

Review article

The health status of youth in juvenile detention facilities

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Manuscript received March 11, 2005; manuscript accepted June 7, 2005.

Abstract

Youth exiting detention facilities have particularly high rates of co-occurring health-risk behaviors, while lacking access to the health care system. Not surprisingly, these youth suffer a disproportionate share of adolescent morbidity and mortality. Their time of incarceration often represents their only significant contact with a health care provider outside of an emergency setting. As such, it is critical that health care providers utilize the opportunity to educate and connect these youth with community resources to facilitate their access to health care upon their reemergence into the community. We review the factors affecting the health of youth in detention, and the health problems that are among the greatest sources of morbidity and mortality in this adolescent population. © 2006 Society for Adolescent Medicine. All rights reserved.

Keywords:

Adolescent; Youth; Detention; Incarcerated; Juvenile; Health; Compliance; At-risk; Mental health; Sexual health; Recidivism; Medical home; Crime; Juvenile justice; Jail; Imprisoned; Correction

Each year an estimated 2.3 million adolescents under the age of 18 pass through the juvenile justice system [1]. Youth transiting the juvenile justice system have particularly high rates of co-occurring health-risk behaviors, while lacking access to the health care system [2,3]. These youth suffer a disproportionate share of adolescent morbidity and mortality [4,5]. They are often disconnected from school, family, or other community sources of healthcare, and their time of incarceration often represents their only significant contact with a health care provider outside of an emergency setting [6–8]. As such, it is critical that health care providers utilize the opportunity to treat, educate and connect these youth with community resources to facilitate their access to health care upon their reemergence into the community.

This article provides an overview of the health and demographics of this at-risk adolescent population, focusing on those medical problems contributing to significant morbidity and mortality. As mental health and sexual health are particularly impaired in youth in detention, a more extensive review of these health categories is provided. We also

examine the “medical home” concept in relationship to these youth, and the role health care intervention may play in delinquency recidivism.

Demographics

General demographics

The population of incarcerated youth has remained high despite dramatic declines in the serious violent crime perpetration rates for youth. The trends in adolescent arrest rates indicate that the arrest rates for violent crime and property crime have shown substantial declines over the last decade, and the growth in arrests have come from lesser crimes [1]. Between 1985 and 2000, the serious violent crime offending rates for adolescents aged 12 to 17 years dropped about 43% [9]. Over the same 15-year period, the standing population of inmates younger than 18 held in state prisons increased 70% to just less than 4000 youth, and an additional 7600 youth younger than 18 were held in adult jails nationwide on the day of the 2000 census [10]. The Census of Juveniles in Residential Placement (CJRP) on October 27, 1999 found an additional 134,011 youth residing in 2939 residential juvenile detention facilities on that day [10]. Although a lack of census data prohibits direct

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Table 1
General demographics

	State prisons		Adult jails		Residential detention facilities		Total	
Number of youth	4000		7600		134,000		145,600	
Racial profile	White 38%		Black 39%		Hispanic 18%		Other 4%	
Gender profile	Male	Female	Male	Female	Male	Female	Male	Female
	83%	17%	88%	12%	91%	9%	84%	16%
	36%	47%	40%	35%	19%	13%	4%	5%

This table illustrates the demographics of youth in correctional facilities as of the October 27, 1999 census. The racial profile is expressed as a percentage of total youth held in residential detention facilities on census day. The top row in gender profile expresses the gender breakdown within a given race of youth held in residential detention facilities on census day. The bottom row in gender profile expresses the racial breakdown within a given gender of youth held in residential detention facilities on census day. Data are taken from [10].

comparisons over the 1985 to 2000 period for the number of adolescents in residential detention facilities, a comparison between the 1999 CJRP and the 1991 Children in Custody census indicates that 51% more juvenile delinquents were committed to residential placement in 1999 than in 1991 [10]. Whereas the CJRP survey encompasses a variety of correctional settings, this review's focus is on the health status of youth in detention facilities.

Minority youth are over-represented in juvenile detention facilities. In 1999, minority youth accounted for 34% of the U.S. adolescent population and 62% of adolescents in residential detention facilities [10]. The custody rate was highest for black youths (10.04/1000), which was more than twice the custody rate of Hispanics (4.85/1000), and nearly five times the custody rate of non-Hispanic whites (2.12/1000) [10]. In recent years, the female adolescent detention population has been growing at a much faster rate than the male population, and as of the 1999 CJRP, females accounted for 13% of adolescents in residential detention facilities [10]. General demographic data are summarized in Table 1.

Medical status

The most comprehensive survey of the medical status of adolescents in detention was a decade-long study in the 1970s of a New York City detention facility [11]. Of the 47,288 adolescents (aged 10 to 18 years; mean 15 years) consenting to examination, 46% were diagnosed with medical problems during their average stay of 14 days in the facility. Thirty-eight percent reported a history of drug abuse, and among these, 37% were found to have abnormal liver function tests consistent with chronic persistent hepatitis. Six percent of adolescents screened had asymptomatic gonorrhea, and high rates of pregnancy and low age at first intercourse were identified in female detainees. In addition to medical problems, 90% of those screened had prior inadequate dental care. During the course of their detention,

3353 youth had severe enough medical conditions to warrant admission to the infirmary. Notable primary diagnoses included respiratory infections (16%), genitourinary infections (13%), trauma (12%), substance overdose or withdrawal syndromes (12%), hepatic infections (9%), psychiatric disturbances (3.5%), and asthma (1.5%).

A mid-1990s survey of 819 adolescents (aged 10 to 18 years; mean 15.3 years) at an Alabama detention facility found that excluding substance abuse or uncomplicated sexually transmitted diseases, 10.6% had a significant medical problem requiring follow-up upon admission, the most common of which was uncontrolled asthma [8]. The most common self-reported symptoms upon admission were headache (10.9%), sinus congestion (5.2%), back or joint pain (4.5%), chest pain (3.7%), and abdominal pain (3.3%). About 10% of the female detainees were pregnant at the time of admission. A urine drug screening completed upon admission was positive in 58.7% of the youth. Only a third of the detainees reported having an identifiable, regular source of medical care before admission, and more than half reported not having received any medical care within the preceding year. Less than half of the detainees requiring medical follow-up upon release from detention had a family or community support network for ensuring compliance.

A mid-1990s survey of 24 adolescent detention facilities in Washington State found a difference between long-term and short-term detention facilities in terms of the most common reasons for health care referrals [12]. Overall, psychiatric treatment, trauma, substance abuse, and dental care were the most common reasons. For short-term detention facilities, the most common (in mean visits/month) were substance use (36.6), trauma (30.8), psychiatric (21.8), dermatological (19.2), respiratory (15.5), and sexually transmitted diseases (15.3). For long-term detention facilities, the most common referrals were for dental care (65.9), psychiatric (44.9), dermatological (44.1), respiratory (35.6), trauma (35.4), and substance abuse (33.7) disorders. Similar health

Table 2
Common medical conditions

Medical condition	Prevalence	Reference
Any	46–70%	[5,11]
Substance abuse ^a	34–59%	[4,8,11,13,22,23,26,28]
Mental health/psychiatric ^a	19–78%	[4,13,22–26,28]
STDs ^a	14–30%	[3,4,44,46,48,49]
Dental ^a	39–90%	[11,13]

This table illustrates the prevalence ranges of four of the most common categories of medical conditions identified in general health surveys of youth in detention facilities. Percentages are rounded to the nearest whole number.

^a Each of these were among the top four reasons for medical referral in [12].

problems were identified in a survey of 405 delinquent youth in Zaragoza City, Spain taken during the same time period [13]. The most frequent health problems reported were a smoking habit (96.5%), substance abuse (55.3%), high-risk sexual behaviors (49.4%), dental problems (39.2%), mental health disorders (19%), incomplete immunization status (16.8%), and infectious diseases related to intravenous drug use or high-risk sexual behavior (12.1%).

A mid-1990s survey of 202 male adolescents (aged 12 to 19 years; mean 16.1 years) at a Maryland detention facility used the Child Health and Illness Profile, Adolescent Edition (CHIP-AE) to assess overall health status and health risk behaviors [5]. Three health profile types—High Risks, High Risks/Low Resilience, and Worst Health—accounted for 69.8% of male adolescents in detention versus just 37.3% of an age-matched school sample (n = 379) of adolescent males. Only 6.4% of male adolescents in detention were in the Excellent or Good Health profile types, compared with 34.2% of the age-matched school sample. The incarcerated males had significantly worse health in five of the six CHIP-AE domains (Satisfaction, Resilience, Risks, Disorders, and Achievement), and regression-adjusted analyses indicated that incarcerated male youth had significantly lower interpersonal problem-solving ability than their school counterparts. The co-morbidity in multiple health domains supports the notion of risk factor complexes or profiles of interrelated health-risk behaviors [14,15]. The prevalence of common medical conditions is summarized in Table 2.

Mental health and substance abuse

Penrose first delineated the inverse relationship between the mental health and criminal justice systems in the 1930s [16]. He documented that the population requiring institutionalization due to “aberrant” behavior is relatively constant in size, and individuals requiring institutional support migrate between the criminal justice and mental health systems. This migration is dependant on societal standards for defining aberrant behavior as criminal versus incompetent, and the degree of funding available to each system. Societal efforts to reduce the costs of health care have

resulted in shortages in the mental health system, resulting in more adolescents presenting to pediatric emergency departments with acute mental health emergencies, and a shift of the institutional burden of care for the mentally ill toward the criminal justice system [17,18]. These effects are amplified in at-risk youth, because children typically do not self-refer for mental health problems but are reliant on intact family and community support systems both for initial entry into the mental health system and for successful implementation of mental health therapy [19]. Underlying psychopathology may also interfere with educational interventions aimed at reducing health-risk behaviors and delinquency.

The Special Investigations Division of the U.S. House of Representatives recently commissioned a report documenting both the extent of the mental health problems suffered by youth in detention facilities and the inadequacy of the mental health treatment available to these youth [20]. More than half of the responding adolescent detention facilities (n = 270 of 524 responding detention centers in 47 states) were holding children 12 years old or younger awaiting treatment for mental health disorders, with 15 facilities holding children as young as seven years old. Two-thirds of the responding facilities (n = 347/524) were holding youth not requiring detention in lieu of outside mental health treatment, simply because there was no where else to place them. Twenty percent (n = 71/347) of these facilities were holding youth who had no charges against them, but who were awaiting mental health treatment. Fifty-four percent (n = 187/347) of these facilities reported that staff received poor, very poor, or no mental health training, and 27% (n = 95/347) of the facilities reported poor, very poor, or no mental health treatment for the youth in their care. The report estimated the annual cost of unnecessary detention of mentally ill youth to be at least \$100 million.

Youth in detention suffer from substantially higher rates of mental disorders. The prevalence of serious psychiatric disorders in the general pediatric and adolescent population is estimated to be between 7% and 12% [21]. By comparison, the prevalence of serious psychiatric disorders has been reported to be 60% to 70% for male youth in detention and 60% to 80% for female youth in detention, with nearly all studies reporting higher rates of psychiatric illness for female youth [22–24]. Comorbidity of mental health disorders is the rule rather than the exception for youth in detention. For example, a late 1990s survey of 1829 youth in detention found that 56.5% of females and 45.9% of males met criteria for two or more psychiatric disorders, whereas only 17.3% of females and 20.4% of males had only one psychiatric disorder [25].

Although heterogeneity of survey methodologies prevents the direct comparison of individual psychiatric diagnoses across multiple studies, generalizations can be drawn from published studies. An admission screening in 2002 of 18,607 adolescent offenders in Pennsylvania using the Massachusetts Youth Screening Instrument Version 2 (MAYSI-2)

Table 3
Mental health conditions

Mental health condition	Instrument	Prevalence	Reference
Any	DISC, MAYSI, APS	44–85%	[4,13,22–27]
Disruptive disorders	DISC, APS	32–48%	[4,22,25–28]
Mood disorders	DISC, APS	7–26%	[4,22,25–28]
Anxiety disorders	DISC, APS	9–59%	[4,22,25–28]

This table illustrates the prevalence ranges in the categories of mental health conditions identified in mental health surveys of youth in detention facilities. Percentages are rounded to the nearest whole number.

found that 70% of males and 81% of females scored above the clinical cutoff on at least one out of five MAYSI-2 psychopathology scales [24]. Females were more likely than males to score above the clinical cutoff for each of the five scales: alcohol-drug use (36% vs. 34%), angry-irritable (56% vs. 41%), depressed-anxious (54% vs. 36%), somatic complaints (59% vs. 43%), and suicidal ideation (33% vs. 18%). A survey in 2000 of 1024 incarcerated adolescents using the Beck Depression Inventory and Patient Health Questionnaire found that 60% had one or more psychiatric disorders, and co-morbidity was prominent between drug or alcohol abuse and depression, somatoform and anxiety disorders [23]. A survey in 2000 of 482 youth at several adolescent detention facilities in Mississippi using the Adolescent Psychopathology Scale (APS) found that 85.2% of the youth scored in the moderate or higher range on at least one APS clinical scale, and 70% scored in the moderate or higher range on two or more APS scales [26]. Half of the youth met diagnostic criteria for one or more psychiatric disorders other than substance abuse disorder, and one-third had co-occurring mental health and substance abuse disorders. The prevalence of other disorders was similarly high, including anxiety disorders (58.5%), conduct disorder (46.6%), adjustment disorder (46.5%), substance abuse disorder (35.9%), and mood disorders (19%). Several surveys ranging in size from 296 to 1829 incarcerated youth utilized the Diagnostic Interview Schedule for Children (DISC) to assess adolescent detainees' mental health [4,22,25,27,28]. The prevalence of disruptive disorders was reported to be 32% to 48%; the prevalence of substance abuse disorders was 44.5% to 50%; the prevalence of mood disorders was 7% to 26.4%; and the prevalence of anxiety disorders was 9% to 59%. All of these prevalence ranges are substantially higher than those found in community adolescent samples [21,29,30]. These data are summarized in Table 3.

Suicide risk is of particular concern in adolescent detainees, as suicide risk is associated with several factors prevalent in this population, including a history of childhood abuse, drug use, early sexual intercourse, and impulsivity [31–33]. A 1991 survey found that although suicidal ideation rates in adolescent detainees were essentially the same as baseline prevalence rates in the adolescent community, the prevalence of suicide attempt ($M = 15.5\%$; $F = 35\%$) and injury from attempts ($M = 8.2\%$; $F = 20\%$) in the past

year were several times community youth prevalence of suicide attempt ($M = 7\%$; $F = 11\%$) and injury from attempts ($M = 2\%$; $F = 2\%$) [3]. Incarcerated adolescent suicide attempters have been found to predominantly (59.4%) employ violent means (cutting, stabbing or hanging), whereas community samples of adolescent suicide attempters predominantly (76.2%) attempt suicide by overdose, perhaps explaining the higher prevalence of injury in incarcerated suicide attempters [34,35]. The incarcerated youth completed suicide rate was found to be more than four times the completed suicide rate of youth overall [36]. The risk of suicide remains high in this population even after their release: an estimated one-fifth to three-fifths of incarcerated youth will attempt suicide at some time in their life [37,38].

Sexual health, pregnancy and STDs

Surveys have consistently shown youth in detention to exhibit more high-risk sexual behavior. The largest was a 1991 Youth Risk Behavior Surveillance Survey (YRBSS) of 1809 youth at 39 detention facilities [3]. It found that incarcerated adolescents of both genders reported substantially higher rates of both having ever had sexual intercourse and having ever had forced sexual intercourse, and substantially lower rates of condom use than community rates reported on the YRBSS given to high school youth. A 1994 survey of 62 girls and 334 boys at a Nevada juvenile facility reported substantially higher rates of sexual abuse in adolescents of both genders [39]. This survey also found that females who reported sexual abuse had their first sexual encounter at an earlier mean age than those who reported no sexual abuse, and abused respondents were significantly more likely to not use any form of contraception than detainees without a history of sexual abuse. A 1997 survey of 486 male youth at a Philadelphia juvenile facility reported substantially higher than background rates of ever having sexual intercourse, having intercourse within the last six months, an age at first sex of ≤ 13 years, and having at least eight sexual partners in their lifetime [40].

Given the preponderance of predisposing risk factors and high-risk sexual behaviors, it is not surprising that youth in detention suffer high rates of sexual health-related problems. A 1997 survey of 138 girls in a Georgia juvenile detention facility found that 36.9% reported having been or

Table 4
Sexual health conditions

		Reference
Male		
Chlamydia	6–9%	[44,47,48]
Gonorrhea	1%	[44]
Either	18%	[49]
Female		
Chlamydia	14–22%	[44,46–48]
Gonorrhea	5–6%	[44,46]
Co-infection	3%	[46]
Pregnancy	37%	[41]

This table illustrates the prevalence ranges of the most common sexual health conditions identified in surveys of youth in detention facilities. Percentages are rounded to the nearest whole number.

being pregnant; by comparison, only 8.5% of female students reported having been or being pregnant on the 1997 YRBSS survey of high school students [41]. A 1992 survey of 430 juvenile detention facilities estimated that at least 24,000 pregnant adolescents (aged 13–18) are arrested each year, and that approximately 670 pregnant teens were being incarcerated on any given day [42]. These incarcerated pregnant teens are often at increased risk for a number of pregnancy complications related to their co-occurring high-risk health behaviors [43].

Sexually transmitted diseases (STDs) are another common problem faced by youth in detention. Chlamydia and gonorrhea are the two most common STDs in the United States and have a far higher prevalence in adolescents in detention (Table 4). The largest survey was of samples taken from 12 juvenile detention facilities ($n = 50,073$ chlamydia tests; $n = 40,529$ gonorrhea tests) from 1996 through 1999. It found a mean prevalence in females of 15.6% for chlamydia and 5.2% for gonorrhea, several times the baseline prevalence rates in adolescent females of 4.74% for chlamydia, .42% for gonorrhea, and .03% for co-infection found by urine specimen results from a representative sample of 12,548 young adults from the National Longitudinal Study of Adolescent Health (Add Health, Wave III) [44,45]. The mean prevalence in detained males was also very high, at 7.6% for chlamydia and .9% for gonorrhea, more than twice the baseline prevalence in adolescent males of 3.67% for chlamydia and .44% for gonorrhea reported in the 2001 Add Health study. Ninety-seven percent of the males testing positive for chlamydia and 93% of the males testing positive for gonorrhea did not report any associated symptoms. Several smaller, more recent, surveys have yielded similar results [46–49]. Human immunodeficiency virus (HIV)-positive youth have proven uniquely difficult to identify, and there is a paucity of data on the seroprevalence of HIV in youth in detention [50]. Two surveys of HIV seroprevalence in youth in detention found rates either not significantly different from youth in community adolescent medical clinics (.2–.3%) or trending

downward [51,52]. In a CDC study between 1992 and 1998, youth younger than age 19 grew as a percentage of all newly identified HIV infections in incarcerated males (from 1.9% to 3.4%) and females (from 1.8% to 2.3%) [53]. However, it is unknown whether this trend was due to increased testing in this population, as the total number of individuals tested within each age group was not reported.

Effects of Health Care on Adolescent Recidivism

Recidivist youth differ from incarcerated youth without a previous detention in terms of both health-risk behaviors and impaired health. A 1996 survey of 486 male youth in detention found that youth with multiple versus first admissions were less likely to report using a condom with their last sex partner and were more likely to report having initiated sex before age 13, having eight or more lifetime sexual partners, having ever exchanged drugs or money for sex, and having ever impregnated a girl [40]. A 1973 survey of 200 youth in detention found that recidivists had significantly higher rates of “neuroses” and personality disorders than nonrecidivists [54]. Surveys of youth in detention throughout the 1990s found that recidivist youth were more likely to have a substance abuse disorder than nonrecidivists [55–57].

Few studies have directly addressed whether treatment of underlying physical or psychopathology would reduce the risk of recidivism. A 1993–1995 prospective cohort study of HIV-positive and high-risk HIV-negative women found that continuity of medical care with a single health care provider was associated with decreased rates of incarceration even after adjusting for possible confounding factors [58]. A 1989 program studying the relation between vision problems and delinquency in a California juvenile detention facility reported a reduction in the recidivism rate for those youth undergoing vision training [59]. A recent study examining mental health and substance abuse treatment in relation to risk of incarceration in youth in the Colorado state foster care program found that youth receiving mental health or substance abuse treatment had lower probabilities of being detained for any offense than did youth not receiving either treatment [60]. Finally, a recent examination of recidivism among mentally ill incarcerated youth in Washington State found that the coordination and provision of community services is associated with lower rates of recidivism during the first year of discharge [61]. The odds ratio for recidivism in adolescents who received mental health treatment and adolescents who received a greater number of contacts with community treatment providers were lower than in youth not receiving post-incarceration intervention. Although these studies provide a tentative basis for assuming that medical intervention may reduce the risk of incarceration and recidivism, further studies are needed to definitively establish such a claim.

Access to Care and the Medical Homes Model

In the early 1980s, in an effort to address the inadequacy of health services in incarcerated populations, the American Medical Association (AMA) established an independent not-for-profit National Commission on Correctional Health Care (NCCHC), which is now supported by 36 major national organizations representing the fields of health, law and corrections. The NCCHC is responsible for writing the national Standards for Health Services for detained populations, which are available on their website (<http://www.ncchc.org>). In addition, the United Nations has set international standards of care for incarcerated youth [62]. Both national and international standards are only as good as their enforcement. Awareness in the medical community of the magnitude of the health care disparities of adolescents in detention is growing, as evidenced by recent policy statements on health care for incarcerated youth from both the Society for Adolescent Medicine and the American Academy of Pediatrics (AAP) [6,7].

In 1992, the AAP issued a policy statement defining the “medical home” concept of health care [63]. The AAP outlined an ideal model of health care delivered or directed by physicians who provide preventive, acute and chronic care that is accessible, continuous, comprehensive, compassionate, and coordinated with specialized services provided by community agencies. The AAP issued a policy statement in 2001 stating that children and adolescents confined to correction care facilities should have special attention focused on, among other things, the establishment of a medical home before release [7]. Furthermore, release planning should include linking the youth with other needed social services in their community. If these youth are to make use of these resources, efforts must also be made to secure funding for their care upon their release, as these youth often lack health insurance. Due to their socioeconomic status, most of these youth are limited to public sources of insurance; such post-release insurance coverage has been the subject of a recent review [64]. As the insurance enrollment process can take considerable time, it should be instituted as soon as possible during their incarceration.

Conclusion

Youth transiting the juvenile detention system have particularly high rates of health-risk behaviors, and suffer a disproportionate share of adolescent morbidity and mortality. Mental health and sexual health are two areas of particular concern in this adolescent population. As their needs are diverse, and conventional familial and community support networks are typically absent, innovative methods are needed to reach these youth and connect them with community health-related resources. Lack of insurance represents a barrier to health care access for youth upon their release from detention, and insurance enrollment may be an

effective intervention for improving their health. Further research is sorely needed on the health status of youth after their release, and on the outcomes of interventions aimed at improving their health. Evaluation of such interventions will aid in the development of best practices whereby health professionals and policy makers can more effectively meet the health care needs of these medically underserved youth.

Acknowledgments

This work was supported in part by a Santa Clara Valley Foundation Grant to M.G. and an AAP Child Access to Community Health (CATCH) grant to A.A.

References

- [1] Snyder HN. Juvenile arrests 2002. In: Juvenile Justice Bulletin. Washington, DC: Department of Justice, 2004.
- [2] Thornberry TP, Huizinga D, Loeber R. The causes and correlates studies: findings and policy implications. *Juv Justice* 2004;IX(1):3–19.
- [3] Morris RE, Harrison EA, Knox GW, et al. Health risk behavioral survey from 39 juvenile correctional facilities in the United States. *J Adolesc Health* 1995;17(6):334–44.
- [4] Lederman CS, Dakof GA, Larrea MA, et al. Characteristics of adolescent females in juvenile detention. *Int J Law Psychiatry* 2004; 27(4):321–37.
- [5] Forrest CB, Tambor E, Riley AW, et al. The health profile of incarcerated male youths. *Pediatrics* 2000;105(1 Pt 3):286–91.
- [6] Joseph-DiCaprio J, Farrow J, Feinstein RA, et al. Health care for incarcerated youth. Position paper of the Society for Adolescent Medicine. *J Adolesc Health* 2000;27(1):73–5.
- [7] American Academy of Pediatrics. Health care for children and adolescents in the juvenile correctional care system. *Pediatrics* 2001; 107(4):799–803.
- [8] Feinstein RA, Lampkin A, Lorish CD, et al. Medical status of adolescents at time of admission to a juvenile detention center. *J Adolesc Health* 1998;22(3):190–6.
- [9] America's Children in Brief: Key National Indicators of Well-Being, 2004. Washington, DC: Federal Interagency Forum on Child and Family Statistics, 2004.
- [10] Sickmund M. Juveniles in detention. In: Juvenile Offenders and Victims National Report Series. Washington, DC: Department of Justice, 2004.
- [11] Hein K, Cohen MI, Litt IF, et al. Juvenile detention: another boundary issue for physicians. *Pediatrics* 1980;66(2):239–45.
- [12] Anderson B, Farrow JA. Incarcerated adolescents in Washington state. Health services and utilization. *J Adolesc Health* 1998;22(5): 363–7.
- [13] Olivan G. The health profile of Spanish incarcerated delinquent youths. *J Adolesc Health* 2001;29(6):384.
- [14] Levine MD, Karniski WM, Palfrey JS, et al. A study of risk factor complexes in early adolescent delinquency. *Am J Dis Child* 1985; 139(1):50–6.
- [15] Zweig JM, Phillips SD, Lindberg LD. Predicting adolescent profiles of risk: looking beyond demographics. *J Adolesc Health* 2002;31(4): 343–53.
- [16] Penrose L. Disease and crime: outline of a comparative study of European statistics. *Br J Med Psychol* 1939;XVIII:I–15.
- [17] Thomas CR, Penn JV. Juvenile justice mental health services. *Child Adolesc Psychiatr Clin N Am* 2002;11(4):731–48.
- [18] Thomas LE. Trends and shifting ecologies: Part I. *Child Adolesc Psychiatr Clin N Am* 2003;12(4):599–611.

- [19] Shelton D. Failure of mental health policy—incarcerated children and adolescents. *Pediatr Nurs* 2002;28(3):278–81.
- [20] Incarceration of Youth Who are Waiting for Community Mental Health Services in the United States. Washington, DC: House Committee on Government Reform, 2004.
- [21] Roberts RE, Attkisson CC, Rosenblatt A. Prevalence of psychopathology among children and adolescents. *Am J Psychiatry* 1998;155(6):715–25.
- [22] Teplin LA, Abram KM, McClelland GM, et al. Psychiatric disorders in youth in juvenile detention. *Arch Gen Psychiatry* 2002;59(12):1133–43.
- [23] Domalanta DD, Risser WL, Roberts RE, et al. Prevalence of depression and other psychiatric disorders among incarcerated youths. *J Am Acad Child Adolesc Psychiatry* 2003;42(4):477–84.
- [24] Cauffman E. A statewide screening of mental health symptoms among juvenile offenders in detention. *J Am Acad Child Adolesc Psychiatry* 2004;43(4):430–9.
- [25] Abram KM, Teplin LA, McClelland GM, et al. Comorbid psychiatric disorders in youth in juvenile detention. *Arch Gen Psychiatry* 2003;60(11):1097–108.
- [26] Robertson AA, Dill PL, Husain J, et al. Prevalence of mental illness and substance abuse disorders among incarcerated juvenile offenders in Mississippi. *Child Psychiatry Hum Dev* 2004;35(1):55–74.
- [27] Garland AF, Hough RL, McCabe KM, et al. Prevalence of psychiatric disorders in youths across five sectors of care. *J Am Acad Child Adolesc Psychiatry* 2001;40(4):409–18.
- [28] Wasserman GA, Ko SJ, McReynolds LS. Assessing the Mental Health Status of Youth in Juvenile Justice Settings. Washington, DC: Department of Justice, 2004.
- [29] Rushton JL, Forcier M, Schectman RM. Epidemiology of depressive symptoms in the National Longitudinal Study of Adolescent Health. *J Am Acad Child Adolesc Psychiatry* 2002;41(2):199–205.
- [30] van Dulmen MH, Grotevant HD, Dunbar N, et al. Connecting national survey data with DSM-IV criteria. *J Adolesc Health* 2002;31(6):475–81.
- [31] Grilo CM, Sanislow CA, Fehon DC, et al. Correlates of suicide risk in adolescent inpatients who report a history of childhood abuse. *Compr Psychiatry* 1999;40(6):422–8.
- [32] Sanislow CA, Grilo CM, Fehon DC, et al. Correlates of suicide risk in juvenile detainees and adolescent inpatients. *J Am Acad Child Adolesc Psychiatry* 2003;42(2):234–40.
- [33] Hallfors DD, Waller MW, Ford CA, et al. Adolescent depression and suicide risk: association with sex and drug behavior. *Am J Prev Med* 2004;27(3):224–31.
- [34] Penn JV, Esposito CL, Schaeffer LE, et al. Suicide attempts and self-mutilative behavior in a juvenile correctional facility. *J Am Acad Child Adolesc Psychiatry* 2003;42(7):762–9.
- [35] Beautrais AL, Joyce PR, Mulder RT. Youth suicide attempts: a social and demographic profile. *Aust N Z J Psychiatry* 1998;32(3):349–57.
- [36] Memory J. Juvenile suicides in secure detention facilities: correction of published rates. *Death Stud* 1989;13:455–63.
- [37] Rohde P, Mace DE, Seeley JR. The association of psychiatric disorders with suicide attempts in a juvenile delinquent sample. *Crim Behav Ment Health* 1997;7:187–200.
- [38] Alessi NE, McManus M, Brickman A, et al. Suicidal behavior among serious juvenile offenders. *Am J Psychiatry* 1984;141(2):286–7.
- [39] Mason WA, Zimmerman L, Evans W. Sexual and physical abuse among incarcerated youth: implications for sexual behavior, contraceptive use, and teenage pregnancy. *Child Abuse Negl* 1998;22(10):987–95.
- [40] Harwell TS, Trino R, Rudy B, et al. Sexual activity, substance use, and HIV/STD knowledge among detained male adolescents with multiple versus first admissions. *Sex Transm Dis* 1999;26(5):265–71.
- [41] Williams RA, Hollis HM. Health beliefs and reported symptoms among a sample of incarcerated adolescent females. *J Adolesc Health* 1999;24(1):21–7.
- [42] Breuner CC, Farrow JA. Pregnant teens in prison. Prevalence, management, and consequences. *West J Med* 1995;162(4):328–30.
- [43] Hufft AG. Supporting psychosocial adaptation for the pregnant adolescent in corrections. *MCN Am J Matern Child Nurs* 2004;29(2):122–7.
- [44] Mertz KJ, Voight RA, Hutchins K, et al. Findings from STD screening of adolescents and adults entering corrections facilities: implications for STD control strategies. *Sex Transm Dis* 2002;29(12):834–9.
- [45] Miller WC, Ford CA, Morris M, et al. Prevalence of chlamydial and gonococcal infections among young adults in the United States. *JAMA* 2004;291(18):2229–36.
- [46] Katz AR, Lee MV, Ohye RG, et al. Prevalence of chlamydial and gonorrhea infections among females in a juvenile detention facility, Honolulu, Hawaii. *J Community Health* 2004;29(4):265–9.
- [47] Bauer HM, Chartier M, Kessell E, et al. Chlamydia screening of youth and young adults in non-clinical settings throughout California. *Sex Transm Dis* 2004;31(7):409–14.
- [48] Kelly PJ, Bair RM, Baillargeon J, et al. Risk behaviors and the prevalence of Chlamydia in a juvenile detention facility. *Clin Pediatr (Phila)* 2000;39(9):521–7.
- [49] Pack RP, Diclemente RJ, Hook EW, et al. High prevalence of asymptomatic STDs in incarcerated minority male youth: a case for screening. *Sex Transm Dis* 2000;27(3):175–7.
- [50] Bell DN, Martinez J, Botwinick G, et al. Case finding for HIV-positive youth: a special type of hidden population. *J Adolesc Health* 2003;33:10–22 (2 suppl).
- [51] Sweeney P, Lindegren ML, Buehler JW, et al. Teenagers at risk of human immunodeficiency virus type 1 infection. Results from seroprevalence surveys in the United States. *Arch Pediatr Adolesc Med* 1995;149(5):521–8.
- [52] Kim AA, McFarland W, Kellogg T, et al. Sentinel surveillance for HIV infection and risk behavior among adolescents entering juvenile detention in San Francisco: 1990–1995. *AIDS* 1999;13(12):1597–8.
- [53] Sabin KM, Frey RL, Horsley R, et al. Characteristics and trends of newly identified HIV infections among incarcerated populations: CDC HIV voluntary counseling, testing, and referral system, 1992–1998. *J Urban Health* 2001;78(2):241–55.
- [54] Ganzer VJ, Sarason IG. Variables associated with recidivism among juvenile delinquents. *J Consult Clin Psychol* 1973;40(1):1–5.
- [55] Duncan RD, Kennedy WA, Patrick CJ. A four-factor model of recidivism in male juvenile offenders. *J Clin Child Psychol* 1995;24(3):250–7.
- [56] Kataoka SH, Zima BT, Dupre DA, et al. Mental health problems and service use among female juvenile offenders: their relationship to criminal history. *J Am Acad Child Adolesc Psychiatry* 2001;40(5):549–55.
- [57] Putnins A. Substance use and the prediction of young offender recidivism. *Drug Alcohol Rev* 2003;22(4):401–8.
- [58] Sheu M, Hogan J, Allsworth J, et al. Continuity of medical care and risk of incarceration in HIV-positive and high-risk HIV-negative women. *J Womens Health (Larchmt)* 2002;11(8):743–50.
- [59] Berman MS. Vision care in a juvenile detention facility. *Optom Vis Sci* 1989;66(1):23–5.
- [60] Cuellar AE, Markowitz S, Libby AM. Mental health and substance abuse treatment and juvenile crime. *J Ment Health Policy Econ* 2004;7(2):59–68.
- [61] Trupin EW, Turner AP, Stewart D, et al. Transition planning and recidivism among mentally ill juvenile offenders. *Behav Sci Law* 2004;22(4):599–610.
- [62] Monahan G. An international perspective on the rights of juvenile offenders or “children living in exceptionally difficult conditions.” *Subst Use Misuse* 2003;38(10):1531–8.
- [63] American Academy of Pediatrics Ad Hoc Task Force on Definition of the Medical Home. The medical home. *Pediatrics* 1992;90(5):774.
- [64] Gupta RA, Kelleher KJ, Pajer K, et al. Delinquent youth in corrections: Medicaid and reentry into the community. *Pediatrics* 2005;115(4):1077–83.