

State of Alaska
Epidemiology



Bulletin

Recommendations
and
Reports

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Volume No. 10 Number 1
January 3, 2006

The Association Between Reproductive Health-Related Medical Claims and Criminal Activity or the Experience of Abuse among Medicaid-enrolled Adolescent Females

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Introduction

Previous experience of abuse has been associated with risky sexual behavior and pregnancy among adolescents (1-5). Few studies, however, have taken the perspective of the provider delivering reproductive health care to young adolescents and evaluated the risk of concurrent abuse among sexually active adolescents. The purpose of this study was to examine the relationship between criminal behavior or ongoing abuse by a caretaker and presentation for reproductive health care services among Alaskan females 10 through 15 years of age who were enrolled in Medicaid from 1999-2003.

Methods

Study design and hypothesis

The study was a retrospective cohort analysis of existing administrative public health databases. The study cohort consisted of females aged 10 through 15 years of age enrolled in Medicaid in Alaska at some point during 1999 through 2003. Using a retrospective cohort analysis, risk groups were identified for reproductive health care outcomes, referral to the Office of Children's Services (OCS) Child Protective Services (CPS) Unit, and criminal activity resulting in Juvenile Justice referral. Using a cross-sectional analysis, the association between having a reproductive health-related medical claim and having a referral to Child Protective Services or Juvenile Justice was evaluated. The primary hypothesis was that females with a Medicaid claim for reproductive health care (pregnancy, sexually transmitted infection, or contraceptive management) were more likely than those without such a claim to have either a reported episode of physical or sexual abuse by a caretaker or a referral to Juvenile Justice.

Data sources

Medicaid

A master data file was obtained from the Alaska Division of Medical Assistance, which contained information on all females enrolled in Medicaid at any point during January 1999 through December 2003 and who were 10 through 15 years of age on December 31st of any study year. This file contained a unique identifier for each person, social

security number, name, residence, race, gender, and date of birth. Nine percent of all enrollees and 17% who experienced one of the evaluated clinical outcomes were enrolled during all five study years.

A clinical outcomes database was created by identifying all billing claims for outcomes of interest that occurred for females 10 through 15 years of age at the time of presentation. Clinical outcomes were categorized using International Classification of Diseases – 9th Revision (ICD-9) and included codes V22 and V23 (pregnancy), V24 (post-partum care and examination), V25 (contraceptive management), 630-676 (complications of pregnancy, childbirth, and puerperium), 90-99 (syphilis and other venereal diseases), and 42 (human immunodeficiency virus infection). Code V72.4 (pregnancy examination or test) was not included because it would have included an unknown number of subjects tested for reasons other than reproductive health or sexual activity, such as radiological or pre-surgical evaluation or at a guardian's insistence.

Vital statistics

To determine which study subjects had a live birth and to have information on father's age for these births, the Alaska Bureau of Vital Statistics provided a database of live births that occurred to Alaska residents during January 1999 through June 2004. This database included births to Alaska residents that occurred in another state.

Child Protective Services

The Alaska Office of Children's Services Child Protection Services unit provided a database of all females 10 through 15 years of age referred during 1999-2003 for evaluation of physical or sexual abuse or neglect perpetrated by a primary caretaker. Abuse committed by non-caretakers, such as boyfriends, was not included because OCS does not have jurisdiction over these cases. The Child Protective Services database did not include a description of the abuse and individual case records were not reviewed.

Juvenile Justice

Alaska OCS provided a database of all females 10 through 15 years of age referred to the Juvenile Justice system during 1999-2003 for evaluation of

possible criminal behavior. Of 1,858 referred subjects, 32 (1.7%) had all charges dismissed.

Data linkage

The master Medicaid file was linked to the Medicaid file of clinical outcomes using a unique Medicaid identifier. This database was linked to birth certificate data by matching on mother's name and date of birth using a computerized program followed by a hand linkage to identify obvious transcription errors.

This database was then linked to the Child Protective Services and Juvenile Justice databases using an exact computer match of social security number or, since this information was frequently missing, subject last name and date of birth. Of 21,350 subjects enrolled in Medicaid, 2,081 (9.7%) matched to the Child Protective Services database by social security number and 849 (4.0%) matched by name and date of birth; 1,080 (5.1%) matched to the Juvenile Justice database by social security number and 778 (3.6%) matched by name and date of birth.

Case definitions

Contraceptive management: ICD-9 code V25.x. This included counseling and advice (primarily prescriptions for oral contraceptives), insertion of an intrauterine device, sterilization, and follow-up evaluations.

Pregnancy: ICD-9 code V22-24 or 630-76.

Pregnancy termination: Either an ICD-9 code of 630-639 or pregnancy plus absence of a successful link to the birth certificate file. For all episodes where a study subject sought care for pregnancy but could not be linked to a birth certificate and had no Medicaid claim for pregnancy termination, a hand linkage was done with birth certificates to document that a live birth had not occurred. As a final check, a separate analysis was performed defining pregnancy termination as a Medicaid claim for ICD-9 codes 635-6 (legal or illegal induced pregnancy termination); results did not differ substantially from those obtained using the broader case definition and thus are not presented.

Statutory rape: The male partner's age was available only for live births, and then incon-

sistently. Pursuant to Alaska law (AS 11.41.434-6), statutory rape was defined as a live birth to a mother <16 years of age, a father 16 years of age or older, and a difference in age between the mother and father of at least 3 years.

Child abuse or neglect: All instances of abuse were identified in the OCS Child Protective Services database. This database contains referrals and substantiation of abuse defined by Alaska statutes (AS 47.17.290) as the physical injury or neglect, mental injury, sexual abuse, sexual exploitation, or maltreatment of a child aged <18 years, circumstances that indicate that the child's health or welfare is harmed or threatened thereby. Substantiated abuse cases were those for which an investigation by Child Protective Services resulted in confirmation that abuse had occurred.

Juvenile Justice referral categories:

1. Violent offense: assault, domestic violence, sexual abuse of a minor, and murder.
2. Theft: Burglary, shoplifting, vehicle theft, robbery, and theft.
3. Drug or alcohol offense: Furnishing alcohol to a minor, importing alcohol by an unlicensed person, possession of illegal substances, purchase or delivery of alcohol by a minor, presence of a minor on the premises of an establishment serving alcohol.

Analysis

To evaluate the association between race or residence and reproductive health, abuse, or criminal activity outcomes, it was assumed that race and residence preceded outcomes; thus, cohort analyses were performed and risks were assigned. To evaluate the association between reproductive health care and either abuse or criminal activity, cross-sectional analyses were performed and odds ratios were calculated. All analyses were conducted with SPSS version 11.0 (SPSS Inc., Chicago, IL).

For analysis of the association between race or residence and reproductive health, abuse, or criminal activity outcomes, logistic regression models were created to adjust for age at Medicaid enrollment and the number of days enrolled in Medicaid. For analysis of the association between reproductive health outcomes and either CPS or

Juvenile Justice referral, logistic regression models were created that also adjusted for Alaska Native ethnicity (as defined by the Medicaid file) and Anchorage residence. In theory, analyses could be influenced if some subjects were enrolled in Medicaid too briefly to allow some outcomes to occur. However, when analyses were repeated and limited to persons enrolled in Medicaid for at least 365 days, virtually identical results were obtained. Because of this and because small sample sizes for some outcomes (specifically, statutory rape) prevented analysis using the restricted dataset, results including the entire dataset are presented. All analyses were conducted with SPSS version 11.0 (SPSS Inc., Chicago, IL).

Ethical issues

This evaluation used existing public health databases housed within the Alaska Department of Health and Social Services. No additional information from subjects was obtained and no subjects were contacted. As this study used existing public health databases and was conducted by a legally empowered governmental authority for the development of public health recommendations, no institutional review board approval was sought or obtained.

Results

Descriptive

There were 21,350 adolescent females aged 10 through 15 years enrolled in Medicaid at some point during 1999 to 2003, including 7,699 during 1999, 9,934 during 2000, 11,473 during 2001, 10,849 during 2002, and 11,918 during 2003. Approximately 44% of subjects were first enrolled in Medicaid at age 10 years, the earliest age possible given the study design (Figure 1), while the remainder was divided equally among ages 11-15 years.

Reproductive health-related medical claims

Among all subjects enrolled in Medicaid, 317 (1.5%) had a billing code for pregnancy including 178 (56%) with a live birth, 63 (20%) with documented pregnancy termination, and 76 (24%) with no evidence of a live birth and that were considered to have had a pregnancy termination. There were 575 (2.7%) that had an approved billing

code for contraceptive management, 23 (0.11%) for a sexually transmitted infection evaluation, and none for HIV evaluation. A total of 841 (3.9%) subjects had one or more approved claims for one of the evaluated medical outcomes. For live births, pregnancy terminations, and any reproductive health-related approved claim, the incidences were 3.7, 2.7, and 16 per 1,000 subjects per year, respectively.

For 114 of 178 live births, both the mother's and father's ages were reported. Of these, 32 (28%) met the definition of statutory rape indicating that at least 0.15% of subjects delivered a live birth as the result of statutory rape (0.60 per 1,000 subjects per year).

Among subjects with a reproductive health claims, most were 14 or 15 years of age at the time of the first claim (Figure 1). Alaska Native Anchorage residents were the most likely to have a reproductive health claim while non-Native non-Anchorage residents were the least likely (Table 1).

Child Protective Services referrals

Among the 21,350 study subjects, 2,930 (14%) had a CPS referral including 1,996 (9.3%) for physical or sexual abuse. There were 870 (4.1%) with substantiated physical or sexual abuse, including 375 (1.8%) with substantiated sexual and 538 (2.5%) with substantiated physical abuse; respective incidences were 17, 7.2, and 10 persons with documented abuse per 1,000 subjects per year.

Among subjects with substantiated physical or sexual abuse, the age at first documented abuse was relatively evenly divided by year of age (Figure 1). As with reproductive health-related claims, Alaska Native Anchorage residents had the highest risk of evaluated abuse outcomes (Table 2).

Juvenile Justice referrals

Among all subjects, 1,858 (8.7%) were referred to the Juvenile Justice system. Three percent of those referred had a first referral by 11 years of age, increasing to 10% by 12 years of age, 23% by 13, and 48% by 14 years of age. Among the 1,858 referred subjects, 1,115 (60%) were referred for theft, 562 (30%) for a violent offense, and 223 (12%) for drug or alcohol offenses while 224 (12%)

had a referral for an offense other than these three. For all referrals and specific categories of referral, Alaska Native and non-Native Anchorage residents were at increased risk compared to non-Anchorage residents (Table 3).

Association between reproductive health care and Child Protective Service referrals

There was a strong association between having a reproductive health claim and experiencing substantiated abuse by a caretaker (Table 4). Of reproductive health related claims evaluated, the association with having a CPS referral was strongest for documented statutory rape. Among the 841 subjects with a reproductive health claim, Alaska Native ethnicity and Anchorage residence were not associated with an abuse referral or substantiation of abuse (data not shown).

A subject's age had an inconsistent effect on the likelihood of referral for abuse. Among subjects 10 to 11, 12 to 13, and 14 to 15 years of age when they experienced their first reproductive health related claim, 16% (4 of 25), 52% (85 of 165), and 36% (237 of 651), respectively, received a CPS referral and 4.0% (1 of 25), 16% (27 of 165), and 10% (68 of 651) had substantiation of abuse.

Of 841 subjects with a reproductive health claim, 326 (39%) had a referral for abuse. Among these 841 subjects, 82 (9.8%) received a referral within 1 month (before or after) of their first claim date, 139 (17%) within 3 months, and 194 (23%) within 6 months. A referral on or after the claim date occurred for 120 (14%) subjects (Figure 2).

Association between reproductive health care and Juvenile Justice referrals

Reproductive health-related claims and Juvenile Justice referrals were strongly correlated (Table 5). This was true for all evaluated categories of Juvenile Justice referral and reproductive health-related claims except statutory rape.

The youngest subjects were least likely to have a Juvenile Justice referral. Among subjects 10 to 11, 12 to 13, and 14 to 15 years of age when they experienced their first reproductive health-related claim, 4.0% (1 of 25), 33% (55 of 165), and 31% (202 of 651), respectively, received a referral and

0% (0 of 25), 15% (25 of 165), and 12% (77 of 651) received a referral for a violent offense.

As with CPS referrals, Juvenile Justice referrals often occurred many months before or after the reproductive health-related claim (Figure 2). Of the 258 subjects that had a reproductive health-related claim and a referral to Juvenile Justice, 18 (7.0%) had their first referral within 1 month of their first medical claim, 64 (25%) within 3 months and 163 (63%) within 12 months.

Conclusions

Numerous previous studies have taken a public health and prevention perspective and documented that abuse is a substantial risk factor for subsequent adolescent pregnancy or sexually risky behavior (1-5). By contrast, the current study adopted a clinical management perspective and documented that among adolescent females enrolled in Medicaid, seeking reproductive health care often occurred in association with ongoing physical or sexual abuse by a caretaker and with criminal behavior. Almost 1 in 2 Medicaid-enrolled adolescent females who received reproductive health care had a temporally proximal referral to Child Protective Services, 1 in 9 experienced substantiated physical or sexual abuse by a caretaker, and 1 in 3 were involved in criminal activity resulting in Juvenile Justice referral – often for violent offenses. Results were similar for all evaluated categories of reproductive health care. These data provide evidence that health care providers should have a high index of suspicion when a patient younger than 16 years presents for any type of reproductive health services and implement appropriate screening and referral.

The documented proportion of live births that resulted from statutory rape was 28% and was consistent with earlier studies (6,7). Nevertheless, it is uncertain how clinical management would differ if providers determined the age of their patients' sexual partners. Although statutory rape resulting in live birth was the strongest predictor for some outcomes – such as sexual abuse – all subjects presenting for reproductive health care were at high risk for abuse and criminal behavior. Additionally, determination of statutory rape is complicated by legitimate concerns regarding the unintended

consequences and effectiveness of mandatory reporting (8). If a body of evidence develops documenting that police intervention can decrease the risk of future violence (9), the current findings provide some support for mandatory reporting laws, provided that such laws are attached to funding for abuse investigations and intervention.

While all outcomes occurred during a relatively brief six-year age span (age 10-15 years), documentation of criminal behavior and the experience of abuse often occurred months or years before or after seeking reproductive health care. This suggests that while sexual activity is a strong predictor of adverse outcomes, it is unlikely to be causally related to these outcomes in many instances. It is more likely that early initiation of sexual activity often occurs in a context of general social disruption. If true, prevention of abuse and criminal behavior will require a comprehensive approach that addresses underlying issues such as violence (10,11), drug abuse (11-13), family disintegration (14,15), and mental health (16,17) including intervening during childhood (18). Clinicians serving the Medicaid-eligible population may have a role in this process by prospectively determining whether patients younger than 16 years of age are engaged in sexual activity and if so, initiating screening and referral (see Recommendations below).

Results from the current study cannot be extrapolated to the non-Medicaid population. Poverty may increase the risk of criminal behavior and experiencing abuse (19,20) and the age at initiation of sexual activity (21). Additionally, an adolescent may enroll in Medicaid because of intervention by a social services case manager whose original contact with the adolescent occurred following a referral for abuse, criminal behavior, or other social issues. Approximately 56% of study subjects were enrolled at greater than 10 years of age (i.e., they were enrolled when they reached adolescence rather than having a long previous history of enrollment), suggesting that this process may have occurred frequently. If so, it would have overweighted the prevalence of adverse outcomes among Medicaid recipients relative to the non-Medicaid population.

The current study had several other limitations. Abuse by non-caretakers (such as an intimate partner) was not evaluated because the Alaska Office of Children's Services has jurisdiction only over abuse by a caretaker. Previous studies have found that adolescents frequently experience non-caretaker abuse (22-24) but there is no readily available data source for these occurrences. Abuse may also have been underestimated because of failure of providers to screen, identify and refer patients; lack of sufficient evidence to substantiate abuse; and insufficient resources to conduct investigations. Consequently, abuse rates presented here will substantially underestimate the overall experience of abuse in this population.

Finally, racial and geographic differences in outcomes may reflect differences in diagnosis, referral, and access to care rather than true differences in occurrence. For example, Anchorage residents may have higher prevalences of Juvenile Justice outcomes because of less availability of criminal justice system components in many rural Alaskan villages. Similarly, Alaska Natives may have higher rates of abuse outcomes because of improved diagnosis and referral by persons providing care and other services to the Alaska Native community.

Recommendations:

1. Providers who deliver reproductive health services to Medicaid-eligible adolescent females should consider screening all of these patients for initiation of sexual activity.
2. Adolescents <16 years of age who report having initiated sexual activity or present for reproductive health care should be screened for abuse (25-27). A three-question screening tool is available at:
http://www.acog.org/departments/dept_notice.cf?m?recno=17&bulletin=585
3. Health care providers should familiarize themselves with community resources for intervening when abuse is identified.

- Public and private groups providing services to children with significant social problems – including abuse and criminal behavior – should receive adequate funding.

Additional recommendations on addressing domestic violence among pediatric patients are available from the American Academy of Pediatrics at:

<http://aappolicy.aappublications.org/cgi/content/full/pediatrics%3b101/6/1091>

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Table 1. Adjusted* odds ratios (aOR) for the association between race and residence and a variety of reproductive health care-related claims among females 10 through 15 years of age enrolled in Medicaid; Alaska, 1999-2003.

Risk group	Any reproductive health care-related claim			Statutory rape			Pregnancy total			Pregnancy termination		
	Percent	aOR	95% CI	Percent	aOR	95% CI	Percent	aOR	95% CI	Percent	aOR	95% CI
Anchorage, Alaska Native (n=1,446)	7.1%	2.2	(1.7 to 2.8)	0.35%	3.3	(1.1 to 10)	2.7%	2.4	(1.6 to 3.5)	1.1%	2.1	(1.2 to 3.8)
Non-Anchorage, Alaska Native (n=6,639)	4.1%	1.1	(0.95 to 1.3)	0.18%	1.7	(0.70 to 4.2)	1.6%	1.4	(1.0 to 1.8)	0.77%	1.4	(0.92 to 2.1)
Anchorage, non-Native (n=5,010)	3.9%	1.1	(0.89 to 1.3)	0.14%	1.3	(0.48 to 3.6)	1.6%	1.3	(0.96 to 1.8)	0.62%	1.2	(0.72 to 1.9)
Non-Anchorage, non-Native (n=7,389)	3.6%	Ref.		0.11%	Ref.		1.2%	Ref.		0.53%	Ref.	

*Adjusted for days of enrollment in Medicaid and age at first enrollment during the study period.

Table 2. Adjusted* odds ratios (aOR) for the association between race and residence and a variety of abuse outcomes among females 10 through 15 years of age enrolled in Medicaid; Alaska, 1999-2003.

Risk group	Any child protective service referral			Substantiated physical or sexual abuse			Substantiated physical abuse			Substantiated sexual abuse		
	Percent	aOR	95% CI	Percent	aOR	95% CI	Percent	aOR	95% CI	Percent	aOR	95% CI
Anchorage, Alaska Native (n=1,446)	23%	2.3	(2.0 to 2.7)	8.1%	2.4	(1.9 to 3.1)	4.2%	2.1	(1.5 to 2.8)	4.3%	2.7	(2.0 to 3.8)
Non-Anchorage, Alaska Native (n=6,639)	16%	1.3	(1.2 to 1.4)	4.5%	1.2	(1.0 to 1.4)	3.1%	1.4	(1.2 to 1.8)	1.7%	0.98	(0.75 to 1.3)
Anchorage, non-Native (n=5,010)	12%	0.98	(0.88 to 1.1)	3.5%	0.96	(0.79 to 1.2)	2.1%	0.98	(0.76 to 1.3)	1.5%	0.88	(0.67 to 1.2)
Non-Anchorage, non-Native (n=7,389)	12%	Ref.		3.5%	Ref.		2.1%	Ref.		1.6%	Ref.	

*Adjusted for days of enrollment in Medicaid and age at first enrollment during the study period.

Table 3. Adjusted* odds ratios (aOR) for the association between race and residence and a variety of criminal activity outcomes among females 10 through 15 years of age enrolled in Medicaid; Alaska, 1999-2003.

Risk group	Any Juvenile Justice referral			Violent offense referral			Theft referral		
	Percent	aOR	95% CI	Percent	aOR	95% CI	Percent	aOR	95% CI
Anchorage, Alaska Native (n=1,446)	20%	4.2	(3.5 to 4.9)	6.4%	3.9	(3.0 to 5.1)	14%	5.1	(4.2 to 6.2)
Non-Anchorage, Alaska Native (n=6,639)	8.1%	1.3	(1.2 to 1.5)	2.8%	1.5	(1.2 to 1.9)	3.9%	1.1	(0.95 to 1.4)
Anchorage, non-Native (n=5,010)	11%	1.8	(1.6 to 2.1)	2.8%	1.5	(1.2 to 1.9)	7.4%	2.3	(2.0 to 2.7)
Non-Anchorage, non-Native (n=7,389)	6.3%	Ref.		1.8%	Ref.		3.4%	Ref.	

*Adjusted for days of enrollment in Medicaid and age at first enrollment during the study period.

Table 4. Adjusted* odds ratios (aOR) for the association between substantiated claims for reproductive health care, or statutory rape, and referrals to child protective services for sexual abuse among females 10 through 15 years of age enrolled in Medicaid; Alaska, 1999-2003.

Risk group	Any child protective services referral			Substantiated physical abuse			Substantiated sexual abuse		
	Percent (n)	aOR 95% CI		Percent (n)	aOR 95% CI		Percent (n)	aOR 95% CI	
<i>Any reproductive health care-related claim</i>									
Yes (n=841)	39%	(326)	2.9 (2.5 to 3.4)	5.8%	(49)	1.6 (1.2 to 2.2)	5.8%	(49)	2.3 (1.7 to 3.2)
No (n=20,509)	13%	(2,604)	Ref.	2.4%	(489)	Ref.	1.6%	(326)	Ref.
<i>Any pregnancy</i>									
Yes (n=317)	43%	(137)	3.6 (2.9 to 4.6)	5.0%	(16)	1.4 (0.84 to 2.4)	7.6%	(24)	3.2 (2.1 to 5.0)
No (n=21,033)	13%	(2,793)	Ref.	2.5%	(522)	Ref.	1.7 %	(351)	Ref.
<i>Pregnancy termination</i>									
Yes (n=139)	40%	(55)	3.0 (2.1 to 4.3)	7.9%	(11)	2.3 (1.2 to 4.3)	5.8%	(8)	2.2 (1.1 to 4.6)
No (n=21,350)	14%	(2,875)	Ref.	2.5%	(527)	Ref.	1.7%	(367)	Ref.
<i>Contraceptive management</i>									
Yes (n=575)	39%	(222)	2.7 (2.3 to 3.2)	6.4%	(37)	1.7 (1.2 to 2.4)	5.9%	(34)	2.1 (1.5 to 3.1)
No (n=20,775)	13%	(2,708)	Ref.	2.4%	(501)	Ref.	1.6%	(341)	Ref.
<i>Statutory rape resulting in live birth</i>									
Yes (n=32)	66%	(21)	8.4 (4.0 to 18)	3.1%	(1)	0.80 (0.11 to 5.9)	16%	(5)	7.0 (2.6 to 19)
No (n=21,350)	14%	(2,909)	Ref.	2.5%	(537)	Ref.	1.7%	(370)	Ref.

* Adjusted for days of enrollment in Medicaid, age at first enrollment during the study period, race, and residence in Anchorage.

Table 5. Adjusted* odds ratios (aOR) for the association between substantiated claims for reproductive health care, or statutory rape, and referrals to juvenile justice – by category of offense – among females 10 through 15 years of age enrolled in Medicaid; Alaska, 1999-2003.

Risk group	Any juvenile justice referral		aOR		Referral for violent offense		aOR		Referral for theft		aOR	
	Percent	(n)	95% CI		95% CI	Percent	(n)	95% CI		95% CI	Percent	(n)
<i>Any reproductive health care- related claim</i>												
Yes (n=841)	31%	(258)	2.9	(2.5 to 3.4)	12%	(102)	3.1	(2.4 to 3.9)	18%	(147)	2.4	(2.0 to 2.9)
No (n=20,509)	7.8%	(1,600)	Ref.		2.2%	(460)	Ref.		4.7%	(968)	Ref.	
<i>Any pregnancy</i>												
Yes (n=317)	28%	(90)	2.5	(1.9 to 3.2)	11%	(35)	2.6	(1.8 to 3.7)	16%	(51)	2.1	(1.5 to 2.9)
No (n=21,033)	8.4%	(1,768)	Ref.		2.5%	(527)	Ref.		5.1%	(1,064)	Ref.	
<i>Pregnancy termination</i>												
Yes (n=139)	26%	(36)	2.4	(1.6 to 2.6)	10%	(14)	2.5	(1.4 to 4.4)	15%	(21)	2.1	(1.3 to 3.5)
No (n=21,350)	1,822	(8.6%)	Ref.		2.6%	(548)	Ref.		5.2%	(1,094)	Ref.	
<i>Contraceptive management</i>												
Yes (n=575)	33%	(187)	3.0	(2.5 to 3.6)	13%	(72)	2.9	(2.2 to 3.9)	19%	(108)	2.5	(2.0 to 3.1)
No (n=20,775)	8.0%	(1,671)	Ref.		2.4%	(490)	Ref.		4.8%	(1,007)	Ref.	
<i>Statutory rape resulting in live birth</i>												
Yes (n=32)	22%	(7)	1.4	(0.58 to 3.2)	9.4%	(3)	1.7	(0.51 to 5.7)	13%	(4)	1.2	(0.42 to 3.7)
No (n=21,350)	8.7%	(1,851)	Ref.		2.6%	(559)	Ref.		5.2%	(1,111)	Ref.	

* Adjusted for days of enrollment in Medicaid, age at first enrollment during the study period, race, and residence in Anchorage.

Figure 1. Among 21,350 Medicaid-enrolled females 10-15 years of age, the age at first Medicaid enrollment, first Child Protective Services (CPS) referral for substantiated sexual or physical abuse (n=870), first Juvenile Justice referral (n=1,858), and first reproductive health-related medical visit (n=841)

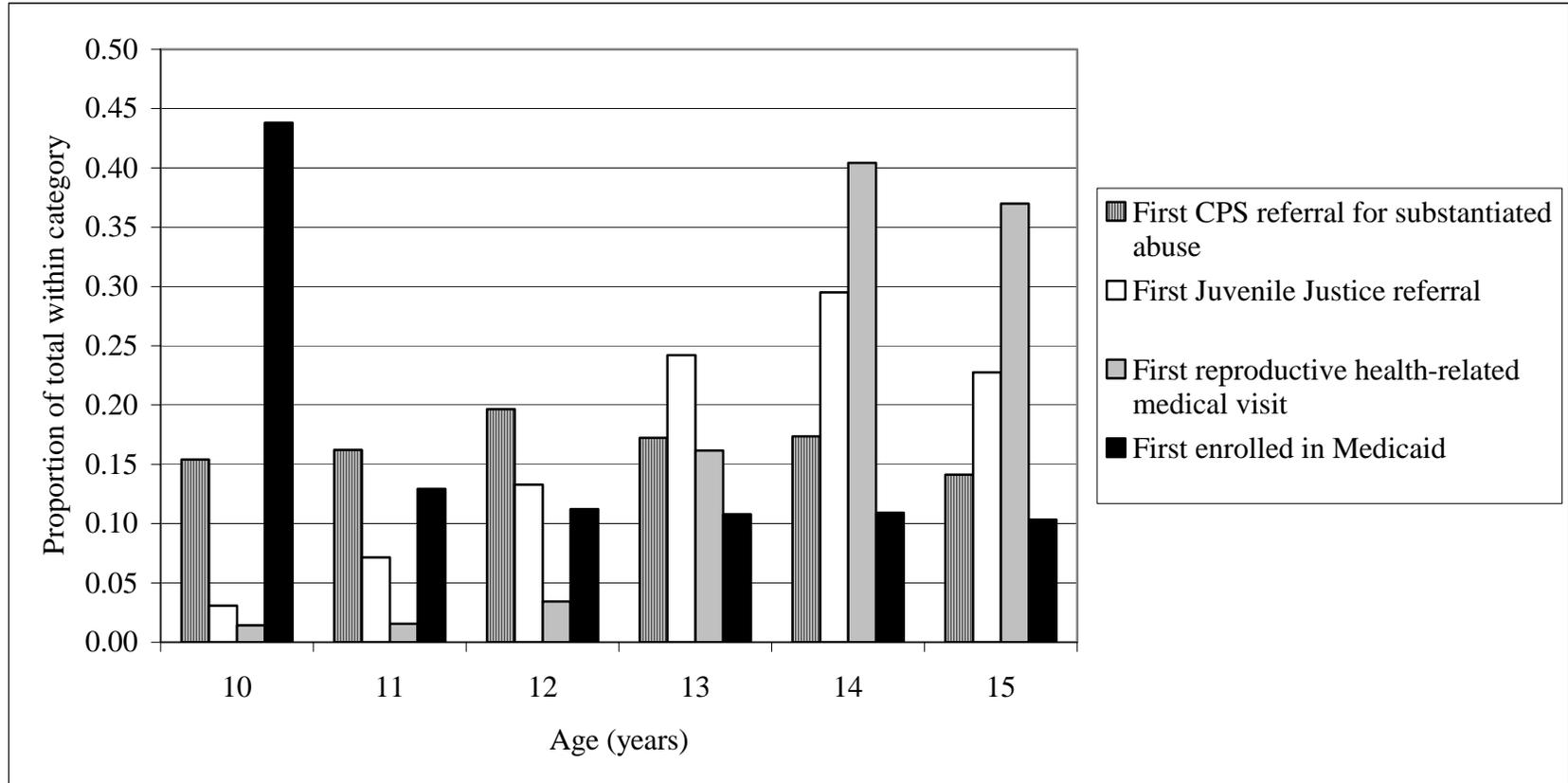


Figure 2. Among females age 10-15 years with a reproductive health-related Medicaid claim and referral to Child Protective Services (CPS) (n=326) or Juvenile Justice (n=258), the months before (negative numbers) or after (positive numbers) the claim that the closest referral occurred; Alaska, 1999-2003.

