

POLICY

SAINSBURY CENTRE
for MENTAL HEALTH
removing barriers achieving change



The chance of a lifetime

Preventing early conduct
problems and reducing crime

a **better** way



Summary

Mental health problems in childhood cast a long shadow. They can often persist into adulthood with adverse consequences for many aspects of people's lives. The most common childhood mental health difficulties are conduct problems. A very high proportion of those who have the most serious conduct problems during childhood will go on to become involved in criminal activity. Effective help for parents and families to prevent and manage conduct problems is extremely good value for public money and should be offered routinely across the UK.

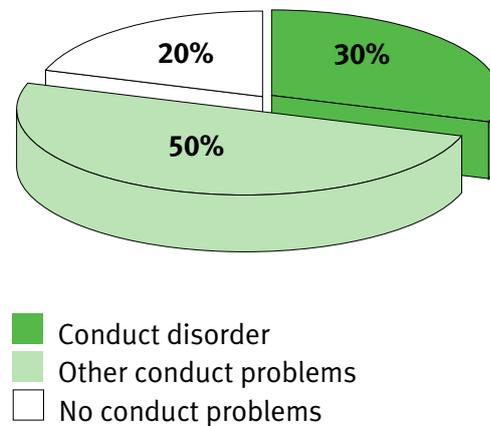
Conduct disorder affects about 6% of all those aged between 5 and 16. Early onset (under age 10) is particularly likely to result in persistent difficulties. In addition to those with a recognisable disorder, much larger numbers display early conduct problems which, while below the threshold for a clinical diagnosis, still increase the likelihood of adverse outcomes in later life, including offending. These problems have many causes, but early family relationships and parenting styles are particularly significant.

Box 1: What are childhood conduct problems?

This term is used to describe a range of oppositional or anti-social forms of behaviour in childhood such as disobedience, lying, fighting and stealing. In some cases the severity and persistence of these problems is sufficient to justify a psychiatric diagnosis of 'conduct disorder', in which the scale of problems is such as to impair a child's functioning as well as causing significant distress to others.

Most crime is committed by a relatively small group of prolific or chronic offenders who typically start offending at an early age. The prevalence of serious conduct problems during childhood is particularly high in this group. Overall, we estimate that around 80% of all criminal activity is attributable to people who had conduct problems in childhood and adolescence, including about 30% specifically associated with conduct disorder (see Figure 1).

Figure 1: Percentage of crime attributable to people who had conduct problems in childhood and adolescence



The costs to society are immense. For example, the lifetime costs of crime committed by a single prolific offender are around £1.5 million. The total cost of crime attributable to people who had conduct problems in childhood is estimated at about £60 billion a year in England and Wales.

This paper examines the links between early conduct problems and subsequent offending. It makes the case for greatly increased investment in evidence-based programmes to reduce the prevalence and severity of conduct problems in childhood. It shows that, in addition to improvements in the quality of life for many individuals and their families, the potential long-term benefits to society as a whole are enormous, particularly in terms of crime prevention. Over time, nothing would have a bigger impact on crime than making these programmes much more widely available than is presently the case.

Key findings on interventions

- The best intervention programmes can reduce offending by 50% or more;
- Programmes aimed at prevention or early intervention at pre-school age are the most effective;
- The costs of these interventions are relatively low, particularly when set against the scale of potential benefits; for example, group-based pre-school parenting programmes cost only £600-£900 per child.

- Just 1% of the law and order budget would be sufficient to fund a comprehensive programme of pre-school support for 30% of all children born each year.

links between childhood conduct problems and subsequent offending, including the implications for public policy and service provision.

Introduction

In May 2009 Sainsbury Centre for Mental Health, in conjunction with the Medical Research Council, the Smith Institute and Unison, published a major report on *Childhood mental health and life chances in post-war Britain* (Richards and Abbott, 2009). This used evidence from three national birth cohort surveys, which have been tracking representative samples of people born in 1946, 1958 and 1970, to explore the long-term consequences of mental health problems experienced in childhood and adolescence.

The study showed that early mental health problems can lead to a wide range of adverse outcomes in later life, including continuing mental health difficulties, poor educational performance, unemployment, low earnings, teenage parenthood, marital problems and criminal activity. It also found that the scale of these negative outcomes was generally much greater among those whose early mental health problems took the form of conduct problems rather than emotional difficulties.

A particularly strong association was found between conduct problems in early life and the subsequent likelihood of involvement in criminal activity. For example, people with severe adolescent conduct problems were over four times more likely than other people to have been arrested in early adulthood and over three times more likely to have a court conviction.

Building on this finding in the life chances report, this paper analyses in more detail the

Facts and figures

Antisocial behaviour in the early years has been shown to have the highest continuity into adulthood of all measured human traits except intelligence (Scott, 2004).

The term ‘conduct problems’ is used to describe a range of oppositional or anti-social forms of behaviour in childhood such as disobedience, lying, fighting and stealing. In some cases the severity and persistence of these problems is sufficient to justify a diagnosis of ‘conduct disorder’, a psychiatric condition recognised in all major illness classification systems, in which the scale of conduct problems is such as to impair a child’s own functioning as well as causing significant distress to others.

Conduct disorder is the most common psychiatric condition found among children and young people, but much larger numbers display conduct problems which, while distressing, are insufficiently severe to merit a clinical diagnosis. It is, however, important not to overlook these ‘sub-threshold’ cases, as the evidence shows very clearly that early conduct problems falling short of a clinical disorder can still signal an elevated risk of adverse outcomes in later life. They are also amenable to effective early intervention.

The population of young people with conduct disorder divides into two sub-groups, distinguished by age of onset (Moffitt, 1993). In the first group, the disorder becomes apparent at an early age (before 10, with evidence of serious behavioural problems often appearing

Table 1: Prevalence of conduct disorder

	Boys %	Girls %	All children %
Age 5-10	6.9	2.8	4.9
Age 11-16	8.1	5.1	6.6
All ages	7.5	3.9	5.8

(ONS Survey, Green *et al.*, 2005)

as early as 2 or 3). It also has a high degree of persistence into later life; for example, up to 50% of these cases will have anti-social personality disorder as adults (Maughan and Kim-Cohen, 2005). In the second group, the disorder begins in adolescence and rarely continues beyond this phase of development.

Prevalence

The most recent official survey of mental health among children and young people in Great Britain, conducted by the Office for National Statistics (ONS) in 2004, gives the rates of prevalence for conduct disorder (Green *et al.*, 2005) (see Table 1).

The ONS survey shows that the prevalence of conduct disorder tends to increase with age and is roughly twice as high among boys as among girls. It also found that conduct disorder has a strong gradient by socio-economic class, being nearly three times as common among children from unskilled and workless households as among those from the professional and managerial groups.

Another important finding from the ONS survey was that more than a third of all children with a conduct disorder have another psychiatric disorder as well. Their numbers divide roughly equally between those who have conduct disorder combined with an emotional disorder (most commonly anxiety) and those who have conduct disorder along with attention deficit hyperactivity disorder (ADHD).

Less detailed and reliable information is available on the numbers of children displaying conduct problems which fall short of a diagnosable disorder. This is because there is no universal agreement on the appropriate definition and classification of such cases and different studies show different rates of prevalence. For example, a study in Christchurch, New Zealand, has divided a representative sample of children aged 7 to 9 years into four groups as follows: severe conduct problems / conduct disorder 5%, moderate problems 15%, mild problems 30%, no problems 50% (Fergusson *et al.*, 2005).

In contrast, a British study of conduct problems in adolescence has distinguished between three groups, with the following relative sizes: severe problems / conduct disorder 7%, less severe problems 18%, no problems 75% (Colman *et*

al., 2009). Whatever the precise method of estimation, it seems clear that the number of sub-threshold cases is large, both in absolute terms and relative to the number with a clinically diagnosable disorder.

There is evidence that conduct problems have become more widespread over time, with one study showing that the number of 15-16 year-olds with conduct problems at the more severe end of the scale more than doubled between 1974 and 1999 (Collishaw *et al.*, 2004). The increase was found for both males and females, for young people in all social groups and for all family types.

Risk factors

Most research on the causes of conduct disorder has focused on the early onset variant and has identified a range of environmental risk factors as well as a genetic or hereditary component. The environmental factors include:

- Socio-economic variables, such as large family size, single parenthood, family poverty and deprived neighbourhoods;
- Parental characteristics, including low educational attainment, mental illness, substance misuse and involvement in criminal activity;
- Family relationships, such as harsh, inconsistent or neglectful parenting, abuse and family discord.

These risk factors tend to have a cumulative effect. The likelihood of conduct disorder rises progressively as an individual is subject to an increasing number of adverse influences in early life.

The risk factors may also interact. Gene-environment interactions are particularly important. This means that genetically determined differences between individuals may control their sensitivity to a specific environmental risk. A genetic predisposition combined with adverse upbringing is therefore especially likely to result in conduct disorder.

But the different risk factors are not all of equal importance. In particular, the evidence suggests that parenting is the single most consistently powerful influence on the emotional and behavioural development of children. For example, one study has suggested that harsh

parenting with poor supervision and little warmth is responsible for 30-40% of antisocial behaviour in children (Patterson *et al.*, 1989). There is also evidence that the association between childhood conduct problems and variables such as large family size and single parenthood may be largely mediated by parenting practices, rather than these variables acting as independent influences in their own right (Scott, 2004).

The contributory factors leading to adolescent-limited conduct disorder are thought to be rather different and the condition has been described as “*the product less of individual risks than of frustrations attendant on the adolescent ‘maturity gap’* [when individuals reach physical maturity some years before achieving economic and social independence], *and social mimicry of deviant peers*” (Rutter *et al.*, 2006). Social factors and social roles are therefore much more important than in the case of early-onset disorder.

The links between early conduct problems and crime

Research evidence indicates that while a significant proportion of the general population have a criminal record by the time they reach their mid-forties, most crime is perpetrated by a small minority of prolific offenders. These prolific offenders typically start their ‘criminal careers’ at an early age.

Patterns of crime

A Home Office study of criminal careers has shown that, among all people born in 1953, 33% of males and 9% of females had been convicted of at least one offence (excluding minor traffic offences etc.) before the age of 46 (Prime *et al.*, 2001). However, more than half of these offenders were convicted on only one occasion. At the other end of the scale, 25% of male offenders and 8% of female offenders had four or more convictions and these prolific offenders accounted for the majority of all recorded crime. Thus, among males, two-thirds of all convictions were attributable to the one-quarter of offenders, equivalent to 8% of the total male population, who had more four or more convictions. And only about 1 in 5 male

offenders and 1 in 20 female offenders had received a custodial conviction by age 46, again suggesting that persistent or serious crime is concentrated in a relatively small minority.

Similar findings are reported in other countries. For example, a cohort study of young people in Philadelphia found that 23% of the sample had committed at least one offence by age 26. Half of this group offended only once, but the 6% of the sample who offended four or more times were responsible for two-thirds of all recorded offences (Cohen and Piquero, 2009).

Further information on patterns of offending in this country is given in the Cambridge Study in Delinquent Development, which has been tracking a sample of 411 boys born in inner London in 1953. Broadly in line with the Home Office findings, follow-up data show that, while 41% of this sample had obtained a criminal record by age 50, over half of all offences were committed by 7% of the sample (Farrington *et al.*, 2006).

The Cambridge study also provides information on patterns of offending by age. It shows that 20% of those with a criminal record committed their first offence at ages 10-13 and a further 30% at ages 14-16. Taken together, these early onset offenders were responsible for 77% of all crime committed by the sample. Among those who committed their first offence at ages 10-13, 91% became repeat offenders, compared with only 37% of those who first offended at ages 21-30, and this group of very young offenders, representing 8% of the overall sample, accounted for 39% of all crime recorded in the study.

Criminal activity is thus strongly concentrated in a small group of chronic offenders, almost invariably male, who typically start offending at an early age. Given the persistence of childhood conduct problems into adolescence and beyond, this pattern of offending strongly suggests that a high proportion of crime has its antecedents in early childhood.

The Cambridge study found that 90% of prolific adolescent offenders had conduct disorder at age 8 (Farrington, 1995). Similarly, evidence from the Christchurch, New Zealand, study indicates that children with conduct disorder at ages 7-9 are 70 times more likely to receive a prison sentence by age 25 than those with no conduct problems in childhood.

How much crime is linked to early conduct problems?

While there is little doubt that early conduct problems are strongly associated with subsequent offending, it is not altogether straightforward to quantify this relationship in terms of an attributable proportion of total crime, i.e. how much of all criminal activity can be causally related to these early problems?

There are a number of reasons for this, including limitations in the data. In particular, surveys that yield detailed and reliable information on patterns of offending rarely provide much linked information on mental health in early life, while those which are strong on the assessment of early psychiatric morbidity are usually weak in their coverage of subsequent criminal activity. The Cambridge Study in Delinquent Development is a notable exception to this; but it is based on a small and, in some respects, unrepresentative sample.

A further complication is that the association between early conduct problems and subsequent offending may in part be driven by other influences. Two factors in particular, socio-economic disadvantage in early life and below-average cognitive ability, are known to be important risk factors for both childhood mental ill health and criminal activity. Failure to allow for the links between these childhood factors and later offending may therefore lead to the causal influence of early conduct problems being overstated.

One source which goes some way towards resolving these problems is the New Zealand study which has been tracking a representative sample of children from Christchurch since birth in 1977 (Fergusson *et al.*, 2005). In addition to detailed information on conduct problems at ages 7-9, this includes data on various measures of criminal activity in early adulthood (numbers arrested / convicted, numbers committing various types of offence and numbers ever imprisoned between ages 17 and 25). It also provides data on other characteristics of the sample which enables allowance to be made for the independent effects on offending of socio-economic background and cognitive ability.

The assessment of conduct problems in the New Zealand sample allows all children in the study to be arranged on a continuum, from the worst-behaved at one end to the best-behaved at the other. The sample is then divided into

four groups, including 5% with severe conduct problems, 15% with moderate problems and 30% with mild problems. The allocation of 5% to the worst-behaved group matches almost exactly the prevalence rate of 4.9% for conduct disorder among children aged 5-10 in Britain as recorded by the ONS (Green *et al.*, 2005).

In order to estimate the proportion of total criminal activity committed by these various groups, use may be made of two measures of criminal activity in the New Zealand study: numbers arrested / convicted and numbers imprisoned. Each of these on its own is inadequate as a proxy for total crime. Information on the numbers arrested / convicted covers all those with a criminal record but gives equal weight to those who offend only once and those who are multiple offenders. Data on the numbers imprisoned is much better in capturing the concentration of criminal activity among prolific offenders, as there is a very high association between frequency of offending and the likelihood of imprisonment. Thus, the Cambridge Study in Delinquent Development found that barely 5% of those who committed only one or two offences were ever imprisoned, compared with over 85% of those who committed 10+ offences, with the latter group being responsible for over half of all crime recorded in the study (Farrington *et al.*, 2006).

It would, however, be misleading to rely wholly on numbers imprisoned as a proxy for total crime, as this would mean ignoring altogether the large number of offenders who are arrested / convicted at least once but never given a custodial sentence. In the absence of a comprehensive measure of criminal activity in the New Zealand study, we have therefore used an average of numbers arrested / convicted and numbers imprisoned, weighted 60:40 in favour of the latter, based on evidence in the Cambridge Study in Delinquent Development that offenders who receive one or more prison sentences are responsible for about 60% of all recorded offences (Farrington *et al.*, 2006).

Proceeding on this basis, our analysis of data in the New Zealand study yields an estimate for the proportion of total crime committed by people with early conduct problems (see Table 2). Two sets of figures are given in Table 2: unadjusted (i.e. not taking into account other risk factors for offending, notably socio-economic background and cognitive ability) and adjusted (i.e. taking these factors into account).

Table 2: Early conduct problems and subsequent offending

	% population	% crime (unadjusted)	% crime (adjusted)
Severe problems (conduct disorder)	5	30.0	21.7
Moderate problems	15	37.4	30.3
Mild problems	30	21.9	27.7
Total combined	50	89.3	79.7

Table 2 shows that the 5% of people in the sample who had severe conduct problems / conduct disorder in childhood were responsible for 30% of all recorded crime, while those with any kind of early conduct problem (severe, mild or moderate) were responsible for nearly 90% of crime. These numbers fall somewhat when other risk factors for offending are taken into account, but still remain very high.

If anything, the proportion of crime associated with conduct disorder is under-estimated in the figures given in Table 2, as the assessments relate to children aged 7-9 years and thus exclude all cases of disorder which are adolescent-limited. To make a rough allowance for this, British figures show that the prevalence of conduct disorder is 4.9% among those aged 5-10 and 6.6% among those aged 11-16 (Green *et al.*, 2005).

At a minimum the prevalence of adolescent-limited disorder is therefore 1.7% (i.e. 6.6% minus 4.9%), but in practice it is likely to be higher than this, as not all early onset cases persist into adolescence. If, as suggested, persistence is around 50%, then the overall prevalence of adolescent-limited conduct disorder works out at around 4.1%. It is likely that most if not at all of these cases would have displayed moderate conduct problems in their pre-adolescent years, implying that about a quarter of those in the 'moderate' group shown in Table 2 should be classified as having conduct disorder. A rough adjustment on these lines suggests that, after allowing for other risk factors, the proportions of all criminal activity that can be related to conduct disorder and conduct problems in childhood and adolescence are: 30% (conduct disorder), 50% (other conduct problems) and 20% (no conduct problems). These estimates should be regarded as broad

orders of magnitude and may require substantial modification in the light of better data.

Costs to society

Comprehensive estimates of the costs of crime in this country, both in total and by type of offence, were first published by the Home Office in 2000 (Brand and Price, 2000) and partially updated five years later (Dubourg, Hamed and Thorns, 2005). These show, for example, that the total cost of crime in England and Wales in 1999 / 2000 was around £60 billion. This covers not just costs falling on the criminal justice system (police, prisons etc) but also – and much more importantly in quantitative terms – costs falling on the victims of crime, including the value of stolen or damaged property, losses in earnings resulting from crime-related injuries etc., and an imputed value of the emotional and physical impact of crime on victims.

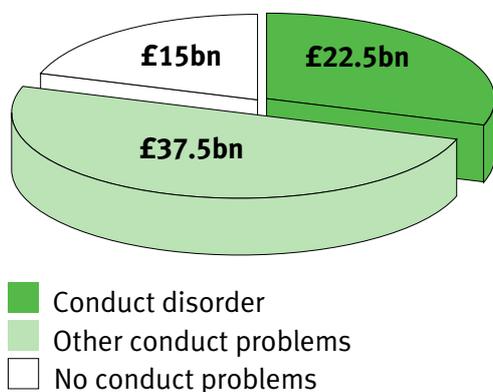
A broad update of the Home Office estimates to allow for changes in the overall level of crime and for general inflation indicates that the total cost of crime in England and Wales is currently about £75 billion a year. Relating this to the estimated proportions of aggregate offending associated with early conduct problems as given earlier, we calculate that the total crime-related cost of these problems amounts to around £60 billion a year, including £22.5 billion a year attributable to conduct disorder and £37.5 billion a year to sub-threshold (moderate or mild) conduct problems (see Figure 2).

Another way of looking at the crime-related costs of early conduct problems is to measure them on an individual lifetime basis. The most

comprehensive estimates prepared on this basis come from the US (Cohen, 1998; Cohen and Piquero, 2009) and relate to the lifetime costs of crime associated with prolific offending. Prolific offenders are defined for this purpose as those who commit six or more offences over the course of a criminal career. Longitudinal evidence in the US suggests that this group represents about 15% of all offenders and is responsible for half of all recorded crime. Crime costs include criminal justice service costs, costs to victims and also lost productivity of offenders who are imprisoned.

Measured on this basis, it is estimated that total crime-related costs for a single prolific offender are in the range \$2.1-\$3.7 million (2007 dollars) when discounted back to birth. This is equivalent to about 45-80 times annual GDP per head in the US. Applying the same multiples to UK GDP per head, we calculate that in this country the lifetime costs of crime committed by a single prolific offender are in the range £1.1-£1.9 million.

Figure 2: Annual cost of crime attributable to people who had conduct problems in childhood



It should, of course, be emphasised that the average lifetime cost imposed on society by a prolific offender is not the same as the average lifetime cost of crime committed by every individual with early conduct problems. Not all children with conduct problems go on to offend at all and, among those who do, only a minority become prolific offenders.

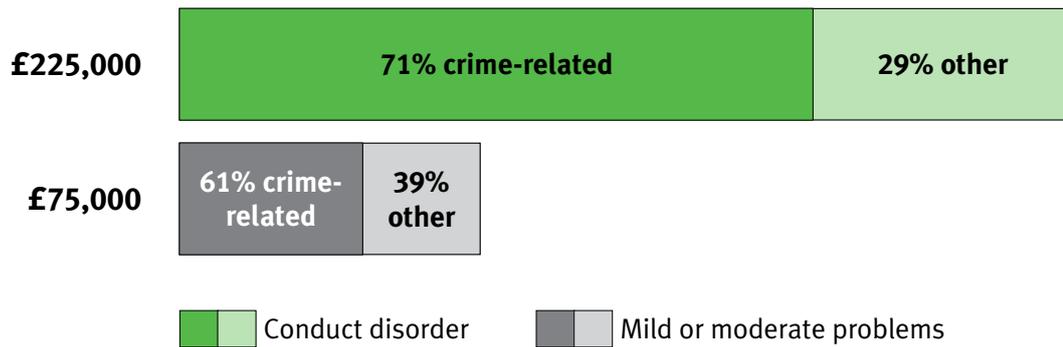
A Swedish cohort study has found that, among all children with conduct disorder at ages

12-16, the proportions with a criminal record by age 30 were 75% among males and 25% among females (Kratzer and Hodgins, 1997). Taking into account the higher prevalence of conduct disorder among males, these figures imply that a substantial minority, over 40%, of all children with conduct disorder desist from crime altogether. Also, using imprisonment as a proxy for prolific offending, the New Zealand study shows that among all people with conduct disorder at ages 7-9 only 14% were imprisoned at any time between the ages of 17 and 25, the peak time for criminal activity (Fergusson *et al.*, 2005).

The US-based estimate of lifetime costs should therefore be seen as an upper limit for the lifetime costs of crime committed by people with early conduct problems, applying only to the minority who go on to become prolific offenders. For an average of crime costs among all those with early conduct problems, reference may be made instead to a recent study in this country which has attempted a broad-based estimate of the lifetime costs of conduct problems, covering not only crime but other adverse outcomes in adult life such as reduced earnings (Friedli and Parsonage, 2007).

Combining data on adult outcomes from the New Zealand study with costings based on relevant UK sources such as the Home Office figures on the costs of crime, the study estimates that the overall lifetime cost of adverse outcomes among the 5% of people who have conduct disorder in childhood is around £225,000 per case. The lifetime cost among the 45% who have mild or moderate conduct problems in childhood is around £75,000 per case. In each case, the point of comparison is given by the outcomes in adult life experienced by the 50% of people who have no conduct problems in childhood.

Among both groups the largest single component of lifetime costs is the cost of crime, accounting for 71% of total costs for those with conduct disorder and 61% of costs for those with sub-threshold problems (see Figure 3). Taken together, these figures suggest that, on average, the lifetime cost of crime associated with conduct disorder in childhood is around £160,000 per case. The lifetime cost of crime associated with early conduct problems falling short of a clinical diagnosis is around £45,000 per case. If anything, these are conservative estimates, as the methods used may not allow

Figure 3: Lifetime costs of conduct problems

for the full extent to which criminal activity is concentrated among a small minority of prolific offenders.

All these figures relate to the crime-related costs of conduct problems in a single generation. A fully comprehensive analysis would also allow for possible inter-generational effects, as the evidence on risk factors for offending shows clearly that children whose parents are involved in criminal activity are themselves much more likely than average to follow the same path in later life. The association between conduct problems and offending is therefore likely to persist over more than a single lifetime, increasing even further the long-term costs.

The case for intervention

The persistence of childhood conduct difficulties and the scale and cost of their long-run effects on offending behaviour together constitute a powerful case for investment in the prevention, management and treatment of these early problems. The case is further strengthened by a large body of research and clinical evidence which demonstrates the effectiveness of intervention. This section summarises some of the key findings.

Effectiveness

A variety of methods and strategies have the potential to reduce conduct problems, applying across the age range and in different settings. These include parent training, home visits, day care and other forms of pre-school support,

schools-based programmes including parent/teacher training and life skills training for children, family therapy for older children and more specialised clinical interventions such as multi-systemic therapy to manage children and young people with clinically significant problems.

A recent review and meta-analysis of the effectiveness of these interventions in reducing subsequent offending analysed data from 40 evaluation studies using high quality research methods such as matching control groups and found that on average the programmes reduced offending by nearly a third (Farrington and Welsh, 2003). The most effective programmes were those which used behavioural parent training and the least effective were those based in schools.

Individual programmes varied in effectiveness within each of the broad categories of intervention. It is therefore crucial to concentrate investment on programmes that have been shown to work.

Some individual programmes have achieved particularly large reductions in criminal activity. For example, an evaluation of the High / Scope Perry Preschool programme, established in the 1960s for black American children born in poverty in Michigan, found that by age 27 those in the programme had accumulated only half as many arrests as a control group (an average of 2.3 compared to 4.6 arrests) and that the number of habitual criminals (those with five or more lifetime arrests) was lower by 63% (Schweinhart, Barnes and Weikart, 1993). Similarly, a 15-year follow-up of a programme providing first-time, low-income mothers with

home visits from public health nurses found that compared with a control group arrests during adolescence were lower by 54% and convictions by 69% (Olds *et al.*, 1998).

Many trials of family-based programmes have been carried out in specialised university research clinics, but the effectiveness of these interventions has also been demonstrated in real-life clinical practice settings. An example of a group parenting programme for children with antisocial behaviour delivered in this way is described in Scott (2005), where it is also reported that children with the most severe initial problems changed the most as a result of the intervention.

Prevention and early intervention

There is strong support in the published literature for programmes which focus on prevention and early intervention. Programmes aimed at older children provide worthwhile benefits, but the largest gains accrue when intervention begins early (US Department of Health and Human Services, 2007). Particularly in the case of early-onset conduct disorder, prognosis is poor in the absence of intervention, with more than 60% of children diagnosed at three still exhibiting serious behavioural problems at eight, if untreated, and the condition becomes progressively less treatable the longer it is established (National Institute for Health and Clinical Excellence, 2006). The persistence of adolescent-limited conduct disorder is much less pronounced, as the evidence suggests that the great majority of cases (over 85%) desist from antisocial behaviour by their early twenties (Scott, 2004).

Programmes based on prevention and early intervention are feasible, as much is now known about the risk and protective factors associated with childhood conduct problems and many of these factors, particularly those associated with family relationships such as parenting style, can be influenced by well-designed interventions. Knowledge of risk factors can also support the identification of children at high risk of developing serious conduct problems and the targeting of preventive efforts on this group.

Such targeting is not, however, without its problems. For example, families identified as high risk may be unwilling to engage with support services because of a fear of

stigmatisation. Also, attention has been drawn in the literature to the so-called prevention paradox, which arises when “*although those belonging to a high-risk group are at increased risk of an adverse outcome, the majority of those experiencing the outcome do not belong to the high-risk group*” (Fergusson *et al.*, 2005). This is indeed the case in relation to offending outcomes, as the evidence presented earlier shows that while individuals with a clinical diagnosis of conduct disorder are particularly likely to become offenders, they nevertheless account for a smaller proportion of total crime than the much larger number with sub-threshold conduct problems. A possible implication is that preventive efforts should apply across the full range of a risk factor rather than being concentrated on the clinically significant extremes.

Some evidence on the effectiveness of a broad-based intervention on these lines is provided by a Canadian programme providing family support and other services for a group of 7-9 year-olds which included not just those with conduct disorder but all those whose conduct problems put them in the bottom 30% of the population (Boisjoli *et al.*, 2007). A follow-up at age 24 found that only 22% of those in the intervention group had a criminal record compared with 33% in a matched control group.

Cost effectiveness

Not all studies have collected detailed information on the costs and benefits of programmes measured in monetary terms, so the evidence base on value for money remains incomplete. However, where such information is available, it generally provides further strong support for the case for investment, as a number of programmes have been shown to yield extremely high returns.

Economic returns

In the High / Scope Perry Preschool programme, a follow-up study when the participants were aged 40 showed a return to society of more than \$17 for every dollar invested (Schweinhart *et al.*, 2005). Cumulative benefits measured in absolute terms were estimated at nearly \$260,000 per participant and just over two-thirds of this total was accounted for by savings in crime-related costs, i.e. around \$175,000

per participant. Most of the remaining benefit accrued in the form of higher earnings for the participants, but even if the programme is assessed purely as a crime prevention measure it has still yielded a return of more than \$11 for every dollar invested. By any standards this is an extraordinarily high return for public spending.

Further evidence on economic returns is provided in reviews published by the Washington State Institute for Public Policy, which have sought to assess cost effectiveness across a range of crime reduction and other early intervention programmes using a common methodology for attaching monetary values to costs and benefits (Aos *et al.*, 2004; Drake, Aos and Miller, 2009). These reviews confirm that, although there is a good deal of variation in cost effectiveness between programmes, there are a number of well-designed therapeutic interventions, applying both to children and to adolescents, which generate high returns from crime reduction and other benefits and represent extremely good value for money for taxpayers.

Another clear finding is that, for adolescent offenders, therapeutic programmes are much more cost effective than punitive interventions such as boot camps or intensive parole and probation supervision. Indeed, punitive measures usually have negative returns, with programme costs exceeding benefits (Drake, Aos and Miller, 2009).

Finally, it is worth emphasising that interventions aimed at preventing or reducing conduct problems do not need to achieve very high levels of effectiveness in reducing offending to remain good value for money. This is essentially because the costs of intervention are typically fairly low while the potential benefits are extremely high.

Costs and benefits in the UK

Figures given in NICE guidance on the management of conduct disorder indicate that the costs of parenting programmes are of the order of £600-£900 per child for group-based programmes and up to £4,000 per child for individual home-based programmes, where the latter are recommended only for complex cases or when there are particular difficulties in engaging the family (National Institute for Health and Clinical Excellence, 2006).

Set against these figures, the potential benefits of intervention can be represented by the estimated lifetime costs of conduct problems given earlier, as in principle all these costs could be saved by effective intervention and every cost saved is a benefit gained. Potential benefits are thus £225,000 per case for conduct disorder (including £160,000 in reduced offending) and £75,000 per case for sub-threshold conduct problems (including £45,000 in reduced offending).

The potential benefits of intervention thus exceed costs by several orders of magnitude, implying that even with very low success rates intervention may still be justifiable on value for money grounds. To take a specific example, an individual home-based parenting programme for children with conduct disorder costing £4,000 per child needs to bring about a reduction in subsequent offending of only 2.5% to cover its costs. Moreover, the required success rate is even lower if other, non-crime benefits are also taken into account.

The published evidence on effectiveness leaves little doubt that success rates of this modest order can readily be achieved. For example, it was shown earlier that, across a range of family-based programmes, subsequent offending is reduced by an average of around 30% – more than ten times the rate needed. A margin of this magnitude implies that the underlying case for investment in these programmes is extremely robust. Using just 1% of the annual law and order budget would be sufficient to fund a comprehensive programme of pre-school support for 30% of all children born each year.

Conclusion

There can be little doubt that a range of evidence-based programmes aimed at preventing or reducing childhood conduct problems should be much more widely available than is presently the case. In the long term nothing would do more to reduce crime.

Pointers to success

- Invest in the early identification of children at risk of developing serious conduct problems and in the provision of evidence-based support such as parenting programmes. It will yield lifetime benefits and save public money.
- Support children and young people as early as possible; but it is never too late.
- Ensure that people working in children's services (e.g. education, health visiting etc.) and the criminal justice system know about conduct disorder and the range of interventions that are available to support children and families.
- Don't just focus on children and young people meeting the criteria for conduct disorder; there are clear indications of effectiveness and savings for sub-threshold cases.
- Treat young people rather than punish them; it is more effective.

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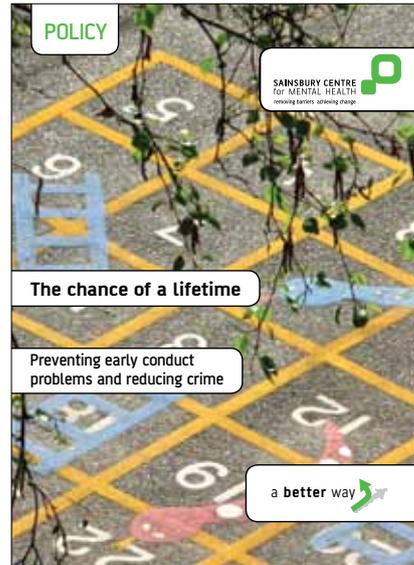
Preventing early conduct problems and reducing crime

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