HM Treasury

Public Service Transformation Network

new economy

Supporting public service transformation:

cost benefit analysis guidance for local partnerships

April 2014

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You can download this publication from www.gov.uk

ISBN 978-1-909790-72-8
PU1617

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Foreword

There is a government commitment to work with local areas to redesign public services to deliver better outcomes and better value for money for the public. Robust evidence that supports better decision-making is critical to achieving this objective.

The Public Service Transformation Network and Whitehall partners have worked closely with New Economy to produce this guidance. It is expected that local services across the country will make use of this guidance to assess and evaluate service transformation proposals in a systematic way in order to better understand fiscal, economic and public benefits, and how these are apportioned across local and national organisations and communities.

Through the Whole Place Community Budget pilots the guidance was tested and subsequently developed and refined. It provides an accessible guide for analysts that want to deepen their understanding of how to identify public policy interventions that are projected to produce net public benefits. It is also designed to enable policy makers to better understand the importance of evidenced-based decisions, including the underlying information requirements and the outputs of cost benefit analyses.

The guidance is based on HM Treasury's Green Book approach to appraisal and Better Business Cases guidance, which are mandatory government guidance for those preparing proposals to spend money devolved from Parliament. This guidance is available on the Treasury Green Book web pages along with access to training on preparing spending proposals and understanding business cases best practice.

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Public Service Transformation Network	Department for Communities and Local Government	HM Treasury, Public Spending Group

1 Introduction

Development of this technical guide

1.1 This document outlines a methodology for a cost-benefit analysis (CBA) model originally developed by New Economy,[1] local authorities and other public sector agencies across Greater Manchester (GM). It is designed to simplify and to lower the cost of performing CBA in the context of local programmes to improve public services where analytical and research resources may be relatively limited. Partnerships across Greater Manchester and in other areas of the UK are using the model in order to appraise and evaluate interventions, and support decision-making on investment approaches across public, private and third sector agencies.

1.2 In the spirit of open policy making this guide has been co-designed by analysts from a number of central government departments including HM Treasury (HMT), Department of Work and Pensions (DWP), Department for Business, Innovation and Skills (BIS), Department of Health (DH), Department for Communities and Local Government (DCLG), Department for Education (DfE), Ministry of Justice (MoJ), Home Office (HO) and the Cabinet Office (CO). These departments form the Technical Advisory Group for the CBA methodology, along with local partners from the Whole Place Community Budget pilots and New Economy.

1.3 The guide is based on HM Treasury's Green Book methodology[2] and will be updated further as better evidence, costs and methodologies are developed. It is intended to support local areas and central government to develop, appraise and evaluate changes to the provision of public services.

1.4 This guidance is supported by a:

- CBA excel model which provides a structured and consistent approach for applying this methodology.
- unit cost database which includes more than 600 unit cost estimates (mostly national estimates) that can be used to calculate the costs of delivering proactive services and the potential savings in reactive costs that can be achieved.

1.5 These resources are available at the New Economy website.[3]

Purpose of the document

1.6 The primary audience for this document is CBA practitioners. By reading it, they will gain a clear understanding of the technical approaches developed by New Economy to demonstrate the cost-effectiveness of public policy interventions. CBA experts will note the commonalities between the approach set out here and the methods recommended by official guidance notes. They will also understand the primary and secondary data and evidence that has been reviewed, and used to translate outcomes into monetary values.

[1] New Economy is wholly owned by the Greater Manchester Combined Authority and provides policy, strategy and research support to the ten GM Local Authorities, the GM LEP and other public and private sector bodies, with the aim of increasing Greater Manchester's Growth and Prosperity.
[2] *The Green Book: Appraisal and Evaluation in Central Government*, HM Treasury 2011
[3] http://neweconomymanchester.com

1.7 Policy makers and generalists will also have use for this document. First, the document provides an introduction to CBA for those who have not previously encountered the methodology. Second, it will give an understanding of the requirements of undertaking CBA and the outputs from the modelling and how to interpret them.

Structure and contents of the document

1.8 The document is structured as follows:

- Chapter two explains what benefits partnerships will realise from possessing a cost-benefit model and the points at which the model can be applied to proposals and projects.
- Chapter three lists the existing guidance and best practice upon which we have drawn when building the model.
- Chapter four summarises the two main inputs that will be needed to run the model: data on project costs; and evidence of project outcomes.
- Chapter five summarises the outputs that will be produced by the model including benefit-cost ratios for individual proposals/projects; and forecasts of total savings if a proposal/project was mainstreamed.
- Chapter six provides more detail on how analysts can calculate the cost figures that will be input to the model, explaining how they can identify the marginal cost of projects and how they can work out costs for particular public agencies.
- Chapter seven provides more detail on how analysts can track the outcomes of projects, how these can be translated into net outcomes via the use of comparator areas, and the general approach to placing values (monetising) on these outcomes.
- Chapter eight sets out the evidence and assumptions used in order to track and monetise individual outcomes for specific central and local government departments and partner agencies.
- Chapter nine switches the focus to consider how analysts should treat the outputs from the model, in terms of calculating metrics for projects, up-scaling findings and accounting for risk and uncertainty.
- Chapter ten provides links to further sources of information and support.

Document version status

1.9 This document is version 2.0 of the Cost Benefit Analysis Guidance. Building on version 1.0, the main updates are:

- Greater alignment with the Green Book five case model, particularly the economic and financial cases.
- Additional outcomes for new areas of modelling including crime, and alcohol and drug dependency.
- Changes to the terminology: economic and social benefits are now referred to as public value benefits.
- Updates to existing approaches to monetising outcomes, based on recent research.

- Further guidance as to certain aspects of the methodology including the calculation of deadweight, definition of cashability and the assignment of benefits to agencies.

1.10 Further versions of this guidance will be published in due course as projects and programmes report primary data on the outcomes they achieve and the value of these outcomes to the public. For further information about New Economy's work visit the website or contact one of the team at New Economy:

Julian Cox
David Morris
Rupert Greenhalgh or
Francis Markus
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2 Objective of analysis

Use of the methodology

2.1 The methodology in this guidance is designed for commissioners, performance officers, finance officers and practitioners to understand the value for money of public service reform programmes.

2.2 It can be used to support the development of local area public sector business cases where analytical resources are relatively limited while aligning with HM Treasury's Green Book guidance on the five case model.[1] It supports the economic case and generates data on cashable savings, risk and financial impacts that feed into the financial case, and which inform the commercial case where procurement is required.[2]

2.3 The outputs of the analysis estimate the overall public value created by a project and the individual elements of public value including economic benefits to individuals and society; and wider social welfare/wellbeing benefits. It is also possible to estimate the financial or 'fiscal' impacts to government agencies and break these down across the agencies affected.[3]

2.4 The analysis can therefore be used to answer some key questions that public service reform programmes are concerned with:

- Do the proposed interventions provide value for money?
- By investing in a preventative approach, can local partners reduce the levels of need and therefore budgets in the medium to long term?
- What is the payback period for the project? Is this short enough to invest based on a spend to save approach?
- Where an agency invests in a programme, to what extent are other agencies likely to benefit?
- Are the impacts of a proposal primarily fiscal or a matter of public value?

2.5 The approach outlined here provides a basis for joint commissioning by enabling practitioners to estimate savings and apportion them to multiple commissioners or departments. In doing so it facilitates cross agency working and provides evidence for investing in preventative interventions, the benefits of which often arise to several agencies/departments.

2.6 Prior to undertaking the analysis it is important to have a clear understanding of the details of the interventions that are proposed, the **New Delivery Model (NDM)**. This can then be compared with the counterfactual, i.e. what would have happened without the NDM, or **Business as Usual (BAU)**. The CBA model can then be used to understand whether the extra benefits arising from the

[1] *Green Book Supplementary Guidance on Public Sector Business Cases Using the Five Case Model*, Lowe, HM Treasury, 2013.

[2] The other two cases in the five case model are the strategic case and management case.

[3] N.B. Only some of the fiscal benefits are included in the public value calculations as so called transfer payments are excluded. Chapter four includes more details on fiscal benefits.

NDM outweigh the extra costs of implementation. It will also indicate when and to whom the future benefits fall, whether they are reactive cost savings to government agencies, or wider public value benefits to society as a whole. To ensure that the proposed NDM provides the best value for money choice a strategic consideration of alternative options should take place using the approach recommended in the HM Treasury Business Case Guidance – known as the options framework and options filter. Use of this simple approach enables non-technical stakeholders to contribute to the design and selection of an optimum shortlist of options on which CBA can be performed to select the most promising solution. Failure to follow this selection process may lead to sub-optimal options being presented for CBA analysis.

2.7 Further discussion on identifying the counterfactual for both costs and benefits can be found in chapters six and seven.

Stages at which cost-benefit analysis can be applied

2.8 CBA offers valuable information at stages in the project cycle:

- Ex-ante CBA, undertaken at the pre-delivery stage, of what return in terms of public value and exchequer savings can be expected from investment in a specific option or proposal. Based on this information, commissioners may choose which proposal to adopt or alternatively to allocate scarce public funds towards other proposals that are expected to deliver greater public value.
- Regular iterations of CBA, based on up-to-date project management data, can show whether a project is achieving, or is likely to achieve, its forecast return on investment. If a project is found to be failing to meet expectations, project managers can redesign delivery or, in some cases, stop delivery and reallocate funds to better performing projects.
- Ex-post CBA, undertaken after a project has been delivered, is one way of judging whether a project has been worth undertaking. It also gives us information with which to update and improve the estimates that are used in ex-ante appraisals of future projects.

Continuing improvement of evidence through robust evaluation

2.9 This approach to CBA has been developed as a flexible methodology that can be used before, during and after project delivery. Before implementing a new or redesigned service, it is useful to start by building an ex-ante, appraisal model. This produces Net Present Values (NPV) and benefit-cost ratios (BCR) of individual projects based on:

- estimates of how many people these projects will benefit;
- forecasts of what projects will cost the public sector; and
- estimates of the value of project benefits to the public including the wider economy.

2.10 As projects begin to deliver, it is important that project managers arrange for collection and reporting of data and information on:

- the number of people the project is working with;
- the needs of this cohort;
- how many of the cohort are achieving specified outcomes; and

- how much the project costs and where possible what public agencies are incurring costs.

2.11 This information can then be used to update the figures in the CBA model to produce a new Net Present Value (NPV) and Benefit Cost Ratio (BCR). These regular updates will help the project team track whether the interventions are meeting the original objectives of the project, and allow adjustments to be made if required.

2.12 Where possible, plans to evaluate whether the anticipated effects, cost and benefits of a project are actually realised should be considered at early stages. The earlier that an evaluation can be planned in the policy development process, the greater the options for undertaking it and the more likely it is that most appropriate evaluation can be chosen.

2.13 Once a project has been implemented (or for continuing projects after a suitable length of time to allow for the project to become established and the expected improvements in outcomes to be realised), a full evaluation report should be produced, setting out total outputs and outcomes and total project costs. Based on this information the CBA model can be used as an ex-post evaluation tool, to produce data on engagement and impact rates and the fiscal and public value of achieving specific outcomes that can then inform future decisions. These decisions could include the continuation, scaling up or termination of a project.

2.14 This approach to continuing evaluation means that, year-on-year, the evidence base for public sector reform is increased and partners are able to make more accurate forecasts in relation to future propositions. Further advice and guidance on evaluation can be found in the Magenta Book.

2.15 CBA is not an exact science and its outputs are a guide to decision-making not a substitute for thought. The commitment to update the model over time will help support improvement, increase transparency and enhance learning. There will always be some need for assumptions or reliance on secondary data, which limits the ability to generalise and draw broad policy lessons from individual project or programme reviews.

2.16 In recognition of this limitation, it is recommended that:

- First, all outputs from the CBA model are subjected to a range of risk and sensitivity tests (see chapter nine) in order to understand more about the degree of confidence with which the outputs from our model should be treated.
- Second, when partners commission and evaluate interventions they should be advised to consider more than just the benefit-cost ratio of the project. They should consider interventions from a range of perspectives, including qualitative feedback, strategic contribution and capacity to deliver, alongside the Net Present Value or Benefit Cost Ratio. The strategic use of the options framework recommended in Treasury Business Case guidance provides a simple but powerful model that brings wider considerations together in a structured way.

3 Background to approach

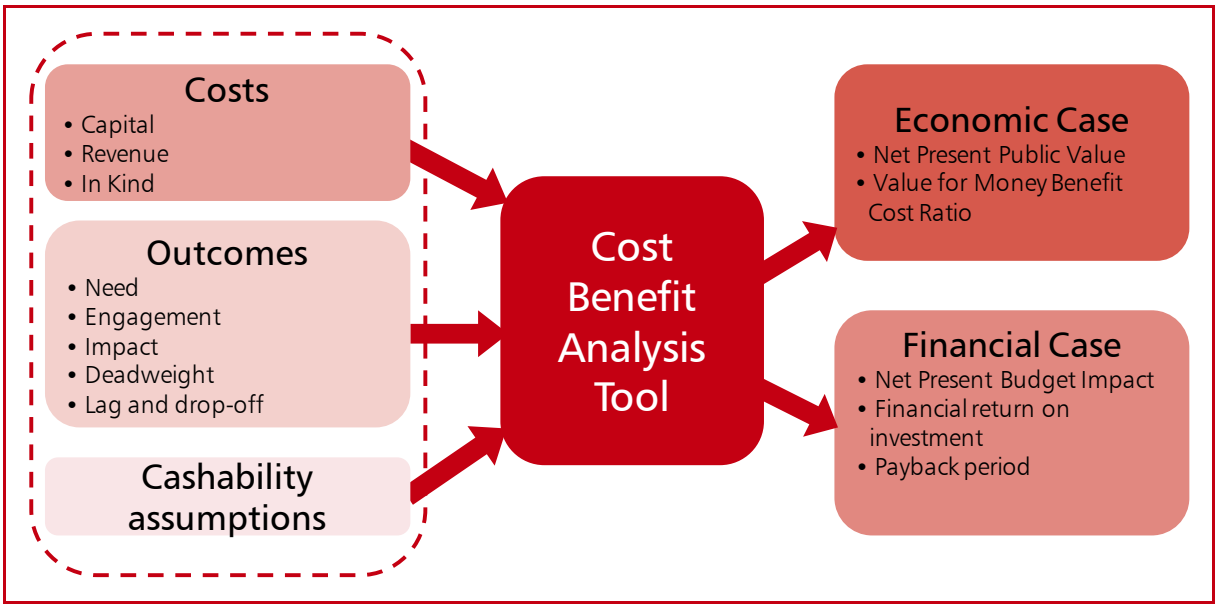
Reference texts

3.1 Our approach, the processes it follows and the assumptions it makes are based, wherever possible, on best practice as defined in existing guidance. The main document that has informed the development of the CBA model is HM Treasury's Green Book.[1] From the Green Book we have taken into account the importance of:

- agreeing the objectives of an intervention, the indicators which will be used to measure achievement, and the timescale over which outputs and outcomes will be monitored;
- considering, and where possible calculating the value of, two types of outcomes from public sector interventions: the public value which is produced in the so called economic case and includes all calculable elements of public welfare including economic and social benefits and the fiscal impact which is output by the so called financial case and is the net cost to the public sector of the proposal;
- identifying the difference between costs and benefits that may be counted in the economic (public value) case and those that may be counted in the financial (fiscal) case;
- counting all the costs that the public sector incurs in order to deliver a project, including those that are borne by agencies other than the direct sponsor of a project;
- applying a discount rate to costs and benefits that will be realised in future years; and
- adjusting CBA outputs to account for risk and uncertainty.

[1] *The Green Book: Appraisal and Evaluation in Central Government*, HM Treasury 2011. The principles and approach will remain unchanged but a refreshed edition of the Green Book will be published by HM Treasury in 2014.

4 Cost benefit analysis inputs



4.1 There are two key inputs into our model: costs and benefits (or outcomes).

Types of costs

4.2 Our model aims to capture all the costs associated with delivering a specific service or intervention within a project[1] area. The model sums three different types of costs:

- Capital costs: one off investments, such as new or refurbished buildings and facilities;
- Revenue costs: costs which tend to fluctuate in relation to the amount of project activity being undertaken, such as staff salaries; and
- In-kind costs: those inputs that are needed in order to make a project a success but which the public purse will not have to pay for, such as a charity providing their facilities for free. These are counted because there will be an opportunity cost associated with using these resources for project activities.

4.3 Some projects will be designed to make immediate cost savings through streamlining services and avoiding duplication. These savings should be subtracted from a project's delivery costs, rather than included as a benefit.

Changes in outcomes and the resultant benefits

4.4 In order to calculate the benefits of a project, an understanding of the change in outcomes produced by the project is required. Chapter eight sets out standard metrics for a number of

[1] We have used the word 'project' to refer to any initiative or intervention. This could range from a small neighbourhood pilot to a large scale change in delivery of public services across the whole of a conurbation such as Greater Manchester.

outcomes typically addressed by public service reform programmes. Many others can also be used provided there is a robust way of monetising the change in an outcome.

4.5 Data should be collected for each outcome on:

- the **level of need** in the cohort or geographical area targeted by the intervention;
- the **degree of engagement** with the cohort;
- the **impact on each outcome** as a result of the New Delivery Model;
- **deadweight** – what would have happened anyway under Business as Usual; and
- the **time lag** before the change in outcome, and the sustainability of each outcome.

4.6 Once each change in outcome associated with delivering a specific service or intervention within a project area has been determined, the model seeks to place a value on two different types of benefits. These are:

- **Fiscal benefits**: savings to the public sector that are due to a specific project (e.g. reduced health service, police or education costs). These are used in the financial case once cashability has been considered.
- **Public value benefits** (economic and social benefits): this is a measure of the overall value to society and includes:
    - All fiscal benefits except transfer payments such as taxation or social security that just move money from one place to another. Real increases in the quality or quantity of output can be included but are not always easy to quantify or monetise.
    - Net growth in the local economy allowing for deadweight, leakage and substitution.
    - Wider social benefits including gains to society such as improvements to health; educational attainment; access to transport or public services; safety; or reduced crime.

4.7 These are used in the economic case to determine the overall value for money of a programme.

4.8 Whether benefits arising from a project are counted in either or both the financial or economic case will depend on whether they lead to:

- **changes in fiscal expenditure** (financial case) and therefore have a direct impact on commissioners' budgets e.g. reductions in government expenditure where payments for Jobseeker's Allowance are reduced or reductions in demand for a service which means less of that service needs to be commissioned or provided.
- **changes in the wider economy** or in wider societal effects (economic case), the impact of which may be indirect or extend over a longer period of time e.g. increases in employment leading to improvements in health and reduced use of social services.

Estimating fiscal benefits and cashability

4.9 Fiscal benefits can be estimated by using the unit cost or a reasonable proxy for the market price associated with the outcome addressed by a proposed project. Using the estimated reduction in demand for a service is one way to do this: for example, where a project is

successful in reducing alcohol dependency the reduction in treatment places that would have been commissioned or purchased (in the absence of the project) could be used to represent a potentially cashable saving.

4.10 One dimension of fiscal benefits is cashability – this refers to the extent to which a change in an outcome or output (e.g. fewer children in care) will result in a reduction in fiscal expenditure such that the expenditure released from that change can be reallocated elsewhere.

4.11 Cashable fiscal benefits should be counted in the financial case as reducing the overall budget impact of a project (see paragraph 5.6) and in the economic case as a benefit to the public (as this resource can be reallocated to productive purposes elsewhere). Fiscal benefits that lead to cashable savings are more likely where a commissioner can regulate the flow of payments related to an outcome associated with those inputs or outputs – for example, Jobseeker's Allowance payments or child care placements that are spot purchased.

4.12 It is important to note that the estimation of cashable savings is imprecise: estimates of what is cashable will be approximate and based on negotiations between commissioners and providers rather than solely on a formula or calculation. Cost-benefit analysis, therefore, informs discussions around how far benefits are cashable; it is not a substitute for negotiation. Paragraph 7.26 includes further details on cashability.

4.13 Non-cashable fiscal benefits should be quantified as these represent a benefit to the public from freeing up resource for other productive purposes (even if public expenditure is not reduced). In this case, the fiscal benefit is assumed to be equal to the 'opportunity cost'[2] of resources under business as usual which are expected to change as a result of the proposed project, i.e. the value of the forgone alternative use of resource under business as usual. For example, staff time in treating avoidable A&E attendances which is freed up for other purposes (i.e. other more serious A&E cases) as a result of a project could be counted as a non-cashable fiscal benefit. These non-cashable fiscal benefits are counted in the economic case in addition to any cashable benefits.

4.14 A simple, if crude, approach for estimating the costs and benefits of a New Delivery Model relative to business as usual is shown below. This example is for illustrative purposes only; it shows how unit costs and volume of service usage can be used to derive an approximate estimate of fiscal benefits arising from changes in avoidable A&E attendance.

[2] 'Opportunity cost' is a concept used in economics to describe the trade-off between different choices, or the cost associated with making one choice over another. The opportunity cost of using a resource in a certain way is the value of the next best alternative use that is forgone. For example, the opportunity cost of investing in building a school could be the forgone value of investing in the next most valuable infrastructure project (or any other use of the expenditure) and the benefits associated with these (e.g. building a road, hospital, etc.).

	Outcome	Unit cost associated with outcome	Volume (number of incidents)	Total cost (=unit cost x volume)	Cashability
Business as Usual		£64	100	£6,400	-
New Delivery Model (EX: early intervention with those likely to present at A&E)	Avoidable A&E attendance	£64	75	£4,800	-
Difference between NDM & BAU (= NDM – BAU)		*£64*	*25*	*£1,600*	-
Fiscal benefit		-	-	£1,600	Depends on how A&E services are commissioned and whether expenditure can be reduced to reflect the reduction in demand for A&E services

4.15 Examples of these different classifications of benefits are set out in the table below.

Example	Fiscal benefits	Public value benefits
Employment mentoring programme for people with mental health problems	Reduction in unemployment payments as individuals gain employment	Increased output resulting from increased employment Improved health with related impacts on well-being (e.g. confidence and self esteem)
Programme to tackle antisocial behaviour	Reduction in police, housing and local authority time spent responding to incidents	Opportunity cost of avoided time spent by public sector agencies Increased patronage of local businesses resulting in net growth in local economy once displacement has been taken into account Reduced fear of crime amongst local residents
Drug treatment programme	Savings in reactive health and criminal justice costs - emergency hospital visits, long term health costs, responses to crime	Opportunity cost of avoided time spent by public sector agencies Improved health and life expectancy of individual

Approaches to consider further social benefits

4.16 Many of the outcomes included in chapter eight take into account the social value created as a result of improving these outcomes. However, for some outcomes it is not possible at this

time to provide a standard value of the social value created as it will vary dependent on the intervention modelled, or the cohort that is being engaged.

4.17 It is important, however that analysts consider other ways of calculating social value, especially as the Public Services (Social Value) Act 2012,[3] effective from January 2013, requires commissioners to include social value when considering public service contracts. Under the legislation, local authority commissioners must now consider how they can improve the social impact of their public service contracts before they start the procurement process.

4.18 The Green Book sets outs the standards required for spending proposals and is mandatory for all proposals that include central government expenditure. It is recognised, however, that there are circumstances where it would be disproportionate to apply such standards – for example charities or social enterprises may not have the technical capacity to do so. In this context, one approach that can be used for quantifying social value is social return on investment – guidance on this has been published by the Cabinet Office.[4]

4.19 Other examples which highlight best practice in estimating social value are available. For example, the National Council for Voluntary Organisations[5] and New Philanthropy Capital have produced reports to demonstrate how charitable and voluntary organisations can provide public services that provide social value.[6] The application and merits of these approaches should be taken into account by analysts when carrying out cost-benefit analysis.

Identifying marginal costs and marginal benefits

4.20 The approach taken to appraising/evaluating the success of projects is to compare the additional outcomes achieved by the project with the additional costs of delivering the project.

4.21 In order to do this it is important to:

1 have a comprehensive view of both the costs of providing the services offered by the project, and also the outcomes predicted/achieved from the project; and

2 make an assessment of the costs and outcomes that would result if the project was not to take place (known in technical terms as accounting for deadweight).

4.22 The methodology and assumptions behind calculating these additional costs and benefits are covered in more detail in chapters six and seven.

Analysis time frame

4.23 The CBA model's primary analysis time frame is a five year assessment of costs and benefits. This timescale has been chosen to reflect the need to identify short term savings of a project to the public sector. However, the CBA model can be modified in order to assess the benefits over any time frame that agencies wish to consider.

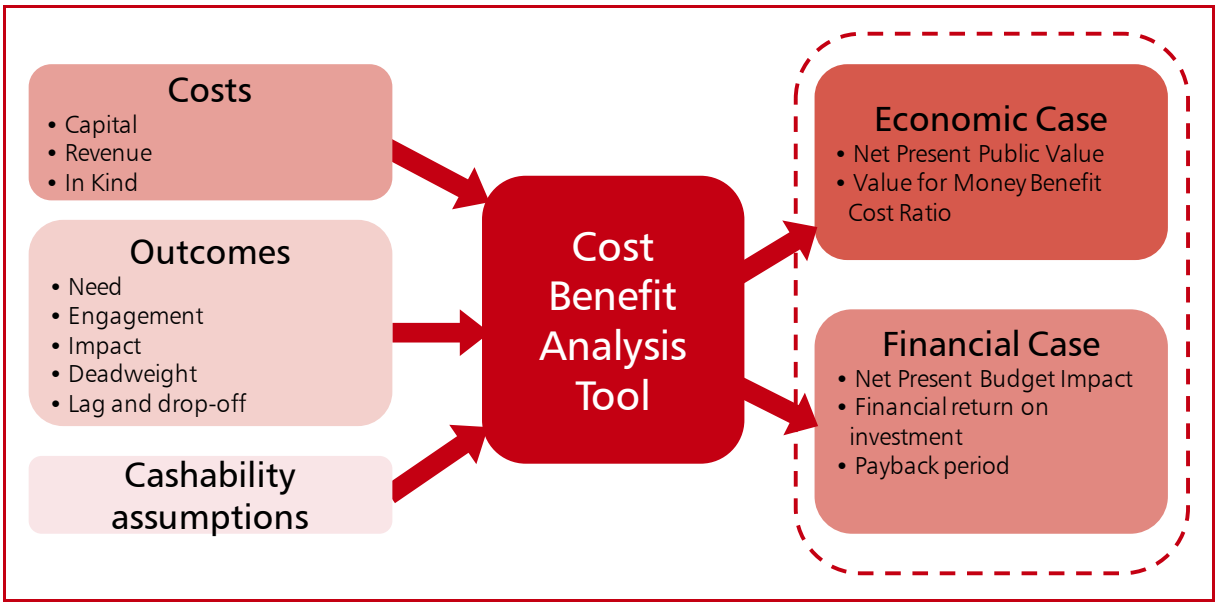
[3] www.gov.uk/government/publications/procurement-policy-note-10-12-the-public-services-social-value-act-2012

[4] http://www.thesroinetwork.org/sroi-analysis/the-sroi-guide

[5] www.ncvo-vol.org.uk/policy-research/public-services/what-we-believe#commissioning

[6] A journey to greater impact, NPC, 2011.

5 Cost benefit analysis outputs



5.1 As set out in HM Treasury's Green Book guidance on the five case model, the business case in support of a new policy, new strategy, new programme or new project must evidence that:

- the intervention is supported by a compelling case for change that provides a holistic fit with other parts of the organisation and public sector– the **strategic case**;
- the intervention represents best public value – the **economic case**;
- the proposed deal is attractive to the market place, can be procured and is commercially viable – the **commercial case**;
- the proposed spend is affordable – the **financial case**; and
- what is required from all parties is achievable – the **management case**.

5.2 The outputs from the model support production of the financial case and the economic case. The key metrics are described in the following sections.

Net present value

5.3 The **net present value (NPV)** is a measure of the additional value created by implementing the project.

5.4 In order to provide a consistent measure of costs and benefits now and into the future, future costs and benefits are discounted to produce Present Values (PV) (see paragraph 9.1 for further details). These Present Values are then used in the NPV calculation as follows:

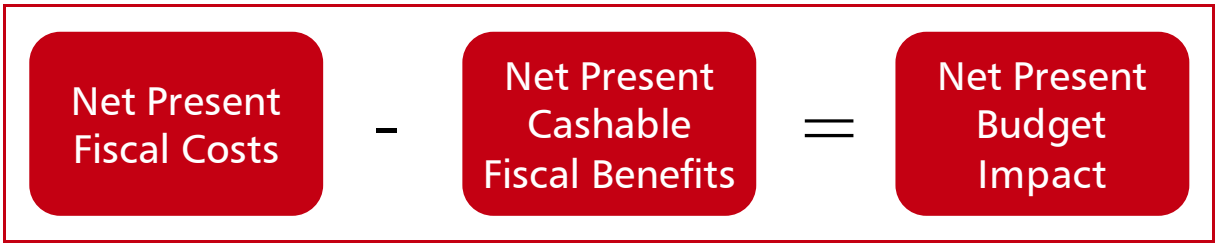
Net present value = Present value of the benefits – Present value of the costs

5.5 Among projects with similar cost outlays, it is those with a relatively high NPV that should normally be first considered for commissioning. However, as noted, any funding constraints also need to be taken into account.

Financial case

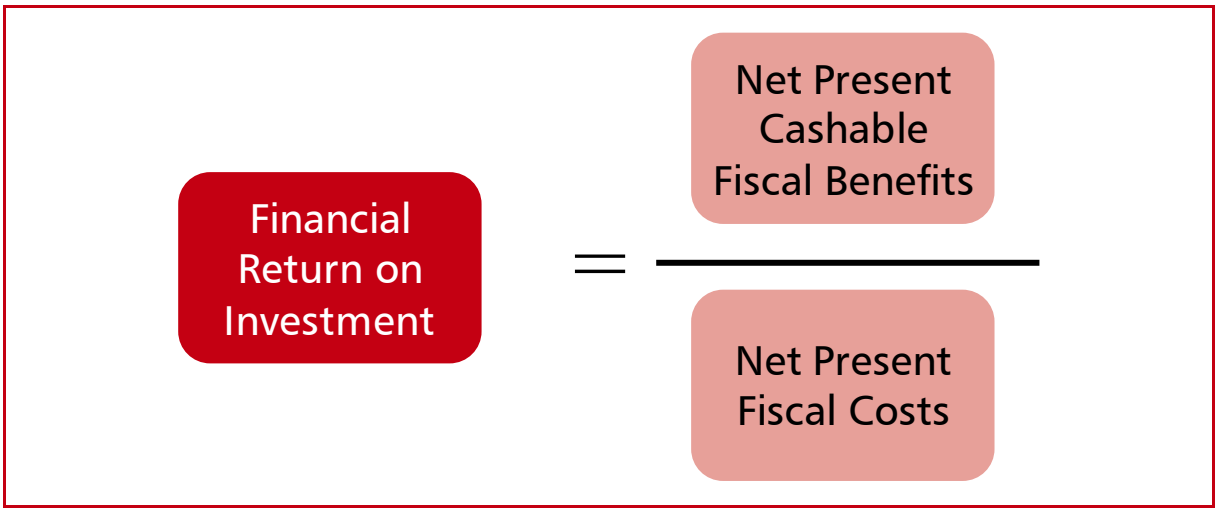
5.6 There are a number of different net present values that can be calculated. For the financial case, the key metric is:

- The **net present budget impact** which solely considers the fiscal costs of delivering the project and the resultant cashable fiscal benefits.



5.7 Other metrics that can be calculated to support the financial case are:

- The **financial return on investment**. This is calculated by dividing the present value of the budgetary savings by the upfront budgetary cost of the intervention.



- The **payback period**. When investing in a project it is important to know how quickly a return on that investment is achieved (so that plans can be made to reinvest savings elsewhere at a certain point in the future). The payback period provides this information and is defined as follows:

Payback period = year in which the cumulative present value of the budgetary savings> cumulative present value of the budgetary costs

5.8 N.B. While these metrics are a key part of building the financial case, other considerations, such as cash flow and the availability of upfront investment are required in order to provide a complete understanding of the financial implications of a project.

Economic case

5.9 The economic case takes a broad view of the benefits of a project and the goal of options appraisal is to identify the project that maximises the total net present value to society, including the economic and social benefits.

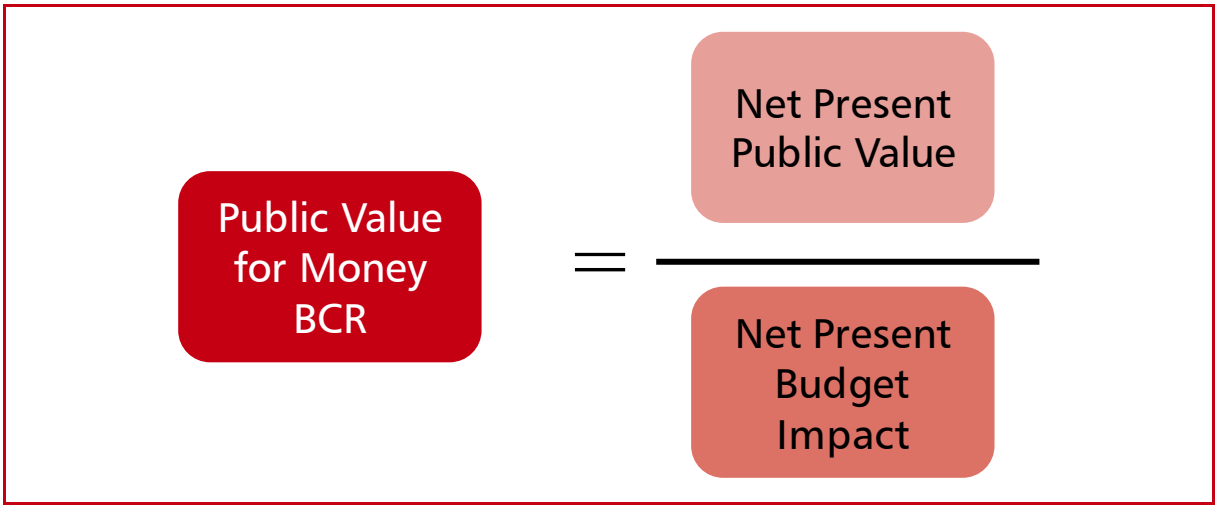
5.10 The NPV metric used for the economic case is:

- The **net present public value**, which is the difference between the overall benefits to society and the overall costs to society.

5.11 Note that in many cases the net present public costs are the same as the net present fiscal costs.

5.12 However, not all projects with positive net present public values will be able to be delivered and projects should be compared and prioritised, taking into account the budget constraints of the funder(s). To do this, projects can be appraised and ranked by benefit-cost-ratios (BCRs). This calculation links the outcomes of the project to the financial costs involved in the undertaking. It is therefore useful as a measure of the overall return on investment for the level of spending.

5.13 The **public value for money benefit cost ratio** is calculated as:



5.14 The public value for money BCR acts as the **link between the economic case and the financial case** in the HM Treasury Green Book.

5.15 A public value for money BCR of less than zero indicates that the project has cost more than it has achieved and therefore is not economically beneficial and should be considered for decommissioning. A public value for money BCR of zero is the break even point at which the benefits achieved exactly match the costs incurred, while projects with Value for Money BCR values greater than zero provide positive returns. The higher the ratio, the greater the return per pound invested in the project. The public value for money BCR is thus a powerful decision support tool, as projects can be prioritised according to the size of the ratio. Budget permitting, it is those projects with the highest value for money BCR values that would be taken forward. N.B. the value for money BCR should only be used when the net present budget impact is positive, otherwise erroneous negative ratios are produced.

5.16 With both calculations of NPVs and BCRs non-monetised factors must be considered in conjunction with monetised calculations. It is often not possible to monetise significant social

costs and benefits. Therefore a more holistic approach must be taken to final project selection in which calculations of NPVs and BCRs play a major role but are not the sole deciding factors.

Other outputs

5.17 The CBA tool can also produce graphical outputs. These include pie charts showing the split of costs and benefits, and bar charts showing the agencies who are investing in a project and those who benefit from reduced future reactive spending.

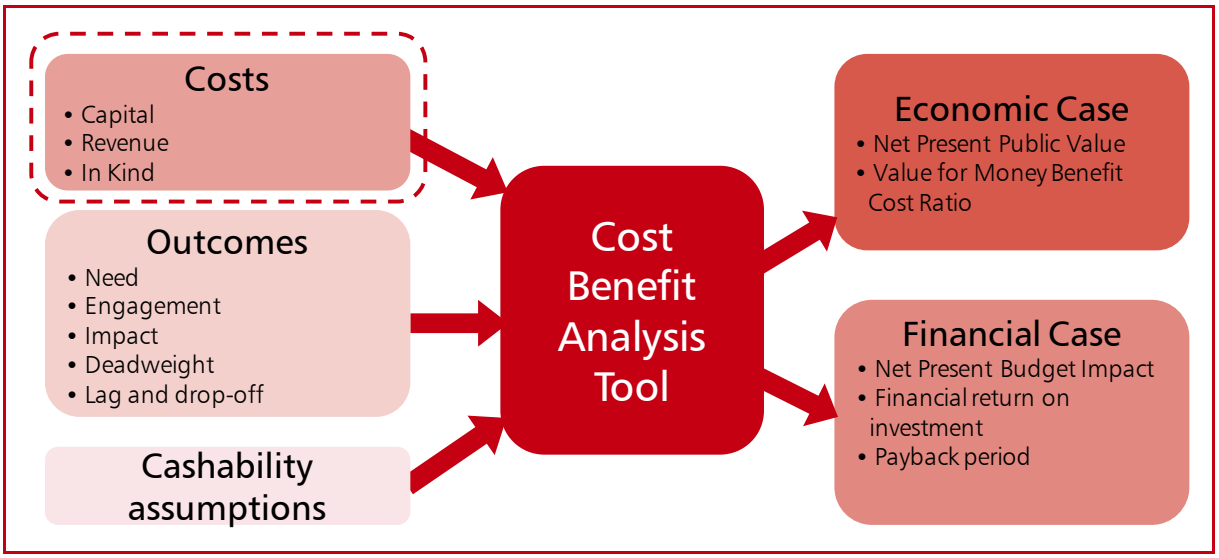
Use of the CBA model outputs in decision making

5.18 The figures and charts produced by the CBA model give support to decision makers deciding whether to commission or decommission services. The priority placed on the different types of benefits is likely to depend on the audience for the analysis.

- For individual public sector agencies the priority is likely to be on making savings to their future reactive spend requirements in order to meet the challenge of reducing budgets – therefore the fiscal benefits may be of the greatest importance.
- For government as a whole: the priority is often on overall growth and prosperity – therefore the net present public value may be of the greatest importance.
- For charities and their funders the priority may be focussed on certain aspects of a project and the impact on people's lives - therefore it may be necessary to disaggregate the analysis to highlight changes in individual outcomes.

5.19 All outputs from the CBA model should be used with care, with a full understanding of the limitations that may exist with the data and the assumptions upon which the analysis is based. In recognition of these points, we recommend that CBA is used as a decision support tool rather than a decision-making tool.

6 Costs – method of calculation



6.1 A prerequisite to CBA (and to meaningful evaluation in general) is the ability to accurately identify the costs that are associated with the project that is being assessed.

6.2 For CBA, we are interested in the marginal cost of the new delivery model (NDM) for the intervention, compared to business as usual (BAU). (N.B. we will use a similar approach for benefits where we take account of deadweight – what would happen anyway under BAU). For each intervention being assessed, the CBA model requires two cost figures: one which relates to the cost of delivering services without any intervention (the BAU case); and one which relates to the cost of delivering services with the intervention (NDM).

Business as Usual (BAU) costs

6.3 We have developed a framework that helps project teams to break down, calculate and report the costs that the public purse has been incurring to deal with these issues (such as worklessness or lack of school readiness amongst young children) prior to the design of the intervention. The framework starts by asking project teams to break down how services and support is currently delivered at four stages in the client journey. These four stages are:

- Identification and engagement: where agencies identify who needs support (the cohorts) and has the capacity to benefit from it.
- Assessment: establishing the exact needs of the cohort and planning a response.
- Intervention: the delivery of support.
- Review: as participants move towards the end of their engagement there is the need to review achievements.

6.4 It then asks project teams to take each of these stages in turn and list i) the agencies who currently incur costs and ii) list the types of costs each agency incurs (with total costs split into revenue, capital and in-kind).

6.5 This approach enables project teams to produce a detailed profile of which agencies are incurring what types of cost and when this occurs. Where possible, BAU case costs for each project are compared to the business as usual case costs being reported by other projects to verify their accuracy.

New Delivery Model (NDM) costs

6.6 The approach used to calculate intervention case costs is similar to that used to calculate business as usual option costs. Project teams are asked to consider which agencies, under the NDM, will incur what types of costs at each of the four stages in the customer journey. From this, the model can build a bottom-up model of intervention case costs to be measured against the business as usual option cost in order to demonstrate the net cost of an intervention.

6.7 The initial NDM cost figure will be an estimate, calculated before the project has completed all its activities. Within this estimate there will be some costs which cannot be forecast accurately. For instance:

- a project team cannot definitively state how much will need to be spent on delivering support until a project is operational; and
- a project team cannot accurately forecast the amount of funding they may save as a result of more efficient staff working until the NDM has been fully implemented.

6.8 The CBA model fills in these knowledge gaps with estimates and assumptions of how many participants a project will engage and what it will cost to support each participant based on previously evidenced cost figures.

6.9 In the longer-term, the model provides a mechanism for gathering more cost data as interventions begin to deliver on the ground. Thus, over time, the model's estimates of the New Delivery Model costs, and hence marginal costs, should become more accurate.

Calculation of marginal costs based on NDM

6.10 The method the CBA model uses to calculate the marginal cost of each intervention varies depending on the NDM being adopted. Two broad categories of NDM have been identified and these are described in turn.

6.11 Where new services are being provided which are not currently available, the identification of marginal cost is relatively straightforward. The project cost is the cost of providing the additional service(s), identified using the framework described above. The BAU cost can be assumed to be zero, because the service(s) are currently not being provided.

6.12 Calculating the marginal cost under a reorganising services model is more complex.

6.13 For these projects a two step process is recommended:

- The first step is to review all the agencies involved in BAU provision of the services and determine their unit cost per resident/client/beneficiary/time period etc.
- The second step is to assess the NDM, with the aim of identifying the same unit cost metric(s).

6.14 If agencies are being brought together in a combined team, project costs are calculated based on the costs of providing this combined service. The BAU costs are calculated by assessing the overall costs of each agency included in the project, and apportioning costs to the project area based on the caseload in the project area compared to the overall caseload for the agency. An example is shown below:

Box 6.A: JobCentre Plus costs example

The local job centre (JC) covers not just the intervention neighbourhood, but also two other neighbourhoods:

- The total costs of providing all JC+ services from the job centre are £3m/year.
- The case load in the pilot area is just over half that of the whole area.
- Number of individuals on benefits in pilot area = 1,200
- Number of individuals on benefits in whole JC+ area = 2,000
- Reference costs for JC+ = £3m x 1,200/2,000 = £1.8m/year

Approach used to identify costs by agency

6.15 As noted earlier, projects often involve input from a range of departments and agencies. It is important to capture all the costs incurred by all partners both under the BAU case and the NDM. Below we provide more detailed guidance on our approach to working out costs for key partners.

Direct agency costs

6.16 Project teams will need to report revenue, capital and in-kind costs. Of these, revenue costs are likely to be largest and will cover the following:

- Staff salaries (pro-rata for those staff who spend a proportion of their working week on activities not related to the project).
- On-costs: National Insurance and pension costs for these staff (again pro-rata for staff who do not work full-time on the project).
- Overhead costs: to account for rent and utility costs. This can be calculated by an average percentage addition to total staff costs.
- Staff travel and subsistence expenses: these are particularly important for those staff whose role involves outreach activities.

6.17 Projects should identify where a specific agency/department will incur non-staffing related costs due to project activity. For instance, Children's or Adults' Services departments may provide venues for project activity. Costs can be assessed by using information on hire costs for such venues and multiplying these costs by the amount of time projects will use such venues. Other non-staffing costs may relate to the production of leaflets and materials with which to recruit participants and to accompany the delivery of support.

Referrals to other services

6.18 It is important that CBA modelling captures all the costs related to project referrals to other services. For example, a family may have a case worker engaged who provides the day-to-day support, and whose costs can be calculated as above. However, in order to achieve the outcomes of the project, other services may be needed such as mental health, alcohol treatment or debt advice. These would generally be onward referrals from the case worker.

6.19 As effective referral is vital to the success of a project, it is important that referral costs are accurately identified. Ideally this would be by a detailed analysis of the costs of supporting agencies for the cohort. However, in many cases this is not possible, in which case a ready reckoner approach should be used.

6.20 For example, NICE Clinical Guideline 115[1] sets out typical costs for different types of alcohol dependency treatment. This provides an average unit cost for psychological interventions received by people with mild alcohol dependence of £741 which is a mean cost of the three main types of therapy recommended: cognitive behavioural therapies, behavioural therapies or social network and environment-based therapies. By multiplying the number of people in a cohort needing treatment for alcohol dependency by this unit cost, a typical cost of providing these referred services can be calculated.

Voluntary sector

6.21 Projects often include input from the voluntary/third sector, in some instances given for free or at below market rates. Projects should identify whether this is the case for their intervention and if it is, quantify and value the amount of support they receive from voluntary/third sector agencies.

6.22 The main types of support from the voluntary sector, and the quantification approach we will use for each, are set out below:

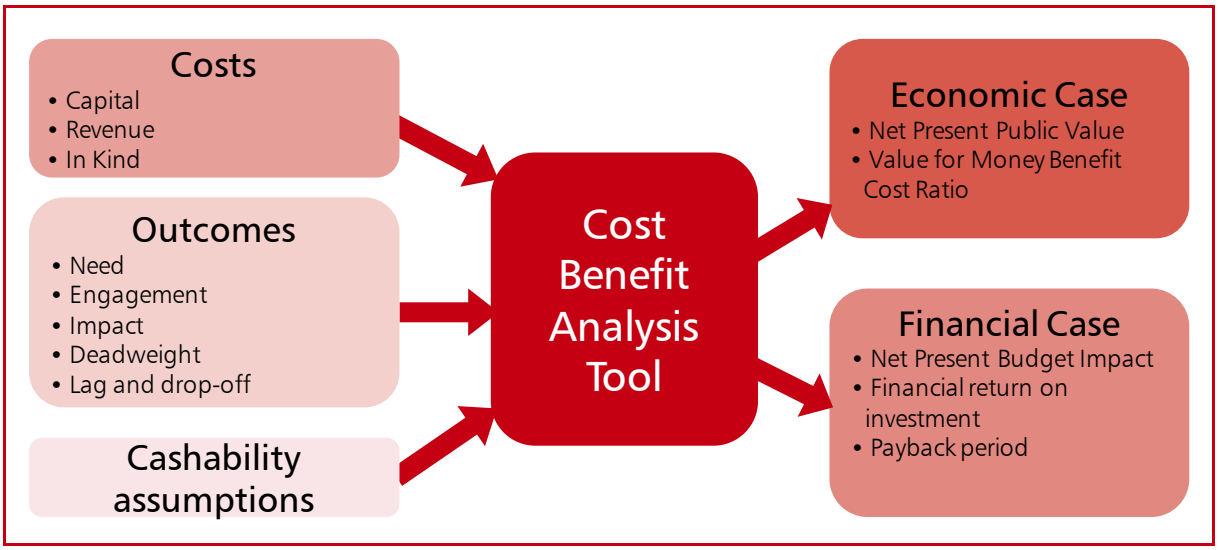
- Volunteer staff time: the model recommends using Volunteering England's advice[2] on how to value the time given by volunteers to a project;
- Free use of community facilities or venues: projects should estimate the length of time over which they will benefit from these services and multiply this figure by an hourly rental rate.

[1] *Alcohol-use disorders: alcohol dependence – Costing report*, National Institute for Health and Clinical Excellence, 2011.

[2] www.volunteering.org.uk/component/gpb/is-there-any-way-of-measuring-the-economic-value-of-the-work-our-volunteers-are-doing

7 Benefits – method of calculation

Outcomes



7.1 The table below lists the outcomes included in this CBA methodology and the key agencies that are expected to benefit as a result of improvement for each outcome:

Outcome measure	Agencies that benefit from improvement in outcome
Reduced number of individuals claiming Jobseeker's Allowance (JSA)	Department for Work and Pensions (DWP), Her Majesty's Revenue and Customs (HMRC), National Health Service (NHS)
Reduced number of individuals claiming Incapacity Benefit (IB) or Employment and Support Allowance (ESA)	DWP, HMRC, NHS
Reduced number of individuals claiming Lone Parent Income Support (LPIS)	DWP, HMRC, NHS
Increased number of people holding Level 2 and Level 3 skills	HMRC
Reduced adult mental health problems (number of individuals with anxiety and depression)	NHS
Reduced avoidable A&E attendance	NHS
Reduced number of domestic violence incidents	Local Authorities, NHS, Criminal Justice Agencies, Third sector
Reduced number of anti-social behaviour incidents	Local Authorities, Police, Housing providers
Reduced number of crimes against individuals, households and businesses	NHS, Criminal Justice Agencies
Reduced housing evictions	Housing providers
Reduced statutory homelessness	Local Authorities

Outcome measure	Agencies that benefit from improvement in outcome
Reduced number of children in care	Local Authorities
Reduced drug abuse	NHS, Criminal Justice Agencies
Reduced alcohol dependency	NHS
Reduce levels of truancy from school	Local Authorities, Schools, Criminal Justice Agencies
Reduced numbers of children excluded from school	Local Authorities, Schools
Reduced hospital inpatient admissions	NHS
Reduced Adult Social Services residential care needs	Local Authorities

7.2 Other outcomes that are targeted by partnerships can be assessed on a case by case basis to identify whether they can be included in the CBA model without compromising the level of robustness expected in the analysis. To support the monetisation of outcomes, New Economy has produced a unit cost database which includes approximately 600 costs across the themes of crime, education and skills, employment, fire, health, housing and social services. This is available from the New Economy website.

7.3 Details of assumptions made for each outcome above and the means of monetising the outcomes are outlined in chapter eight.

Analysis approach

Input data

7.4 For each outcome, project data is needed to determine inputs for the CBA. The input data required are the:

- **total population in the project area** (e.g. total working age population);
- **population at risk** (e.g. number of individuals on IB/ESA);
- **level of engagement** with the target population (percentage individuals who engage with the services);
- **level of retention** of the cohort (percentage of individuals who continue to be engaged until the intervention is complete); and
- **scale of impact** in changing the outcome (percentage success at achieving the desired outcomes - e.g. getting the individual into employment).

7.5 Sources for this data include local data systems, national data resources such as NOMIS[1] or Neighbourhood Statistics[2], or published research and evaluation reports from interventions elsewhere in the UK or abroad. It is likely that some data will initially have to be populated with assumptions, until the evaluation evidence gathered during delivery of the project can be used to replace these assumptions with real data on impact, engagement etc.

Deadweight

7.6 As for determination of costs, it is important to compare change in outcomes as a result of the New Delivery Model (NDM) to the counterfactual, Business as Usual (BAU) position. Otherwise the analysis will overstate the benefits of the NDM by claiming improved outcomes

[1] www.nomisweb.co.uk
[2] www.neighbourhood.statistics.gov.uk

that might have happened anyway as a result of long term trends or other initiatives unrelated to the programme being modelled.

7.7 When calculating the incremental benefits of a scheme, the change in outcomes that would have happened anyway is known as the deadweight. Deadweight can be calculated in various ways, depending on the type of CBA being undertaken:

- For ex-ante CBA, deadweight is best determined by forecasting the trends in outcome indicators over the duration of the project, taking account of cyclical effects (e.g. for JSA volumes);
- During or at the end of a project, ex-post CBA can take two approaches to calculating deadweight:
    - for measures which are not affected by localised changes or the transience of individuals into and out of the project area, by assessing the change in outcome measures of comparator areas or cohorts (see below);
    - for other measures, by measuring changes in the outcomes of individuals engaged in the project through a robust monitoring and evaluation plan.

Comparator areas and control groups

7.8 One way of assessing deadweight is to use comparator areas. These are areas that have similar characteristics to the project area but are not implementing the New Delivery Model. For example, the Greater Manchester Early Years and Better Life Chances pilots used comparator areas that had been matched based on the 2007 Index of Multiple Deprivation (IMD). Ideally, comparator areas should closely match a project area in terms of demographics, economic make-up, levels of crime and antisocial behaviour, transport connectivity and so on.

7.9 Control groups are a more micro-level alternative to comparator areas. Under this approach to assessing deadweight, a project team tracks the same outcomes they hope to deliver using the NDM for a group of people who are not receiving the NDM. Provided that the intervention and control groups are similar in terms of make-up (gender, age, economic status etc), this approach provides a reasonably robust way of assessing deadweight. The Magenta Book[3] provides detailed guidance on evaluation including information on comparison area and control group methods.

7.10 For some outcome measures, it may not be possible to identify a net impact that is discernible from the background variation in the outcome measure. However, this does not necessarily mean that the project has not delivered significant changes in outcomes for the individuals involved. It is therefore desirable that project teams also collect information about the change in outcomes for individuals. To understand the deadweight factor for each individual, project teams can review an individual's case history and make a judgement on the likelihood of a change in outcome occurring without the project intervention. For example, when assessing the interventions that will aid individuals to find employment, projects should assess the working history of the individual over preceding years.

[3] www.gov.uk/government/publications/the-magenta-book

Assumptions for other impacts on additionality

Leakage

7.11 A project intervention may lead to changes in outcomes that benefit others outside the project area or result in individuals moving out of the project area. To date, the CBA model has been applied to geographically concentrated projects, such that the likelihood of benefits remaining within the overall boundary of analysis is judged to be high. Even if there is leakage outside the project area, there will probably still be benefit to the UK as a whole, unless benefits fall to foreign individuals or companies. Analysts should consider whether this will be material and adjust the impact accordingly.

Displacement and substitution

7.12 Displacement and substitution refers to the extent to which increases in outcomes (especially employment) are offset by reduction in outcomes elsewhere. DWP guidance[4] only applies to a substitution multiplier as part of sensitivity analysis for the CBA. For this analysis the recommended factors are 0.55 for demand-side programmes (e.g. subsidising employers to create jobs) and 0.8 for supply-side programmes (e.g. job search and training)

Multiplier effects

7.13 At present the model makes no assumption on whether increases in outcomes have knock-on effects elsewhere in the project area. For example, the model currently assumes that no further economic activity occurs as a result of increased employment in the project area.

Monetisation

7.14 In order to turn outcomes from projects into a financial benefit that can then be used in the cost benefit analysis, each outcome needs to be monetised.

7.15 Outcomes are monetised under two categories:

Benefit category	Description
Fiscal	Savings to central and local government agencies, resulting in reduced overall government expenditure.
Public value (economic and social benefits)	The overall benefit to the public, including economic growth and improved health and wellbeing.

N.B. In order to realise fiscal savings, decommissioning will be required. Otherwise, other demands on services will backfill available capacity and remove the opportunity to deliver cashable savings. Detail on how the model addresses cashability is included in paragraph 7.26.

Indexation

7.16 Monetisation values are recorded in the spreadsheet based on the year of the study/analysis from which they are taken. The CBA model automatically converts all values to real prices, using the GDP deflator indices produced by HM Treasury.[5]

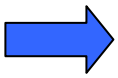
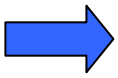
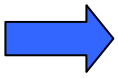
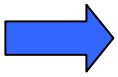
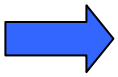
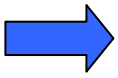
Optimism bias (OB)

7.17 Evidence shows that commissioners and practitioners are often overly optimistic about the outcomes that will be achieved by the project or programme and the amount of money that will

[4] *Social Cost-Benefit Analysis Framework, Working Paper No 86*, Daniel Fujiwara, Department for Work and Pensions, 2010.
[5] www.gov.uk/government/publications/gdp-deflators-at-market-prices-and-money-gdp-march-2013

be needed to deliver these outcomes. It seems reasonable to assume that the degree of over-optimism will be greater when the data and evidence upon which CBA is based are uneven, old or incomplete. Therefore, the CBA model applies optimism bias correction factors in response to the level of uncertainty in the data or assumptions used. The OB approach used is based on the following confidence grade definitions:

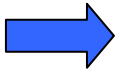
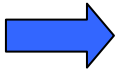
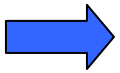
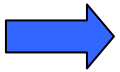
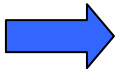
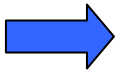
Table 7.A: Confidence grade for cost data

Confidence grade	Colour coding	Data source	Age of data	Known Data error		Optimism bias correction
1		Independently audited cost data	Current Data (<1 year old)	+-2%		0%
2		Formal service delivery contract costs	1-2 years old	+-5%		+5%
3		Practitioner monitored costs	2-3 years old	+-10%		+10%
4		Costs developed from ready reckoners	3-4 years old	+-15%		+15%
5			4-5 years old	+-20%		+25%
6		Uncorroborated expert judgement	>5 years old	+-25%		+40%

7.18 The confidence grade which the CBA model applies to the data is determined by the lowest assessment in any of the descriptive columns. The optimism bias correction factor for the data is then determined based on the lowest confidence grade found in relation to each individual outcome and costs are increased by the corresponding percentage factor (shown in the table above). Data in the spreadsheet are colour-coded to enable a quick visual assessment of the quality of the cost data inputs.

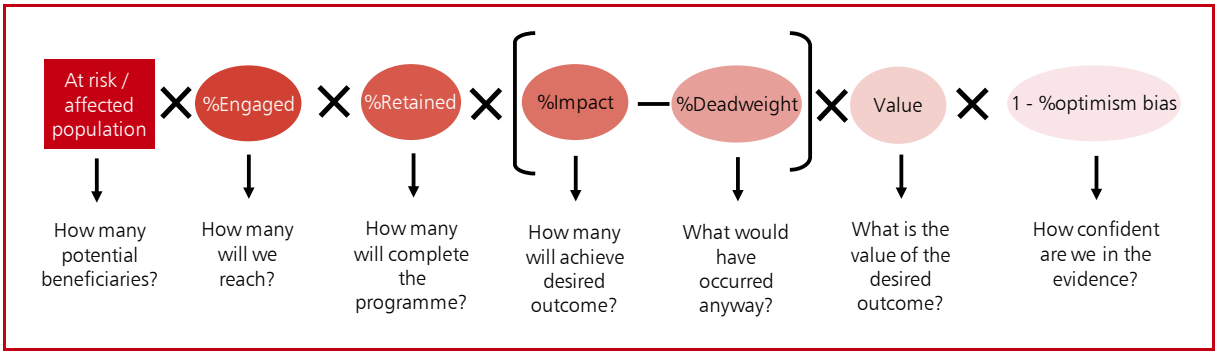
7.19 For project benefits, the same approach is taken but this time the forecast benefits are reduced by the confidence grade percentage.

Table 7.B: Confidence grade for benefits data

Confidence grade	Colour coding	Population / Cohort Data	Evidence base (engagement / impact)	Age of data / analysis	Known data error		Optimism bias correction
1		Figures taken from agency data systems	Randomised Control Trial in UK	Current Data (<1 year old)	+-2%		0%
2		Figures derived from local stats	International Randomised Control Trial	1-2 years old	+-5%		-5%
3		Figures based on national analysis in similar areas	Independent monitoring of outcomes with a robust evaluation plan	2-3 years old	+-10%		-10%
4		Figures based on generic national analysis	Practitioner monitoring of outcomes with a robust evaluation plan	3-4 years old	+-15%		-15%
5		Figures based on international analysis	Secondary evidence from a similar type of intervention	4-5 years old	+-20%		-25%
6		Uncorroborated expert judgement	Uncorroborated expert judgement	>5 years old	+-25%		-40%

Benefit calculation

7.20 The maximum potential monetary benefit for each outcome is calculated using the following formula:



Lag/drop off

7.21 By completing the stages in the CBA model described above, project teams will be able to produce an estimate of the maximum potential benefit that would arise if all their project beneficiaries immediately achieved the desired outcome (e.g. entered employment) and were able to sustain this outcome for five years (e.g. no beneficiary returns to unemployment in the next five years).

7.22 Such an estimate would not be realistic. This is because:

- A project is unlikely to have the capacity to work with all clients from day one – instead, it may enrol clients on the project in phases;
- The desired outcomes from a project will almost definitely not be achieved on day one and may take more than a year to materialise and
- Over subsequent years some of the project beneficiaries are likely to revert back to their pre-intervention status.

7.23 To make its analysis as realistic as possible, the CBA model requires project teams to forecast when a desired outcome is likely to occur and for how long that outcome will be sustained across the beneficiary group. Below we describe this approach using the example of a project which helps people into employment.

Box 7.A: Lag and drop-off calculations example

A project has the capacity to work with 100 residents per year, with the primary outcome being to support these residents off JSA and into sustained employment. Using the CBA model, the team calculates the maximum potential annual benefit (if all the residents enter employment) to be:

- 100 x £9,234 = £923,400. If this was sustained for a full five years this would equate to £4.6 million.

However, it is felt that half of the residents supported each year face extensive barriers to entering employment and are therefore highly unlikely to re-enter employment in year one. The remaining half will also take some time and it is likely that for these residents, the average lag period before entering employment would be 6 months. Based on this, the team considers that:

- 25% of the maximum annual benefit will be achieved in year one (i.e. half the cohort will be in employment for an average of six months), 65% in year two and 80% in year three.

After year three some of the initial beneficiaries are likely to return to unemployed status due to natural change in the labour market. The team agrees that:

- 75% of the cohort is likely to be in employment in year four, falling to 70% in year five.
- Based upon these percentages, the five year maximum actual benefit = £2.9 million

7.24 For each outcome category the guidance aims to provide guidance on lag and drop-off rates (see chapter eight). However, the lack of longitudinal data relating to outcomes such as entry into employment or reoffending makes it hard to provide robust guidance on this topic. In the absence of robust data, project teams are advised to combine the type of outcomes profile given above with their own expert judgement.

7.25 In addition to calculating the impact of lag and drop off for a single year's cohort, it is often the case that the NDM will continue for multiple years. The excel model includes a cohort impact calculator in order to calculate the percentage impact of multi-year programmes.

Cashability

7.26 Cashability refers to the extent to which a change in an outcome or output (e.g. fewer children in care) will result in a reduction in fiscal expenditure such that the expenditure released from that change can be reallocated elsewhere. The ability to cash benefits will be project specific, and will depend on the type of benefit, scale, timing and the leadership in place to realise the savings.

7.27 For some outcomes, such as benefits payments, cashability is almost 100%. For example, where a person enters employment a Jobseeker's Allowance payment is no longer made. For other outcomes – such as those related to improvements in health or reduced crime – cashability (as a result of changes in those outcomes) is often lower as decommissioning a prison or a hospital wing requires a reduction in service demand at scale.

7.28 In addition, the scope for cashability may change over time. Over a longer period, there will be more opportunities to restructure contract arrangements. A sustained improvement in outcomes over time will also give greater confidence to commissioners to reduce provision.

7.29 Another element of whether costs are cashable is to do with leadership. Without a commitment from senior leaders to reduce budgets and identify where savings may arise there is a risk that the benefits realised through successful interventions will be offset by other activities and unmet demand. Questions that can help project teams understand whether a new or redesigned service may create an opportunity for obtaining cashable savings are:

- Is it possible to regulate the flow of payments for a given output or outcome? This is related to the contractual basis upon which costs are incurred – is it on a call off or spot purchasing basis, or is it under a long-term outsourcing agreement?
- Is it possible to decommission the service easily or is there considerable infrastructure (e.g. a building) related to the outcome, which makes it harder to decommission spend in the short-term?
- How many agencies are involved in delivering the intervention(s) that achieves the outcome? If the answer is several, it may be harder to get lots of agencies to agree to stop devoting resources to the same thing.
- Is the monetary value of the outcome fairly small, thereby making it less likely that it will be prioritised for decommissioning?
- Is it politically controversial to decommission activity relating to this outcome?
- Will 'backfill' reduce the scope for cashable savings? Backfill arises where reductions in demand for a service are filled by other service users – a problem that often arises in acute services across the criminal justice system, social care and NHS. Even if spare capacity is created through a successful intervention will it simply be used to reduce existing backlogs in the system?

8 Assumptions and unit benefits for each outcome

8.1 This chapter sets out, for each outcome currently included in the CBA model, the evidence and assumptions that have been built into the Excel spreadsheet (readers who will not be involved in undertaking CBA may wish to skip to chapter nine).

8.2 The chapter has sections for each outcome currently included in the CBA model. Each section identifies the agencies that are likely to have a role in delivering and/or benefitting from the specific outcome; specifies the ways in which outcomes should be measured; and explains how the model monetises the fiscal and public value (economic and social) impact associated with each outcome and how it apportions benefit across agencies, over time etc.[1]

8.3 For each outcome the chapter provides some guidance on how cohort engagement and impact percentages can be calculated. However, the precise method for working out these two important percentages is largely dependent upon how information on project performance is going to be collected (i.e. analysts should summarise what monitoring information they will be collecting and when, and define what will constitute the achievement, or impact, of the outcome). More outcomes will be added to this chapter as new data become available.

1. Reduced Benefits claimants – Jobseeker's Allowance (JSA)

Key partners – DWP, DH.

Metric – Reduction in the number of individuals claiming Jobseeker's Allowance (JSA).

At risk/affected population – Individuals on JSA in the project cohort.

Calculation – Number of individuals on JSA as determined from NOMIS[2] for large cohorts or by local data collection for smaller cohorts.

Engagement – Dependent on intervention.

Impact – Dependent on intervention. Note that the monetisation figures below are based on entry to employment for a 12 month continuous period. Not all individuals entering employment will stay in a job indefinitely, and therefore an assessment of the length of employment should be included when calculating the impact of an intervention. Paragraph 7.12 includes a discussion of substitution effects.

Monetisation – Using DWP Cost Benefit Framework guidance[3] and response to parliamentary questions.

The monetisation values per individual finding employment are outlined in the table below:

[1] Figures may not sum to 100% or total indicated due to rounding.
[2] See www.nomisweb.co.uk
[3] *Social Cost-Benefit Analysis Framework, Working Paper No 86*, Daniel Fujiwara, Department for Work and Pensions, 2010.

		Monetised benefit per year per extra individual in employment	
	Type of claimant	**Fiscal**	**Public value**
Reduced benefits payments	JSA	£9,234	
Improved health – savings to NHS	JSA	£566	£566
Income in employment			£14,044

These figures are based on 2012/13 prices.

Fiscal benefits

Benefits payments – Reduced benefits claimants will result in savings to the exchequer managed by the DWP (Annually Managed Expenditure).

Health – The calculation to determine the impact on health service costs is based on a reduction in NHS services of 33% as outlined in the DWP guidance document. These savings will fall to the NHS. However, decommissioning of services is also necessary in order to cash these savings. These costs relate to general NHS costs, and are not broken down to include acute issues such as teenage pregnancy, drink and substance misuse. If these outcomes are targeted, they should be assessed as specific outcomes and monetised individually.

Crime – Previous versions of this methodology included monetisation of crime benefits. It is now considered that any crime benefits should be included directly (see crime section below).

When determining the proportion of fiscal benefits to individual agencies, the following percentages should be used:

Benefits Payment/improved health – 94% DWP (AME), 6% NHS

Public value benefits

Employment income – the earnings assumed per individual is based on the modelled income on entering employment (based on DWP Research Report 791).[4]

Opportunity cost of avoided health spending – £566.

Non-monetised benefits – other benefits may accrue from individuals entering employment that have not been monetised. These could include personal wellbeing improvements gained through employment, and the impact on the wider community through increased employment, especially through being role models for others seeking employment. It is not possible at the present time to calculate directly the social value of employment as this will vary widely among cohorts.

Deadweight:

- For appraisal – estimates of deadweight will depend on the cohort to which the intervention is applied. For example, if the interventions are delivered to the general JSA population it may be most appropriate to use a deadweight figure valued at 26.3% of the benefits. This is based on an analysis of 16 people and skills based evaluations carried out by BIS.[5] However, for a cohort who are on average are further from employment, this may overestimate the number of people who would find a job under the business as usual approach. Therefore, for these cohorts, other

[4] *Destinations of Jobseeker's Allowance, Income Support and Employment and Support Allowance Leavers*, Department for Work and Pensions, 2011.
[5] *BIS Occasional Paper No. 1 – Research to improve the assessment of additionality*, Department for Business, Innovation and Skills, 2009.

data such as success rates for the Work Programme or other initiatives could be used to estimate deadweight.

- For evaluation – outcomes and deadweight will be determined based on individual case history before, during and at the end of the project. The number of months worked in the previous two year period prior to the project intervention should be assessed. Employment outcomes following the intervention should then be tracked and the additionality calculated as the difference in work history prior to and following the intervention.

2. Reduced Benefits Claimants – Employment Support Allowance (ESA) or Incapacity Benefit (IB)

Key partners – DWP, DH.

Metric – Reduction in the number of individuals claiming ESA or IB.

At risk / affected population – Individuals on ESA or IB in the project cohort.

Calculation – Number on ESA or IB as determined from NOMIS[6] for large cohorts or by local data collection for smaller cohorts.

Engagement – Dependent on intervention.

Impact – Dependent on intervention. Note that the monetisation figures below are based on entry to employment for a 12 month continuous period. Not all individuals entering employment will stay in a job indefinitely, and therefore an assessment of the length of employment should be included when calculating the impact of an intervention. Paragraph 7.12 includes a discussion of substitution effects.

Monetisation – Using DWP Cost Benefit Framework guidance[7] and unpublished DWP modelling.

The monetisation values per individual finding employment are outlined in the table below:

		Monetised benefit per year per extra individual in employment	
	Type of claimant	**Fiscal**	**Public value**
Reduced benefits payments	ESA	£7,500	
Improved health – savings to NHS	ESA	£1,132	£1,132
Income in employment			£12,568

These figures are based on 2012/13 prices.

Fiscal benefits

Benefits payments – Reduced benefits claimants will result in savings to the exchequer managed by the DWP (Annually Managed Expenditure).

Health – The calculation to determine the impact on health services costs is based on a reduction in NHS services of 66% as outlined in the DWP guidance document. These savings will fall to the NHS. However, decommissioning of services is also necessary in order to cash these savings. These costs relate to general NHS costs, and are not broken down to include acute

[6] See www.nomisweb.co.uk

[7] *Social Cost-Benefit Analysis Framework, Working Paper No 86*, Daniel Fujiwara, Department for Work and Pensions, 2010.

issues such as teenage pregnancy, drink and substance misuse. If these outcomes are targeted, they should be assessed as specific outcomes and monetised individually.

Crime – Previous versions of this methodology included monetisation of crime benefits. It is now considered that any crime benefits should be included directly (see crime section below).

When determining the proportion of fiscal benefits to individual agencies, the following percentages should be used:

Benefits Payment/improved health – 87% DWP (AME), 13% NHS

Public value benefits

Employment income – the earnings assumed per individual is based on the modelled income on entering employment (based on DWP Research Report 791).[8]

Opportunity cost of avoided health spending – £1,132.

Non-monetised benefits – other benefits may accrue from individuals entering employment that have not been monetised. These could include personal wellbeing improvements gained through employment, and the impact on the wider community through increased employment, especially through being role models to others seeking employment. It is not possible at the present time to calculate directly the social value of employment as this will vary widely among cohorts.

Deadweight:

- For appraisal – estimates of deadweight will depend on the cohort to which the intervention is applied. For example, if the interventions are delivered to the general ESA/IB population it may be most appropriate to use a deadweight figure valued at 26.3% of the benefits. This is based on an analysis of 16 people and skills based evaluations carried out by BIS.[9] However, for cohorts who are on average further from employment, this may overestimate the number of people who would find a job under the business as usual approach. Therefore, for these cohorts, other data such as success rates for the Work Programme or other initiatives could be used to estimate deadweight.
- For evaluation – outcomes and deadweight will be determined based on individual case history before, during and at the end of the project. The number of months worked in the previous two year period prior to the intervention should be assessed. Employment outcomes following the intervention should then be tracked and the additionality calculated as the difference in work history prior to and following the intervention.

3. Reduced Benefits Payments – Lone Parent Income Support (LPIS)

Key partners – DWP, DH.

Metric – Reduction in the number of individuals claiming Lone Parent Income Support (LPIS).

At risk / affected population – Individuals on LPIS in the project cohort.

[8] *Destinations of Jobseeker's Allowance, Income Support and Employment and Support Allowance Leavers*, Department for Work and Pensions, 2011.
[9] *BIS Occasional Paper No. 1 – Research to improve the assessment of additionality*, Department for Business, Innovation and Skills, 2009.

Calculation – Number on LPIS as determined from NOMIS[10] for large cohorts or by local data collection for smaller cohorts. Where not otherwise available, gender and age split determined from NOMIS data – assumed to be consistent across benefit types.

Engagement – Dependent on intervention.

Impact – Dependent on intervention. Note that the monetisation figures below are based on entry to employment for a 12 month continuous period. Not all individuals entering employment will stay in a job indefinitely, and therefore an assessment of the length of employment should be included when calculating the impact of an intervention. Paragraph 7.12 includes a discussion of substitution effects.

Monetisation – Using Annex A of the DWP Worklessness Co-design – Interim Report.[11]

The monetisation values per individual finding employment are outlined in the table below:

		Monetised benefit per year per extra individual in employment	
	Type of claimant	**Fiscal**	**Public value**
Reduced benefits payments	LPIS	£7,004	
Improved health – savings to NHS	LPIS	£566	£566
Income in employment			£8,701

These figures are based on 2012/13 prices.

Fiscal benefits

Benefits payments – Reduced benefits claimants will result in savings to the exchequer managed by the DWP (Annually Managed Expenditure).

Health – The calculation to determine the impact on health services costs is based on a reduction in NHS services of 33% as outlined in the DWP guidance document. These savings will fall to the NHS. However, decommissioning of services is also necessary in order to cash these savings. These costs relate to general NHS costs, and are not broken down to include acute issues such as teenage pregnancy, drink and substance misuse. If these outcomes are targeted, they should be assessed as specific outcomes and monetised individually.

Crime – Previous versions of this methodology included monetisation of crime benefits. It is now considered that any crime benefits should be included directly (see crime section below).When determining the proportion of fiscal benefits to individual agencies, the following percentages should be used:

Benefits Payment/improved health – 93% DWP (AME), 7% NHS

Public value benefits

Employment income – the earnings assumed per individual is based on the modelled income on entering employment (based on DWP Research Report 791).[12]

Opportunity cost of avoided health spending – £566.

[10] See www.nomisweb.co.uk

[11] *Worklessness Co-design – Interim Report*, Department for Work and Pensions, 2011.

[12] *Destinations of Jobseeker's Allowance, Income Support and Employment and Support Allowance Leavers*, Department for Work and Pensions,2011.

Non-monetised benefits – other benefits may accrue from individuals entering employment that have not been monetised. These could include personal wellbeing improvements gained through employment, and the impact on the wider community through increased employment, especially through being role models to others seeking employment. It is not possible at the present time to calculate directly the social value of employment as this will vary widely among cohorts.

Deadweight:

- For appraisal – estimates of deadweight will depend on the cohort to which the intervention is applied. For example, if the interventions are delivered to the general LPIS population it may be most appropriate to use a deadweight figure valued at 26.3% of the benefits. This is based on an analysis of 16 people and skills based evaluations carried out by BIS.[13] However, for cohorts who are on average further from employment, this may overestimate the number of people who would find a job under the business as usual approach. Therefore, for these cohorts, other data such as success rates for the Work Programme or other initiatives could be used to estimate deadweight.
- For evaluation – outcomes and deadweight will be determined based on individual case history before, during and at the end of the project. The number of months worked in the previous two year period prior to the intervention should be assessed. Employment outcomes following the intervention should then be tracked and the additionality calculated as the difference in work history prior to and following the intervention.

4. Skills

Key partners – DWP, BIS, Local Authorities.

Metric – Increase in population qualified to Level 2 and Level 3 skills.

At risk / affected population – Working age individuals in project areas with < level 3 skills.

Calculation – Total numbers based on Census 2011 figures are to be used to estimate the skill levels in the project areas. As these figures are not up to date and trackable over the lifetime of the projects, evaluation should track the skill profiles of individuals as they are engaged with the project.

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – Based on percentage uplift in wages as identified in BIS and IER research findings.[14]

Fiscal benefits –increased taxation revenue per annum

	NVQ	City and Guilds	BTEC	Apprenticeship
Increase from < Level 2 to Level 2	£83	£641	£494	£787
Increase from Level 2 to Level 3	£513	£741	£683	£1,391

Public value benefits – increased annual earnings per individual:

[13] *BIS Occasional Paper No. 1 – Research to improve the assessment of additionality*, Department for Business, Innovation and Skills, 2009.

[14] *Returns to vocational qualifications. Research Paper 53*, Department for Business, Innovation and Skills, 2011.

	NVQ	City and Guilds	BTEC	Apprenticeship
Increase from < Level 2 to Level 2	£443	£1,059	£878	£1,208
Increase from Level 2 to Level 3	£921	£1,382	£1,123	£1,925

These fiscal and public value benefits are in 2010/11 prices

Non-monetised benefits – There are potential additional well-being impacts on individuals, families and community.

Deadweight:

- For appraisal CBA, assumed zero deadweight, as individuals in project are not likely to be engaged with training providers without support.
- For evaluation CBA, we will use comparator areas to determine deadweight.

5. Adult mental health

Key partners – DH, Local Authorities.

Metric – Reduced adult mental health problems (number of individuals with anxiety and depression).

At risk / affected population – Adults in the project area with anxiety or depression.

Calculation – One way of estimating the affected population is to use adults in receipt of Employment Support Allowance / Incapacity Benefit for Mental Health reasons. N.B. This will underestimate the number of people at risk in project areas. Work to further understand the prevalence of mental health problems is underway and will be incorporated in future versions of this framework.

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – Based on Kings Fund report 2008[15] which uses 2007 figures.

		Overall costs			Cost per person		
	Number of people (£m)	Service costs (£bn)	Lost earnings (£bn)	Total costs (£bn)	Service costs (£)	Lost earnings (£)	Total costs (£)
Depression	1.24	1.68	5.82	7.5	1,355	4,694	6,048
Anxiety	2.28	1.24	7.7	8.94	544	3,377	3,921
Total	3.52	2.92	13.52	16.44	830	3,841	4,670

Service costs include prescribed drugs, inpatient care, GP costs, other NHS services, supported accommodation and social services costs.

Fiscal benefits – Service cost per person – £830. 92% of these costs fall to NHS bodies, with the remaining 8% falling to Local Authorities.

Public value benefits – £4,670 including service costs and lost earnings.

[15] *Paying the Price - The cost of mental health care in England to 2026*, Kings Fund, 2008.

Non-monetised benefits – It is possible to quantify the health impacts of reducing the likelihood of having a mental health problem (especially anxiety and depression) using tools such as the EQ-5D questionnaire.[16] The standard tariffs for different health states using this approach are currently being reviewed, and this document will be updated in due course. Where health impacts of an intervention are likely to be important, the Department of Health guidance on Impact Assessment[17] provides a useful resource for monetising health impacts using changes in Quality Adjusted Life Years (QALYs).

Deadweight:

- For appraisal – assume zero deadweight as individuals in project areas currently do not receive specific support and are therefore unlikely to improve their outcomes.
- For evaluation – outcomes and deadweight determined based on individual case history before and during the project.

6. A&E attendance

Key partners – DH, Local Authorities.

Metric – Reduced avoidable A&E attendance.

At risk / affected population – Number of residents attending A&E with no significant treatment.

Calculation – Attendances at A&E based on local data.

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – Based on the NHS Reference Costs for "No investigation with no significant treatment" – HRG Code VB11Z for 2011/12.

Fiscal benefits – Cost of basic A&E attendance with no investigation – £64. Costs fall to the NHS. This is a 2011/12 price.

Public value benefits – £64.

Non monetised benefits – None identified.

Deadweight:

- For appraisal CBA – deadweight should be calculated based on trends in A&E attendance in the project area.
- For evaluation CBA – use comparator area to determine deadweight.

7. Domestic violence

Key partners- Local Authorities, NHS, Police, Probation, Other Criminal Justice agencies

Metric – Reduced incidents of domestic violence.

At risk / affected population – Adults suffering from domestic violence incidents. N.B. Concern has been raised about the quality of data recorded for domestic violence.

[16] The EQ-5D is the EuroQol Five Dimensional self-assessment of health state. This tool enables an assessment of health states across the five dimensions of mobility, ability to self-care, ability to carry out usual activities, pain/discomfort and anxiety/depression.

[17] Department of Health. *Health Impact Assessment of Government Policy*. 2010. For more detailed guidance on quantifying the health impacts of policy, see: DH, *Quantifying health impacts of government policies*, 2010.

Calculation –Number of domestic violence incidents in project area.

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – Based on Silvia Walby report for the Dti/Women and Equality Unit, 2009[18], and The Cost of Domestic Violence, 2004[19]

Fiscal benefits – Policing/courts/NHS cost per incident – £2,470 (2008/09 prices)

The split of fiscal benefits is based on Walby's 2004 report: NHS 47%, Police 17%, Local Authority 12%, Courts/Legal Aid 11%, Probation 3%, Prisons 2%, Other CJS 8%.

Public value benefits – £10,738

- Service costs as above (£2,470)
- Costs to employers per incident due to absence (£655)
- Costs to victims (£818)
- The costs of human and emotional impact of domestic violence (£6,795)

Non monetised benefits – None identified.

Deadweight:

- For appraisal CBA – use domestic violence trend data to determine deadweight.
- For evaluation CBA – use comparator area to determine deadweight.

8. Anti-social behaviour

Key partners – Local Authorities, Police, Housing Providers

Metric – Reduced number of anti-social behaviour incidents

At risk / affected population – Individuals carrying out antisocial behaviour.

Calculation – Total number of incidents of Anti Social Behaviour as recorded, broken down into incidents which result in further actions, and those incidents which do not result in any action being taken.

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – Based on LSE paper 2003,[20] Home Office Online Report 30/05[21]

Fiscal benefits – Reduced costs of dealing with incidents – no further action £35, further action necessary £500. These are 2002/03 prices.

Split of fiscal benefits will be related to local arrangements. A suggested split would be Police 40%, Local authority 30%, Housing Providers 30%.

[18] *The Cost of Domestic Violence: Up-date 2009*, Silvia Walby, Lancaster University, 2009.
[19] *The Cost of Domestic Violence*, Sylvia Walby, University of Leeds, 2004.
[20] *The Economic and Social Costs of Anti-Social Behaviour: A Review*, London School of Economics and Political Science, 2003.
[21] *The economic and social costs of crime against individuals and households 2003/04*, Home Office Online Report 30/05, Home Office, 2004.

Public value benefits – service costs as above plus physical and emotional impact on direct victims. A suggested proxy for this is the social impact for low level crime, for example: 'theft – not vehicle' – £118 per incident

Non-monetised benefits – Reduced fear of crime; improved desirability of locality.

Deadweight:

- For appraisal CBA – deadweight based on trends in ASB incidents in project area.
- For evaluation CBA – deadweight assessed by use of comparator area.

9. Crime

Key partners – MoJ, HO, Local Authorities, Police, Probation, Prisons, Courts, Other Criminal Justice Agencies, Health.

Metric – Reduced incidents of crime (all crimes). For specific crime types see table below.

At risk / affected population – Individuals carrying out crime.

Calculation – Total number of incidents of crime (as measured by the British Crime Survey). Multipliers should be used to covert from recorded crime to actual crime. The average multiplier for Greater Manchester for 2011/12 was 5.24.

Engagement – Dependent on intervention.

Impact – Dependent on intervention. This could be assessed using a before and after offending history of the cohort. However, care should be taken to account for the change in propensity to commit crime with age.

Monetisation – Updated figures based on Home Office Online Report 30/05[22] and Integrated Offender Management Value for Money Toolkit.[23]

Fiscal benefits – £609 per crime. Agency split: NHS 18%, Police 37%, Courts and Legal Aid, 13%, Prisons 18%, Probation 3%, Other CJS 10%.

Public value benefits – £2933 per crime.

- Service costs as per fiscal benefits – £609
- Economic benefits including increased insurance costs and loss of property – £676; Physical and emotional impact on direct victims of crime – £1,648

These benefits are in 2010/11 prices.

Non monetised benefits – Reduced fear of crime; improved desirability of locality.

Deadweight:

- For appraisal CBA – deadweight based on trends in crime incidents in project area.
- For evaluation CBA – deadweight assessed by use of comparator cohort (which could be identified using Propensity Score Matching).

[22] *The economic and social costs of crime against individuals and households 2003/04*, Home Office Online Report 30/05, Home Office, 2004.
[23] *Revisions made to the multipliers and unit costs of crime used in the Integrated Offender Management Value for Money Toolkit*, Home Office, 2011.

Table 8.A: Specific crime types

Crime type	Fiscal	Public value		NHS	Police	Courts and legal aid	Probation	Prisons	Other CJS	Recorded crime to actual crime multiplier (from 2011 IOM toolkit)
		Economic	Social							
Homicide	£174,363	£535,120	£1,069,481	1%	10%	6%	1%	78%	5%	1
Serious wounding	£18,608	£1,384	£5,661	9%	38%	20%	2%	17%	14%	1.5
Other wounding	£2,765	£1,384	£5,661	58%	18%	10%	3%	6%	7%	1.5
Sexual offences	£3,597	£5,256	£28,284	30%	32%	15%	1%	15%	7%	13.6
Common assault	£455	£319	£980	32%	31%	17%	4%	3%	13%	7.9
Robbery	£3,674	£1,344	£3,789	16%	28%	15%	3%	27%	11%	4.8
Burglary in a dwelling	£1,361	£1,746	£803	0%	50%	9%	6%	27%	7%	2.8
Theft (not vehicle)	£358	£255	£147	0%	63%	15%	9%	7%	6%	3
Vehicle theft	£237	£3,719	£994	0%	41%	10%	15%	32%	4%	1.3
Theft from vehicle	£60	£641	£331	0%	61%	14%	12%	8%	6%	3.5
Attempted vehicle theft	£78	£297	£241	0%	27%	6%	19%	45%	3%	2.3
Criminal damage	£152	£316	£587	0%	60%	12%	2%	5%	21%	5.9
Burglary – not in a dwelling	£1,597	£2,050	£943	0%	49%	11%	4%	33%	3%	1.9
Commercial robbery	£3,909	£1,430	£4,031	16%	42%	9%	1%	28%	5%	4.8
Commercial theft of vehicle	£479	£7,515	£2,010	0%	52%	13%	8%	26%	2%	1.3
Commercial theft from vehicle	£73	£774	£399	0%	43%	21%	9%	26%	2%	3.5
Commercial attempted vehicle theft	£78	£297	£241	0%	57%	8%	8%	25%	2%	2.3
Shoplifting	£26	£97	£-	0%	47%	13%	13%	27%	0%	16.1
Commercial criminal damage	£265	£552	£1,024	0%	44%	9%	3%	13%	31%	5.9

10. Reduced housing provider costs from evictions

Key partners – Housing providers, Local Authorities, Legal Services Commission

Metric – Reduced housing evictions.

At risk / affected population – Families at risk of eviction from social housing.

Calculation – Total number at risk identified by Housing Providers.

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – Based on Shelter Research Briefing.[24]

Fiscal benefits – £6,680 (2010/11 prices). This includes:

- Writing off arrears at the point of an eviction.
- Costs of repairing and re-letting the property.
- Administrative and legal costs.
- Temporary accommodation.

The split of fiscal benefits is 87% Housing provider, 10% Local Authorities, 3% Other Criminal Justice Agencies (Legal Services Commission)

Public value benefits – £6,680 as above

Non-monetised benefits – Reduced homelessness.

Deadweight:

- For appraisal CBA – many families identified as a risk of eviction will not actually get to the point of being evicted. An assessment should be made using historical figures of the number of actual evictions compared to those at risk to determine deadweight.
- For evaluation CBA – trends in evictions in comparator area used to determine deadweight.

11. Statutory homelessness

Key partners – Local Authorities

Metric – Reduced numbers of individuals who are statutory homeless.

At risk / affected population – Individuals meeting the definition of statutory homelessness.

Calculation – Cohort at risk as identified by project team.

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – Based on Shelter Research Briefing (2012)[25]

[24] *Research Briefing: Immediate costs to government of loss of home*, Shelter, 2012.
[25] *Research Briefing: Immediate costs to government of loss of home*, Shelter, 2012.

Fiscal benefits – Reduced costs of accommodation, administration and legal advice – £2,501(2010/11 prices). Agency split: Local Authority 97%, Other Criminal Justice Agencies (Legal Services Commission) 3%.

Public value benefits – £2,501 as above

Non-monetised benefits – improved wellbeing of cohort.

Deadweight – analysis of trends in the project area of percentages of individuals who are identified as at risk of homelessness, who do not then reach the point of statutory homelessness.

12. Children in care

Key partners – Department for Education, Local Authorities

Metric – Reduced numbers of children in care.

At risk / affected population – Children identified as at risk of becoming looked after children (LAC).

Calculation – Number of children as identified by project team.

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – Based on LA costs of children's services collated using DfE Section 251 data on Looked After Children costs for 2012/13 and the 903 return data on number of LAC for March 2013. The total cost of the LAC placements has been included, plus 50% of the costs related to 'Safeguarding Children and Young People'

Fiscal benefits – Removed cost of safeguarding – £63,362 – average cost per child in foster or residential care in England (2012/13 prices).

Public value benefits – £70,822

- Service costs as above – £63,362; Reduced harm to children, based on the costs of human and emotional impact of domestic violence uprated to 2012/13 prices – £7,460.

Non-monetised benefits – improved wellbeing and future opportunities of children.

Deadweight – analysis of trends in the project area of percentages of children who are identified as at risk of safeguarding, who do not then reach the point at which safeguarding occurs.

13. Drug abuse

Key partners – NHS, MoJ, HO, Local Authorities

Metric – Numbers entering treatment for drug abuse.

At risk / affected population – Individuals with drug or alcohol problems.

Calculation – Total numbers entering treatment

Engagement – Dependent on intervention

Impact – Dependent on intervention

Monetisation – Based on The Drug Treatment Outcomes Research study (DTORS): Cost-effectiveness analysis[26] and estimating the crime reduction benefits of drug treatment and recovery.[27]

Fiscal benefits – NHS – £2,136; Criminal Justice system – £1,495. Costs up rated to a consistent cost base (2013/14).

Public value benefits – £16,399

- Service costs as above - £3,631.
- Cost saving due to not buying drugs - £8,954. Reduced health impact of drug abuse £3,814.[28] As above costs up rated to 2013/14 prices.

Non-monetised benefits – Reduced fear of crime; improved desirability of locality.

Deadweight:

- For appraisal CBA – deadweight based on trends in drug abuse in project area.
- For evaluation CBA – deadweight assessed by use of comparator area.

14. Alcohol dependency

Key partners – NHS

Metric – Numbers entering treatment for alcohol dependency.

At risk / affected population – Individuals with alcohol problems.

Calculation – Total numbers entering treatment

Engagement – Dependent on intervention

Impact – Dependent on intervention

Monetisation – Nice Clinical Guidance 115,[29] Liverpool Public Health Observatory: Prevention Programmes Cost-Effectiveness Review: Alcohol,[30] and The Drug Treatment Outcomes Research study (DTORS): Cost-effectiveness analysis.[31]

Fiscal benefits – Savings to the NHS - £1,800 per year (2009/10 prices)

Public value benefits – £3,198.

- Service costs as above - £1,800; Health impact on individual entering treatment. This is calculated as £1,398for alcohol abuse.[32]

Non-monetised benefits – Reduced fear of crime; improved desirability of locality.

[26] *The Drug Treatment Outcomes Research study (DTORS): Cost-effectiveness analysis*, *Research Report 25*, Home Office, 2009.
[27] *Estimating the crime reduction benefits of drug treatment and recovery*, National Treatment Agency for Substance Misuse, 2012.
[28] The Drugs Treatment Outcomes Research Study suggests that drug treatment leads to 0.05 extra QALYs compared to no drug treatment. A value of £60,000 per QALY (2009 prices) is used in this analysis.
[29] *Alcohol-use disorders: alcohol dependence – Costing report*, National Institute for Health and Clinical Excellence, 2011.
[30] *Prevention Programmes Cost-Effectiveness Review: Alcohol*, Liverpool Public Health Observatory, 2009.
[31] *The Drug Treatment Outcomes Research study (DTORS): Cost-effectiveness analysis*, *Research Report 25*, Home Office, 2009.
[32] There are a range of studies looking at the impact of alcohol interventions. One analysis of brief interventions delivered in GP surgeries found that they led to an additional 0.0233 QALYs (Quality Adjusted Life Years) per person. A value of £60,000 per QALY (2009 prices) is used in this analysis.

Deadweight:

- For appraisal CBA – deadweight based on trends in alcohol dependency in project area.
- For evaluation CBA – deadweight assessed by use of comparator area.

15. Truancy

Key partners – DfE, Local Authorities

Metric – Reduced numbers of children absent from school for >15% of the time.

At risk / affected population – Children identified who are not in school for >85% of school year.

Calculation – Number of persistently truanting children.

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – Based on analysis of Manchester City Council truancy services costs, and Misspent Youth, 2007[33].

Fiscal benefits – £476 per year (2005/6 prices). This is based on a £52 saving in health costs and a £424 saving to criminal justice agencies. Local authority initiatives around truancy are generally proactive, focussed on attendance, rather than reactive as a result of children being absent from school. Therefore they should be accounted for under the costs section of this methodology.

Public value benefits – £1,318.

- Service costs as above - £476.
- Increased earnings of £842 per year. N.B. This will only be relevant when the child is of working age, and this may be beyond the timescale for the modelling.

Non-monetised benefits – improved wellbeing and future opportunities of children who are not truants arising from less class disruption.

Deadweight – analysis of truancy trends in the project area.

16. Exclusion

Key partners – DfE, Local Authorities

Metric – Reduced numbers of children excluded from school.

At risk / affected population – Children identified who are at risk of exclusion (may have had temporary exclusions in the past).

Calculation – Number of children at risk of exclusion as identified by project team.

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – Based on Misspent Youth, 2007[34].

[33] *Misspent Youth: The costs of truancy and exclusion*, New Philanthropy Capital, 2007. https://www.thinknpc.org/publications/misspent-youth/

Fiscal benefits – £9219 per year. This is based on a £7181 cost per year of alternative educational arrangements for excluded children (e.g. Pupil Referral Units), a £64 saving in health costs, a £1004 cost to Local Authority children's social services and a £970 saving to criminal justice agencies. Other local authority initiatives around exclusion are generally proactive focussed on reducing the risk of exclusion. Therefore they should be accounted for under the costs section of this methodology. This split to individual agencies is 89% Local Authorities, 10% Criminal Justice system and 1% NHS.

Public value benefits – £9,748

- Service costs as above – £9,219.
- Increased earnings of £529 per year. N.B. This will only be relevant when the child is of working age, and this may be beyond the timescale for the modelling.

Non-monetised benefits – improved wellbeing and future opportunities of children who are not at risk of exclusion arising from less class disruption.

Deadweight – analysis of trends in the project area of exclusion.

17. Reduced hospital inpatient admissions

Key partners – NHS.

Metric – Reduced numbers of patients admitted to hospital.

At risk / affected population – Population at risk of hospitalisation – especially the elderly.

Calculation – Number of admissions to hospital of the modelled cohort (measured/predicted).

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – National Schedule of Reference Costs 2011-12 for NHS trusts and NHS foundation trusts – weighted average of all elective inpatient, non-elective inpatient (long stay) and non-elective inpatient (short stay) data.[35]

Fiscal benefits – £1,713 per admission (2011/12 prices).

Public value benefits – £1,713 per admission. Service costs as above.

Non-monetised benefits – reduced sickness absence, and related economic impact. Health and wellbeing impact of patients.

Deadweight – analysis of trends in the project area.

18. Adult Social Services Residential Care

Key partners – Local Authorities

Metric – Reduced numbers of adults needing residential care.

At risk / affected population – Elderly populations who are at risk of needing residential care, but could be supported better in the community.

[34] *Misspent Youth: The costs of truancy and exclusion*, New Philanthropy Capital, 2007. https://www.thinknpc.org/publications/misspent-youth/

[35] *NHS 2011-12 reference costs publication*, Department of Health, 2011.

Calculation – Number of adults at risk of needing residential care.

Engagement – Dependent on intervention.

Impact – Dependent on intervention.

Monetisation – Based on Personal Social Services: Expenditure and Unit Costs, England, 2012-13.[36]

Fiscal benefits – £352/week (2012/13 prices). Based on 67% of costs falling to Local Authorities.

Public value benefits – £528/week (2012/13 prices)

Service costs as above £352/week

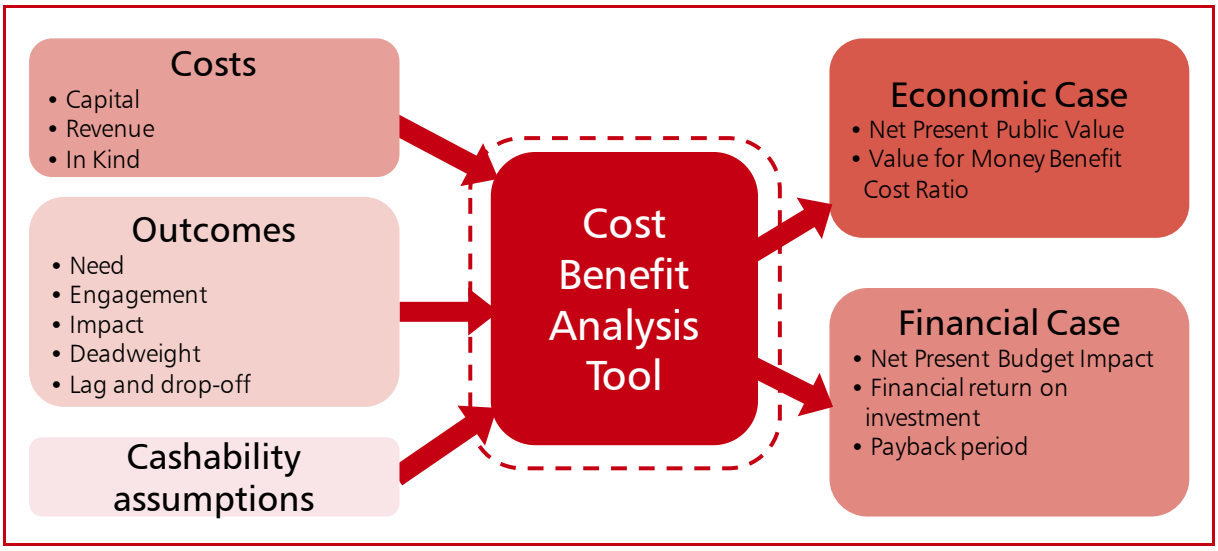
Costs to private individuals £176/week-based on 33% of overall costs.

Non-monetised benefits – Wellbeing impact of residential care.

Deadweight – analysis of trends in the project area.

[36] *Personal Social Services: Expenditure and Unit Costs, England, 2012-13,* Health and Social Care Information Centre, 2013.

9 Overall analysis approach



Discounting

9.1 In order to determine the present value of the costs and benefits for use in calculations of overall efficiency and benefit cost ratios, the values of future costs and benefits need to be discounted to current prices. The CBA model uses a standard discount factor of 3.5%, as stipulated in HM Treasury's Green Book.

Calculation of CBA outputs

9.2 The follow outputs are calculated in the model as described in chapter five:

- Net Present Budget Impact
- Financial Return on Investment
- Payback period
- Net Present Public Value
- Value for Money Benefit Cost Ratio

Benefits to different agencies

9.3 The methodology and model allow for a greater understanding of which agencies are benefiting from the intervention. The model produces graphs of those agencies benefiting and compares this to those agencies that are delivering the services. This enables greater discussion of the potential for joint investment in services based on a recognition of who benefits from the improvement in outcomes.

Distributional analysis

9.4 Distributional analysis using weighting of benefits to different sectors of society is not carried out by the CBA model. However, it is recommended that practitioners carry out a high level assessment of which groups in society contribute and which groups in society benefit from a project, in order to understand the distributional impact of implementing the project that is being assessed.

Sensitivity analysis

9.5 In order to provide a greater understanding to decision makers who will be using the outputs of the CBA, it is recommended that sensitivity analysis is carried out to understand whether potential error in the data and assumptions in the model has a significant effect on the outputs of the CBA. Data in the model should be adjusted to more pessimistic or optimistic values to understand the impact on the Financial Return on Investment Ratio. There are a number of different potential scenarios that can be run. For example, these could include calculating the impact on certain outcomes at which point the project breaks even financially, or excluding in-kind costs to look solely at the fiscal impact of an intervention.

10 Further information

Knowledge Hub website

10.1 This guidance, the CBA model and the unit cost database can be found here. Registration is required to access the Knowledge Hub website but it is open to anyone who would like to use these resources. The site is also a location for analysts to share expertise, ask questions and to publish analysis.

Evaluation guides

10.2 The audience for New Economy's CBA work is diverse and include: central government and local government; operational, delivery, strategic and management staff; CBA experts and CBA novices. A range of tools are available on the Knowledge Hub website including evaluation guides. These guides explain how the CBA model works and set out the core and secondary indicators that a project may wish to track in order to understand changes in outcomes.

Training and dissemination activities

10.3 New Economy and the Public Service Transformation Network run regular training events and seminars so that a growing number of commissioners and project deliverers across the UK are able to gather and report data and information in a manner that fits with the CBA model.

Bibliography

10.4 A wide range of secondary sources have been used in the development of this guidance. These have included:

- *The Green Book: Appraisal and Evaluation in Central Government*, HM Treasury 2011.
- *Green Book Supplementary Guidance on Public Sector Business Cases Using the Five Case Model*, Lowe, HM Treasury, 2013.
- *The Magenta Book*, HM Treasury, 2011.
- *BIS Occasional Paper No. 1 – Research to improve the assessment of additionality*, Department for Business Innovation and Skills, 2009.
- *A guide to Social Return on Investment*, SROI Network, 2012.
- *The social impact of housing providers*, Fujiwara, D. and HACT, 2013.
- *Returns to vocational qualifications. Research Paper 53*, Department for Business, Innovation and Skills, 2011.
- *Paying the Price - The cost of mental health care in England to 2026*, Kings Fund, 2008.
- *The Cost of Domestic Violence: Up-date 2009*, Silvia Walby, Lancaster University, 2009.
- *The Economic and Social Costs of Anti-Social Behaviour: A Review*, London School of Economics and Political Science, 2003.

- *The economic and social costs of crime against individuals and households 2003/04*, Home Office Online Report 30/05, Home Office, 2004.
- *Revisions made to the multipliers and unit costs of crime used in the Integrated Offender Management Value for Money Toolkit*, Home Office, 2011.
- *Research Briefing: Immediate costs to government of loss of home*, Shelter, 2012.
- *The Drug Treatment Outcomes Research study (DTORS): Cost-effectiveness analysis*, *Research Report 25*, Home Office, 2009.
- *Estimating the crime reduction benefits of drug treatment and recovery*, National Treatment Agency for Substance Misuse, 2012.
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- *Prevention Programmes Cost-Effectiveness Review: Alcohol*, Liverpool Public Health Observatory, 2009.
- *Misspent Youth: The costs of truancy and exclusion*, New Philanthropy Capital, 2007.
- *NHS 2011-12 reference costs publication,* Department of Health, 2011.
- *Unit Costs of Health and Social Care*, PSSRU, Kent University, 2013.

Further information including Excel Model

10.5 Further information, including a fully worked example of the Excel Model as well as a blank version can be found on the Knowledge Hub site and New Economy website.

HM Treasury contacts

This document can be downloaded from www.gov.uk

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