

Costs of Juvenile Violence: Policy Implications

Ted R. Miller, PhD*; Deborah A. Fisher, PhD*; and Mark A. Cohen, PhD†

ABSTRACT. *Objective.* Violence involving children has been one of the least documented areas of violent crime. The purpose of this study was to develop cost estimates to assess the magnitude of juvenile violence in Pennsylvania in terms of both victimizations and perpetrators. Our study is the first to address 4 critical questions. First, how large a share of violence is juvenile violence? Second, is the juvenile violence problem primarily a problem of violence by juveniles or of violence against juveniles? Third, is the juvenile violence pattern different in urban and rural areas? Fourth, does the public spend more on victims or on perpetrators of juvenile violence?

Methods. Archival data on the number of violent crimes committed in the state in 1993 were used and adjusted for underreporting. The incidence of juvenile violence has 2 dimensions: 1) juvenile perpetrator violence, which consists of violent crimes committed by juveniles regardless of victim age; and 2) juvenile victim violence, which includes violent crimes committed against juveniles regardless of perpetrator age.

Cost estimates were developed to reflect the costs incurred by society for both victims and perpetrators. Two major categories of costs were computed: 1) victimization costs and 2) perpetrator costs.

Victimization costs of juvenile violence include the costs related to victims of both juvenile perpetrator violence and juvenile victim violence. These costs were computed in 5 categories: 1) medical care costs, 2) future earnings losses, 3) public program costs, 4) property damage and losses, and 5) quality of life losses. Victim costs per violent crime were adapted from national estimates that we broke down by rural/urban location and by victim age. National estimates were multiplied times price and wage adjusters for Pennsylvania. We applied a 2.5% discount rate to adjust future losses extending beyond a year (eg, future work loss, quality of life losses) to their present value.

Perpetrator costs of juvenile crime included the expenditures for juvenile offenders who committed violent crimes against other juveniles and adults. The costs associated with adult perpetrators of violent crimes against juveniles were not studied. The major elements of perpetrator costs were: 1) probation costs, 2) detention costs, 3) residential treatment program costs, 4) alternative placement costs, and 5) incarceration costs.

Results. In 1993, there were 63 500 cases of violence by juveniles against other juveniles, 30 400 cases of violence by juveniles against adults, and 31 300 cases of

adult violence against juveniles. Nearly 9 of 10 violent crimes committed by juveniles and 7 of 10 violent crimes committed against juveniles involved rape or assault. Of the 377 000 estimated violent crimes overall committed in Pennsylvania in 1993, juveniles were 25% of both perpetrators and victims.

For most violent crimes, the largest contributors to national estimates of average total costs per victim were quality of life losses followed by future earnings losses. The absolute level of quality of life and future earnings losses, however, varied considerably across crimes. The quality of life and future earnings losses related to murder and rape were larger for juvenile victims than for adult victims because juveniles suffer larger productivity losses because of their longer expected work lives. Victim age was also related to differences in medical care costs of rape victims because of higher average mental health treatment costs for the juvenile victims.

Estimated total victim costs of all violent crime in Pennsylvania in 1993 exceeded \$11.6 billion. Of this total, juvenile violence accounted for \$5.4 billion of victim costs (47%). Quality of life losses accounted for 83% of total victim costs and future earnings losses accounted for 11%. Including Medicare and Medicaid costs, public programs targeted toward the victims of juvenile violence cost an estimated \$42 million. The victim costs of violence against juveniles (\$4.5 billion) greatly exceeded the victim costs of violence by juveniles (\$2.6 billion).

Most juvenile violence occurred in the urban counties of the state, which together accounted for >72% and nearly 71% of the total violent crimes committed by juveniles and against juveniles, respectively. As with the incidence of violent crime, victim costs were higher in urban counties than in rural ones (\$4.0 billion vs \$1.4 billion), accounting for nearly 75% of total victim costs. In both urban and rural counties, the largest share of victim costs of juvenile violence was for crimes by adults against juveniles; the smallest share was for violent crimes by juveniles against adults. Several violent crimes—rape, assault, and robbery—were more likely to result in physical injury when committed in rural areas.

The estimated total criminal justice costs for perpetrators of juvenile violence in Pennsylvania exceeded \$46 million in 1993. Juvenile treatment program costs accounted for 55% of total perpetrator costs, and probation costs and detention costs ~20% each. Incarceration costs, although large per unit, accounted for only 6% of total costs.

Total public spending on victims and perpetrators of juvenile violence was approximately equal. On a per capita basis, however, spending per known perpetrator was nearly 5 times greater than spending per known victim.

Conclusions. Contrary to recent concerns over rates of violence among juveniles, the results of this study suggest that violence against children and adolescents is a much larger problem than is violence committed by youth. Although incidence data suggest that juveniles are

From *Pacific Institute for Research and Evaluation, Landover, Maryland; and †Owen Graduate School of Management, Vanderbilt University, Nashville, Tennessee.

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Requests for reprints to (T.R.M.) Pacific Institute for Research and Evaluation, 11710 Beltsville Drive, Suite 300, Calverton, MD 20705-3102. E-mail: miller@pire.org

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25% of both victims and perpetrators, our cost estimates show that because of differences in the distributions of youth and adult victims across crimes and the impacts on victims, greater losses are associated with violence against youth than with violence by youth. Although the analysis presented here is based on data from 1993 (when juvenile violence peaked), recently published national crime and injury data suggest that our findings regarding juvenile victim versus juvenile perpetrator violence continue to hold.

The finding that total public spending on victims of juvenile violence roughly equals total spending on juvenile perpetrators of violence is both novel and provocative. Public debate is needed about whether equity in expenditures on victims versus perpetrators is appropriate, as well as the extent to which resources should be directed toward prevention programs (which are not costed here). *Pediatrics* 2001;107(1). URL: <http://www.pediatrics.org/cgi/content/full/107/1/e3>; *juvenile violence, costs, victims, perpetrators*.

ABBREVIATION. NCVS, National Crime Victimization Survey.

Violence is a major public health concern. Violent crime imposes many different kinds of losses both on victims and on society. Among the general population, violent crime can induce fear, anxiety, restriction of activities (eg, not going out at night), and other responses. Victims of violent crime often suffer physical trauma—ranging from minor injury to serious injury to permanent disability to death—as well as emotional and psychological problems. Because of victimization, victims may require medical and mental health care, lose time from work or school, be unable to carry out routine personal and household tasks, and suffer pain and diminished quality of life.

One way to quantify the losses imposed by violent crime is by estimating their costs. In 1996, Miller et al¹ estimated the victim costs of violent crime in the United States to be \$426 billion annually, with approximately \$83 billion in tangible costs (ie, medical costs, lost earnings, and public program costs related to police investigations and victim assistance) plus \$343 billion in intangible losses (ie, pain, suffering, and reduced quality of life). Excluded were criminal justice costs associated with adjudicating cases and incarcerating offenders. Lindgren² estimated that in 1992 total direct expenditures on the criminal justice system were \$94 billion—roughly the same as estimated tangible victim costs.

Violence involving children has been one of the least documented areas of violent crime. To assess the magnitude of juvenile violence at the request of the state legislature, Pennsylvania's Joint State Government Commission examined the incidence and cost of violent crimes by and against juveniles in the state's rural and urban counties during 1993.³ Violent crimes included murder and voluntary manslaughter, rape, robbery, assault, and child abuse and neglect. The analysis estimated costs associated with both victims and perpetrators.

Our study is the first to address 4 critical questions. First, how large a share of violence is juvenile

violence? Second, is the juvenile violence problem primarily a problem of violence by juveniles or of violence against juveniles? Third, is the juvenile violence pattern different in urban and rural areas? Fourth, does the public spend more on victims or perpetrators of juvenile violence?

METHODS

This section summarizes our cost-estimating methods. Details appear in a report to the Pennsylvania legislature³ and in a report to the National Institute of Justice on crime costs in the United States.¹

Incidence of Juvenile Violent Crime

We defined juveniles as people <18 years of age. The incidence of juvenile violence has 2 dimensions: 1) juvenile perpetrator violence, which consists of violent crimes committed by juveniles regardless of victim age; and 2) juvenile victim violence, which includes violent crimes committed against juveniles regardless of perpetrator age. Juvenile violence excludes violent crimes committed by adults against adults.

Estimated total violent crimes (adult and juvenile violence) are based on the actual number of cases reported to state and federal law enforcement authorities and on an estimate of the number of crimes committed that were not reported to authorities. The Federal Bureau of Investigation's Uniform Crime Report⁴ and the Pennsylvania Childline and Abuse Registry⁵ provided data on the number of reported crimes. The 1987–1990 National Crime Victimization Survey (NCVS)⁶ and the 1986 National Incidence Survey on Child Abuse and Neglect⁷ were used to adjust these official crime statistics to account for underreporting. The portion of violent crime committed by juveniles was estimated using a national survey,⁸ Pennsylvania arrest data, and Childline records.

Costs of Violent Crime

The total cost of violent crime includes costs associated with victims and criminal justice costs associated with perpetrators. We did not assess costs incurred for violence prevention programs. We examined costs from the perspective of society, as recommended by the Panel on Cost-Effectiveness in Health and Medicine.⁹ That means we estimated aggregate costs, regardless of who pays them. Societal costs are broader than costs to any individual group, such as victims, insurers, or the state.

Victimization Costs

We computed the victim costs of violent crime overall and separated out the costs associated with juvenile violence, which includes victim costs associated with juvenile perpetrator violence and juvenile victim violence. The costs related to victims of violence were computed in 5 categories.

- Medical care costs included payments for hospitals, physicians, mental health services, rehabilitation, prescriptions, allied health services, and medical devices for victims of violent crime. Also included were coroner costs, funeral expenses, and health insurance claims processing costs.
- Future earnings losses included wages, fringe benefits, and the value of housework lost by crime victims and their families, as well as the value of lost school days. This category also included insurance claims processing costs (eg, processing of life insurance claims for fatalities and Workers' Compensation disability claims for people victimized while working).
- Public program costs included initial police response and follow-up investigation as well as emergency medical transport, victim services, and child protective services. This category excluded mental health services.
- Property damage and losses included the value of property damage and of property taken from victims that is not recovered as well as property insurance claims administration costs that arise in compensating victims' property losses.
- Quality of life losses represented the monetary value of intangible yet real losses suffered by victims including pain, suffering, and reduced quality of life resulting from injury and fear.

For murder victims, quality of life losses were computed from the amount people routinely spend (in dollars or time) to reduce their risk of death and injury. This value of survival has been estimated in more than 50 technically sound "willingness to pay" studies.^{10,11} When lifetime work loss (earnings, fringe benefits, and household production) is subtracted from the value of survival, the residual is the value of pain, suffering, and lost quality of life.

We valued crime survivors' losses caused by pain, suffering, fear, and lost quality of life as the amount a jury would award to compensate each crime victim for these losses.¹² The use of jury awards to estimate intangible costs has been quietly gaining credibility and has been used to value pain and suffering for serious birth defects, assault, rape, medical malpractice, consumer product injury, and burns.¹³⁻¹⁸ In all, some 300 jury awards to rape victims and nearly 1000 jury awards to assault victims were used in regression analyses to estimate intangible losses to surviving victims (based on medical costs, earnings losses, victim demographics, and severity of injury).¹ The basic premise is that pain and suffering to a survivor can be approximated by the difference between the amount of compensatory damages awarded by a jury minus the actual out-of-pocket expenses associated with the injury. This approach assumes that juries will fully and exactly compensate victims for wage losses, medical costs, property damage and losses, and any other out-of-pocket costs incurred by the victim. In using jury awards, we omitted punitive damages and adjustments made by juries because the victim was partially to blame and eliminated "deep pocket" effects (ie, excessively high jury awards to victims suing rich plaintiffs). The pain and suffering component of jury verdicts can be predicted reasonably accurately ($r^2 > .5$ in log-linear regressions).

Victim costs per violent crime were adapted from national estimates that we broke down by rural/urban location and by victim age for this study. The development of cost estimates relied primarily on 2 datasets: the NCVS, which surveys a sample of the US population about victimization and its consequences but reports costs for an average of only 3 months after injury; and a proprietary file from the National Council on Compensation Insurance, which tracks longer-term injury costs by diagnosis for a sample of people suffering disabling workplace injury.¹ These data were supplemented by a survey of mental health providers.¹⁹ National estimates were multiplied times price and wage adjusters for Pennsylvania—the ACCRA all-items and medical Cost of Living Indices (1993–1994) and county-specific wage data from Pennsylvania's Department of Labor and Industry.²⁰ Because money invested now will earn interest until needed, the value of a dollar in a future year is not the same as a dollar today. We applied a 2.5% discount rate to adjust future losses extending beyond a year (eg, future work loss and quality of life losses) to their present value.

Perpetrator Costs

Perpetrator costs of juvenile crime included the expenditures for juvenile offenders who committed violent crimes against other juveniles and adults; the costs associated with adult perpetrators of violent crimes against juveniles were excluded because they fell outside the scope of the legislature's request. Perpetrator costs are incurred as juveniles are arrested for violent crimes and authorities dispose of cases through the juvenile or adult justice system. As juvenile cases move through the system, elements of perpetrator costs are added. We did not include any intangible costs suffered by perpetrators. Although they certainly suffer loss of freedom from incarceration, this is not generally considered a social cost. The major elements of perpetrator costs fell into 5 categories:

- Probation costs included administrative costs, support costs, probation officer salaries and fringe benefits, utility costs, and rental costs. Also included were costs of services provided to juveniles by probation officers: intake, in-home detention, intensive probation services, aftercare, and traditional probation services.
- Detention costs included staff costs and the costs connected with operating detention facilities including medical and food services.
- Residential treatment program costs included the costs of publicly and privately operated institutional, community, and wilderness therapeutic programs.

- Alternative placement costs included the costs of therapeutic programs, such as day treatment and outpatient counseling, as well as electronic monitoring and purchased intensive probation services.
- Incarceration costs included incarceration of juveniles in adult correctional facilities.

Juvenile perpetrator costs per violent crime were estimated using data from the Pennsylvania Juvenile Court Judges' Commission²¹⁻²³; the Pennsylvania Department of Public Welfare's Office of Children, Youth, and Family; and the Pennsylvania Commission on Crime and Delinquency.²⁴

RESULTS

In 1993, an estimated 93 900 violent crimes were committed by juveniles in Pennsylvania: 100 murders and manslaughters (<1% of the total violent crimes committed by juveniles), 13 500 rapes (14%), 9100 robberies (10%), 69 600 assaults (74%), and 1600 acts of child abuse (2%). An estimated total of 94 700 violent crimes were committed against juveniles in Pennsylvania: 100 murders and manslaughters (<1% of the total violent crimes committed against juveniles), 21 200 rapes (22%), 8900 robberies (10%), 46 600 assaults (49%), and 17 900 acts of child abuse (19%). There were 63 500 cases of violence by juveniles against other juveniles, 30 400 cases of violence by juveniles against adults, and 31 300 cases of adult violence against juveniles. Nearly 9 of 10 violent crimes committed by juveniles and 7 of 10 violent crimes committed against juveniles involved rape or assault. Of the 377 000 estimated violent crimes overall committed in Pennsylvania in 1993, juveniles were 25% of both perpetrators and victims.

To facilitate adaptation of our method to other states, Table 1 shows the estimated average costs per victim of juvenile violence in the United States. These national estimates were used to derive the Pennsylvania costs by applying price adjusters to them. These costs and the state costs derived from them varied considerably by cost category, type of crime, urban/rural residence, and victim age. For most crimes, the largest contributors to average total costs were quality of life losses followed by future earnings losses. The absolute level of quality of life and future earnings losses, however, varied substantially across crimes. For murder, costs for both quality of life and future earnings losses were valued in the millions of dollars; for rape, hundreds of thousands and thousands of dollars, respectively; and, for assault, thousands and hundreds of dollars, respectively. The quality of life and future earnings losses related to murder and rape were larger for juvenile victims than for adult victims because juveniles suffer larger productivity losses because of their longer expected work lives. Victim age was also related to differences in medical care costs of rape victims because of the higher mental health treatment costs for juvenile victims.

Table 2 shows the estimated total victim costs of all violent crime in Pennsylvania for 1993. For all victimizations, these costs exceeded \$11.6 billion. Of this total, juvenile violence accounted for \$5.4 billion (47%) of victim costs. Quality of life losses accounted for 83% of total victim costs of juvenile violence, and future earnings losses accounted for 11%. Including

TABLE 1. Estimated Average Cost Per Victim of Juvenile Violence, by Cost Element, Type of Crime, Urban/Rural Residence, and Age of Victim—United States, 1993

Type of Crime	Medical Care Costs	Future Earnings Losses	Public Program Costs	Property Damages and Losses	Quality of Life Losses	Total*
Urban						
Murder						
<18 y old	\$21 088	\$1 830 962	\$1695	\$100	\$2 333 514	\$4 187 359
18 y and older	\$21 088	\$1 489 001	\$1695	\$100	\$1 952 288	\$3 464 172
Rape						
<18 y old	\$5141	\$4513	\$60	\$39	\$101 307	\$111 060
18 y and older	\$1338	\$3144	\$60	\$39	\$79 037	\$83 617
Robbery						
<18 y old	\$421	\$1270	\$159	\$652	\$5715	\$8217
18 y and older	\$421	\$1270	\$159	\$652	\$5715	\$8217
Assaults						
<18 y old	\$277	\$780	\$107	\$21	\$7331	\$8515
18 y and older	\$283	\$788	\$107	\$21	\$7042	\$8240
Sexual abuse						
<18 y old	\$6360	\$2041	\$1174	\$0	\$96 698	\$106 272
Physical abuse						
<18 y old	\$3472	\$5219	\$2086	\$21	\$61 637	\$72 434
Rural						
Murder						
<18 y old	\$21 088	\$1 736 521	\$1695	\$223	\$2 572 318	\$4 331 844
18 y and older	\$21 088	\$1 331 920	\$1695	\$223	\$1 606 921	\$2 961 846
Rape						
<18 y old	\$4975	\$2154	\$73	\$401	\$89 815	\$97 419
18 y and older	\$1173	\$1155	\$73	\$401	\$70 117	\$72 920
Robbery						
<18 y old	\$545	\$1146	\$165	\$1502	\$5920	\$9278
18 y and older	\$545	\$1146	\$165	\$1502	\$5920	\$9278
Assaults						
<18 y old	\$655	\$1918	\$100	\$30	\$8173	\$10 875
18 y and older	\$661	\$1596	\$100	\$30	\$7571	\$9957
Sexual abuse						
<18 y old	\$6195	\$2041	\$1174	\$0	\$85 738	\$95 147
Physical abuse						
<18 y old	\$3472	\$5254	\$2086	\$30	\$46 677	\$57 519
Urban or rural (No data available on differences for injuries or their consequences)						
Mental abuse						
<18 y old	\$2683	\$905	\$2082	\$0	\$21 099	\$26 769
Serious physical neglect						
<18 y old	\$911	\$40	\$837	\$0	\$7903	\$9691

* Because of rounding, detail may not sum to totals.

Medicare and Medicaid costs, public programs targeted toward the victims of juvenile violence cost an estimated \$42 million.

The victim costs of violence against juveniles (\$4.5 billion) greatly exceeded the victim cost of violence by juveniles (\$2.6 billion). This difference in victimization costs results primarily because of differences in the nature and severity of injuries suffered by victims, particularly the greater frequency of sexual assault violence against juveniles relative to adults. Because, on average, sexual assault has more severe psychological consequences for youth, juvenile rape cases tend to have higher medical care costs for treatment of victims and greater losses in quality of life and future earnings.

Most juvenile violence occurred in the urban counties of the state, which together accounted for >72% and nearly 71% of the total violent crimes committed by juveniles and against juveniles, respectively. For costs of juvenile violent crime, county-level estimates were made for victim costs. As with the incidence of violent crime, victim costs were higher in urban counties than in rural ones (\$4.0 billion vs \$1.4 billion), accounting for nearly 75% of total victim costs.

Figure 1 shows the magnitude of juvenile violence

relative to overall violent crime in urban and rural Pennsylvania. In both urban and rural counties, the largest share of victim costs of juvenile violence was for crimes by adults against juveniles (28% and 23% in rural and urban areas, respectively). The smallest share was for violent crimes by juveniles against adults. In urban counties, 45% of victim costs of violence involve a juvenile. Involvement of juveniles was higher (50%) in rural counties. Juvenile victims accounted for 36% of urban violence and 45% of rural violence costs. Juvenile perpetrators accounted for 22% of victim costs in urban and rural counties.

Criminal justice costs associated with perpetrators were assessed for the state as a whole. Table 3 shows the estimated average cost per perpetrator of juvenile violence by type of cost, unit cost, and total cost. In terms of unit cost, the 2 largest perpetrator cost elements were juvenile placements in treatment programs and juvenile incarcerations in adult prisons. The average cost per placement was higher for state residential programs than for private residential or private community programs; the average cost per juvenile incarceration in an adult prison was higher for state prisons than for county prisons.

The estimated total criminal justice costs for per-

TABLE 2. Total Victim Costs of Violent Crime by Cost Category, Victim and Perpetrator Age Groups, and Urban/Rural Location—Pennsylvania, 1993 (in Millions of Dollars)*

	Medical Care	Future Earnings	Public Programs	Property Loss	Quality of Life	Total†
Juvenile victimization by juveniles <18 y old						
Rural	\$25	\$39	\$3	\$2	\$415	\$484
Urban	\$52	\$95	\$7	\$7	\$1023	\$1184
Adult victimization by juveniles						
Rural	\$6	\$26	\$1	\$1	\$121	\$155
Urban	\$12	\$175	\$3	\$1	\$570	\$761
Juvenile victimization by adults						
Rural	\$41	\$53	\$8	\$2	\$699	\$803
Urban	\$91	\$227	\$20	\$1	\$1687	\$2026
Subtotal juvenile violence						\$5413
Adult victimization by adults						
Rural	\$45	\$239	\$5	\$7	\$1118	\$1414
Urban	\$88	\$1199	\$16	\$25	\$3456	\$4784
Total juvenile and adult violence						\$11 611
All victimization						
Rural	\$117	\$357	\$17	\$12	\$2352	\$2855
Urban	\$244	\$1696	\$46	\$34	\$6736	\$8756
Total						\$11 611

* Source: estimated by the Pacific Institute for Research and Evaluation.

† Figures do not always sum because of rounding.

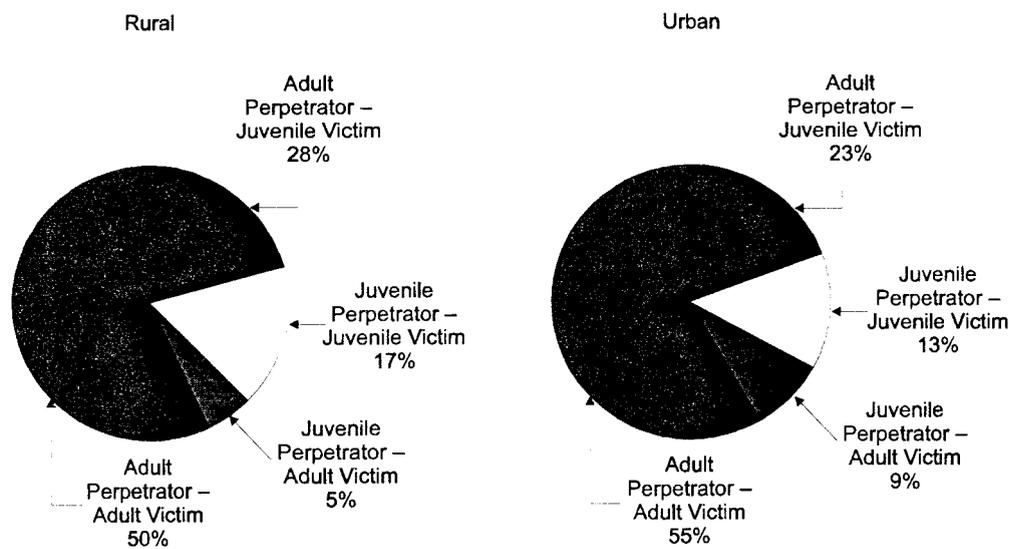


Fig 1. Victim costs of violent crime in urban and rural Pennsylvania by perpetrator and victim age group

TABLE 3. Unit and Total Costs and Case Counts for Perpetrators of Juvenile Violence—Pennsylvania, 1993

Type of Cost	Unit	Unit Cost	Total Cost	% of Total
Probation costs	5133 referrals	\$1635	\$8 392 000	18
Detention costs	3708 admissions	\$2495	\$9 251 000	20
Juvenile treatment program costs	678 placements	\$37 368	\$25 335 000	55
Private residential programs	396 placements	\$33 107		
State residential programs	174 placements	\$49 234		
Private community programs	108 placements	\$33 870		
Alternate juvenile treatment program costs				
Private community			\$500 000	1
Adult incarceration costs			\$2 762 000	6
State prisons	56 placements	\$20 075		
County prisons	102 placements	\$16 060		
Grand total			\$46 240 000	100

perpetrators of juvenile violence in Pennsylvania exceeded \$46 million in 1993. Table 3 shows that juvenile treatment program costs accounted for 55% of total perpetrator costs, and probation costs and de-

tention costs accounted for ~20% each. Incarceration costs, although large per unit, accounted for only 6% of total perpetrator cost.

Estimated public spending on juvenile perpetra-

tors of violent crimes (\$46 million) was approximately equal to the public spending on victims of juvenile violence (\$42 million). Public spending on victims pays for medical, emergency, child protective, and victim services. On a per capita basis, the \$8000 spent per apprehended juvenile perpetrator was substantially greater than the \$1700 spent per victim of juvenile violence who was reported to the authorities.

DISCUSSION

Although this study helps to quantify the impact of juvenile violent crime, several limitations must be kept in mind. First, to some extent the data (eg, reported crimes in Pennsylvania, perpetrator costs) are based on a single, large, and heavily industrialized state in the eastern part of the United States. Therefore, caution must be used in extrapolating these findings to other areas of the country where demographic, economic, and social influences may differ dramatically from those in Pennsylvania. In contrast, much of the data used to generate these estimates (eg, the adjustments for underreporting of crimes, victim costs) are necessarily national in scope and, thus, are not tailored to the particular demographics of the state. For example, except for price adjustments, the cost per crime incident (and, hence, the seriousness of the typical offense within each offense type) was assumed to be the same throughout the United States. We were not able to adjust these figures to account for the fact that some states might have more violent assaults or a higher frequency of gunshots, etc.

Second, differences in the willingness to report certain crimes may lead to a greater underestimation of violent crime when the victim is a juvenile. For instance, NCVS data show that child rape is reported to authorities less often than adult rape. Families may try to protect a daughter more often by hiding her rape than they would if an adult woman were a rape victim. Juveniles are probably also more frequently the victims of rape by a date or by an acquaintance. In these circumstances, the rapist often pressures the victim to keep the incident a secret. Children and adolescents are more likely to be manipulated by the threats of an attacker than are adult victims.

Third, our measure of intangible (pain, suffering, and lost quality of life) costs is based on a combination of willingness to pay to reduce the risk of death and jury awards to compensate victims of nonfatal crimes. For purposes of policy analysis, the more appropriate measure would be willingness to pay, because this is a measure of how much society will pay to reduce crime. In theory, the use of jury award data results in a higher cost estimate for intangible losses.²⁵ If one is interested in only the out-of-pocket costs to victims or taxpayers, intangible costs should not be included. However, these are real losses because potential victims and taxpayers, in general, are willing to pay real money to avoid them. Thus, when comparing differing government programs, including intangible costs across the board will provide a meaningful comparison.

Despite these issues, this analysis of the estimated victim and perpetrator costs does much to illuminate the issue of juvenile violence. In contrast with recent concerns over rates of violence among juveniles, the results of this study suggest that violence against children and adolescents is a much larger problem than violence committed by youth. Although incidence data suggest that juveniles are 25% of both victims and perpetrators, our cost estimates show that because of differences in the distributions of youth and adult victims across crimes and the impacts on victims, there are greater losses associated with violence against youth than with violence by youth. Some adult violence against juveniles occurs very early in life as in cases of child abuse. Violence directed at or witnessed by children can serve to create not only current victims of violence, but also future perpetrators as juveniles later model the behavior they have learned as normative.²⁶

Although the analysis presented here is based on data from 1993 (when juvenile violence peaked), there is good reason to believe that our findings regarding juvenile victim versus juvenile perpetrator violence continue to hold. For example, national estimates for 1996 indicate that ~25% of medically treated assault victims were youth 0 to 19 years of age, as were >50% of rape victims (data on 0 to 17-year-olds only not available). These estimates combined suggest that youth 0 to 19 years of age comprised more than one third of intentional injury victims.²⁷⁻²⁸ Thus, the Pennsylvania data for 1993 may understate the current share of violence perpetrated against youth. Other support for this notion comes from the NCVS,²⁹ which found that from 1993 to 1997, violent victimizations by youth dropped more than adult perpetrated crime in each of the 3 individual offense categories in the serious violence group of the NCVS: robberies (37% vs 22%), aggravated assault (30% vs 25%), and violent sexual assaults (45% vs 37%). The number of youth victimized by adults, therefore, probably exceeds the number of adults victimized by youth.

Not surprisingly, we found that rural areas are safer with respect to violence compared with urban areas. The analysis quantifies this risk. Victim costs associated with violent crime are nearly twice as high in urban areas (\$1150 vs \$650 per capita when rural/urban price differences are eliminated). In addition to a higher incidence of violent crimes in urban areas, these estimates reflect differences in injury probability and severity.

Nationally, although both the incidence and the cost of violence are higher in urban areas, violent crimes are more likely to result in physical injury in rural areas. Rural rapes are more likely than urban rapes to involve physical injury but are less likely to damage a victim's property. Urban robberies are less likely to leave victims physically injured and tend to involve much less money and property loss, perhaps because many of them occur in low-income areas and are street crimes. Similarly, assaults are substantially more likely to involve physical injury in rural than in urban areas. Assaults, however, are 1.7 times more likely to be fatal in urban areas.

The finding that total public spending on victim services roughly equals total spending on juvenile perpetrators of violence is both novel and provocative. The obvious, yet unanswered, question is whether equity in total costs is an appropriate balance. Another issue is the extent that resources should be directed toward the third category—prevention programs—which we have not included here. Determining the appropriate balance among care of victims, perpetrators, and prevention of future victimizations requires exploring both unmet needs and public priorities in the face of scarce resources.

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