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Series: Study Group on the Transitions between Juvenile Delinquency
and Adult Crime

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Series: Study Group on the Transitions Between Juvenile Delinquency and
Adult Crime

BULLETIN 6: CHANGING LIVES:
PREVENTION AND INTERVENTION TO REDUCE SERIOUS OFFENDING

Brandon C. Welsh, Mark W. Lipsey, Frederick P. Rivara, J. David Hawkins, Steve Aos,
Meghan E. Peel, and David Petechuk

Decades of rigorous study have revealed much about risk factors for delinquency and later criminal offending. These studies have found factors in neighborhoods and communities, families, schools, and peer groups, as well as characteristics of individuals themselves, that increase the probability of offending. They have also demonstrated that many of the same factors predict substance abuse, teenage pregnancy, dropping out of school, and other behavior problems during adolescence and young adulthood (Rutter et al., 1998; Howell, 2009). Because they predict future criminal behavior among those not yet involved in crime, risk factors are potential targets for prevention and intervention programs. No less important, longitudinal studies have also identified protective factors that inhibit the development of criminal behavior, the misuse of drugs, and other risky behaviors of adolescents and young adults (Catalano et al., 2005; Loeber et al., 2008).

There is also a growing body of high-quality scientific evidence on the effectiveness of prevention and intervention programs that address risk factors (and in some cases protective factors). Randomized controlled trials and rigorous quasi-

experimental comparison group studies have shown that many such programs have positive effects on subsequent offending and a range of other outcomes (Farrington & Welsh, 2007; Greenwood, 2006; Lipsey & Cullen, 2007). Moreover, prevention scientists have used this evolving knowledge to design new and better interventions aimed at criminal and delinquent behavior. Ample evidence now supports the conclusion that various programs at different targeting levels – universal (for whole populations), selected (for selected populations of at-risk youth), and indicated (for delinquent youth) – are effective for preventing or reducing subsequent criminal behavior (Catalano, 2007).

These prevention and intervention programs and research on their effectiveness largely divide along the same lines as the juvenile and criminal justice systems. Programs are targeted either at juveniles (typically defined as under age 18) or adults, and they are evaluated by assessing the effects on later offending during the juvenile or adult years, respectively. Much less is known about the effectiveness of prevention and intervention modalities that are targeted at the important transitional stage from adolescence to early adulthood, a stage that holds important implications for the prevention of persistence, encouragement of desistance, prevention of adult-onset offending, and prevention of escalation of criminal offending.

This bulletin reviews effective prevention and intervention programs intended to reduce serious offending in early adulthood. Specifically, this bulletin assesses:

- Programs implemented during the later juvenile years (ages 15-17) that have measured the impact on offending in early adulthood (ages 18-29).
- Programs implemented in early adulthood that have measured the impact on offending up to age 29.

- Programs implemented in early childhood that have measured the impact on offending in early adulthood.
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SIDEBAR

Methodology

The vast majority of prevention and intervention programs have not been evaluated adequately. This bulletin focuses on the highest quality research studies (i.e., randomized experiments and non-randomized quasi-experiments that establish equivalence between groups), as well as the most rigorous research reviews (i.e., systematic and meta-analytic reviews). Further, inclusion of evaluation studies was restricted to those with a sample size of no less than 50 individuals and an outcome measure of criminal offending (for example, a program would not be included if it only had outcome measures of risk factors).

Systematic reviews and meta-analyses are the most rigorous methods for assessing effectiveness. A meta-analysis involves the statistical or quantitative analysis of the results of prior research studies (Lipsey & Wilson, 2001). Since these studies involve the statistical summary of data (in particular, effect sizes). They require a reasonable number of intervention studies that are sufficiently similar to be grouped together. When there is sufficient diversity in the settings, participants, and methods used in those studies, meta-analysis can yield important conclusions about the external validity (i.e., generalizability) of findings about program effects as well as summarizing their average effects.

Family

Family-based prevention and intervention programs target risk factors for offending that are associated with the family, such as poor child rearing, poor supervision, and inconsistent or harsh discipline. Broadly speaking, family-based prevention programs have developed along the lines of two major fields: psychology and public health. When delivered by psychologists, these programs are often classified into parent management training, functional family therapy, or family preservation (Wasserman & Miller, 1998). Typically, they attempt to change the social contingencies in the family environment so that children are rewarded in some way for appropriate or prosocial behaviors and punished in some way for inappropriate or antisocial behaviors. Family-based programs delivered by health professionals such as nurses are typically less behavioral, mainly providing advice and guidance to parents or general parent education. More often this type of family prevention is provided during pregnancy or early infancy.

Early family prevention

Farrington and Welsh (2007) and Piquero et al. (2009) found that early parent education – in the context of home visitation – and parent management training (PMT) are effective intervention modalities for preventing offending in the juvenile years. Only two early family-based prevention programs have measured the impact on offending in early adulthood. Long et al. (1994) evaluated a PMT program, tracking their experimental children for 14 years after completion of the program. Seventy-three young children (between ages 2 and 7) referred to the researcher's clinic for noncompliance (to

parent requests) and their mothers were randomly allocated to an experimental group that received PMT or to a control group that received no services. Over eight to ten sessions, mothers were taught to attend to and reward appropriate behavior and to use clear commands and time-out for noncompliance. At the completion of treatment, children in the experimental group, compared to the controls, were less likely to exhibit “deviant” behavior and were more compliant.

At the latest follow-up of 26 experimental group participants (from the original 47 in this condition) when they were between ages 16 and 21, Long et al. found that they were similar on delinquency, emotional adjustment, and academic progress compared to controls retrospectively matched on age, gender, ethnicity, and family socioeconomic status. A new control group, comprising 26 young adults, was used as the basis of comparison, presumably because the researchers did not have follow-up data for the original controls.

The best known home visiting program, and the only one with a direct measure of delinquency, is the Nurse-Family Partnership (NFP) initially carried out in Elmira, New York (see Olds et al., 2007). Four hundred first-time mothers were randomly assigned to receive home visits from nurses during pregnancy, or to receive visits both during pregnancy and during the first two years of their child’s life, or to a control group who received no visits. Each visit lasted just over one hour, and the mothers were visited on average every two weeks. The home visitors gave advice about prenatal and postnatal care of the child, infant development, and the importance of proper nutrition and avoiding smoking and drinking during pregnancy.

Results showed that postnatal home visits caused a significant decrease in recorded child physical abuse and neglect during the first two years of the child's life, especially by poor, unmarried, teenage mothers (Olds et al., 1986). In a 15-year follow-up, significantly fewer experimental compared to control group mothers were identified as perpetrators of child abuse and neglect (Olds et al., 1997). At age 15, children of the higher risk mothers who received home visits incurred significantly fewer arrests than controls (Olds et al., 1998). In the latest follow-up at age 19, compared to their control counterparts, girls of the full sample of mothers had incurred significantly fewer arrests and convictions and girls of the higher risk mothers had significantly fewer children of their own and less Medicaid use; few program effects were observed for boys (Eckenrode et al., 2010).

Family interventions for adjudicated delinquents

Greenwood (2006) identified three effective family interventions for adjudicated delinquents that operate outside of the justice system: multisystemic therapy (MST), functional family therapy (FFT), and multidimensional treatment foster care (MTFC).

Multisystemic therapy

MST is a multi-modal intervention designed for serious juvenile offenders (Henggeler et al., 1998). The particular type of treatment may include individual, family, peer, school, and community interventions (including parent training and skills training); more often, though, it is referred to as a family-based treatment. Three unique MST evaluations have measured the impact on offending in early adulthood.

Henggeler et al. (2002) carried out a long-term follow-up of a randomized experiment of MST versus usual community services (UCS) for 118 substance-abusing

juvenile offenders. The mean age at treatment was 15.7 and the mean age at follow-up was 19.6. Compared to those who received UCS, MST participants had significantly lower yearly conviction rates for aggressive criminal activity (0.15 vs. 0.57), but not for property crimes. Treatment effects on long-term illicit drug use were mixed, with biological measures indicating significantly higher rates of marijuana abstinence for MST participants (55% vs. 28%), but no effect on cocaine use.

Schaeffer and Borduin (2005) carried out a long-term follow-up of a randomized experiment of MST versus individual therapy (IT) for 176 serious and violent juvenile offenders. The mean age at treatment was 13.7 and the mean age at follow-up was 28.8. Compared to those who received IT, MST participants had significantly lower recidivism rates (50% vs. 81%), including lower rates of rearrest for violent offenses (14% vs. 30%). MST participants also had 54% fewer arrests and 57% fewer days of confinement in adult detention facilities. Desirable results were also found in a later follow-up.

Borduin et al. (2009) carried out another long-term follow-up of a randomized experiment of MST versus UCS for 48 high-risk juvenile sex offenders. The mean age at treatment was 14 and the mean age at follow-up was 22.9. Compared to those who received UCS, MST participants reported lower recidivism rates for sexual (8% vs. 46%) and nonsexual (29% vs. 58%) crimes. MST participants also had 70% fewer arrests for all crimes and spent 80% fewer days in detention facilities compared to UCS participants.

Functional Family Therapy

FFT involves modifying patterns of family interaction – by modeling, prompting, and reinforcement – to encourage clear communication of requests and solutions between family members, and to minimize conflict (Alexander & Parsons, 1973). Gordon et al.

(1995) carried out a long-term follow-up of an experiment on FFT compared to probation services for 54 juvenile offenders. The mean age at treatment was 15.4 for the experimental group and 15.3 for the control group. Most of the experimental and control group members were between the ages of 20 and 22 at follow-up. FFT participants reported a lower rate of rearrests compared to their control counterparts (9% vs. 41%).

Multidimensional Treatment Foster Care

MTFC involves individual-focused therapeutic care (e.g., building problem solving skills) for adolescents in an alternative, non-correctional environment (foster care) and parent management training (Chamberlain & Reid, 1998).

Chamberlain et al. (2007) carried out a short-term follow-up of a randomized experiment on MTFC compared to group care for 81 serious and chronic female juvenile offenders. The age at treatment was between 13 and 17, and the age at follow-up was between 15 and 19. Analyses showed that MTFC was more effective than group care, as measured by days in locked settings, number of criminal referrals, and self-reported delinquency. Further analyses revealed that older MTFC participants exhibited less delinquency relative to younger participants in both conditions.

Eddy et al. (2004) carried out a two-year follow-up of a randomized experiment of MTFC compared to services-as-usual group home care for 79 adolescent males under the control of the juvenile justice system. The age at treatment was between 12 and 17 (mean age 14.9) and the age at follow-up was between 16 and 19 (mean age 16.9). MTFC was significantly more effective than group home care, as measured by referrals for violent offending and self-reports of violent behavior. Twenty-four percent of the group home care condition had two or more criminal referrals for violent offenses compared to

only five percent in the MTFC condition. Rates of self-reported violent offending were four to nine times higher among group home care participants compared to those who received MTFC.

School

Schools are a critical social context for crime prevention efforts from the early to later grades (Elliott et al., 1998). According to Gottfredson et al. (2002, p. 149), “students who are impulsive, are weakly attached to their schools, have little commitment to achieving educational goals, and whose moral beliefs in the validity of conventional rules for behavior are weak are more likely to engage in crime than those who do not possess these characteristics.” The school’s role in influencing these risk factors and preventing offending in both school and the wider community (the focus here) differs from situational and administrative measures taken to make the school a safer place (e.g., through metal detectors, police in school, or video surveillance cameras). (See sidebar “The Situational Context of Criminal Events.”)

The meta-analyses of Wilson et al. (2001) and Gottfredson et al. (2006) identified four school interventions that were effective in preventing delinquency among youths in middle school and high school: school and discipline management, classroom or instructional management, reorganization of grades or classes, and increasing self-control or social competency with cognitive behavioral or behavioral instructional methods. In a meta-analysis of school-based psychosocial prevention programs and their effects on aggressive and disruptive behavior, Wilson and Lipsey (2007) found that the most effective approaches (across all ages) were universal programs and targeted programs for selected and indicated children. Only three school-based prevention programs have

measured the impact on offending in early adulthood, and each one of these began in the early grades.

The Seattle Social Development Project (Hawkins et al., 1991) is a multi-component program combining parent training, teacher training, and skills training for children. About 500 first grade children (aged 6) in 21 classes were randomly assigned to experimental or control classes in the original study. Parents and teachers in the experimental classes received instruction in methods of child management and instruction, which were designed to increase children's attachment to their parents and their bonding to school, based on the assumption that delinquency is inhibited by the strength of social bonds. The children also were trained in interpersonal cognitive problem-solving. Their parents were trained to notice and reinforce socially desirable behavior in a program called "Catch Them Being Good." Their teachers were trained in classroom management, for example, to establish rules and routines at the beginning of the school year, provide children with clear instructions and expectations, reward children for participation in desired behavior, use methods least disruptive to instruction to maintain order in the classroom, and teach children prosocial methods of solving problems.

In a follow-up of participants at age 18, Hawkins et al. (1999) found that the full intervention group who received the intervention from grades 1-6 reported significantly less violence, less alcohol abuse, and fewer sexual partners than a late intervention group (grades 5-6 only) or controls. In the latest follow-up, which included 93% of the original sample, Hawkins et al. (2008b) found that the full intervention group (compared to the comparison groups) reported significantly better educational and economic attainment,

mental health, and sexual health by age 27, but no effects were found for substance abuse or criminal activity at ages 24 or 27.

The Montreal Longitudinal-Experimental Study (Tremblay et al., 1992) is also a multi-component program that combines skills training, parent training, and teacher support. Beginning with a large sample of disruptive (aggressive/hyperactive) six-year-olds from low socioeconomic neighborhoods in Montreal, the researchers randomly allocated 250 to experimental or control conditions. Between ages seven and nine, the experimental group received training to foster social skills and self-control. Coaching, peer modeling, role playing, and reinforcement contingencies were used in small group sessions at school on topics such as “how to help,” “what to do when you are angry,” and “how to react to teasing.” Also, parents were trained using the parent management training techniques developed by Patterson (1982). They were taught how to provide positive reinforcement for desirable behavior, to use non-punitive and consistent discipline practices, and to develop family crisis management techniques.

By age 12 (3 years after the end of treatment), the experimental boys committed significantly less burglary and theft and were significantly less likely to get drunk or to be involved in fights than the controls. Also, the experimental boys had significantly higher school achievement (Tremblay et al., 1992). At every age from 10 to 15, the experimental boys had significantly lower self-reported delinquency scores than the control boys. Interestingly, the differences in delinquency between experimental and control boys increased as the follow-up progressed. However, the experimental boys were only slightly less likely to have a juvenile court record up to age 15 (7% compared with 9% of the controls). The experimental boys were also less likely to be gang members, to get

drunk, or take drugs, but they were not significantly different from the controls on having sexual intercourse by age 15 (Tremblay et al., 1995, 1996).

In the latest follow-up when the study participants were aged 24, Boisjoli et al. (2007) conducted criminal record searches of all 250 of the original participants. They found that those in the experimental group were less likely to have a criminal record than their control counterparts (22% compared with 33%).

The final school-based prevention program is the Good Behavior Game (GBG; Kellam & Rebok, 1992). It uses a universal classroom behavior management strategy to foster learning by teaching children to regulate their own and their classmates' behavior. Teachers are trained in the curriculum and receive supportive monitoring throughout the school year. In an experimental study in 19 urban elementary schools in Baltimore, Maryland, first grade students were randomly assigned to heterogeneous groups that included equal numbers of aggressive and disruptive children. While GBG was in progress, teachers monitored the behavior of students in each group. Misbehavior of any student in a group resulted in a check mark being placed on the chalkboard for that group. At the end of the session, groups with fewer than five check marks received a reward. At the beginning of the program, game sessions were announced and tangible rewards (e.g., stickers) were given immediately following the session. As the program became more familiar to students, sessions started unannounced and less tangible rewards were given (e.g., extended recess). In addition, the time between the session and the granting of rewards was extended. The program lasted for two years in the first and second grades.

After one year, experimental students were rated as less aggressive and shy than control students by teachers and peers. The program's positive effects were most evident

among students rated as highly aggressive at baseline. The positive effects of the intervention were maintained through sixth grade for boys with the highest baseline ratings of aggression at first grade entry (Kellam et al., 1994).

In a long-term follow-up when study participants were between ages 19 and 21, Kellam et al. (2008) and Petras et al. (2008) assessed program effects on a range of important life-course outcomes. Significant reductions in rates of violent and criminal behavior were found among males in the highest risk group compared to their control counterparts (34% vs. 50%). Also, significant reductions in rates of drug abuse/dependence disorders were found among males overall (19% vs. 38%) and in the highest risk group (29% vs. 68%) compared to their control counterparts.

Peers and community

Peer-focused programs recognize that association with friends who engage in delinquent behavior or drug use is one of the strongest risk factors for these behaviors. Peer-focused programs to prevent offending are ostensibly designed with two related aims: to reduce the influence of delinquent friends and increase the influence of prosocial friends. Farrington and Welsh (2007) found that there are no outstanding examples of effective intervention programs for delinquency and later offending based on peer risk factors. The most hopeful programs involve using high-status conventional peers to teach children ways of resisting peer pressure, which have been effective in reducing drug use (Tobler et al., 1999).

The most important prevention program whose success seems to be based mainly on reducing peer risk factors is the Children at Risk program (Harrell et al., 1999), which

targeted high-risk adolescents (average age 12) in poor neighborhoods of five U.S. cities. Eligible youths were identified in schools and randomly assigned to experimental or control conditions. Initial results were disappointing (Harrell et al., 1997), but a one-year follow-up showed that, according to self-reports, experimental youths were less likely to have committed violent crimes and used or sold drugs (Harrell et al., 1999).

Community-based prevention covers a wide array of programs, including after-school, mentoring, and youth and resident groups. These programs hold wide appeal among the public and political leaders alike, but are often among the first programs to lose funding in times of federal or state budget cuts (Butterfield, 2003). As a result, researchers have difficulty acquiring data to determine the effectiveness of community-based prevention programs.

Gottfredson et al. (2004) concluded that there is insufficient evidence to support claims that after-school programs are effective in preventing delinquency or other problem behaviors, but those that “involve a heavy dose of social competency skill development ... may reduce problem behavior” (p. 256). Jolliffe and Farrington’s (2008) systematic review and meta-analysis of 18 mentoring programs found that this approach to be effective in preventing delinquency. The average effect across the studies corresponded to a significant 10% reduction in offending. The authors found that mentoring was more effective in reducing offending when the average duration of each contact between mentor and mentee was greater, in smaller scale studies, and when mentoring was combined with other interventions. No studies included in these reviews or others have measured the impact on offending in the early adult years.

Communities That Care (CTC) and other comprehensive community initiatives bring together key stakeholders to target a range of risk factors with programs that have demonstrated effectiveness in preventing delinquency, substance abuse, and serious offending. Findings from a large-scale randomized controlled trial involving 24 communities in seven U.S. states and more than 4,400 students show that CTC reduces targeted risk factors and delinquent behavior community-wide (Hawkins et al., 2008a, 2009). Specifically, the initiation of delinquent behavior, alcohol use, cigarette use, and smokeless tobacco use was significantly reduced in CTC compared with control communities between grades 5 and 8. In grade 8, the prevalence of alcohol and smokeless tobacco use in the last 30 days, the prevalence of binge drinking in the past two weeks, and the number of different delinquent behaviors committed in the past year in grade 8 were significantly lower in CTC communities than in control communities. However, at this time, there are no known community-based prevention programs with follow-ups of offending outcomes in early adulthood.

Individual

Individual-based prevention programs target individual-level risk factors for offending and are implemented in early childhood, adolescence, and early adulthood. In early childhood, preschool intellectual enrichment programs are relevant. In early and later childhood, social skills training or social competence programs, which generally target the risk factors of impulsivity, low empathy, and self-centeredness, have been used. Substance abuse and mental health are two transition issues of special relevance to ex-offenders in early adulthood. Individual-level support includes mental health services and

substance abuse treatment. Few studies in these areas have measured the impact on offending in early adulthood. Indeed, only in the case of preschool intellectual enrichment programs are there some evaluations with long-term follow-ups on offending.

Preschool intellectual enrichment programs generally target the risk factors of low intelligence and attainment. As noted by Duncan and Magnuson (2004, p. 105): “Child-focused early-education intervention programs are designed to provide economically disadvantaged children with cognitively stimulating and enriching experiences that their parents are unlikely to provide at home.” Improved cognitive skills, school readiness, and social and emotional development are the main goals (Currie, 2001).

Three preschool programs have measured the impact on offending in early adulthood: the Perry Preschool, the Child-Parent Center program in Chicago, and the Carolina Abecedarian Project. In the Perry Preschool project, carried out in Ypsilanti, Michigan, 123 children were allocated (approximately at random) to experimental and control groups. The experimental children attended a daily preschool program, backed up by weekly home visits, usually lasting two years when children were between ages 3 and 4. The aim of the “plan-do-review” program was to provide intellectual stimulation, to increase thinking and reasoning abilities, and to increase later school achievement (Schweinhart & Weikart, 1980).

This program had long-term benefits. Berrueta-Clement and colleagues (1984) showed that, at age 19, the experimental group was more likely to be employed, to have graduated from high school, and to have received college or vocational training, while being less likely to have been arrested. By age 27, the experimental group had accumulated only half as many arrests as the controls – an average of 2.3 compared to 4.6

arrests (Schweinhart et al., 1993). Also, they were more likely to have graduated from high school, had significantly higher earnings, and more likely to be homeowners. More of the experimental women were married, and fewer of their children were born out of wedlock.

The most recent follow-up, which included 91% of the original sample at age 40, found that the program continued to make an important difference in participants' lives (Schweinhart et al., 2005). Compared to the control group, program group members had significantly fewer lifetime arrests for violent crimes (32% vs. 48%), property crimes (36% vs. 58%), and drug crimes (14% vs. 34%), and were significantly less likely to have been arrested five or more times (36% vs. 55%). Improvements were also recorded in many other important life-course outcomes. For example, significantly higher levels of schooling (77% vs. 60% graduating from high school), better records of employment (76% vs. 62%), and higher annual incomes were reported by the program group compared to controls.

The Child-Parent Center (CPC) program provided disadvantaged children, ages 3 to 4, with high quality, active learning preschool supplemented with family support. It also provided the children with the educational enrichment component into elementary school, up to age 9. The program was located in 24 centers in high-poverty neighborhoods across Chicago.

A rigorous non-randomized controlled design was used to evaluate the program, and the initial sample comprised more than 1,500 children. The evaluation of the preschool intervention found that, compared to the control group, those in the program were significantly less likely to be arrested for any offense (17% vs. 25%), multiple

offenses (10% vs. 13%), and violent offenses (9% vs. 15%) by the time they were aged 18 (Reynolds et al., 2001). The CPC program also produced other benefits for those in the experimental compared to the control group, including a significantly higher rate of high school completion (50% vs. 39%). A more recent evaluation when participants were age 24 (Reynolds et al., 2007) found that the experimental group had significantly lower rates of felony arrest (17% vs. 21%) and lower rates of incarceration (21% vs. 26%).

The Carolina Abercledarian Project targeted children born to low-income, multi-risk families. A sample of 111 children aged 3, mostly African American (98%), were randomly assigned either to receive full-time preschool childcare (focusing on the development of cognitive and language skills) or not. Families of children in both the experimental and control groups received supportive social services as needed (Campbell et al., 2002). At age 21, 104 of the participants were interviewed, and fewer of the experimental compared to the control participants (but not significantly so) reported being convicted of a misdemeanor offense (14% vs. 18%) or a felony offense (8% vs. 12%) or had been incarcerated (14% vs. 21%). In addition, significantly fewer of the experimental participants were regular marijuana users or had become a teenage parent. Significantly more had attended college or university, and they had significantly higher status jobs.

Labor Market

The following interventions target key socioeconomic risk factors for offending and are implemented in late adolescence and early adulthood. A key focus is on programs that aim to increase the employment of individuals or populations at risk of serious offending.

(See sidebar “The Impact of Employment/Unemployment on Offending.”) Bushway and Reuter (2006) found that two employment strategies were especially effective in reducing serious offending: intensive residential training programs for at-risk youth and ex-offender job training for older males no longer under criminal justice supervision.

Intensive residential training programs for at-risk youth. Among job training and education programs for at-risk youth, Bushway and Reuter (2006, p. 214) observed that “very few evaluations of these programs measure change in criminal behavior, simply because crime prevention is not generally a primary objective and its measurement requires substantial and complex additional data collection.” Job Corps is the only one of these programs that has demonstrated desirable effects on offending in early adulthood. LaLonde (2003) found that Job Corps is also the only one of these programs that has demonstrated desirable effects on subsequent earnings.

A nationwide program in the United States, Job Corps is designed to improve the employability of at-risk young people (ages 16 to 24) by offering a comprehensive set of services, including vocational training, basic education (the ability to obtain a high school education), and health care. Each year, Job Corps serves more than 60,000 new participants at a cost of approximately \$1.5 billion administered by the Department of Labor. On average, youths are enrolled in the program for eight months. In a three-year follow-up (post-program) of a large-scale randomized experiment involving 15,400 individuals, Schochet et al. (2008) found that participation in Job Corps resulted in significant reductions in criminal activity, improvements in educational attainment, and greater earnings. Program participants had an average arrest rate of 29% compared to

33% for their control counterparts. An analysis of tax data showed that earnings gains were sustained for the oldest participants eight years post-program.

Ex-offender job training for older males no longer under criminal justice supervision. Bushway and Reuter (2006) note that maturation (i.e., aging-out of crime) may reduce the propensity for offending among some older adult ex-offenders who are eligible for these programs; but, compared to some of their younger counterparts, “these individuals may be finally ready to take advantage of training programs that are offered” (p. 219).

Once again, there are few evaluations measuring these programs’ impact on offending. Bushway and Reuter (2006) identified two older programs implemented in the 1970s that were effective in reducing offending in early adulthood: the Supported Work program (Piliavin & Masters, 1981) and the Baltimore Life Experiment (Mallar & Thornton, 1978). Uggen’s (2000) analyses of the Supported Work program found that it was highly effective in reducing offending and improving employment for ex-offenders over the age of 26, but not for younger participants.

Restorative Justice. As an emerging intervention, restorative justice may also be important during the transition from juvenile delinquency to adult offending. It serves as a non-punitive strategy that seeks to address a range of issues that produce conflict between offender and victim (as well as the supporters of either) and, hence, to reconcile the parties. Restoration rather than retribution or punishment is at the heart of the restorative justice approach. Sherman (2003, p. 11) describes the methods of restorative justice as “any means that can produce reconciliation between victims, offenders and their supporters, minimizing anger, and leaving all satisfied that they have been treated

fairly while justice has been done.” Family group conferencing, mediation, and circle sentencing are some examples.

Experimentation on restorative justice approaches has been especially rigorous (see McGarrell & Hipple, 2007; Sherman & Strang, 2007; Sherman et al., 2005).

Unfortunately, a search of the literature identified only one study with a measure of offending in early adulthood. Bergseth and Bouffard (2007) compared restorative justice programming with traditional court processing in a quasi-experimental study involving 330 youthful offenders. Whenever possible, the program attempted to facilitate face-to-face conferences between the parties. Control group members were matched with treatment group members. Study participants had a mean age of 14.7 years at the time of intervention. A four-year follow-up, when study participants were on average aged 18.7, included only 106 participants. Compared to traditional court processing, referral to restorative justice was associated with a marginally significantly lower likelihood of reoffending at the latest follow-up.

Can Work be a Negative Influence?

Although most of the literature supports the importance of employment in fostering desistance from crime and substance use, a few studies have reported results at odds with these studies. In a study focused on marriage effects, Maume et al. (2005) controlled for the move into full-time employment across two waves of the National Youth Survey for those who used marijuana at the first wave and found that employment was not related to the likelihood of desistance from marijuana use. Results did not change when the authors substituted a measure of job stability. When they narrowed their sample to include only

those who were not married and were not in college during either wave, they found that full-time employment was associated with a *decrease* in the likelihood of desistance.

In an analysis of seven-year follow-up data on male parolees from the California Youth Authority, Piquero et al. (2002) found that whether or not a man was employed full-time during a particular year was not related to his arrests during that year. Horney, Osgood, and Marshall (1995), who used a life-event calendar to obtain month-by-month reports of employment and crime, found that being employed was associated with a 28% *increase* in the odds of committing a property crime in that month. Although both of these two studies employed strong within-person designs that could control for all time-stable individual differences, the measures of employment in both were relatively crude, capturing neither stability nor quality of employment. Both of these studies also involved samples of serious offenders, and it is possible that employment effects are conditioned by criminal propensity.

Moffitt (1993) has suggested that, where others find opportunities for desistance from offending, persistent offenders sometimes find opportunities for offending, as when “a new job furnishes the chance to steal” (p. 684). Theft from an employer may be a more ubiquitous problem that complicates research findings on employment. Nagin, Farrington, and Moffitt (1995), in a study of offending trajectories of working-class London males, found that the group identified from their offending pattern as “adolescence-limited,” after a peak conviction rate at age 16, reached a conviction rate of zero by age 22. By age 32 their job stability was no different from the group of “never convicted.” However, self-reports indicated that this group continued to be involved in

property crime; in particular, 43% of them admitted to stealing from an employer during the preceding five years.

Similar program effects for both juvenile and adult offenders

Although relatively few studies have examined the effects of interventions specifically on offenders in the transitional age range spanning juvenile and adult status, there are many studies of similar intervention modalities and their effects on either juvenile or adult offenders. When a particular type of intervention (e.g., cognitive-behavioral therapy) shows similar effects on the reoffending of juveniles and adults, it is reasonable to suppose that those results would also apply to offenders in the transitional ages. A considerable number of meta-analyses have been published in the last decade or so synthesizing research on the effectiveness of particular intervention modalities for juvenile offenders, adult offenders, or both. Those meta-analyses provide a broad perspective on the extent to which there are similarities and differences in the effects of those interventions on juvenile and adult offenders. The following summary draws heavily on the rather comprehensive review conducted by Lipsey and Cullen (2007).

In general, the effects of most intervention modalities on later offending are far more similar than different for juvenile and adult offenders. One of the broadest themes emerging from the meta-analytic reviews is the relative ineffectiveness of correctional sanctions and supervision on recidivism rates of both juveniles and adults. Meta-analyses of the effects of probation or parole supervision and other such intermediate sanctions for adults and juveniles show remarkably similar small undesirable effects on subsequent offense rates (Andrews et al., 1990; Aos et al., 2001; Cleland et al., 1997; Lipsey, 2009;

Pearson et al., 1997; Petrosino, 1997; Smith et al., 2002). Similarly, only small mean effects for both juveniles and adults are found in studies of the effects of incarceration, albeit slightly desirable (less recidivism) in this instance (Pearson et al., 1997; Smith et al., 2002; Villettaz et al., 2006). Studies of boot camps, as an alternative form of incarceration, show average effects close to zero that are substantially similar for juveniles and adults (Aos et al., 2001; Wilson et al., 2005b).

By contrast, interventions that might be characterized as “therapeutic,” that is, those that explicitly promote and support constructive behavior change, show generally desirable effects on the reoffending rates of both juvenile and adult offenders. Meta-analyses of the hundreds of studies of such interventions find average effects in the range of 10 to 40% reductions in reoffending rates, with little evident difference in the net desirable effects found in meta-analyses of such programs for juveniles and those for adults (Andrews et al., 1990; Cleland et al., 1997; Illescas et al., 2001; Lipsey, 2009; Petrosino, 1997; Latimer et al., 2003).

There are four broad intervention modalities with ample studies of their effects for both juveniles and adults and multiple meta-analyses that have attempted to summarize the effects on reoffending rates for juveniles, adults, or both together. These intervention modalities are (a) cognitive behavioral therapy, (b) educational, vocational, and employment programs, (c) drug treatment, and (d) treatment for sex offenders.

Cognitive Behavioral Therapy. Landenberger and Lipsey (2005) have conducted the most comprehensive meta-analysis of studies focusing on cognitive behavioral therapy (CBT) and its effects on reoffending rates. They found an average of about 22% reductions in reoffending rates. Studies with juvenile samples and those with adult

samples were included and no significant difference was found between the mean effects for these two subsets. Similar overall findings were reported in other meta-analyses of CBT that included both juvenile and adult studies (Wilson et al., 2005a; Pearson et al., 2002) and in meta-analyses of particular types of CBT with juveniles or adults (Aos et al., 2001; Tong & Farrington, 2006). Based on these findings, there is no reason to expect that CBT would any less effective with offenders in the transitional age range.

Educational, Vocational, and Employment Programs. A comprehensive meta-analysis of programs in this category by Pearson and Lipton (1999a) included both juvenile and adult studies and found a modest average effect representing a reduction of about 10% in reoffending rates. However, they did not investigate whether the mean effects differed for juvenile and adult offenders. Wilson et al. (2000) conducted a meta-analysis of educational, vocational, and work programs for adult offenders and found a mean effect corresponding to about a 20% reduction in reoffending rates. Smaller scale meta-analyses of the effects of such programs for adults by Aos et al.(2001) and Visher et al. (2005), on the other hand, found smaller effects on the order of 6% and 2% reductions in reoffending, respectively. The only meta-analyses focusing on programs of this type with exclusively juvenile samples are by Lipsey and Wilson (1998) and Lipsey (2009), which was an update of the previous meta-analysis. The first of these found a mean effect of zero but the update showed a more positive 6% mean reduction in reoffending rates.

These various meta-analyses do not show a consistent pattern but, if we put the most weight on those encompassing the greatest number of studies, there is some indication that educational, vocational, and employment programs, as a group, are somewhat more effective with adult than juvenile offenders. This is plausible given that

the average age of the samples in the juvenile studies is around 15, too young for employment issues to be highly salient. Offenders in the transitional age range around 18, however, may find employment issues more pressing and respond to these programs more like adult offenders. The ambiguity on this point, however, highlights the need for research specifically directed at the effects of employment-related programs for transitional offenders.

Drug Treatment. Substance abuse problems are commonplace among offenders and a significant risk factor for reoffending. This bulletin focuses on the effects of drug treatment programs on general reoffending rates, not the effects on substance use itself, though that is an important issue in its own right. Meta-analyses of drug and alcohol treatment effects in studies of adult offenders (Aos et al., 2001; Pearson et al., 1997), studies of juvenile offenders (Lipsey & Wilson, 1998), and both together (Mitchell et al., 2006; Pearson & Lipton, 1999b), report a range of positive effects from about 4% to 20% reductions in reoffending rates. Within that range, however, there is no clear distinction between the mean effects found for the different samples. In general, therefore, drug treatment appears to be about equally effective for juvenile and adult offenders. Thus, similar effects can be expected for offenders in the transitional age range.

Treatment for Sex Offenders. Various kinds of interventions are used with sex offenders (e.g., CBT, psychotherapy, therapeutic communities). The available meta-analyses of these programs, however, all look broadly at this category of programs rather than focusing on specific interventions. The meta-analyses that encompass the greatest number of studies all include those with either juvenile or adult samples (Gallagher et al., 1999; Hall, 1995; Hanson et al., 2002; Lösel & Schmucker, 2005). These show similar

and quite desirable mean effects on general reoffending rates (not restricted to sex offenses), corresponding to 24 to 36% reductions. Lösel and Schmucker (2005) and Hanson et al. (2002) disaggregate effects for juvenile and adult samples, with Lösel and Schmucker finding somewhat greater effects for juveniles and Hanson et al. finding somewhat greater effects for adults. Hanson et al. tested this difference and did not find that it was statistically significant. Lösel and Schmucker did not report a significance test, but the difference they found may well be nonsignificant as well.

Meta-analyses restricted to studies with juvenile samples (Aos et al., 2001; Reitzel & Carbonell, 2006) show inconsistent effects but encompass very few studies; no meta-analysis focuses only on studies with adults while looking broadly at different sex offender treatments. Thus, in this treatment area, as in others summarized earlier, there do not appear to be large differences in the average effects on reoffending rates between juveniles and adults. We infer that these interventions would also produce similar positive effects for offenders in the transitional age group.

Overall, the meta-analyses of interventions with juvenile and adult offenders show a great deal of similarity with regard to effects on reoffending rates. For both groups, sanctions and incarceration appear to have essentially negligible or slightly undesirable effects and therapeutically oriented programs have generally desirable effects. For those intervention modalities applied, studied, and meta-analyzed for both juvenile and adult samples often enough to support relatively robust conclusions, the effects are substantially similar across age. The one possible exception is for the educational, vocational, and employment programs, which appear to have larger effects for adult samples, but it is those samples that are likely to be most similar to offenders of

transitional age. The generalization that follows from these results is that, for programs applicable to both juvenile and adult offenders, the effects on reoffending rates are not highly sensitive to age. Though focused research is needed to develop evidence related to the programs' effects on offenders in the transitional age range, we would expect these effects to be similar to those found separately for juvenile and adult samples.

Benefits and costs of selected evidence-based programs

This section describes the results of a financial benefits and costs analysis of selected well-researched programs intended to reduce criminal reoffending of juvenile and young adult offenders. It is important to note that not all of these evidence-based programs or the individual studies in each program type have measures of offending in early adulthood. The analysis uses the benefit-cost model developed and maintained by the Washington State Institute for Public Policy (WSIPP), the non-partisan research unit of the Washington State legislature. The model is designed to help the Washington legislature identify evidence-based and economically sound ways to reduce crime and provide Washington taxpayers with a better return on their dollars. WSIPP computes effect sizes for a program by collecting available research evaluations on a particular juvenile or adult corrections topic. WSIPP then performs a meta-analytic review of the research after identifying program evaluations that meet requirements associated with research design, intent to treat, and outcomes on new criminal activity. (A full description of WSIPP can be found at <http://www.wsipp.wa.gov>.)

Benefit-cost estimates

Table 1 displays a summary of financial benefit-cost estimates for a selected set of specific evidence-based programs, or general types of programming, that could be applied to juvenile and young adult offenders. The principal finding is that policymakers have a number of well-researched options that can produce benefits that exceed costs. At the same time, however, the full WSIPP analysis indicates the following: not all well-researched programs have been shown to work; some that achieve crime reductions do not produce benefits that exceed costs; and most programs in the field today have probably never even been evaluated rigorously, or at all. Thus, as with any investment decision, caution is advised. Still, for some programs, the WSIPP analysis indicates impressive returns on investment.

For example, one specific well-researched program for juvenile offenders is FFT. This in-home, family-based program costs about \$3,100 (in 2009 dollars) per family in Washington and, according to the WSIPP estimates, can be expected to reduce reoffending by about 18%. This reduction translates into \$32,200 of long-run benefits to Washington taxpayers and people who do not become victims of crime, yielding an expected net present value of about \$29,100 in benefits per participant.

An example of a more general type of program is cognitive-behavioral therapy for adult offenders. The WSIPP findings indicate that the average evaluated cognitive-behavioral program can be expected to reduce re-offending by about 7%, thereby achieving net benefits of \$12,300 per participant. An example of a general type of programming with a poor return on investment is intensive supervision of offenders where the focus is simply on increased surveillance, but not increased treatment. WSIPP found only a modest reduction in recidivism (about 2%), and the benefits from this slight

reduction fail to exceed increased staffing costs. In contrast, the WSIPP analysis found that intensive community supervision that includes drug or cognitive behavior treatment produces a \$12,700 in benefits per participant.

The figures shown in Table 1 are “expected-value” estimates. There is, of course, considerable uncertainty in these average return figures. WSIPP’s full analysis includes measures of the riskiness in these return-on-investment estimates.

Two straightforward lessons emerge from this benefit-cost analysis. First, there is information available today that can help public policymakers craft a criminal justice strategy that can both reduce crime and provide taxpayers with a better return on their dollars. Second, the findings support the “treatment principle” and the “risk principle.” Evidence indicates that some types of treatment appear to be able to alter criminal behavior, and treatment strategies that focus on higher risk offenders tend to (but not always) have higher returns on investment than those that focus on lower-risk offenders.

SIDEBAR

A Good Return on Investment

Based on research conducted by the Washington State Institute for Public Policy (WSIPP), the financial benefits of programs often outweigh their costs as they both reduce offending in the young adult years and save money in the long run. This was true, for example, of multidimensional treatment foster care (MTFC) (\$8 saved per \$1 expended), functional family therapy (FFT) (\$10 saved per \$1 expended), multisystemic therapy (MST) (\$3 saved per \$1 expended), vocational education in prison (\$12 saved per \$1 expended), cognitive-behavioral therapy in prison (\$22 saved per \$1 expended), drug

treatment in prison (\$6 saved per \$1 expended), and employment training in the community (\$12 saved per \$1 expended).

Summary

A number of conclusions can be drawn about evidence on the effectiveness of prevention and intervention programs to reduce serious offending in early adulthood. First, there is a paucity of high-quality evaluations of programs that have measured the impact on offending in early adulthood.

Second, there are some promising signs that early prevention programs can produce lasting effects on offending and other important life-course outcomes into the early adult years. At the individual level, preschool intellectual enrichment programs look to be especially effective. At the school level, multi-component programs emphasizing classroom behavior management seem to be promising.

Third, there are some promising signs that family-based interventions for adjudicated delinquents that operate outside of the juvenile justice system can reduce offending in early adulthood. These include multisystemic therapy and multidimensional treatment foster care.

Fourth, the available evidence about intervention modalities used with both juvenile and adult offenders indicates that their effects are substantially similar. This generality across the major age divide in juvenile and criminal justice implies that such programs should be effective with young adult offenders as well.

Fifth, there are a number of evidence-based programs for juvenile and young adult offenders that can produce monetary benefits that exceed costs.

Related to the overall paucity of high-quality evaluations is the noticeable lack of studies in the domains that are arguably the most important to the transition from late adolescence to early adulthood: peers, community, and labor market. Prior research has noted the need for future experiments to test the long-term effects of peer-based programs, as well as to investigate the causal effects of peer influence (van Lier et al., 2007; Welsh & Farrington, 2009).

With only a handful of early prevention programs, there is a need for more high-quality and targeted studies. We encourage prevention scientists to pursue funding for ongoing and long-term follow-ups of their studies and to include offending outcome measures. It is also imperative that federal funding agencies recognize that long-term follow-ups of these studies and a new generation of studies can contribute to the advancement of scientific knowledge as well as the improvement of early childhood policies.

Efforts also need to be made to address the challenges presented by large-scale dissemination of prevention and intervention programs shown to be effective. Some of these challenges include insufficient service infrastructure, greater population heterogeneity, and loss of program fidelity (Welsh et al., 2010). While by no means immune to implementation difficulties, Communities That Care, as a well-developed and effective community prevention operating system, has the capacity to ensure that due attention is paid to many of the problems that contribute to the attenuation of program effects once programs are scaled-up or rolled out for wider public use (Hawkins et al.,

2010). State or even national efforts such as the provision of technical assistance, skills, and knowledge can also go some way toward helping to address challenges of large-scale implementation.

At this point, little is known about the effectiveness of early family-based prevention programs with respect to offending in early adulthood. There is, however, strong evidence on the effectiveness of early family-based prevention programs in reducing antisocial behavior and delinquency (Greenwood, 2006; Farrington & Welsh, 2007; Piquero et al., 2009). Furthermore, there are some promising developments in community-based prevention of delinquency. The latest findings of Communities That Care (Hawkins et al., 2008a, 2009) provide one such example.

Also important to the conclusion on early prevention is that the desirable effects of these two types of programs are not limited to a reduction in later offending. Results are highly favorable and robust for impacts on other important life-course outcomes, such as education, government assistance (e.g., welfare), employment, income, substance abuse, mental health, and family stability. This should not come as a surprise to many, given that the original impetus of some programs was first and foremost to improve early childhood outcomes well before delinquency or later offending could be measured. Indeed, the desirable impact on offending outcomes is sometimes considered to be a spin-off benefit. This should be of particular interest to policymakers who are concerned that early prevention only provides benefits in the long term.

While more experimental tests of job training programs for at-risk youth and young adults are needed, the importance of the one Job Corps study should not be underestimated. As a robust, nationwide experiment involving more than 15,000

participants and with between three and eight years of follow-up data, its effects – including significant reductions in criminal activity, improvements in educational attainment, and greater earnings (Schochet et al., 2008) – become all the more impressive and relevant to public policy. It may be that the pressing matter for policymakers should be how to make this intervention even more effective.

There is support for the view that some of these intervention modalities can go a long way toward preventing the continuation from juvenile to young adult offending and fostering early desistance. The most effective of these interventions include multi-systematic therapy, cognitive behavioral therapy, drug treatment, and sex offender treatment. Furthermore, a recent study in the United Kingdom suggests that a number of alternative interventions for young adult offenders (ages 18-24), including restorative justice conferencing, can produce substantial financial savings to society compared to standard criminal justice system practices (Barrow Cadbury Trust, 2009).

Among interventions that take place outside of the juvenile justice system, MST and MTFC show promising results in reducing serious offending in the early adult years. Both are multi-component interventions, but are considered family-based because this domain takes center stage; the parents or foster care parents (in MTFC) are actively involved. Also, both target the highest risk juvenile offenders, with each considered a last chance to avoid lengthy prison sentences.

Importantly, both MST and MTFC have produced reductions in early adult offending across a range of sub-groups of high-risk offenders. For the three MST studies, one was targeted on serious and violent offenders, another on substance abusers, and the other on sex offenders. For the two MTFC studies, one was targeted on serious and

chronic male offenders and the other on serious and chronic female offenders. This generalizability of effects adds further weight to the emerging evidence on the effectiveness of various interventions at this important transitional stage. Benefit-cost analyses conducted by the WSIPP show that these two program models can be a worthwhile investment of public resources. Investments in these interventions stand to make a major contribution to reductions in serious offending in early adulthood.

While there remains much work to be done, there are some promising signs that serious offending in early adulthood can be reduced through a number of prevention and intervention programs that take place over the life-course. It is certainly the case that prevention and intervention programs have much more to offer our young people and society at-large compared to more punitive responses. That these prevention and intervention program models are not limited to one stage of development or even one domain is an encouraging sign for making inroads in addressing the needs of our at-risk young people today.

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Table 1: Estimates of the benefits and costs of selected evidence-based programs for juvenile and young adult offenders

Program Name or Type (and whether it is delivered in juvenile (J) or adult (A) correctional settings)	Expected Effect on Crime Outcomes		Benefits and Costs (2009 Dollars)					
	Percent Change in Criminal Re-Offense Outcomes	Number of Studies on Which the Estimate is Based	Total Benefits Per Program Participant	Benefits to Taxpayers	Benefits to Victims	Total Program Costs per Program Participant	Total Benefits Divided by Costs	Total Benefits Minus Costs (Net Present Value)
Multi-dimensional Treatment Foster Care (J)	-18%	3	\$59,275	\$13,544	\$45,731	\$7,418	\$7.99	\$51,857
Functional Family Therapy (J)	-18%	7	\$32,248	\$8,463	\$23,785	\$3,134	\$10.29	\$29,114
Family Integrated Transitions (J)	-10%	1	\$33,770	\$7,716	\$26,054	\$10,795	\$3.13	\$22,975
Adolescent Diversion Project (J)	-28%	6	\$21,434	\$5,507	\$15,927	\$2,116	\$10.13	\$19,318
Multi-systemic Therapy (J)	-13%	9	\$23,112	\$6,065	\$17,047	\$7,076	\$3.27	\$16,036
Vocational Education in Prison (A)	-10%	4	\$15,470	\$4,763	\$10,707	\$1,296	\$11.94	\$14,174
Aggression Replacement Training (J)	-9%	4	\$15,325	\$4,022	\$11,303	\$1,449	\$10.58	\$13,876
Intensive	-18%	11	\$20,617	\$6,262	\$14,355	\$7,878	\$2.62	\$12,739

Supervision, with treatment (A)								
Education in Prison, basic or post-secondary (A)	-8%	17	\$13,128	\$4,042	\$9,086	\$1,055	\$12.45	\$12,073
Cognitive Behavioral Programs in Prison (A)	-7%	27	\$11,204	\$3,450	\$7,754	\$517	\$21.69	\$10,687
Drug Treatment in Community (A)	-9%	6	\$9,999	\$3,037	\$6,962	\$629	\$15.89	\$9,370
Drug Treatment in Prison (A)	-6%	21	\$10,195	\$3,139	\$7,056	\$1,758	\$5.80	\$8,437
Restorative Justice, for low risk offenders (J)	-10%	14	\$7,820	\$2,009	\$5,811	\$972	\$8.04	\$6,848
Drug Courts (A)	-9%	67	\$9,869	\$3,375	\$6,494	\$4,792	\$2.06	\$5,077
Employment Training/Job Asst in Community (A)	-5%	16	\$5,238	\$1,591	\$3,647	\$438	\$11.96	\$4,800
Coordination of Services (J)	-2%	14	\$3,402	\$893	\$2,509	\$379	\$8.98	\$3,023
Intensive Supervision, surveillance only (A)	-2%	23	\$1,769	\$537	\$1,232	\$4,144	\$0.43	-\$2,375

Note: Estimates prepared by WSIPP. All monetary figures are life-cycle present values; the discount rate used was 3%. All figures estimated with the benefit-cost model of the Washington State Institute for Public Policy. The benefits to taxpayers and program costs are estimated for Washington State taxpayers. The benefits to crime victims are estimated with victim cost information representing the United States. All estimates were calculated in April of 2010; investors should be aware that WSIPP revises estimates whenever new information becomes available or when improvements in modeling are undertaken.

