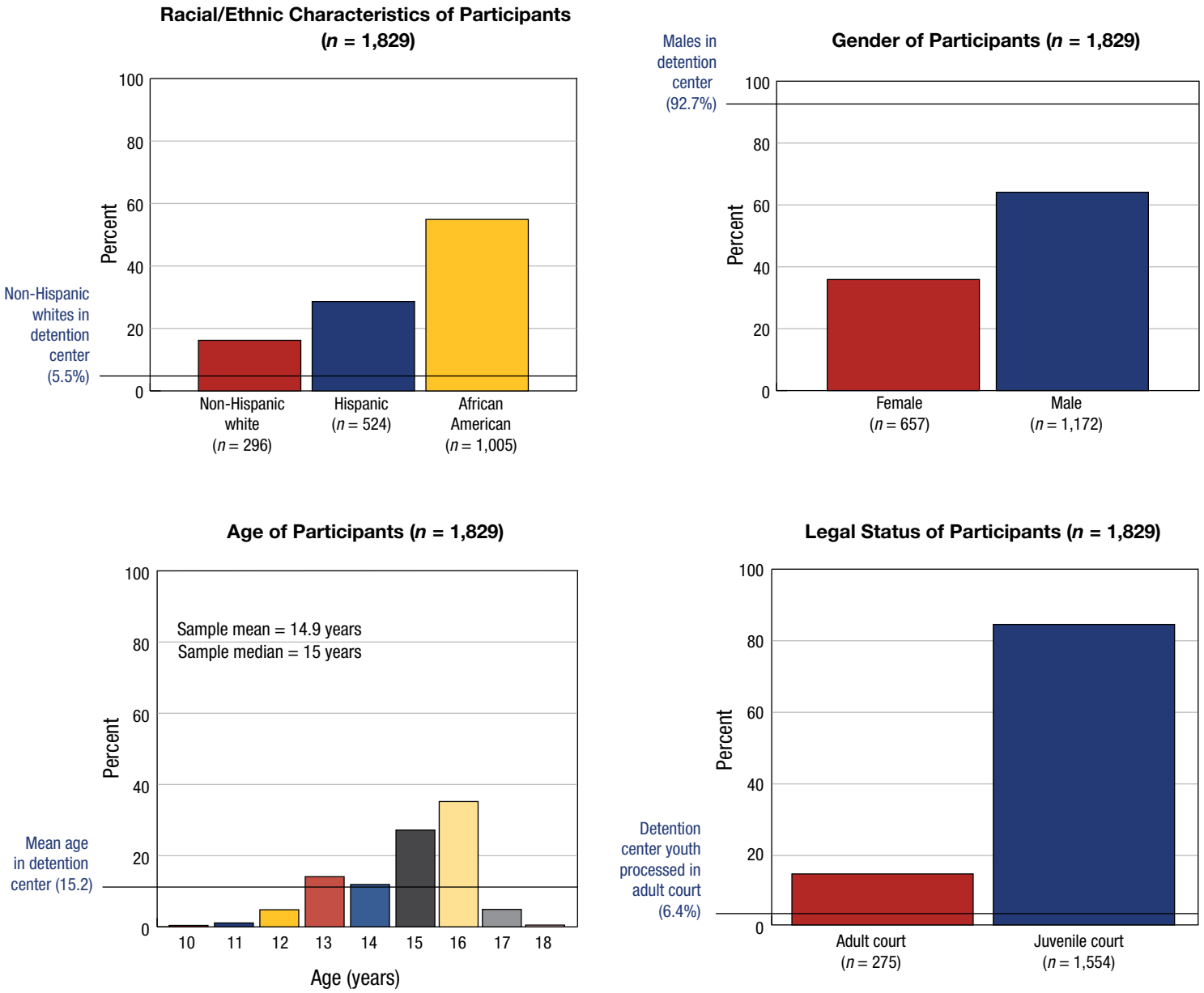
[2] Jail breakdown as calculated by NJP.

[3] Sickmund et al., 2011.

[4] Data were available for males only due to stratification.

[5] Data were available for males ages 14 and older only.

Figure 1. Sample Stratification for the Northwestern Juvenile Project



change of address cards. Returned mail indicates the participant has been lost to followup and more extensive tracking procedures are required. Interviewers update contact information at every interview. To track participants, researchers use the telephone, Internet, agency contacts, and contacts the participant has previously provided; they also visit last-known addresses. Table 3 shows participation rates (82–97 percent).

Considerations for Measurement

The following goals have guided the choice of measures.

Ensure comprehensiveness. Content areas reflect prior empirical studies of psychiatric and substance use disorders, criminal recidivism, and risk and protective factors.

Maximize sensitivity. Because many of the participants' responses score at the extremes of conventional measures (e.g., very low on cognitive assessments and very high on many behavioral assessments), the researchers selected instruments that are sensitive in extreme ranges (Dowling, Johnson, and Fisher, 1994; Hawkins et al., 2003; Needle et al., 1995; Weatherby, Needle, and Cesari, 1994). Whenever possible, the researchers chose instruments designed for high-risk populations who, on average, have more verbal deficits than general population youth. As needed, the research team refined the coding to capture smaller gradations of symptoms, behaviors, and attitudes.

Minimize cultural bias. Standardized measures in some areas—demographics, family structure, and family functioning—are inappropriate for many delinquent youth

because they often do not live in traditional families. It is common for these youth to live in single-parent households, move frequently, or be cared for by siblings or extended family. The researchers revised standard instruments to capture variations in these family systems.

Maximize comparability to the researchers' baseline data. In some cases, the research team developed new instruments that were superior to those used in the baseline assessments or that better addressed participants' evolving developmental stages. Where they used new instruments, researchers maximized their comparability to the instruments used at earlier waves.

Maximize efficiency. To complete interviews within the limits of most participants' attention span and motivation, the researchers combined some instruments and condensed others, with advice from authors or experts in the field. Researchers worked with participants to construct a timeline of events since their last interview, in the past year, and in the past 3 months to help them recall the timing of behaviors throughout the interview. Interviewers conducted reliability checks with mock participants following training and annually thereafter to maintain consistency.

Maximize comparability to other studies. Whenever possible, the research team selected commonly used instruments to maximize the likelihood that these data could be compared with other large studies of adolescents and at-risk populations. NJP draws questions from the National Institute of Mental Health's Methods for the Epidemiology of Child and Adolescent Mental Disorders study (Goodman et al., 1998); the National Survey on Drug Use and Health (Substance Abuse and Mental Health Services Administration, 2004); the National Institute on Drug Abuse's Risk Behavior Assessment (Dowling, Johnson, and Fisher, 1994; Needle et al., 1995; Weatherby, Needle, and Cesari, 1994); the Denver Youth Survey (Institute of Behavioral Science, 1991); the Seattle Social Development Project (Hawkins et al., 2003); the Washington, DC, Metropolitan Area Drug Study of Juveniles (National Institute on Drug Abuse, 1995); the Child and Adolescent Functional Assessment Scale (Hodges, 1994); and the Child and Adolescent Services Assessment–Modified (Burns et al., 1994).

The sidebar "Northwestern Juvenile Project: Key Areas of Measurement" (pages 8–9) lists key variables that NJP assesses.

Diagnostic Measures

NJP employs standardized diagnostic instruments that are appropriate for the developmental stage of the participants at each wave. The baseline assessments used the Diagnostic Interview Schedule for Children (DISC), version 2.3 (based on the revised third edition of the *Diagnostic and Statistical Manual for Mental Disorders* (DSM–III–R)), which was the most recent version available (in both English and Spanish) at the time of those assessments (Bravo et al., 1993; Shaffer et al., 1996). The DISC is a highly structured diagnostic interview that contains detailed probes into symptoms.

For followup interviews, the research team modified diagnostic assessments in accordance with improvements in diagnostic technology and the age of participants. The team administered the DISC version 4.0 (DISC–IV, which is based on the DSM–IV), which its authors modified for use with young adults, at the followup interviews (Fisher et al., 1997; Shaffer et al., 2000). In addition, the team used the Diagnostic Interview Schedule, version IV (DIS–IV, which is based on the DSM–IV) to assess disorders that either were not assessed or that the DISC–IV did not adequately assess, including substance use disorders, schizophrenia, cognitive impairment, and antisocial personality disorder (Shaffer et al., 2000).

By 2002, most of the participants in the sample were 18 years old or older, at which time NJP stopped using diagnostic tools designed for children and adolescents and began administering the World Mental Health–Composite International Diagnostic Interview (WMH–CIDI) for adults. The researchers use the WMH–CIDI to assess the following DSM–IV disorders: depression, mania, panic, generalized anxiety, and posttraumatic stress disorder (PTSD), as well as suicidality (Kessler and Üstün, 2004). The WMH–CIDI is a comprehensive measure that

Table 3. Participation Rates

Followup Interview[1] (years)	Planned Sample[2]		Interviews Completed	
	Type	*N*	*N*	Percent[3]
3	Full	1,829	1,751	97.5%
3.5	Subsample[4]	997	942	95.5%
4	Subsample[4]	997	914	93.1%
4.5	Full	1,829	1,625	91.5%
6	Full	1,829	1,489	84.2%
8	Full	1,829	1,442	82.3%
10	Subsample[5]	800	655	85.5%
11	Subsample[5]	800	667	87.4%
12	Full	1,829	1,520	87.7%

[1] The 13- to 16-year followup interviews are ongoing; participation rates are not yet available.

[2] Number of interviews planned for the followup.

[3] Number of interviews completed divided by the number of participants still living at the close of the followup. Some participants completed interviews beyond the interview window.

[4] The 3.5- and 4-year followup interviews include only a random subsample of participants (n = 997).

[5] The 10- and 11-year followup interviews include only participants who had received the HIV/AIDS assessment at baseline (n = 800).

NORTHWESTERN JUVENILE PROJECT: KEY AREAS OF MEASUREMENT

Sociodemographic Characteristics

- Educational performance and attainment
  - Employment
    - Characteristics of employment
    - Employment stability
    - Compensation
    - Attitudes and satisfaction
    - Perceived barriers to securing employment
  - Income
    - Legal vs. illegal source
    - Allocation of resources
    - Public assistance status
    - Other financial assistance (e.g., benefits, resources)
  - Residential stability and living situation
    - Type of residence
    - Homelessness
  - Marital status
  - Acculturation (Hispanic participants)

Psychiatric Disorders

- Psychotic disorders
  - Psychosis
  - Schizophrenia
- Affective disorders
  - Major depressive disorder
  - Dysthymic disorder
  - Mania
  - Hypomania
  - Suicidality
- Anxiety disorders
  - Separation anxiety disorder
  - Overanxious disorder
  - Generalized anxiety disorder
  - Panic disorder
  - Posttraumatic stress disorder
- Attentional/disruptive behavioral disorders
  - Attention-deficit/hyperactivity disorder
  - Oppositional defiant disorder
  - Conduct disorder
  - Antisocial personality disorder
  - Gambling disorder
- Substance use disorders
  - Alcohol abuse and dependence disorder
  - Marijuana use and dependence disorder
  - Other drug use and dependence disorders

Substance Use

- Type of substance
- Recency of use
- Mode of use
- Use during pregnancy
- Context of use
  - Inhibition
  - Habitual use
- Readiness for change

Criminal Activity

- Onset
- Type
- Frequency
- Recency
- Context
  - Relationship to victim
  - Working alone or with others
- Arrest history
- Access to and use of guns

Incarceration History

- Stays in correctional facilities
  - Age at incarceration(s)
  - Length of stay
  - Type of facility
- Reentry from incarceration
  - Number of release(s) into the community
  - Resources at release
  - Living arrangement after release
  - Employment after release
  - Relationship with community corrections (e.g., parole, probation)

Health and Impairment

- Functional impairment
  - Global impairment
  - Domain-specific impairment
- Physical functioning
  - Infection, disease
  - Injury
  - Chronic pain
  - Sexually transmitted infections
    - Sex risk behaviors
    - Drug risk behaviors
  - Global health and exercise
- Cognitive functioning
  - Intellectual functioning (composite IQ, verbal, nonverbal)
  - Academic achievement (reading, arithmetic)
- Quality of life
- Mortality

Life Events

- Milestones
  - Marriage
  - Childbirth
  - Educational attainment
  - Employment
- Adverse life events
  - Childhood maltreatment
    - Physical abuse
    - Sexual abuse
    - Neglect
  - Loss of intimates
  - Trauma and exposure to violence
  - Victimization
    - Sexual
    - Domestic
    - Criminal

Attitudes and Beliefs

- Self-esteem
- Self-efficacy
- Religiosity
- Future orientation
- Attitudes toward deviance and risky behavior

Service Utilization

- Mental health and substance use services
  - Provider
  - Level of care
    - Community-based services
    - Inpatient services
    - Correctional services
  - Characteristics of services
  - Satisfaction with services
  - Payment for services
- Perceived barriers to mental health and substance use services
- Physical healthcare utilization

Interpersonal and Community Characteristics

- Family of origin characteristics
  - Household composition
  - Biological parental contact
  - Parental monitoring and disciplinary practices
  - Primary caretaker(s) during childhood
  - Caretaker risk factors
    - Substance use
    - Psychiatric problems
    - Criminal involvement
- Marital and intimate relationships
  - Quality of relationship
  - Behaviors and employment of partner
- Parenting practices and attitudes
- Social support
  - Deviant and peer associations
    - Peer criminal activity
    - Peer substance use
    - Gang involvement
    - Gang pressure toward deviance
  - Structure and function of social support network
  - Sense of “mattering” to other(s)
- Neighborhood characteristics
  - Neighborhood safety
  - Ease of obtaining drugs
  - Perceived violence

provides information on both prevalence and severity of these disorders. It builds on earlier versions of the CIDI and DIS–IV (Kessler and Üstün, 2004).

NJP continues to use sections of the DIS–IV to assess (1) antisocial personality disorder because it is not included in WMH–CIDI 2000, (2) substance use disorders because the WMH–CIDI collapses many types of drugs into an "other" category rather than identifying specific drugs abused, and (3) schizophrenia because the WMH–CIDI screens for psychosis only.

Other Measures

More information about the measures used to assess other variables listed in the sidebar on pages 8–9 will be provided in subsequent bulletins.

Overview of Selected Findings From NJP

Published data from NJP have been cited in the *Report of the Surgeon General's Conference on Children's Mental Health* (U.S. Department of Health and Human Services, 2000), by national advocacy groups, and in reports to Congress. Analyses of data from NJP are ongoing. To date, articles have been published in the *Archives of General Psychiatry, American Journal of Public Health, Journal of Adolescent Health, Journal of the American Academy of Child and Adolescent Psychiatry, Journal of Consulting and Clinical Psychology, Pediatrics,* and *Psychiatric Services.* A brief summary of some key findings follows (also see the sidebar, "Overview of Selected Findings From the Northwestern Juvenile Project").

OVERVIEW OF SELECTED FINDINGS FROM THE NORTHWESTERN JUVENILE PROJECT

Characteristics of Youth in Detention

Prevalence of Psychiatric Disorders

- Psychiatric disorders are prevalent: 66 percent of males and 74 percent of females met the criteria for at least one disorder at the baseline interview in detention.
- Substance use disorders are the most common: 51 percent of males and 47 percent of females met diagnostic criteria at baseline.
- Rates of many disorders were greater among females and non-Hispanic whites.

Multiple Disorders

- Having more than one disorder is common: 46 percent of males and 57 percent of females had two or more disorders at baseline.
- Compared with participants who did not have a major mental disorder (MMD), those with an MMD had significantly greater odds of also having a substance use disorder.
- Multiple substance use disorders are also common: Among participants with an alcohol disorder, four out of five also had one or more drug disorders.

Prevalence of Psychiatric Disorders Among Youth Processed as Adults

- Rates of psychiatric disorder among youth processed in adult criminal courts are similar to the rates for youth processed in juvenile courts: 66 percent had at least one psychiatric disorder and 43 percent had two or more psychiatric disorders.

Trauma and Posttraumatic Stress Disorder

- Ninety-three percent of participants had been exposed to one or more traumas prior to baseline.
- Significantly more males than females reported at least one trauma.
- Eleven percent of the sample met diagnostic criteria for posttraumatic stress disorder (PTSD) in the past year; more than half of participants with PTSD reported witnessing violence as the precipitating trauma.
- Among participants with PTSD, 93 percent also met diagnostic criteria for at least one comorbid psychiatric disorder.

Suicidality

- More than one in three juvenile detainees (and nearly half of female detainees) had felt hopeless or thought about death in the 6 months prior to detention.
- One in ten juvenile detainees reported thinking about committing suicide in the past 6 months; 1 in 10 had ever attempted suicide.
- Recent suicide attempts were most common in females and in youth with major depression and generalized anxiety disorder.
- Less than 50 percent of detainees with recent thoughts of suicide had told anyone about their ideation.

Child Maltreatment

- Four out of five juvenile detainees reported ever having been physically abused.

Characteristics of Youth in Detention

This section discusses characteristics of the youth who were sampled at detention.

Prevalence of psychiatric disorders. Psychiatric disorders are prevalent among juvenile detainees; in NJP, almost three-quarters of females and two-thirds of males in detention had one or more psychiatric disorders. The rates of disorder remained high even after excluding conduct disorder. Substance use disorders, the most common type of disorder, affected more than 50 percent of males and 47 percent of females (Teplin et al., 2002, 2006). Overall, females were significantly more likely than males to have a psychiatric disorder. Non-Hispanic whites were also significantly more likely than African Americans or Hispanics to have any disorder.

Multiple disorders. Many youth have more than one disorder; 57 percent of females and 46 percent of males met diagnostic criteria for two or more disorders at baseline. Detained youth were more likely to have substance use disorders comorbid with attention-deficit/hyperactivity disorder or other behavioral disorders than any other combination of disorders. Participants with a major psychiatric disorder (e.g., major depression, mania, psychosis) were significantly more likely to also have a substance use disorder than were those without major psychiatric disorders (Abram et al., 2003; Teplin et al., 2006). Multiple substance use disorders are also common; more than 21

- Official records underestimate the prevalence of childhood maltreatment; only 17 percent of participants who reported any physical abuse, 22 percent who reported the greatest level of abuse, and 25 percent who required medical attention as a result of abuse had a court record for this maltreatment.

Prevalence of HIV/AIDS Risk Behaviors

- Ninety-five percent of the sample engaged in 3 or more HIV/AIDS risk behaviors; 65 percent engaged in 10 or more risk behaviors.
- Participants with substance use disorders were more likely to engage in HIV/AIDS risk behaviors.
- HIV/AIDS risk behaviors are persistent: More than two-thirds of youth who engaged in 10 or more risk behaviors at baseline persisted with at least 10 risk behaviors 3 years later.

Perceived Barriers to Accessing Mental Health Services

- Eighty-five percent of youth with psychiatric disorders reported at least one perceived barrier to accessing services.
- The most common barriers were the belief that the problem would go away or could be solved on its own, uncertainty about the appropriate place to get help, and difficulty obtaining help.

Outcomes of Juvenile Delinquents

Detecting and Treating Psychiatric Disorders

- Among detainees with major psychiatric disorders and functional impairment, 15 percent received treatment in the detention center and 8 percent received treatment in the community by the time of case disposition or 6 months after detention.
- The likelihood of detection and treatment was greater among youth with a current major psychiatric disorder or a history of receiving treatment, or among youth who reported suicidality.
- The likelihood of detection and treatment was lower among racial/ethnic minorities, males, older detainees, and youth transferred to adult court.

Functional Impairment

- Twenty-two percent of youth had marked global impairment that required intensive interventions from multiple sources of care.
- Only 8 percent of the sample had no noteworthy impairment.

Development of Antisocial Personality Disorder

- Three years after the baseline interview, 17 percent of detained youth had developed antisocial personality disorder (APD).
- Significantly more males than females developed APD.

Mortality

- The overall mortality rate of juvenile detainees an average of 7.1 years after they were detained was more than four times as large as the rate in the general population.
- The mortality rate of female detainees was nearly eight times the rate in the general population.
- Ninety-six percent of deaths were homicides or legal interventions (e.g., the youth was killed by police); among homicides, 93 percent resulted from gunshot wounds.

percent of participants had two or more substance use disorders. The most prevalent combination of substance use disorders was alcohol and marijuana. Among participants with an alcohol disorder, four out of five detainees also had one or more drug use disorders (McClelland et al., 2004).

Prevalence of psychiatric disorders among youth processed as adults. Youth processed in adult criminal court had rates of psychiatric disorder similar to those among youth processed in juvenile court; 66 percent of youth processed in criminal court had at least one psychiatric disorder and 43 percent had two or more types of disorder. Among youth transferred to criminal court, those sentenced to prison had significantly greater odds of having a disruptive behavior disorder, a substance use disorder, or comorbid affective and anxiety disorders (Washburn et al., 2008).

Trauma and PTSD. Exposure to trauma is common among juvenile detainees; nearly all of the NJP participants (93 percent) experienced one or more traumas in their lifetime at baseline. Significantly more males than females reported having experienced a traumatic event (Abram et al., 2004). More than 1 in 10 detainees met diagnostic criteria for PTSD during the year prior to the baseline interview. Of those participants who met these criteria, more than half reported witnessing violence as the precipitating trauma. Among participants with PTSD, 93 percent also met criteria for at least one comorbid psychiatric disorder (Abram et al., 2007).

Suicidality. More than one-third of juvenile detainees felt hopeless or thought about death in the 6 months before detention. Approximately 1 in 10 juvenile detainees (10.3 percent) reported thinking about committing suicide in the past 6 months, and 11 percent had attempted suicide at some point in their lives. Recent suicide attempts were most prevalent among females and among youth who experienced major depression and generalized anxiety disorder. Fewer than half of detainees with recent thoughts of suicide had told anyone about their ideation (Abram, Choe et al., 2008).

Child maltreatment. Child maltreatment is common among detained youth; 83 percent of detainees reported physical abuse received from parents, stepparents, foster parents, or other caretakers. Despite the high rates of self-reported physical abuse, a small proportion of all incidents of maltreatment come to the attention of authorities: Only 17 percent of those who reported any type of physical abuse, 22 percent of those who reported the most severe level of physical abuse, and 25 percent of those who reported needing medical attention as a result of physical abuse had a court record of abuse or neglect (Swahn et al., 2006).

Prevalence of HIV/AIDS risk behaviors. Risk for HIV/AIDS infection is high among detained youth, regardless of gender, race/ethnicity, or age. Approximately 95 percent of detained youth engaged in 3 or more HIV/AIDS risk behaviors, and 65 percent engaged in 10 or more HIV/AIDS risk behaviors. Significantly more African Americans than non-Hispanic whites engaged in sexual risk behaviors, while significantly more non-Hispanic whites than African Americans engaged in drug risk behaviors (Teplin et al., 2003). Detained youth with substance use disorders, either with or without comorbid major psychiatric disorders, were more likely to engage in HIV/AIDS risk behaviors (Teplin, Elkington et al., 2005). Youth continue to engage in HIV/AIDS risk behaviors over time; more than two-thirds of youth who engaged in at least 10 risk behaviors at their baseline interviews persisted in at least 10 risk behaviors 3 years later (Romero et al., 2007).

Perceived barriers to accessing mental health services. Approximately 85 percent of detained youth with psychiatric disorders reported at least one perceived barrier to accessing services. The most common barrier was the belief that problems would go away without help or that the individual could solve problems independently. Youth also reported that they were unsure of where or how to obtain help and that help was too difficult to obtain. Many

"Three years after detention, African American and Hispanic males living in the community were more likely to be impaired than non-Hispanic whites and females."

participants denied having a problem; detained youth who do not recognize their mental health needs or who feel that they can resolve their problems alone are unlikely to seek services or cooperate with services when they receive them (Abram, Paskar et al., 2008).

Key Outcomes of Study Participants

This section presents some of the outcomes of the youth who participated in NJP.

Detecting and treating psychiatric disorders. Among detainees who had major psychiatric disorders and associated functional impairments, records showed that only 15 percent had been treated in the detention center before release and that even fewer (8 percent) had been treated in the community during the 6 months following their interview in detention (Teplin, Abram et al., 2005). The likelihood that disorders would be detected or treated was greater among youth who had a current major psychiatric disorder, a history of receiving treatment, or who reported suicidality at intake, whereas the likelihood was lower among racial/ethnic minorities, males, older detainees, and detainees transferred to adult court for legal processing (Teplin, Abram et al., 2005).

Functional impairment. Three years after detention, most participants continue to struggle in one or more major life domains; more than one in five participants had markedly impaired functioning that required intensive intervention. These youth failed to meet age-appropriate social, occupational, and interpersonal indicators. Only 8 percent of the entire sample demonstrated no noteworthy impairment (Abram et al., 2009).

Development of antisocial personality disorder. Nearly one-fifth (17 percent) of male juvenile detainees developed antisocial personality disorder (APD) approximately 3 years after detention. Significantly more males than females developed APD, but no differences were found by race/ethnicity. A diagnosis of conduct disorder (CD) and the number of CD symptoms endorsed were significantly associated with developing modified APD (M–APD; i.e., APD without the CD requirement). Subsequent analyses, however, indicated that the number of CD symptoms affects risk for M–APD: Participants with five or more CD symptoms were significantly more likely to develop M–APD than those with fewer than five symptoms. Analyses also indicated that several other disorders were significantly associated with developing M–APD, including dysthymia, alcohol use disorder, and generalized anxiety disorder (Washburn et al., 2007).

Mortality. Based on the total number of deaths of 15- to 24-year-old participants that occurred an average of 7.1 years after baseline, standardized mortality rates among juvenile delinquents were more than four times greater than rates in the general population. Mortality among females was nearly eight times greater than in the general population. For both males and females, all deaths resulted from external causes; 96 percent of the deaths were the result of homicide or legal intervention (e.g., the study participant was killed by police). Gunshot wounds were the primary means of death (93 percent of the homicides) (Teplin, McClelland et al., 2005).

Summary

As the first large-scale, prospective longitudinal study of drug, alcohol, and psychiatric disorders in juvenile detainees, the Northwestern Juvenile Project provides much-needed insight into the types of services and treatment that youth in the juvenile justice system most require. Findings from the study have been published in peer-reviewed journals, cited in the Surgeon General's Report on Children's Mental Health and in reports to Congress, and used by national advocacy groups.

The findings presented in this and future bulletins will help build the empirical foundation on which practitioners will develop and implement appropriate services to facilitate youth's successful reentry into the community. Analyses and data collection are ongoing.

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