

Sexual Abuse of Children: Intersection With the HIV Epidemic

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ABSTRACT. *Objective.* Sexual transmission of human immunodeficiency virus (HIV) is the predominant risk exposure among adolescents and adults reported with HIV infection and acquired immunodeficiency syndrome (AIDS). Although perinatal transmission accounts for the majority of HIV infection in children, there have been reports of HIV transmission through sexual abuse of children. We characterized children <13 years of age who may have acquired HIV infection through sexual abuse.

Methods. All reports by state and local health departments to the national HIV/AIDS surveillance system of children with HIV infection not AIDS ($n = 1507$) and AIDS ($n = 7629$) through December 1996 were reviewed for history of sexual abuse. Information was ascertained from data recorded on the case report form as well as investigations of children with no risk for HIV infection reported or identified on initial investigation. For children with a possible history of sexual abuse, additional data were collected, including how sexual abuse was diagnosed; characteristics of the perpetrator(s) (ie, HIV status and HIV risks); and other possible risk factors for the child's HIV infection.

Results. Of 9136 children reported with HIV or AIDS, 26 were sexually abused with confirmed ($n = 17$) or suspected ($n = 9$) exposure to HIV infection; mean age of these children at diagnosis of HIV infection was 8.8 years (range, 3 to 12 years). There were 14 females and 3 males who had confirmed sexual exposure to an adult male perpetrator at risk for or infected with HIV; of these, 14 had no other risk for HIV infection, and 3 had multiple risks for HIV infection (ie, through sexual abuse, perinatal exposure, and physical abuse through drug injection). The other 9 children (8 females, 1 male) had no other risk factors for HIV infection and were suspected to have been infected through sexual abuse, but the identity, HIV risk, or HIV status of all the perpetrator(s) was not known. All cases of sexual abuse had been reported to local children's protective agencies. Sexual abuse was established on the basis of physician diagnosis or physical examination ($n = 20$), child disclosure ($n = 15$), previous or concurrent noncongenital sexually transmitted disease ($n = 9$), and for confirmed cases, criminal

prosecution of the HIV-infected or at-risk perpetrator ($n = 8$). For the 17 children with confirmed sexual exposure to HIV infection, 19 male perpetrators were identified who were either known to be HIV infected ($n = 18$) or had risk factors for HIV infection ($n = 17$), most of whom were a parent or relative.

Conclusions. These 26 cases highlight the tragic intersection of child sexual abuse and the HIV epidemic. Although the number of reported cases of sexual transmission of HIV infection among children is small, it is a minimum estimate based on population-based surveillance and is an important and likely underrecognized public health problem. Health care providers should consider sexual abuse as a possible means of HIV transmission, particularly among children whose mothers are HIV-antibody negative and also among older HIV-infected children. The intersection of child abuse with the HIV epidemic highlights the critical need for clinicians and public health professionals to be aware of the risk for HIV transmission among children who have been sexually abused, and of guidelines for HIV testing among sexually abused children, and to evaluate and report such cases. *Pediatrics* 1998;102(4). URL: <http://www.pediatrics.org/cgi/content/full/102/4/e46>; *pediatric, human immunodeficiency virus, child sexual abuse.*

ABBREVIATIONS. HIV, human immunodeficiency virus; AIDS, acquired immunodeficiency syndrome; CDC, Centers for Disease Control and Prevention; STD, sexually transmitted disease; IDU, injecting drug user; PCP; *Pneumocystis carinii* pneumonia.

Sexual exposure to human immunodeficiency virus (HIV) is the major mode of transmission among adolescents and adults, with male-to-male sexual contact the most common transmission mode among men and heterosexual exposure the most rapidly increasing transmission mode among women.^{1,2} Among children, 90% of all acquired immunodeficiency syndrome (AIDS) cases and nearly all new HIV infections have been attributable to perinatal transmission.^{1,3} The incidence of transmission through receipt of blood, blood components, or clotting factor concentrates has been virtually eliminated since the implementation of heat treatment for coagulation factors and nationwide HIV antibody screening of blood and plasma donors in 1985.⁴ Only 1% of all AIDS cases in children lack an ascribable risk, most of which involve incomplete information about the birth mother.⁵ However, several case reports and case series have described transmission of HIV to children through sexual abuse.⁶⁻¹²

Many children are sexually abused in the United States each year. The National Center on Child

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Abuse and Neglect^{13,14} reported that >125 000 children were reported to have been sexually abused in 1995. This represents an unknown yet likely smaller proportion of all actual cases.¹⁵⁻¹⁷ The American Academy of Pediatrics defined sexual abuse as engaging a child in sexual activities that the child cannot comprehend and for which the child is developmentally unprepared and cannot give informed consent.¹⁸ Varied recommendations exist for HIV screening of sexually abused children, including recommendations for selective and universal screening.^{9,11,19-24} Because sexual abuse of children is likely to be underrecognized and underreported, sexually abused children are not routinely screened for HIV infection, and sexually abused children infected with HIV who have not progressed to AIDS are not reported in many states, the extent of sexual transmission of HIV among children is not known.

To identify and characterize sexual transmission of HIV infection among children <13 years old, we reviewed data from national HIV/AIDS surveillance, a population-based surveillance system. Our objectives were to characterize children with HIV infection and AIDS who had sexual exposure to HIV infection, describe known perpetrators of sexual abuse including HIV status and HIV-related risk behavior, describe how sexual abuse was diagnosed, characterize other risks for HIV infection among children with sexual exposure, and provide a surveillance definition of sexual exposure to HIV infection among children for classification purposes. This is the first population-based, nationwide evaluation of sexual exposure among HIV-infected children, based on HIV and AIDS surveillance, and thus extends and builds upon previous evaluations based on case series and clinic-based evaluations⁶⁻¹² and provides a mechanism for an ongoing assessment of this exposure. Although these data provide information on a minimum number of HIV-infected children who were exposed to HIV infection as a result of sexual abuse, they serve to highlight the importance of this mode of transmission as a consideration in the diagnosis and management of HIV-infected children and to heighten health care provider's awareness of the contribution that public health surveillance data make to focus attention and recommendations on issues of prevention of HIV transmission to children.

METHODS

HIV/AIDS Surveillance

Since 1981, the Centers for Disease Control and Prevention (CDC) and state and local health departments have conducted surveillance for AIDS, which is reported in all 50 states and US territories.^{1,25-27} Health departments forward information to the CDC without personal identifiers. Additionally, children <13 years old with HIV infection who do not have AIDS are reported in 29 states using the same procedures as for AIDS cases. The pediatric HIV/AIDS case report form collects demographic information, modes of HIV exposure, vital status, laboratory data, and AIDS-defining clinical conditions. Information collected on risk exposures among children includes receipt of clotting factor, receipt of blood/blood components, maternal HIV status, and maternal risks for HIV infection for children with perinatally acquired infection.¹ Children who have HIV or AIDS reported without a known mode of HIV exposure are classified as having a risk not reported or not identified.^{1,28} Children reported without a

risk are high priority for active follow-up by surveillance personnel in state and local health departments. The nationally standardized follow-up routinely includes medical record review and interviews with parents, physicians, and other caregivers. Information from these investigations is forwarded to the CDC. Unlike children <13 years of age, adolescents 13 years of age or older reported with HIV or AIDS have had sexual exposure information routinely collected and reported through surveillance.¹ To more completely ascertain sexual exposure among children <13 years, the CDC revised the pediatric HIV/AIDS case report form in 1993 to collect standardized information about sexual contact with a male or female. Before that time, information on sexual abuse was collected through investigations of children reported without HIV risk and where noted in the comment section of the report form.

Case Ascertainment

The national HIV/AIDS surveillance system was reviewed for: 1) case reports of children <13 years old reported through December 1996 with AIDS ($n = 7629$) in the United States and HIV infection without AIDS ($n = 1507$) from 29 states with confidential HIV surveillance that contained any mention of "abuse," "rape," "molest," or "sex" in the comment section; 2) case reports that included data in the new mode of exposure variables: sexual contact with a male and sexual contact with a female and 3) case reports of children without a risk for HIV (50% of all AIDS and HIV cases had been reported since 1993).

Case Investigations

For children reported with HIV infection or AIDS and possible sexual exposure, state and local health departments collected standardized supplemental data from medical record reviews and physician/caregiver interviews. The supplemental information included diagnosis and type of sexual abuse, other possible exposures to HIV, HIV status and risk and other characteristics of the perpetrator(s), and documentation of referral to child protection services.

For this analysis, we developed a surveillance definition for classification of confirmed sexual exposure to HIV infection among children (Table 1). This definition is intended for epidemiologic monitoring of sexual exposure to HIV infection through sexual abuse and is not intended to be used for direct patient clinical management. We present case histories for children with confirmed sexual exposure. We characterized HIV-infected children with suspected sexual exposure, who were sexually abused, had no other risks for HIV infection, but did not meet the surveillance definition for confirmed sexual exposure to HIV because the identity, HIV status, or risk of the perpetrators was not known.

TABLE 1. HIV/AIDS Surveillance Definition for Confirmed Sexual Exposure to HIV Infection Among Children

To meet this definition, a child must have:	
A.	HIV infection or AIDS, ^{25,26} and
B.	Diagnosis of sexual abuse (ie, genital-genital/genital-anal) based on at least one of the following:
1.	Physical examination or physician diagnosis
2.	Child, caregiver, or perpetrator disclosure
3.	Previous or concurrent noncongenital sexually transmitted disease (eg, syphilis, gonorrhea, trichomoniasis, etc) ²²
4.	Prosecution of the perpetrator
5.	Pregnancy in the abused child, and
C.	Documentation in the perpetrator of:
1.	HIV infection or AIDS, ²⁷ or
2.	Risk for HIV infection:
	Men who have sex with men
	Injecting drug use
	Hemophilia/coagulation disorder
	Heterosexual contact with an HIV-infected or at-risk partner

Abbreviations: HIV, human immunodeficiency virus; AIDS, acquired immunodeficiency syndrome.

RESULTS

Of 7629 children <13 years of age reported with AIDS and 1507 children reported with HIV infection who had not yet progressed to AIDS, we found 26 HIV-infected children who had been sexually abused and had confirmed or suspected exposure to HIV infection (Table 2). Overall, 22 (85%) were female and 4 (15%) were male; 19 (73%) were black non-Hispanic, 6 (23%) were white non-Hispanic, and 1 was Hispanic (4%). These children were reported from 12 states: Alabama, California, Colorado, Florida, Michigan, Missouri, New Jersey, New York, Ohio, Tennessee, Texas, and Virginia. Most (70%) have been reported since 1993. The mean age at diagnosis of HIV infection was 8.8 years (range, 3 to 12 years). Nineteen children had AIDS, and their median age at AIDS diagnosis was 9.5 years (range, 5 to 12 years). Sexual abuse was diagnosed based on one or more of the following: physician diagnosis or physical examination ($n = 20$), child disclosure ($n = 15$), concurrent or previous sexually transmitted disease (STDs) ($n = 9$), other caretaker or relative or perpetrator disclosure ($n = 10$), and for confirmed cases, prosecution of the HIV-infected or at-risk perpetrator ($n = 8$). Sexual abuse was confirmed as an exposure to HIV infection for 17 children (Table 3); of these, 14 had sexual contact as their only known risk factor for HIV infection, of whom 2 had no information available on maternal HIV status. Three children had multiple exposures to HIV infection (ie, through sexual abuse, perinatal exposure, and physical abuse through drug injection); of the 3 that also had possible perinatal exposure, the mother tested HIV-antibody positive after the child's birth, often surrounding the child's diagnosis of HIV or AIDS, and her HIV status during pregnancy was not known. Nine HIV-infected children had evidence of sexual abuse by a male perpetrator(s) and had no other risk for HIV infection; however, the identity, HIV risk, or HIV antibody status of all the perpetrators were not known and therefore we classified these cases as suspected sexual exposure (Table 1). All children had been reported to local children's protective agencies.

Six children had a previous history of STDs, of

whom 4 had no HIV-antibody testing documented at the time of the STD diagnosis and first tested HIV-antibody positive when they presented with an HIV-related illness or when the perpetrators' HIV status became known. The other 2 of these 6 children had tested HIV-antibody negative when they first presented with STDs related to sexual abuse, however, no follow-up HIV testing was documented until the child presented with an HIV-related illness.

We identified 19 adult male HIV-infected or at-risk perpetrators of 17 children with confirmed sexual exposure to HIV infection (Table 4). Two children had sexual contact with more than one adult HIV-infected or at-risk male perpetrator, and 4 other children had been sexually abused by additional perpetrators whose identity and/or HIV status were not known. Eighteen perpetrators were known to be HIV-infected. Risks for HIV infection were known for all but 2 perpetrators: injecting drug user (IDU) ($n = 10$), men who have sex with men ($n = 6$), sex with an IDU ($n = 1$). The majority of the perpetrators were related to the child or were sex partners of the child's mother. Eight HIV-infected or at-risk perpetrators had been prosecuted by legal authorities for the sexual abuse, 6 of whom were known to have been incarcerated for the abuse. Three perpetrators died before local authorities performed an investigation of the sexual abuse.

Case Summaries: Children Who Were Sexually Abused With Confirmed Sexual Exposure to HIV Infection

Patient 1

A 12-year-old black non-Hispanic female tested HIV-antibody positive 3 months before she was diagnosed with recurrent bacterial infections in 1992. This child was exposed to HIV through sexual abuse (genital-genital) by an HIV-infected adult IDU male who was an acquaintance of her mother. Another adult male perpetrator, the mother's boyfriend, also sexually abused this child; however, he was HIV-antibody negative. The child's mother tested HIV-antibody negative, and maternal risk factors for HIV infection were not known. Sexual abuse was documented by physical examination, by disclosure of the

TABLE 2. Characteristics of Children With Confirmed and Suspected Sexual Exposure to HIV Infection

Characteristic	Confirmed ($n = 17$)	Suspected ($n = 9$)	Total ($n = 26$)
Mean age at HIV diagnosis (range)	9.1 y (3–12)	8.2 y (5–12)	8.8 y (3–12)
Sex			
Female	14	8	22
Male	3	1	4
Race/ethnicity			
Black non-Hispanic	11	8	19
White non-Hispanic	6	0	6
Hispanic	0	1	1
No. with AIDS	12	7	19
Mean age at AIDS diagnosis (range)	10.3 y (5–12)	8.3 y (6–12)	9.5 y (5–12)
Diagnosis of sexual abuse			
Physician diagnosis/physical examination	12	8	20
Child disclosure	12	3	15
Sexually transmitted diseases	6	3	9
Other disclosure	7	3	10
Prosecution of HIV-infected or at-risk perpetrator*	8		

Abbreviations: HIV, human immunodeficiency virus; AIDS, acquired immunodeficiency syndrome.

* For confirmed cases only.

TABLE 3. Characteristics of Children Reported With HIV/AIDS and Meeting the Surveillance Definition for Risk of Sexual Transmission of HIV Infection

HIV/AIDS Status	Patient	Gender	Race	Age at Diagnosis (Age at First Positive HIV test) (Age at AIDS diagnosis)	Maternal HIV Status	Maternal HIV Risk	Other Modes of HIV Exposure	HIV+ /at risk Perpetrators (No.)	Diagnosis of Sexual Contact
AIDS	1	Female	Black non-Hispanic	HIV-12 y AIDS-12 y	HIV-	Not reported/identified	None	One	MD diagnosis Child and mother disclosure Prosecution of perpetrator
AIDS	2	Female	White non-Hispanic	HIV-12 y AIDS-12 y	HIV-	Sex with HIV+ male Sex with bisexual male	None	One	MD diagnosis
AIDS	3	Female	White non-Hispanic	HIV-10 y AIDS-10 y	HIV-	None	None	One	MD diagnosis Prosecution of perpetrator
AIDS	4	Female	Black non-Hispanic	HIV-12 y AIDS-12 y	HIV-	IDU Sex with IDU Sex with HIV+ male	None	One	MD diagnosis Child disclosure Previous STD Prosecution of perpetrator
AIDS	5	Female	Black non-Hispanic	HIV-7 y AIDS-7 y	HIV+	IDU Sex with IDU	Perinatal, Physical abuse by drug injection	Two	MD diagnosis
AIDS	6	Female	Black non-Hispanic	HIV-9 y AIDS-11 y	HIV+	Sex with HIV+ male Sex with bisexual male	Perinatal	One	Perpetrator disclosure
AIDS	7	Female	White non-Hispanic	HIV-12 y AIDS-12 y	HIV+	Sex with IDU Sex with HIV+ male	Perinatal	Two	Child disclosure Prosecution of perpetrator
AIDS	8	Female	Black non-Hispanic	HIV-11 y AIDS-12 y	Unknown	None	None	One	MD diagnosis Child disclosure Concurrent STD
AIDS	9	Female	Black non-Hispanic	HIV-7 y AIDS-7 y	HIV-	Sex with IDU	None	One	Previous STD MD diagnosis Child disclosure Sibling disclosure Prosecution of perpetrator
AIDS	10	Male	Black non-Hispanic	HIV-4 y AIDS-5 y	HIV-	Sex with HIV+ male	None	One	MD diagnosis Prosecution of perpetrator
AIDS	11	Female	Black non-Hispanic	HIV-12 y AIDS-12 y	HIV-	Not reported/identified	None	One	Concurrent STD Child and mother disclosure
AIDS	12	Male	Black non-Hispanic	HIV-11 y AIDS-11 y	HIV- after child's birth but subsequently seroconverted	IDU	None	One	Grandmother, cousin, and child disclosure
HIV	13	Female	White non-Hispanic	HIV-3 y	HIV-	IDU Sex with IDU	None	One	MD diagnosis Child disclosure
HIV	14	Female	Black non-Hispanic	HIV-10 y	HIV-	Sex with HIV+ male	None	One	MD diagnosis Child and mother disclosure Previous STD
HIV	15	Female	White non-Hispanic	HIV-7 y	HIV+	Sex with HIV+ male Sex with IDU	None (child tested HIV- at time of abuse then subsequently seroconverted)	One	MD diagnosis Prosecution of perpetrator Child disclosure Sibling disclosure
HIV	16	Female	Black non-Hispanic	HIV-11 y	Unknown	Not reported/identified	None	One	MD diagnosis Child disclosure Prosecution of perpetrator Previous STD
HIV	17	Male	White non-Hispanic	HIV-5 y	HIV-	IDU	None	One	Child disclosure

Abbreviations: HIV, human immunodeficiency virus; AIDS, acquired immunodeficiency syndrome; MD, physician; IDU, injecting drug user; STD, sexually transmitted disease; HIV+, HIV-infected; HIV-, HIV-antibody negative.

TABLE 4. Characteristics of 19 HIV-Infected or At-Risk Perpetrators of Sexual Abuse of 17 HIV-Infected Children

	No. (%)
Sex	
Male	19 (100)
HIV status	
HIV-infected	18 (95)
Unknown	1 (5)
Behavioral risk for HIV infection	
Injecting drug user	10 (53)
Men who have sex with men	6 (32)
Sex with an injecting drug user	1 (5)
Unknown	2 (11)
Relationship to child	
Father	6 (32)
Stepfather	3 (16)
Other relative	4 (21)
Unrelated adult	6 (32)
Relationship to child's mother	
Sexual partner or spouse	13 (68)
Acquaintance or relative	5 (26)
None	1 (5)
Perpetrator lived in the household	12 (63)
Legal status regarding abuse of the child	
Prosecuted	8
Incarcerated	6
Vital status	
Dead	8
(3 died before an investigation of sexual abuse by authorities took place)	

* Percentage (%) may not add up to 100 due to rounding.

abuse by the child and the child's mother, and by prosecution of both perpetrators for the abuse. The HIV-infected perpetrator died of AIDS in 1993. The child was thought to have been sexually abused multiple times during a 6- to 12-month period in 1991. The child's siblings were HIV-antibody negative. The child was alive at last follow-up.

Patient 2

A 12-year-old white non-Hispanic female first tested HIV-antibody positive when she was diagnosed with *Pneumocystis carinii* pneumonia (PCP) in 1991. This child was exposed to HIV through sexual abuse (genital-genital) by her HIV-infected biologic father. Her father's risk for HIV infection was male-to-male sexual contact. A friend of the father was also reported to have sexually abused this child, however his HIV status and HIV risk were not known. The child's mother tested HIV-antibody negative. The child's father had AIDS diagnosed in 1990 and died in 1992. Sexual abuse was diagnosed by a physician. Four siblings were HIV-antibody negative. The child was alive at last follow-up.

Patient 3

A 10-year-old white non-Hispanic female first tested HIV-antibody positive when she was diagnosed with PCP in 1993. This child was exposed to HIV through sexual abuse (genital-genital) by her HIV-infected uncle. The uncle was bisexual and first tested HIV-antibody positive in 1990. The patient's mother was HIV-antibody negative and reported no risk factors for HIV infection. Sexual abuse was documented by a physician by abnormal physical examination, and prosecution of the abuser. Three siblings were HIV-antibody negative. The child died of HIV-related causes in 1993.

Patient 4

A 12-year-old black non-Hispanic female first tested HIV-antibody positive when she was diagnosed with PCP in 1991. She was exposed to HIV through sexual abuse (genital-genital) by her HIV-infected biologic father, who was an IDU. Sexual abuse by several other males who were friends of her father was reported but not confirmed. The child's mother was an IDU but was HIV-antibody negative. Sexual abuse was documented by abnormal physical examination, disclosure of abuse by the child, history of chlamydia at age 8 and trichomonas at age 11, and prosecution and incarceration of the HIV-infected father for the abuse. Two siblings were HIV-antibody negative. The child was alive at last follow-up.

Patient 5

A 7-year-old black non-Hispanic female first tested HIV-antibody positive when she was diagnosed with recurrent bacterial infections in 1988. This child had multiple exposures to HIV infection: possible perinatal exposure, sexual abuse (genital-genital) by two HIV-infected adult male IDUs (the child's biologic father and the mother's boyfriend), and physical abuse consisting of repeated injection of nonprescription drugs by the child's mother. The child's mother was also an IDU. The mother first tested HIV-antibody positive several years after the child's birth. The child's sexual abuse was diagnosed by a physician. Both perpetrators and the mother died of HIV-related causes. The child was alive and in foster care at last follow-up.

Patient 6

A 9-year-old black non-Hispanic female first tested HIV-antibody positive in 1988. This child's exposures to HIV infection included possible perinatal exposure and sexual abuse (genital-genital) by an HIV-infected boyfriend of her mother. The perpetrator's risk for HIV infection was male-to-male sexual contact. The abuse occurred 5 months before the child's first positive HIV-antibody test. The child's mother first tested HIV-antibody positive after the child was diagnosed with HIV infection. The biologic father was also HIV-infected. The perpetrator disclosed the sexual abuse and subsequently died of HIV-related causes. Two siblings were HIV-antibody negative. The child developed extrapulmonary cryptococcosis and died of HIV-related causes in 1990.

Patient 7

A 12-year-old white non-Hispanic female first tested HIV-antibody positive several months before she was diagnosed with PCP in 1988. The child's exposures to HIV infection included possible perinatal exposure and sexual abuse (genital-genital) by multiple male perpetrators. One of the identified perpetrators was her biologic father, who was an IDU but whose HIV status was not documented. The father died in 1988. The child reported her father had abused her at approximately age 9. Another identified perpetrator was her HIV-infected stepfather, who also was an IDU. The stepfather was incarcer-

ated for sexual abuse of this child. A third identified perpetrator was an uncle whose HIV status and HIV risk were not known and who had died. The child's mother tested HIV-antibody positive in 1986 and died in 1988. Sexual abuse was documented by disclosure of abuse by the child and prosecution of the stepfather for the abuse. A younger female sibling developed AIDS which was thought to be acquired perinatally. The child was alive at last follow-up.

Patient 8

An 11-year-old black non-Hispanic female first tested HIV-antibody positive in 1991. She had recurrent bacterial infections diagnosed at age 12. This child was exposed to HIV infection through sexual abuse (genital-genital) by her HIV-infected maternal uncle. The uncle's risk for HIV infection was not known. The child's mother was never tested for HIV infection and she did not report any HIV risk factors. Sexual abuse was diagnosed by a physician, by child disclosure, and by diagnosis of gonorrhea and genital warts concurrent with her HIV diagnosis. The child was alive at last follow-up.

Patient 9

A black non-Hispanic female was sexually abused (genital-genital) at age 4, at which time she tested positive for gonorrhea and negative for HIV-antibody and antigen. No follow-up HIV testing was documented. She did not name the perpetrator at that time. She subsequently tested HIV-antibody positive at age 7 in 1994 when she presented with recurrent thrush, a CD4 count of 1 cell/ μL , and 1 month later was diagnosed with HIV encephalopathy. The sexual abuse was diagnosed on physical examination, and disclosure by the child and sibling. The perpetrator was the mother's boyfriend who was an HIV-infected IDU who was incarcerated for the sexual abuse of this child. The perpetrator had a history of gonorrhea. The child has no other risk for HIV. The child's mother tested HIV-antibody negative in 1995. Two siblings and a cousin tested HIV-antibody negative. The child died in 1996.

Patient 10

A 4-year-old black non-Hispanic male first tested HIV-antibody positive in 1989 and his CD4 count was 13 cells/ μL . Four months later he presented with PCP at age 5. The child's mother tested HIV-antibody negative at that time. The perpetrator was the child's HIV-infected biologic father whose risk for HIV infection was not known. The father was prosecuted for the abuse of this child. The sexual abuse was diagnosed by a physician. Two siblings were HIV-antibody negative. The child died at age 5.

Patient 11

A 12-year-old black non-Hispanic female tested HIV-antibody positive in 1993 when she presented with herpes simplex disease. She was first sexually abused at age 11 by a perpetrator who was incarcerated for the abuse (genital-genital), but whose HIV status and risk were not known. The child was diagnosed with multiple STDs beginning in 1993 with

hepatitis B and C, recurrent gonorrhea, and pelvic inflammatory disease. The child reported having sexual contact with a HIV-infected male who first tested HIV-antibody positive in 1989 and whose risk for HIV infection was sex with a female IDU. The child's mother was HIV-antibody negative in 1994 and her risk for HIV infection were unknown. The child has no other risk factors for HIV infection and was alive at last follow-up.

Patient 12

An 11-year-old black non-Hispanic male tested HIV-antibody positive when he was diagnosed with wasting syndrome in 1995, and had a CD4 count of 443 cells/ μL at that time. The child's mother is an IDU who tested HIV-antibody negative in 1990, 6 years after the child's birth, however, she subsequently tested HIV-antibody positive 2 years later. The perpetrator was the child's HIV-infected uncle, whose risk for HIV infection was male sexual contact. The perpetrator died before an investigation could occur. The maternal grandmother and child's cousin also disclosed the (genital-anal) abuse. The child was alive at last follow-up.

Patient 13

A 3-year-old white non-Hispanic female tested HIV-antibody positive in 1992 and was reported through HIV infection surveillance. This child was exposed to HIV infection through sexual abuse (genital-genital) by her HIV-infected biologic father who was an IDU. The child's biologic mother was an IDU but tested HIV-antibody negative in 1992. Sexual abuse was documented by physical examination and by child disclosure of the abuse. The child was alive at last follow-up.

Patient 14

A 10-year-old black non-Hispanic female tested HIV-antibody positive in 1995 when she was diagnosed with recurrent shingles and had a CD4 count of 570 cells/ μL at that time. The child had been sexually abused 3 years previously, at age 7 years, that resulted in contracting gonorrhea, however, she tested HIV-antibody negative at that time. There was no follow-up HIV testing done. The perpetrator was the child's HIV-infected stepfather whose risk for HIV was male sexual contact. The abuse (genital-genital) occurred at least three times and was diagnosed by a physician, and by disclosure by the child and mother. The child's biologic mother tested HIV-antibody negative in 1995. The child's two siblings tested HIV-antibody negative. The child had no other risks for HIV infection and was alive at last follow-up.

Patient 15

A 7-year-old white non-Hispanic female was sexually abused (genital-genital) by her new stepfather who was an HIV-infected IDU. The child tested HIV-antibody negative initially after the abuse, however, 1 month later she seroconverted. The child's sibling also disclosed the abuse. A physician diagnosed sexual abuse on physical examination. The child's bio-

logic mother was HIV-antibody positive but it is not known when she was first tested. Because the child initially tested HIV-antibody negative, perinatal transmission was not considered the source of her HIV infection. All the child's siblings are HIV-antibody negative. The perpetrator has been incarcerated for the sexual abuse of this child. The child was alive at last follow-up.

Patient 16

An 11-year-old black non-Hispanic female tested HIV-antibody positive in 1995 and had a CD4 count of 728 cells/ μ L. The child was diagnosed with recurrent gonorrhea at age 6, however, no HIV testing was documented at that time. The child's aunt disclosed that the perpetrator was the biologic mother's boyfriend who was an IDU. The perpetrator was incarcerated for the sexual abuse of this child. The child was first tested for HIV infection after the perpetrator died of AIDS in prison and the family was notified. The abuse was diagnosed by a physician and disclosed by the child. The mother died shortly after the child's birth and her HIV status was unknown. The child has no other risk factors for HIV infection and was alive at last follow-up.

Patient 17

A 5-year-old white non-Hispanic male, was diagnosed with HIV infection in 1992. At that time, the child had notified his foster mother that his uncle had sexually abused him and the foster mother then brought him to health care providers for HIV testing. The uncle is an HIV-infected bisexual male. The abuse occurred 6 months to 1 year before the child was tested. Both the child's biologic father and mother are IDU's, however, they are both HIV-antibody negative. The child has no other risk factors for HIV infection. Two siblings are also HIV-antibody negative. The child was alive at last follow-up.

DISCUSSION

These 26 cases highlight the tragic intersection of child sexual abuse and the HIV epidemic. Virtually all these children were in environments with multiple social problems, including drug abuse, family disintegration, and HIV-related deaths occurring throughout short periods. The challenge for clinicians and public health professionals is to recognize, evaluate, and report evidence of possible sexual abuse among children, including HIV-infected children, and to help foster ways to anticipate and prevent such abuse. Health care providers should consider sexual abuse as a possible reason for acquisition of HIV infection among HIV-infected children, particularly older children and those whose mothers are HIV-antibody negative.

HIV-infected children frequently live in dysfunctional home environments associated with sexual abuse of children.^{7,9,29} Household risk factors for child abuse include substance abuse, poverty, fragmented families where children are not living with their biologic parents, and disability or illness of the caretaker.^{7,9,14,16,29-31} These factors are often present in the homes of HIV-infected children who are living

with HIV-infected parents or caretakers. Parents or caretakers in such households may sexually abuse children or not protect them from abuse by other household members or strangers.²⁹ Physicians who provide care for children living in households where risk factors for child sexual abuse and HIV are present should refer their families for appropriate medical and social services.

Identification of children with potential risk for sexual exposure to HIV is dependent on clinical suspicion, subsequent investigation, and documentation of sexual abuse and HIV exposure by health care providers, social workers, and law enforcement personnel. The incidence of reported sexual abuse and noncongenital STDs has been increasing among children and adolescents.¹⁶ Screening policies for HIV-antibody testing among sexually abused children have varied from recommendations for selective to recommendations for universal testing.^{9,11,19-24} The CDC developed guidelines for evaluation and treatment of STDs in consultation with a group of invited experts in 1993 which were updated in 1998. These guidelines recommend that the decision to test for HIV infection among sexually abused children should be made on a case by case basis, depending on the likelihood of infection among the assailant(s). The CDC recommendations state that situations involving a high risk for STDs, including HIV infection, and thus a strong indication for testing include: if the suspected perpetrator is known to have HIV infection or be at high risk for HIV infection, if the child has symptoms or signs of HIV infection, or if the prevalence of HIV in the community is high.²² Other indications recommended by experts for testing for STDs include evidence: of 1) genital or oral penetration or ejaculation, or 2) STDS in siblings or other children or adults in the household.²² These recommendations include the need for follow-up testing for HIV after sexual assault to detect seroconversion. Data are insufficient concerning the efficacy and safety of postexposure antiretroviral therapy after sexual exposure to HIV among adults or among children.²² In communities with high HIV prevalence, public health departments and clinical centers should encourage provider awareness of the risk for HIV transmission among children evaluated for sexual assault and the CDC guidelines for HIV testing among sexually abused children, particularly among providers who encounter these children. Another recent analysis by a working group on HIV testing and counseling of sexually assaulted persons noted the importance of HIV testing of the accused perpetrator as well.¹⁹

The typical perpetrator of sexual violence abuses many children. In a study of nonincarcerated sex offenders, the average number of victims of sexual abuse by pedophiles was 1.7 when the abuse was incestuous but for nonincestuous abuse the numbers were ~20 if the victims were girls and 150 if the victims were boys.³² Incestuous pedophiles repeatedly molested the same child: boy victims were molested an average of 37 times and girl victims 45 times.³² Identification of sexual abuse allows for the prevention of further abuse of the same child and

other at-risk children and for prevention of HIV transmission by an HIV-infected perpetrator.³³ Our study confirms the observations of others that most perpetrators were known to the child and that few accused perpetrators were prosecuted for their crimes.^{7,8,32,33} In the survey of nonincarcerated sex offenders, the ratio of arrest to commissions of rape and child molestation was ~1:30.³²

Children who are suspected victims of abuse are protected by legislation mandating that care and service providers report suspected abuse to appropriate authorities.³⁴ HIV/AIDS reporting laws ensure the confidentiality and security of information on individuals with HIV infection or AIDS reported to health departments. Because of the confidential nature of reports of potential and confirmed cases of child sexual abuse and the confidential reporting of persons with HIV infection and AIDS, HIV and AIDS surveillance and law enforcement/court records are independent. Therefore, to more completely ascertain the occurrence of sexual abuse among children with HIV infection, we urge health care providers to comply with local reporting mechanisms for both sexual abuse and for HIV and AIDS.

Standardized collection of HIV exposure information through HIV/AIDS surveillance has been critical in characterizing the epidemic, following trends, targeting and evaluating prevention activities, and identifying any new or unusual modes of HIV transmission.^{1,28,35-40} Sexual contact was added as a standardized risk exposure category on the national pediatric HIV/AIDS case report form in 1993. Child sexual abuse comprises a spectrum of sexual offenses (eg, oral-genital, digital-genital, genital-genital, and genital-anal). For surveillance purposes, only genital-vaginal and genital-anal contact were considered as biologically relevant sexual exposures among both children and adults. There have been rare reports, however, of transmission associated with oral exposure to ejaculate among men who have sex with men.⁴¹ The surveillance definition for sexual abuse is consistent with that used to document sexual abuse in any pediatric population.^{7,9,42-45} Documentation of HIV infection or HIV-related risk in the perpetrator(s) confirms sexual exposure to HIV among children. This is similar to how heterosexual transmission is defined among HIV-infected adults in HIV/AIDS surveillance.¹ Because information on the perpetrator may not always be available, systematic collection of sexual contact information among children with no other risks for HIV can characterize suspected sexual exposure to HIV, however, these suspected sexual transmissions remain classified as risks not identified or reported.

The risk of transmission of HIV infection through vaginal or anal intercourse after single or multiple exposures has been difficult to quantify.^{19,46,47} The risk of HIV transmission depends on the clinical status of the perpetrator, the type of sexual contact, and the frequency of contacts. Risk of sexual transmission is increased with traumatic sexual contact involving loss of mucosal membrane integrity; presence of other STDs, particularly ulcerative STDs; and either recent infection or advanced clinical stage of

infection in the perpetrator. Many of these risk factors were present among children described in this report. Because of their young age, there is an increased likelihood that traumatic assault accompanied the sexual abuse.^{7,24} Three children had previously documented STDs. Sexual abuse was not usually limited to a single perpetrator or sexual act. Because most perpetrators were either parents or relatives of the child and had lived in the household, multiple exposures to the same perpetrator probably occurred.^{7,8,32,33}

In this study, 85% of the children were females. Overrepresentation of females among children with other noncongenitally acquired STDs and among sexually abused children is commonly reported.^{14,42,48,49} However, underreporting of sexual abuse by boys has been described.^{16,17} The mean age at AIDS diagnosis was older (9.5 years) for the 19 sexually abused children than for children with AIDS attributable to perinatal transmission (1.8 years), treatment for hemophilia (9.3 years), and receipt of blood or blood components (5.5 years). This older age at diagnosis for children with sexual exposure warrants investigation of potential sexual exposure for all children diagnosed with HIV or AIDS at and beyond school age. Data from the National Child Abuse and Neglect System¹⁴ indicate that 61% of sexually abused children are 8 years of age or older. However, as demonstrated by the 3-year-old child with sexually transmitted HIV in this study and given that 39% of sexually abused children are younger than 8 years, sexual exposure should be considered for all HIV-infected children, particularly those whose mother is HIV-antibody negative after the child's birth.

Three of the 26 children had risk for perinatal exposure to HIV infection. Perinatal transmission may be difficult to exclude in an older child diagnosed with HIV infection, particularly when the HIV status of the mother at the child's birth is not known. However, these cases highlight the need to consider sexual exposure in older HIV-infected children with other risks for HIV infection. As HIV testing increases among pregnant women as a result of the 1995 United States Public Health Service recommendations for routine HIV counseling and voluntary testing during pregnancy,⁵⁰ we will be able to identify which children in fact do and do not have multiple risks for HIV infection.

For several reasons, these 26 cases represent a minimum number of HIV-infected children who were sexually exposed to HIV. First, the ability to obtain sexual abuse information is limited by the extent of cooperation from the child's parents, caregivers, and health care providers and documentation in medical records. Second, identifying the perpetrator or obtaining the perpetrator's HIV-antibody status or risk is often difficult.⁹ Many children who are sexually abused may not be able to accurately describe the sexual offense or to identify the perpetrator because of their young age. Third, although completeness of AIDS case reporting has been estimated to be 85% to 90% among adults^{51,52} and 85% among children based on a study in New York City (oral

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