

PRO BONO ECONOMICS



# Economic evaluation of Place2Be's Counselling Service in Primary Schools

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A Pro Bono Economics report for Place2Be

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In association with Dr Allan Little



# Contents

Foreword.....	3
Acknowledgements.....	4
Disclaimer.....	5
About Pro Bono Economics.....	6
About Place2Be.....	6
Executive summary.....	7
1. Introduction.....	10
2. Background.....	11
3. Our approach.....	12
4. Impact of the counselling service on participants' mental health.....	15
5. Estimated benefits of the counselling service.....	17
6. Cost of the counselling service.....	21
7. Estimated value for money of counselling service.....	22
Annex: Further details on evidence used.....	25
References.....	30

## Foreword

I am delighted to introduce this report on behalf of Pro Bono Economics, for whom I am co-founder and trustee. The report is an economic evaluation of Place2Be's counselling service in primary schools. Dr Allan Little, an economic adviser at the Department for Education, volunteered his time and expertise in order to conduct this research. I would like to congratulate him on an excellent report.

Place2Be is a leading mental health charity, which provides emotional and therapeutic services in primary and secondary schools. I have known them, their work and their leaders for over a decade. They do wonderful work with children and young adults, so I am delighted PBE has been able to evaluate some of it.

An estimated one in ten children and young people in the UK have a mental health condition. Without effective intervention, these conditions can have a significant impact on their life chances and result in significant long-term costs. These costs arise from a range of adverse outcomes for the individual, such as reduced earnings and increased government spending on education, social care, and youth and criminal justice.

Our study examines the activities of Place2Be's counselling service in 2016/17. In this year, 4,548 children in 251 primary schools in the UK benefited from the service. The study estimates, using conservative assumptions, that every £1 spent on this service delivered a societal return of £6.20, in the form of higher earnings for the individual and a lower cost to the taxpayer.

Charities tell us that results from Pro Bono Economics reports help them to truly understand the impact of their services. This report is a powerful example of our work in action. The analysis of this Place2Be scheme shows the potential for counselling services in primary schools to generate significant economic benefits to children in later life.

The Government's recent Green Paper, *Transforming children and young people's mental health provision* recognises the importance of identifying mental health issues early and putting support in place to help those children affected by it. The analysis in this report is intended to contribute to increased understanding of the value of this type of intervention in primary schools and to help support commissioning decisions.

I hope, like me, you find this report informative, engaging and useful.

Andy Haldane

Chief Economist at the Bank of England  
Co-Founder and Trustee at Pro Bono Economics

## Acknowledgements

The author would like to thank the team at Place2Be for their advice on the programme. In particular, the author is grateful to Sarah Golden, Head of Evaluation at Place2Be, for providing the financial and evaluation data which underpinned this analysis. The author is also grateful to several other colleagues for their comments and advice throughout the work, including Gemma Bruton and Neil Pratt of Pro Bono Economics, and Michael Parsonage (Centre for Mental Health).

Place2Be would like to thank Legal & General Group who have funded this research into the social return achieved through early intervention in schools. The company has many years of experience in supporting millions of adults through their Group Protection business and is keen to understand the impact of very early intervention in schools and its knock-on effect in the workplace of the future.<sup>1</sup>

Finally, the author is indebted to the research by Gillian Paull and Xiaowei Xu at Frontier Economics, which influenced the value for money framework used to analyse Place2Be's programme. Any errors in the interpretation and use of this research are the author's own.

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<sup>1</sup> For more information [www.legalandgeneralgroup.com/csr](http://www.legalandgeneralgroup.com/csr).

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## About Pro Bono Economics

The charity Pro Bono Economics (PBE) harnesses the power of economics, to help charities and social enterprises understand and improve the impact and value of their work. Set up in 2009, PBE matches professional economists who want to use their skills to volunteer with charities. We have engaged with over 400 charities and have over 400 volunteer economists on our books. The charities we help cover a range of issues including education, employment, mental health and poverty.

PBE is a charity supported by high-profile economists. Lord Gus O'Donnell is the Chair of the Board with trustees including Andy Haldane (Bank of England), Sir David Ramsden (Bank of England) and Professor Diane Coyle (University of Cambridge). Our patrons include Dame Kate Barker, Lord Jim O'Neill, Robert Peston, Martin Wolf and Lord Adair Turner.

## About Place2Be

Place2Be is the UK's leading children's mental health charity providing in-school support and expert training to improve the emotional wellbeing of pupils, families, teachers and school staff.

Our school-based teams of mental health professionals help to create a culture of openness, ensuring that potential mental health problems can be identified at an early stage and that children can access support in a safe and familiar environment.

Place2Be is a leading provider of specialist training and university-validated child counselling qualifications, building an ever-growing pool of professionals who specialise in working therapeutically with children and young people. The charity also trains school leaders, teachers and staff to build their understanding of children's mental health and wellbeing.

## Executive summary

Place2Be is a children's mental health charity that provides in-school support and training to improve the emotional wellbeing of pupils, families, and staff in primary and secondary schools. Founded in 1994, by 2016/17 Place2Be's services were reaching 116,000 pupils across 282 primary and secondary schools in the UK.<sup>2</sup>

Mental health problems affect a significant number of children and young people in the UK. The available data suggests that one in ten children and young people aged 5-16 have a clinically diagnosable mental health problem. This corresponds to around 850,000 children and young people in total, or roughly three in every school class.<sup>3</sup> Children suffer from a range of difficulties, including conduct disorder (5.8% of children), anxiety (3.3%), hyperkinetic disorder (1.5%) and depression (0.9%).

Mental health problems can have a significant impact on children and young people's lives, and without effective intervention can damage their long-term prospects. The Government is seeking to improve mental health provision for children and young people and has recognised the important role that schools and colleges play in identifying mental health issues at an early stage, and in helping to put in place support for children experiencing difficulties. Charities such as Place2Be have a valuable part to play in improving outcomes for children through in-school mental health support, particularly where schools lack the necessary resources or expertise.

### Study scope and aims

Place2Be asked Pro Bono Economics to assess the value for money of its one-to-one counselling service in primary schools. Our analysis is intended to provide insight into the economic case for in-school provision of this type of service and support commissioning decisions.

Our study focuses on the activities of the counselling service in 2016/17. In this year, 4,548 children in 251 primary schools benefited from the service. We use existing evidence to link improvements in the mental health of these children to better future outcomes in seven different areas as they reach adolescence and adulthood, including school attendance, employment prospects, and involvement in criminal behaviour. The economic benefit of the programme is estimated as the total monetary value associated with improvements in these outcomes, including higher output from employment and lower spending on public services (such as health and the criminal justice system), that accrue over the lifetime of the children who attend the counselling service.

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<sup>2</sup> [www.place2be.org.uk/what-we-do](http://www.place2be.org.uk/what-we-do)

<sup>3</sup> Department of Health and Department for Education (2017): *Transforming children and young people's mental health provision*.

## Key findings<sup>4</sup>

Our analysis of the counselling scheme in 2016/17 shows that:

- Providing counselling services in primary school could lead to improved outcomes in the form of reduced rates of truancy, exclusion, smoking, depression, and crime, and also higher rates of employment and wages.
- Every £1 invested in the service in 2016/17 results in benefits of £6.20 in terms of improved long-term outcomes.
- The estimated benefit of counselling is £25.9m for all the children who received counselling in 2016/17 compared to a cost of £4.2m for the service.
- The potential benefit per child from counselling is just over £5,700 per child, including a saving of over £2,000 per child for government.

## Interpretation of these findings

Our results are based on several assumptions detailed in the report, two of which are particularly important to highlight:

- Our estimate of benefits is based on a forecast of improvements across several later life outcomes for children who received counselling in 2016/17 rather than on actual observed outcomes for these children. We assume that the linkages between improved mental health in early years and later outcomes for children who received counselling in this year are similar to those found in the retrospective studies we rely on in this study.
- Our estimate of benefits includes a 50% reduction to allow for the possibility that some children who received counselling would have got better anyway, and the potential fading out of initial improvements in mental health after counselling. This is a broad assumption and the true importance of these effects is uncertain given the evidence available.

Evidence on the causal impact of the counselling service on children's mental health could potentially be obtained in future evaluations if a feasible way can be found to assess how the mental health of young people changes without counselling. This might include, for example, benchmarking changes in the mental health of children who receive individual counselling against children who do not. However, the challenge, as ever, is to ensure that the two groups are sufficiently comparable to give robust results. This is particularly difficult for mental health interventions, given the practical and ethical considerations involved.

Additional evidence on the extent to which gains made through counselling are sustained over time would also be valuable in future evaluations. We understand that Place2Be intends to carry out follow-up evaluations with children who have received counselling to help inform future evaluations.

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<sup>4</sup> Costs and benefit figures are estimates that are based on several assumptions and uncertainties detailed in the report. The figures quoted here correspond to the average values in the main report. Benefits are shown in 2016 prices and are present values calculated from the monetary value of improved outcomes over the lifetimes of children who received counselling in 2016/17. Future benefits are discounted at 3.5%.

## Conclusion

Overall, we consider that our analysis shows the potential for counselling services in primary schools to generate significant economic benefits resulting from improved outcomes for children in adolescence and adulthood. The gap between estimated benefits and delivery costs is significantly positive after applying a 50% downward adjustment to benefits.<sup>5</sup> Moreover, estimated benefits exceed costs, provided that at least 16% of the increase in mental health shown by children who received counselling is causally related to the counselling service, and has a sustained impact on later life outcomes for these children.

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<sup>5</sup> Subject to the limitations and assumptions outlined above and detailed in the report.

# 1. Introduction

Place2Be is a children's mental health charity that provides in-school support and training to improve the emotional wellbeing of pupils, families, and staff in primary and secondary schools. Founded in 1994, by 2016/17 Place2Be's services were reaching 116,000 pupils across 282 primary and secondary schools in the UK.

Place2Be offers a flexible menu of services that are tailored to meet schools' needs. Its typical model is based on a team of five or more Place2Be personnel (both clinicians and skilled volunteers) that delivers a range of services in a school. Each school has a Place2Be School Project Manager, who is an experienced clinician with responsibility for overseeing service delivery and assessment. Place2Be's services include individual and group counselling for children; dedicated therapeutic support for parents and carers; and training, individual advice and support for Head Teachers and school staff.<sup>6</sup>

## Study scope and aims

Place2Be asked Pro Bono Economics to carry out an economic evaluation of its one-to-one counselling service in primary schools ('the counselling service') to assess whether it provides value for money. The counselling service provides children with weekly one-to-one sessions with a trained counsellor that are tailored to each child's needs. The fundamental aim is to improve children's mental health and wellbeing. Children can self-refer into the counselling service, or be referred by a parent or carer, a teacher or another agency. The issues raised by children are wide-ranging and often complex, including bullying, family breakdown, addiction or abuse, dealing with anger or anxiety, bereavement or friendship issues.

Our analysis compares the estimated economic benefits of the service to its delivery costs using data for 2016/17. In this year, Place2Be provided one-to-one counselling to 4,548 children aged between 4 and 11 in 251 primary schools in the UK.

## Structure of this report

The remainder of the report is structured as follows:

- Section 2 sets out the background to the report.
- Section 3 outlines our approach in this evaluation.
- Section 4 assesses the impact of the counselling service on participants' mental health.
- Section 5 evaluates the economic benefits of the counselling service.
- Section 6 discusses the delivery cost of the counselling service.
- Section 7 sets out our value for money assessment.

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<sup>6</sup> See [www.place2be.org.uk/what-we-do](http://www.place2be.org.uk/what-we-do) and <https://www.place2be.org.uk/what-we-do/supporting-schools/our-model.aspx>

## 2. Background

Mental health problems affect a significant number of children and young people in the UK. The available data suggests that one in ten children and young people aged 5-16 have a clinically diagnosable mental health problem.<sup>7</sup> This corresponds to around 850,000 children and young people in total, or roughly three in every school class.<sup>8</sup> Children suffer from a range of difficulties, including conduct disorder (5.8% of children), anxiety (3.3%), hyperkinetic disorder (1.5%) and depression (0.9%).

Mental health and behavioural difficulties that start below secondary school age can have long-lasting effects on children's prospects in adolescence and adulthood. For example, around half of children affected by early onset conduct disorder have poor life chances, including an increased risk of adult mental illnesses (Moffitt, 2006). Compared with their peers, children with conduct disorders are on average more likely to leave school with no qualifications, at higher risk of becoming drug dependent, more likely to end up in prison, and more likely to die before the age of 30.

The Department of Health and NHS England (2015) set out clear evidence for the role of schools in the promotion of good mental health, both in the identification of children's needs and as a location of the provision of initial support. Many schools acknowledge this role and are keen to act on it (Marshall et al, 2017; White et al, 2017).

The Government is seeking to improve mental health provision for children and young people. It published a Green Paper in 2017 setting out the government's proposals for public consultation. The Green Paper also recognises the important role that schools and colleges play in identifying mental health issues at an early stage, and in helping to put in place support for children experiencing difficulties.

Charities such as Place2Be who provide school-based mental health support services can play an important role in realising the Government's aim of early intervention through enhanced provision in schools. The analysis in this report is intended to contribute to increased understanding of the economic case for this type of provision, and support commissioning decisions.

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<sup>7</sup> Green, H., McGinnity, A., Meltzer, H., et al. (2005). *Mental health of children and young people in Great Britain*.

<sup>8</sup> Department of Health and Department for Education (2017): *Transforming children and young people's mental health provision*.

### 3. Our approach

This section provides an overview of the approach used in our economic evaluation of Place2Be's counselling service. Further details of our analysis are set out in the following sections and the Annex to the report. We follow a four-step approach:

- Step 1: Quantification of the impact of the counselling service on the mental health of children aged 4-11.
- Step 2: Quantification of the link between better mental health in early years and improved later outcomes between the ages of 11 and 60.
- Step 3: Estimation of the potential economic benefit of improved later outcomes in monetary terms for participants in the counselling service.
- Step 4: Calculation of the value for money of the counselling service.

We estimate the benefits of the counselling scheme using an approach that closely follows the framework set out in a recent report by Paull and Xu of Frontier Economics.<sup>9</sup> This report is an important part of the value for money component of the Department for Education's (DFE) Study of Early Education and Development (SEED), and it has been peer reviewed by Government and leading academics.<sup>10</sup>

One of the key challenges in evaluating the counselling scheme, as in other evaluations of early interventions, is that benefits arise over a long period of time. This means that data on the observed later outcomes for children who receive counselling from Place2Be will not be available for many years. We therefore rely on retrospective evidence from previous related studies reported in Paull and Xu (2017) to assess the strength of the links between improved mental health in childhood and a range of later outcomes in our evaluation of the counselling service.

Paull and Xu's approach is particularly useful in the context of this study because it assesses the monetary value of improved mental health in early years, based on the Strengths and Difficulties Questionnaire (SDQ) measure of child development that is used by Place2Be to evaluate the impact of the counselling service. This is a well-established metric used to evaluate therapeutic interventions with children and adolescents.<sup>11</sup>

Although the SDQ is a widely used evaluation metric, it is rare for evaluators to value the economic return associated with improved SDQ scores. We combine Place2Be's evaluation data with the estimates in Paull and Xu to quantify the potential economic benefit of the counselling service.

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<sup>9</sup> We refer to this report as Paull and Xu (2017).

<sup>10</sup> The SEED study is based on a large scale longitudinal study following the progress of a cohort of 8,000 children in England from age 2 through to the end of Key Stage 1. The SEED study was carried out by NatCen Social Research, working with Frontier Economics, the University of Oxford and Action for Children.

<sup>11</sup> The SDQ measures a child's strengths and difficulties in several domains relating to children's conduct, behaviour and emotional difficulty. See [sdqinfo.com](http://sdqinfo.com) for further details.

The four key steps in our approach are outlined below and summarised schematically in Figure 1.

### **Step 1: Quantification of the impact of counselling on early mental health**

The impact of the counselling service on participants' mental health is assessed using evaluation data collected by Place2Be. This comprises a set of SDQ assessments completed by teachers and parents before and after counselling for a large sample of children aged 4-11 who received counselling in 2015/16.<sup>12</sup>

### **Step 2: Quantification of the link between early mental health and later outcomes**

The data on the impact of the counselling service on children's mental health is linked to changes in the likelihood of a range of later outcomes, based on evidence reported in Paull and Xu (2017) that is discussed in the Annex.

### **Step 3: Estimation of the value of improved later outcomes**

The economic benefits of the service are estimated by monetising the value of the expected improvements in the relevant later outcomes. We use monetary values for these outcomes that are reported in Paull and Xu (2017) to calculate the total lifetime benefit per child of the service, and multiply this by the number of children who received counselling in 2016/17.<sup>13</sup> We apply a 50% downward adjustment to the estimated gross benefit of the service to capture the possibility of some natural recovery amongst children suffering from poor mental health, as well as a fading out of improvements over time. The total benefits from the service accrue to the children who receive counselling (e.g. through increased lifetime earnings), the government (e.g. through reduced expenditure on public services), and other citizens.

### **Step 4: Calculation of the value for money of the counselling service**

We bring together our estimate of the total benefit and delivery cost of the counselling service to assess value for money. We compute both the net total benefit (i.e. total benefit less delivery cost), and the benefit-cost ratio.

Figure 1 shows how the different elements of the analysis fit together. The benefits reported in the third column show the estimated total benefit of the counselling service in 2016/17, and the breakdown between the children who receive counselling (private benefit), government, and other individuals (society). The figures include the 50% downward adjustment mentioned above, and they represent the average value in our analysis based on the assessments of both parents and teachers.<sup>14</sup>

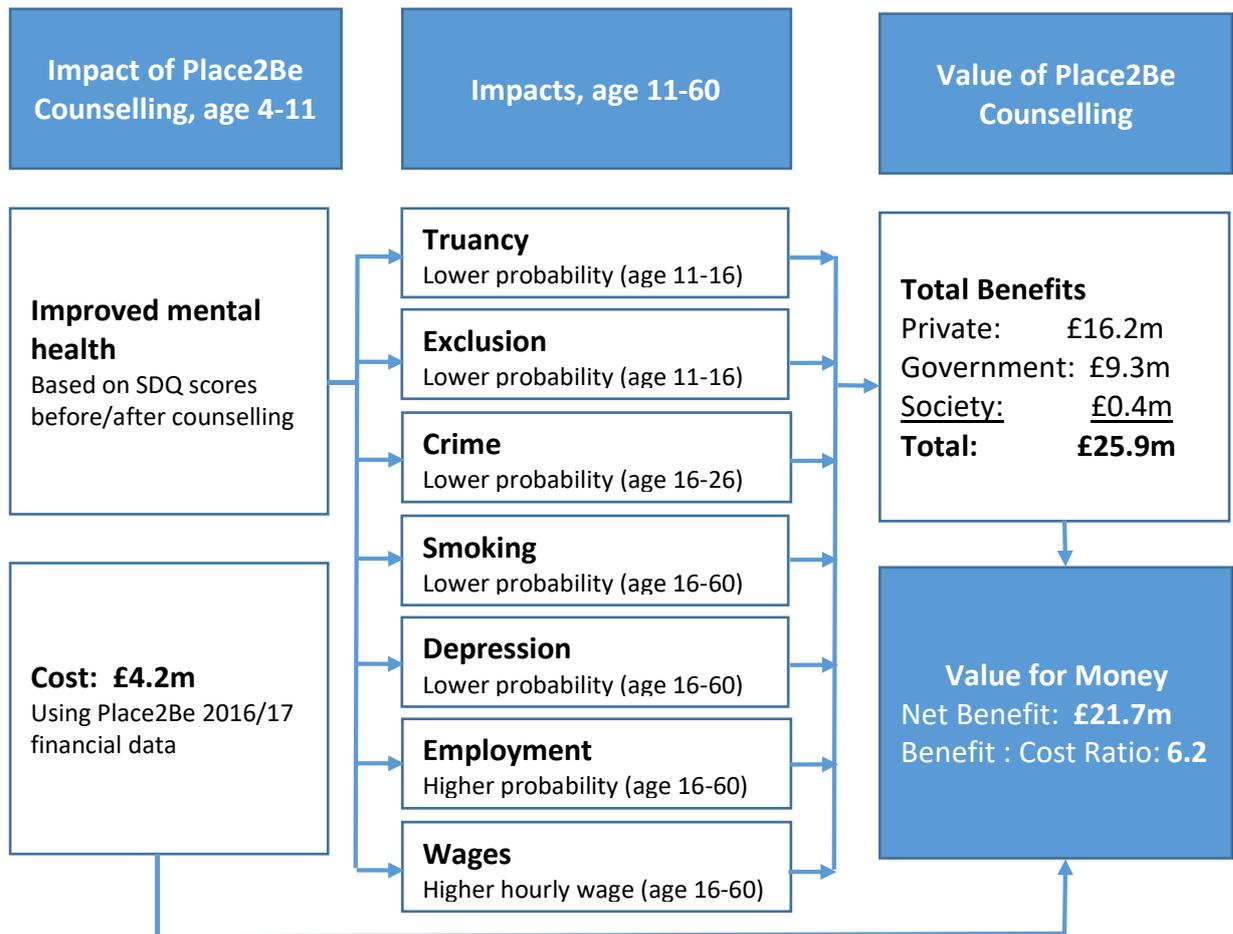
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<sup>12</sup> We assume for the purposes of this study that this is broadly representative of the impact of the counselling service in 2016/17.

<sup>13</sup> The only exception to this relates to the cost of crime, where we use a higher estimate that we consider is more appropriate. See section 4 and the discussion in the Annex for details.

<sup>14</sup> Section 5 shows results for parent and teacher assessments separately.

Figure 1: Overview of our approach



Note: SDQ scores refers to Goodman’s Strengths and Difficulties Questionnaire. Benefits are expressed as present values and show the monetary value of improved outcomes over the lifetime of children who received counselling in 2016/17 based on the average improvement in SDQ score. Future benefits are discounted at 3.5%, and all monetary values are in 2016 prices.

## 4. Impact of the counselling service on participants' mental health

We assess the impact of the counselling service on children's mental health by comparing the mean SDQ score before and after counselling using assessments completed by teachers and parents. The SDQ score here refers to the 'total difficulties' score, which is a summary measure that represents a child's overall mental health (higher scores indicate that a child is experiencing more difficulties).

Figure 2 shows the mean SDQ score before and after counselling based on the evaluation data Place2Be collected from parents and teachers. The mean SDQ score before counselling was 15.2 based on teacher assessments and 16.6 based on parent assessments. These scores are very close to the thresholds which are indicative of a clinically diagnosable mental health condition in the SDQ scoring system (16.0 for teacher assessments and 17.0 for parent assessments).<sup>15</sup> Post-counselling, the average SDQ score reduced significantly to 12.2 based on teacher assessments, and 12.3 based on parent assessments.

Figure 2: Impact of counselling on SDQ score



Note: Based on teacher evaluations for 2,179 children and parent evaluations for 1,637 children in 2015/16. Standard deviations for the post-counselling scores are 7.2 and 7.0 for teacher and parent assessments, respectively. The SDQ measure is the total difficulties score and has a range of 0 to 40.

We divide the reduction in the mean SDQ score by the standard deviation of the SDQ scores in the post-counselling assessments. This gives a standardised measure of the impact of the counselling service in terms of the change measured as a fraction of the standard deviation.<sup>16</sup> Using this measure, the

<sup>15</sup> Goodman R (1997). *The Strengths and Difficulties Questionnaire: A Research Note*. Journal of Child Psychology and Psychiatry, 38, 581-586.

<sup>16</sup> The standard deviation is a measure of the dispersion of SDQ scores around the average value.

estimated impact of the counselling service on SDQ scores is 0.42 and 0.61 standard deviation for teacher and parent assessments respectively, with an average value of 0.52<sup>17</sup>

These results indicate that parents rate the effectiveness of counselling more highly than teachers, which is a typical finding in analysis of SDQ data. To explore the effect of this on our analysis, we present our findings separately based on teachers' assessments, parents' assessments, and for the average across both. We consider that the teacher and parent assessments are equally valid, and hence the full range of estimates should be used when assessing the value of the counselling service to avoid overreliance on either.

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<sup>17</sup> Sawilowsky (2009) suggests that impacts of 0.2, 0.5 and 0.8 standard deviation should be classified as 'small', 'medium' and 'large' respectively, as a 'rule of thumb'.

## 5. Estimated benefits of the counselling service

We estimate the economic benefits of the service by monetising the value of the expected improvements in the seven later outcomes that are included in our analysis. It is important to note that our analysis focuses on outcomes that can be reliably quantified in monetary terms, such as employment and savings related to reduced demand on various public services. This is unlikely to capture all the potential benefits, however, and so our approach is likely to give a conservative view.

For example, we do not include an estimate of the impact of better mental health on well-being and quality of life in adolescence and adulthood. This limitation, which is not unique to this study, reflects the lack of consensus on how such intangible outcomes should be valued in monetary terms. Also, the monetary valuations we use are unlikely to capture all the costs that are related to poor outcomes in later life associated with poor mental health in childhood, including for example:

- costs associated with children taken into care;
- costs of alcohol or drug abuse; and
- costs of adult mental health illnesses other than depression.

We estimate the benefits of the counselling service using monetary values reported in Paull and Xu (2017) relating to the impact of improved mental health in early years on later outcomes. The only exception relates to the monetary value associated with a reduction in youth offending where we use a higher figure than Paull and Xu.<sup>18</sup> Further detail on our calculation of the benefit of the counselling service from the values reported in Paull and Xu, and our treatment of crime, is provided in the Annex.

### Allowing for natural recovery and fading of improvements

It is important to consider what proportion of the estimated improvement in SDQ scores based on teacher and parent assessments can be causally attributed to the counselling service. This is a well-known issue in economic evaluation which can result in benefits being overstated if not taken into account.

As noted earlier, it is likely that some children will get better without counselling due to natural recovery. However, the natural recovery rate cannot be measured accurately in the absence of a control sample which assesses outcomes for a comparable group of children who do not receive one-to-one counselling.

There is also an important question about whether initial improvements in mental health are sustained once counselling ends or fade out over time.<sup>19</sup> We understand that Place2Be plans to evaluate the

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<sup>18</sup> Specifically, we use a monetary value for crime that is around 10 times larger than the value reported in Paull and Xi (2017). This adjustment results in a 4% increase in the total benefit across all outcomes and does not materially alter our overall findings.

<sup>19</sup> Longitudinal cohort studies have explored these issues, but this research is not directly applicable to Place2Be's counselling evaluation. Much of the evidence relates to the stability of individual disorders and finds that recovery and persistence vary depending on the nature of the problem. Bevilacqua et al (2017) presented a systematic review on the trajectories of conduct problems, reporting that "full recovery from conduct

significance of fade-out based on data from one-year follow-up assessments with children who received individual counselling.

Ideally, the impact of the counselling service should be assessed by comparing the change in SDQ scores for children who receive counselling to the change over the same period for a group of children who do not receive counselling. The difference between the two groups will reveal the improvement that is causally attributable to the counselling service, provided that the two groups are genuinely comparable.

Unfortunately, we do not have a suitable comparison group for this study. In the absence of firm evidence on these issues we have applied a 50% downward adjustment to estimated benefits to take account of natural recovery and the potential fade-out of initial improvements over time. Place2Be's mental health experts advised that this is plausible for a programme like the counselling service. However, this is a broad assumption that could be improved through further research, and it is an important area of uncertainty in our analysis.

### **Estimated benefit of the counselling service per child**

Figure 3 shows the estimated benefit of the counselling service per child based on parent and teacher assessments, as well as the average figure. This represents the total monetary value per child of all seven later outcomes included in our analysis and includes the 50% downward adjustment noted above. All figures are expressed as present values to take account of the fact that benefits emerge at different points in the future, and in 2016 prices.<sup>20</sup> As can be seen, the benefit is higher based on parent assessments, reflecting the fact that parents considered that counselling was more effective than teachers.

Just under 63% of the total benefit from the counselling service accrues to the children who receive counselling. This benefit, which amounts to £3,568 per child in the average case, is mainly due to higher lifetime earnings from increased employment and higher wages, with a significantly smaller contribution from a reduction in smoking. Savings to government account for a further 36% of benefits arising from increased tax revenue and lower spending on public services related to the outcomes included in our analysis.<sup>21</sup> These savings amount to £2,050 per child.

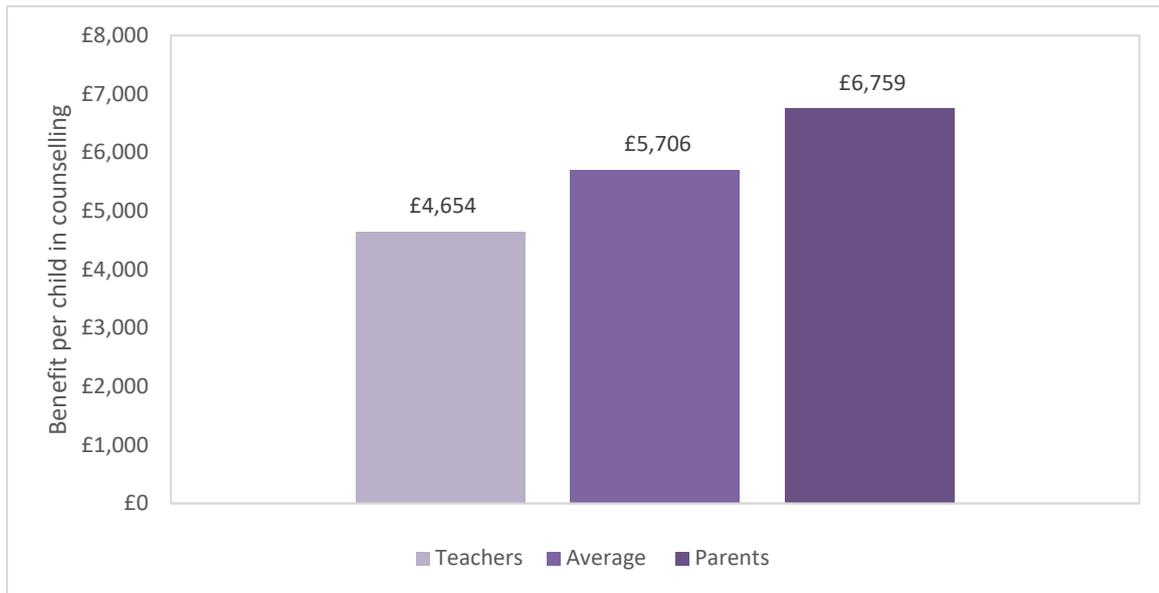
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problems rarely occurs" when this is assessed against a range of psychosocial outcomes in adulthood. Depression and anxiety problems can be episodic. However, the expected rate of recovery based specifically on the SDQ measure (which covers conduct disorders, emotional issues, hyperactivity and peer relationships), over the specific timeframe of Place2Be's evaluation, cannot be estimated accurately based on this evidence.

<sup>20</sup> These adjustments ensure benefits that occur at different ages are included in the calculation on a consistent basis that takes account of the time value of money as well as inflation.

<sup>21</sup> A further benefit of £88 per child accrues to other members of society, related to the expected reduction in smoking.

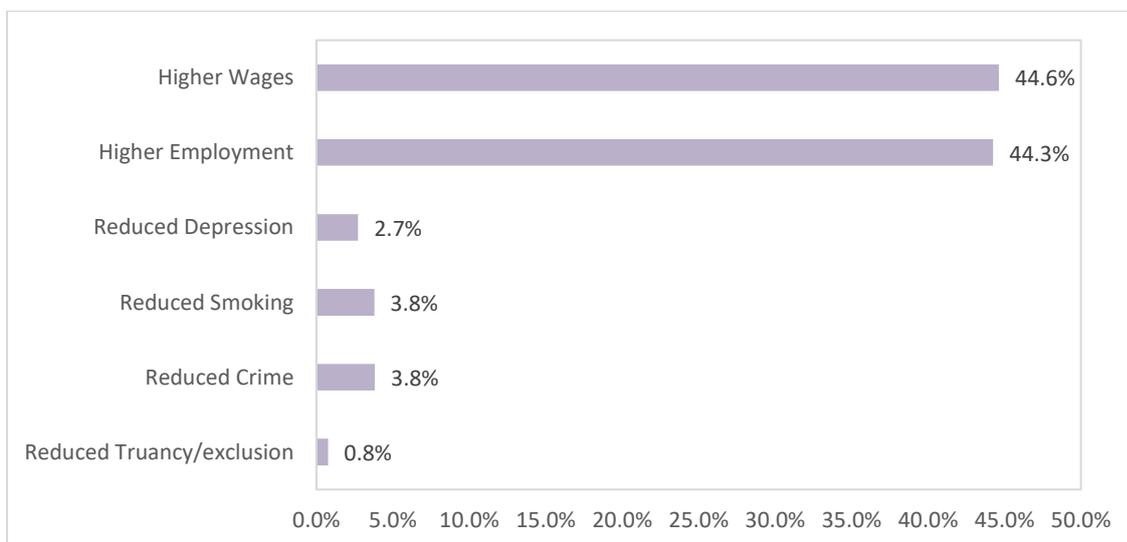
**Figure 3: Estimated benefit of counselling service per child in 2016/17**



Note: Benefits are discounted using a 3.5% discount rate and expressed in 2016 prices.

Figure 4 shows the share of the estimated benefit for each outcome. The relative importance of employment-related benefits is partly because of the strength of the link between mental health improvements in early years to improved employment outcomes later in life compared to the other outcomes. A second more important reason is that the gains from improved lifetime productivity arise over some 44 years of working life in our framework (i.e. between the age of 16 and 60), which is considerably longer than most of the other outcomes.

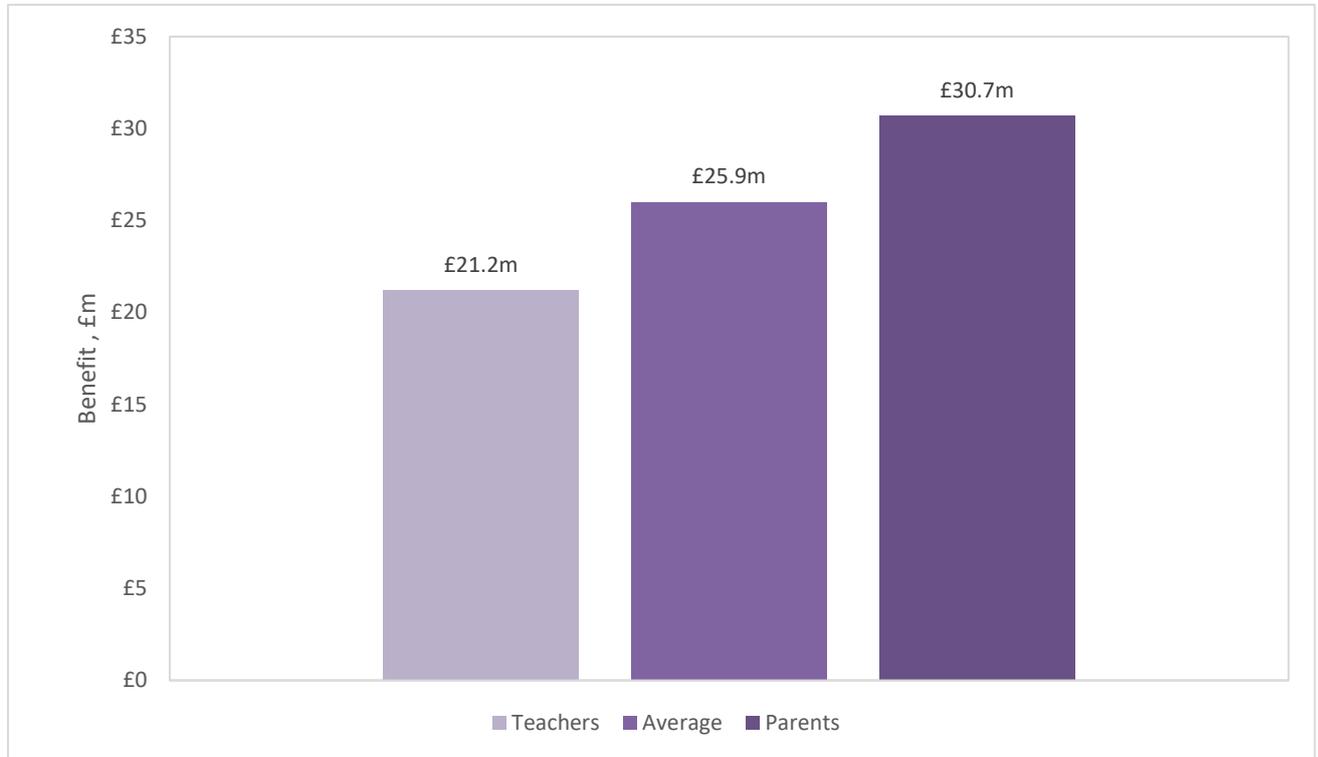
**Figure 4: Percentage share of estimated benefit by outcome**



### Estimated benefit of the counselling service for all children in 2016/17

Figure 5 shows the estimated benefit for the counselling service related to all 4,548 children who received counselling in 2016/17. This is calculated by multiplying the benefit per child by the number of children who received individual counselling in this year to give the aggregate benefit of the service.

Figure 5: Estimated total benefit of counselling service



Note: Benefits are discounted using a 3.5% discount rate and expressed in 2016 prices.

## 6. Cost of the counselling service

We estimate the cost of the counselling service based on financial data provided by Place2Be relating to the total cost of providing services in primary schools in the 2016/17 financial year. As Place2Be provides a range of services in addition to the counselling service, it was necessary to estimate the proportion of the overall cost that could be associated with the delivery of the counselling service using a pro-rata apportionment of the total cost of providing all services in primary schools that is based on the time spent on the service by Place2Be's School Project Managers.<sup>22</sup> This method allocates a blend of fixed and recurrent costs to the counselling service.

The total delivery cost of all Place2Be's services in primary schools in 2016/17 was £9.3m.<sup>23</sup> This figure relates to staff costs and other overheads. It does not include non-financial opportunity costs associated with any resources provided by children, parents and the school that are not paid for by Place2Be (including for example use of school buildings and parent and school staff time).

Place2Be told us that School Project Managers spent on average 45% of their time on the counselling service in 2016/17. This includes undertaking referrals and assessments, direct contact time and clinical supervision. The other 55% of their time is used on a range of other activities involved in delivering a 'whole school approach', such as group work, whole class work, the self-referral service, consultation and support for school staff, parent partnership work and multi-agency meetings. Applying this 45% figure gives an apportioned cost for delivering the one-to-one counselling service of £4.2m per annum. This is equivalent to £923 per child who receives counselling.<sup>24</sup>

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<sup>22</sup> Place2Be provides a range of interdependent services in schools which means that it is difficult to attribute costs to specific services. For example, materials and equipment are shared across activities; referrals to individual counselling are informed by participation in other activities; and staff training covers multiple activities.

<sup>23</sup> This figure relates to the academic year starting 31 August 2016. We note that some pupils continued in counselling between one academic year and the next. We assume that the average cost per pupil in 2016/17 represents a 'steady-state', with children entering and leaving the counselling service at a similar rate.

<sup>24</sup> This is the average cost of the service per child, based on the scale of Place2Be's counselling service in 2016/17. We note that scaling up the service to support additional children may have an impact on the average cost, depending on the extent to which it would be necessary to incur additional fixed costs to support this (for example in the form of overheads).

## 7. Estimated value for money of counselling service

We assess the value for money of the counselling service by considering two standard measures commonly used in economic evaluations:

- Net benefit of the service, calculated by subtracting the cost of the counselling service from the present value of the monetary benefits attributed to the service. This provides a summary measure of the extent to which benefits exceed delivery costs.
- Benefit to cost ratio of the service, calculated by dividing the present value of the monetary benefit by the cost of the counselling service. This ratio shows the value of benefits for every £1 of cost incurred in delivering the service.

Figure 6 shows the net benefit based on the assessments of the impact of counselling provided by parents and teachers, as well as the average based on both types of assessment. The estimated net benefit ranges from £17.0m to £26.5m, with an average estimate of £21.7m. These figures represent the estimated net present value of the improvements in later life outcomes for the 4,548 children who took part in counselling in 2016/17. The corresponding average net benefits per pupil are £3,730 to £5,835, with an average of £4,782.

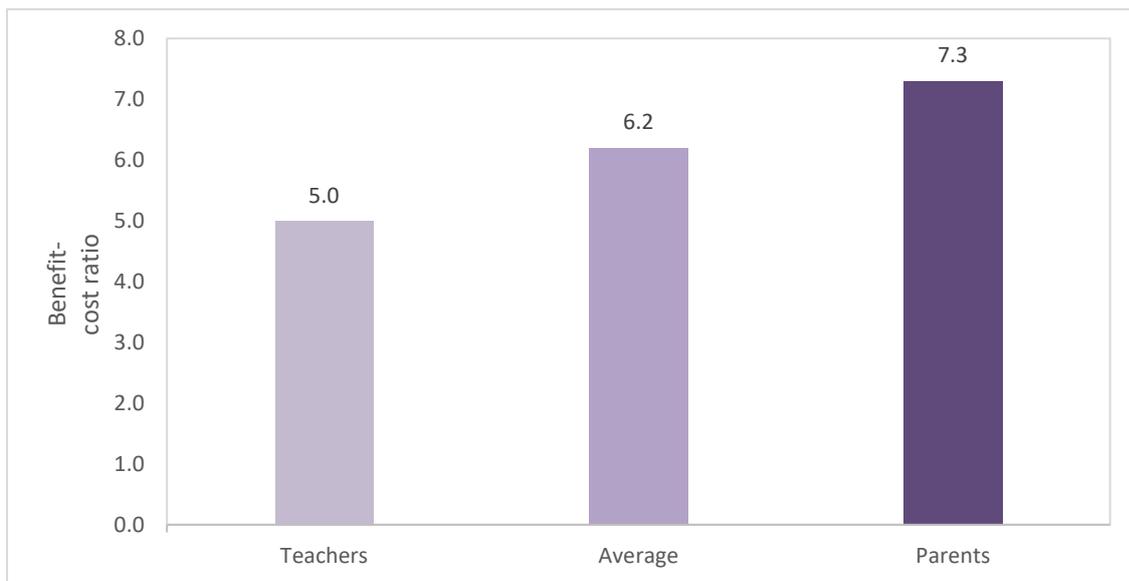
Figure 7 shows that the benefit to cost ratio ranges from 5.0 to 7.3 for teacher and parent assessments, with an average of 6.2. This means that the counselling service generates benefits between £5.0 and £7.3 for every £1 incurred in delivering the service.

**Figure 6: Estimated net benefit of counselling service**



Note: All figures are in 2016 prices. Benefits are discounted using a 3.5% discount rate.

**Figure 7: Estimated benefit: cost ratio**



Note: All figures are in 2016 prices. Benefits are discounted using a 3.5% discount rate.

### **Interpretation of our results**

Our results are based on several assumptions which are set out in the report and in the Annex. As a general matter, we have adopted a conservative approach to avoid overstating the net benefit of the counselling service. There are, however, three assumptions that are particularly important to our results which should be highlighted:

- First, the calculation of benefits is based on a forecast of the expected impact of individual counselling in primary school on later life outcomes, rather than on actual observed outcomes for those children who receive counselling. Our analysis therefore relies on the assumption that the linkages between improved mental health in early years and later outcomes reported in Paull and Xu (2017) are both robust and relevant to the children who received counselling in 2016/17.
- Second, we do not have a control group in this study and therefore the amount of any improvement in mental health that is causally attributed to the counselling service is uncertain.
- Third, the extent to which improvements in mental health are sustained after counselling is uncertain.

As explained above, we have reduced the estimate of gross benefits by 50% to take account of potential natural recovery and fading out of initial improvements. However, we acknowledge that this is a broad assumption which may not be accurate, and the true figure may be higher or lower. It would be useful to investigate the feasibility of identifying a robust control or comparison group for use in future evaluations to provide more definitive evidence on the causal impact of the counselling service. This might include, for example, benchmarking changes in SDQ scores amongst children who receive individual counselling against children who do not. The challenge, as ever, in this type of work is to find

ways of ensuring that the children in the comparator group are sufficiently comparable to those who receive counselling to give meaningful results.

Place2Be's ongoing evaluation of their programme is likely to improve the assumptions made about the impact of counselling on children's mental health and the links to later outcomes. We understand that Place2Be plan to evaluate data from one-year follow-up assessments with children who completed counselling. This should shed light on how well improvements from counselling are sustained over time. More generally, the literature on the economic value of mental health interventions continues to develop, including new methods to capture the impact of mental health issues on individual wellbeing. Place2Be may wish to develop their cost-benefit approach, as this new evidence becomes available.

## **Conclusion**

Overall, we consider that our analysis shows the potential for counselling services in primary schools to generate significant economic benefits resulting from improved outcomes for children in adolescence and adulthood. The gap between estimated benefits and delivery costs is significantly positive after applying a 50% downward adjustment to benefits. Moreover, estimated benefits exceed costs provided that at least 16% of the increase in mental health shown by children who received counselling is causally related to the counselling service and has a sustained impact on later life outcomes for these children.<sup>25</sup>

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<sup>25</sup> This figure is based on the average benefit of the counselling service. The comparable figure for parents' and teachers' assessments are 14% and 20%.

## Annex: Further details on evidence used

In this annex we provide further details of the evidence we have used to quantify the monetary value of improved child development. As discussed in the main report, we have relied on results that are reported in Paull and Xu (2017) in relation to:

- the links from the total difficulties SDQ score in early years to seven later outcomes in a child's life; and
- estimates of the monetary values of improvements in these later outcomes associated with improvements in the SDQ score in early years.

We discuss how we have used the estimates in Paull and Xu below. Following this, we provide further detailed observations on the evidence relating to the monetary values reported in Paull and Xu (2017)

### Evidence on the links from SDQ in early years to later outcomes

Paull and Xu (2017) draw on a retrospective study by Carneiro *et al.* (2011) to establish the link between SDQ scores in early years and several outcomes in later life. The Carneiro study is based on longitudinal data from the National Child Development Survey (NCDS), which is a cohort study based on all individuals born in Great Britain in a single week in March 1958. It uses this data to assess the relationship between children's cognitive skills and mental health at age 7 and the likelihood of:

- truancy, exclusion, youth crime and smoking by age 16; and
- crime, depression, employment and hourly wages at age 42.

There are three limitations of this evidence that are important to bear in mind:

- First, our use of the retrospective evidence in Carneiro (2011) means that we rely on the assumption that the links between SDQ scores in early years and later outcomes for children who receive counselling in 2016/17 are similar in the NCDS sample several decades ago.
- Second, the NCDS used teacher ratings of children's behaviour using the Bristol Social Adjustment Guides (BSAG) to assess mental health (the SDQ measure was not available in the NCDS). Paull and Xu (2017) therefore assumed that standardised improvements in the BSAG measure would approximate to improvements on the SDQ scale. In practice, however, the correspondence between these rating scales is unlikely to be perfect.
- Third, the NCDS observed children's outcomes at age 7 and 11, but not during intervening years. Following Paull and Xu (2017) we assume that the reported impacts at age 7 in Carneiro *et al.* (2011) are a reasonable proxy for pupils of all ages between 4 and 11.

The links between early development and later outcomes that are relevant to our study are shown in Table A1 below. The figures show the change in the probability of each later outcome that is associated with a one standard deviation improvement in the SDQ score for children aged 4-11. The impact of the

counselling service on the likelihood of each outcome for is obtained by multiplying these probabilities by the estimated improvement in the SDQ score of between 0.42 and 0.61 standard deviations.<sup>26</sup>

**Table A1: Impact of improvement in mental health at age 4-11 on later outcomes (for 1 standard deviation)**

Outcome	Ages	Change in probability
Truancy	11 – 16	-2.2%
Exclusion	11 – 16	-0.2%
Crime	16 – 26	-1.6%
Smoking	16 – 60	-1.3%
Depression	16 – 60	-1.9%
Employment	16 – 60	+2.1%
Wages	16 – 60	+2.5%

### Evidence on the monetary valuations of improved later outcomes

Paull and Xu (2017) provide monetary valuations for each of the seven later outcomes included in this study. These outcomes arise over an individual’s life between the ages of 11 and 60, depending on the outcome. Paull and Xu draw on several sources of evidence to estimate the relevant monetary values (see Table 6 of Paull and Xu for details) which are selected to avoid double-counting of benefits. For example, the impact of reduced depression in adulthood on future earnings is not separately included since this is captured through the link between children’s early mental health and earnings.

We use the monetary values associated with improvements in later outcomes relating to a one standard deviation reduction in SDQ in early years that are reported in column 4 of Table 7 of Paull and Xu (2017). These values represent the expected change in the lifetime value per child associated with the change in probabilities for each of the outcomes reported in Table A1 above. We have made three adjustments to these figures as follows:

- First, the values in Table 7 of Paull and Xu relate to the present value of the future benefits from improved outcomes associated with a one standard deviation decrease in SDQ at age 3.<sup>27</sup> We must therefore translate them into equivalent figures for a one standard deviation decrease in SDQ at age 7. This is done by scaling the monetary estimates for a one standard deviation in SDQ at age 3 by a factor of 1/0.39. The rationale for this is that Paull and Xu report that a one standard deviation increase in SDQ at age 3 is associated with a 0.39 increase at age 7 (see Figure 3 in Paull and Xu).
- Second, Paull and Xu report monetary values in 2015 prices. We convert these into 2016 prices using the HMT GDP deflator series.

<sup>26</sup> These figures are based on the associations shown in Table 5 of Paull and Xu (2017). Paull and Xu state that these associations are statistically significant and based on regression analysis with controls for other factors.

<sup>27</sup> Paull and Xu (2017) apply a discount rate of 3.5 percent to the value of outcomes that occur within 30 years (starting from age 3) and 3 percent thereafter for up to 75 years, as recommended by HM Treasury (2003).

- Third, we have adjusted the estimated cost of crime (see discussion below for details).

With these adjustments we obtain an estimate of the lifetime value of a one standard deviation reduction in the SDQ score at age 7 for each outcome. We use these monetary values to calculate the (equivalent) value for children at each age between 4 and 11. This is done by applying an age-related adjustment to the monetary values for a child age 7 to allow for the fact that benefits associated with improved later outcomes at a given age will occur earlier for children who are older than those who are younger.<sup>28</sup> Finally, we calculate a weighted average value per child using the age breakdown of children participating in counselling as weights.

Table A2 summarises this analysis. The weighted average value per child is shown in the final column. Note that:

- The monetary values for children of age 3 in the third column are based on the values reported in Table 7 of Paull and Xu (2017) for a one standard deviation reduction in SDQ score at age 3. They are expressed in 2015 prices.
- The monetary values for children of age 7 in the fourth column are for a one standard deviation reduction in SDQ at age 7. They are calculated as the values for children at age 3 divided by 0.39, as explained above, and are therefore also in 2015 prices and discounted to age 3.
- The figures are gross values that do not take account of the 50% downward adjustment we apply to estimate the benefits that can be attributed to the counselling service.

**Table A2: Gross monetary values per child for one standard deviation improvement in SDQ score at age 4-11<sup>29</sup>**

<b>Outcome</b>	<b>Beneficiary</b>	<b>Age 3</b>	<b>Age 7</b>	<b>Weighted average</b>
Reduced truancy	Government	£31	£79	<b>£98</b>
Reduced exclusion	Government	£22	£56	<b>£70</b>
Reduced smoking	Private	£248	£636	<b>£784</b>
	Government	-£91	-£233	<b>-£288</b>
	Society	£108	£277	<b>£342</b>
Reduced crime	Government	£268	£687	<b>£847</b>
Reduced depression	Government	£191	£490	<b>£604</b>
Higher employment	Private	£1,887	£4,838	<b>£5,967</b>
	Government	£1,215	£3,115	<b>£3,842</b>
Higher wages	Private	£2,246	£5,759	<b>£7,103</b>
	Government	£882	£2,262	<b>£2,789</b>

Note: Benefits are in present value terms at 2016 prices and relate to a one standard deviation reduction in SDQ between the age of 4 and 11. Higher employment and higher wages relate to the after-tax increase in earned income due to the increased likelihood of obtaining a job and receiving a higher wage respectively.

<sup>28</sup> This is done using a discount rate of 3.5% per annum.

<sup>29</sup> The reduced prevalence of smoking has a positive return for the individual, but a negative impact for the Exchequer due to reduced tax revenue on tobacco products

Finally, we multiply the weighted average monetary values by the estimated improvement in the SDQ scores resulting from the counselling service. This gives the estimated monetary values per child for the counselling service shown in Table A3, based on the average impact of the counselling service for both teacher and parent assessments. Again, these are gross values that do not take account of the 50% downward adjustment factor.

**Table A3: Gross monetary values of counselling service per child for average change in SDQ**

Outcome	Ages	Private	Government	Society	Total
Truancy	11 – 16		£50		£50
Exclusion	11 – 16		£36		£36
Crime	16 - 26		£436		£436
Smoking	16 – 60	£404	-£148	£176	£432
Depression	16 – 60		£311		£311
Employment	16 – 60	£3,073	£1,979		£5,052
Wages	16 – 60	£3,658	£1,436		£5,094
<b>Total</b>		<b>£7,135</b>	<b>£4,100</b>	<b>£176</b>	<b>£11,412</b>

Note: Benefits are present values at 2016 prices and represent a weighted average benefit per child based on the age profile in the sample provided by Place2Be.

### Discussion of monetary valuations reported in Paull and Xu

Paull and Xu (2017) note several important points relating to the evidence and assumptions underpinning their valuations which we outline below.

**Truancy and Exclusion:** Paull and Xu (2017) included the cost of education and welfare services, cost of exclusion from school, Local Authority administrative costs and costs for alternative education and related social services. For truancy, the government cost per case of education and welfare services is estimated to be £875 based on Brookes et al (2007). For exclusion: LA administrative costs per new case were £1,123; alternative education was £8,904; and social services were £1,417. These were all initially reported in Brookes et al. (2007) and in 2015 prices. Paul and Xu (2017) further note that:

*“for both the costs of truancy and exclusion, Brookes et al (2007) also report lost earnings, health, crime and other related social services. However, these elements are not included because the lost earnings are captured more directly in other evidence, while the other costs are based on a dubious proxy of conduct disorder for both truancy and exclusion.”*

**Smoking:** Paull and Xu (2017) derived this cost based on the costs of smoking (ASH (2015)) divided by the number of smokers estimated from the proportion of the population aged 16+ who smoke (Figure 2.1 in HSCIC (2014)) and the size of the 16-90 population in England (ONS (2015a)). The estimated health and social care cost is £386; taxation revenue to be -£1,489; private costs of £3,000; lost productivity and fires (societal cost) of £1,309.

**Crime:** Paull and Xu (2017) provide separate estimates of the costs of youth and adult crime, drawing on a number of sources, including the NAO (2011) report on youth offending. Based on further analysis of this report, we consider that the Paull and Xu cost estimates are likely to understate the potential cost saving. This is because the NAO report, which tracks all young people aged 10-17 in England and Wales who first offended in 2000, found that the scale of re-offending over the subsequent decade was such that the cost to the criminal justice system was £80,000 per offender over the full 10-year period (in 2008/09 prices). This is significantly higher than the equivalent total cost of crime (youth and adult combined) given in Paull and Xu. Bearing in mind that much of the crime committed by the NAO cohort took place when the individuals concerned were aged 18+ and would therefore have been treated as adult offenders, we use the NAO data to cover the costs of both youth and adult crime, in place of the figures given in Paull and Xu.<sup>30</sup>

Our estimate is still likely to be conservative, for two main reasons. First, the NAO study does not take account of potential re-offending beyond 10 years after the first offence. And second, our estimate covers costs to the criminal justice system only, which according to the Home Office (2005) account for just 20% of the total economic and social costs of crime, with the largest single cost relating to the physical and emotional impact of crime on victims (50% of the total).

**Depression:** this is estimated by Paull and Xu (2017) based on McCrone *et al.* (2008) as the total amount spent on related services divided by the number of people with depression to give an estimated cost to government of £1,585 per person per year. The estimate of lost earnings due to depression was not included by Paull and Xu (2017) to avoid double counting.

**Earnings:** this is estimated by Paull and Xu (2017) using employment rates (ONS (2015a)) and mean annual gross pay (ONS (2016a)) for different age groups and the division between net earnings and government revenue based on 2015 Income Tax and National Insurance parameters (HMRC (2016)). Welfare benefits for under 25s and over 25s are estimated to be £3,011 and £3,801 based on DWP (2015).

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<sup>30</sup> We adjust the estimated cost to the criminal justice system per offender in the NAO report to express it in 2016 prices. Further, we assume that the total cost of crime can be averaged across each year between ages of 16 and 26 to estimate a present value figure of £68,900 per offender at age 16. Further discounting is applied to align with the ages of children who benefit from the counselling service.

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