Social impact bonds: a data gathering how-to guide for commissioners

1. Disclaimer

This how-to guide and the accompanying sample potential savings template are provided to commissioners as potentially useful tools in designing payment by results (PbR) programmes supported by or paid for via social impact bonds (SIBs) or similar instruments, and in estimating the potential savings resulting from them.

These documents offer one suggested methodology for estimating the savings to the public sector of interventions designed to achieve specific social outcomes, including complex and overlapping outcomes. They are based on an approach developed by the Cabinet Office with pilot local authorities using the example of interventions for troubled families. However commissioners will ultimately need to make their own decisions on how best to model their target populations, associated costs and potential savings.

In addition to this package of information, commissioners are advised to review other sources of information and assistance which might offer alternative or complementary approaches to the one outlined here.

1. Introduction

These documents could help commissioners:

* identify what outcomes they wish to deliver and/or base payments upon;
* estimate the savings that might be generated as a result;
* demonstrate benefits that accrue to other public sector organisations;
* budget for expected savings and additional funding that may be required;
* set appropriate payments for outcomes;
* compare the savings that might be achieved for different cohorts or intervention points; and
* move towards cross-cutting and sustainable service re-design.

It should be noted that the quality of the output information can only be as good at the input, and commissioners should not underestimate the amount of work involved in assembling good-quality data.

1. Structure of the template
   1. Overall principles

Payments by commissioners in SIBs and other PbR savings mechanisms usually depend on the achievement of improved outcomes through interventions and the corresponding reduction in costs. This means that any commissioner designing a SIB or other PbR savings programme needs to:

* identify the outcomes that they wish to achieve; and
* estimate whether the achievement of the outcomes will save enough money to make the scheme viable.

The potential savings template provides a framework for identifying outcomes and collecting data on how those outcomes can change and how costs are affected when an intervention takes place. By collecting data in the form set out in the template, commissioners should have the minimum data they need in a suitable format to be able to populate a financial model with potential fiscal savings.

* 1. Sample main outcomes

The template is based on six high-level social issues, intended as examples of the areas which SIB-funded interventions might typically target. They were developed for use with troubled families, but will be relevant for many other cohorts. Listed in successive rows in the template, these are:

* risk of harm to children;
* crime and anti-social behaviour;
* attendance and behaviour at school;
* stable housing;
* physical and mental health; and
* engagement in employment, education or training.

These six high-level areas do not constitute an exhaustive list of possible outcomes, and exclude some which commissioners may wish to target. However, they should help commissioners understand how to apply a similar approach to other social areas.

* 1. Categories and detailed indicators

The main outcomes shown in the template are representative of the sorts of high-level outcomes typically identified by policy makers. However such outcomes are general in scope and cannot normally be specified or measured directly for the purposes of designing a SIB or PBR scheme, or managing the performance of those providing interventions (providers). Therefore, within each main outcome, commissioners will need to identify:

* public service areas within which the outcomes fall; and
* detailed indicators which can be specified and measured and the achievement of which will contribute to (or act as proxy measures for) the achievement of the overall outcome.

The public service areas and indicators shown in the template are indicative of the sorts of measures which commissioners might arrive at through this process. **However, they are presented only as suggestions and indications of the types of measures which might be arrived at, and not as a list which is recommended or mandated.** The categories and measures used should reflect specific circumstances and preferences, and each commissioner should consider which measures it wishes to use accordingly.

While consideration of all potential areas of interest is useful in the initial analysis, commissioners should be wary of selecting too many indicators upon which to base their payments and savings assumptions. Each additional indicator requires involvement and analysis of another area of the public service, the data they collect and the programmes they run.

In developing their own list of outcomes, commissioners might wish to consider the following key questions:

* can the outcome be measured with relative ease and accuracy?
* can the outcome be linked directly to some kind of intervention?
* does reduction of a negative outcome (or achievement of a positive one) contribute to desirable social objectives?
* does avoidance / achievement of the outcome save money, either by directly reducing costs or by avoiding likely future cost?
* can the money thus saved be realised, and is it therefore cashable?
  1. The ‘financial equation’

In order to populate the template in sufficient detail to understand the potential savings associated with achieving each of the detailed indicators, six key pieces of information are required:

* the current or expected future cost of services prior to intervention;
* volume / prevalence;
* impact of the intervention;
* cashability;
* split of benefits; and
* timing.

These items are linked to the columns in the template, and are considered in more detail below.

1. Populating the template
   1. Current or expected future cost of services

Potential savings in this context are current costs that can be reduced or eliminated, or future costs that can be reduced or avoided if the proposed intervention is successful. These costs relate to interaction of the identified cohort with public services. The estimated future cost associated with each outcome means the cost that would be incurred without the intervention, assuming no other change. This can be calculated by taking a unit cost, specific to each outcome, and multiplying by its duration or frequency. All of this information is required in order to get a complete picture of costs incurred by the cohort.

Some unit costs are straightforward and easily identified (e.g. the cost of a child being in residential care for one week on a spot-purchased contract), but others are significantly more complicated. In particular, the reduction in cost effected by an intervention may well be partially offset by additional costs elsewhere – so that even in the event of ‘success’, the cost may not fall to zero. For example, a child no longer in residential care may still be on a Child Protection Plan. **Future cost should be calculated as the difference between the current cost and the cost of alternative provision (where required).**

As well as the unit cost, it is also necessary to know how often or for how long the negative outcome occurs. This data can take a number of forms, but is typically:

* a one-off event (e.g. a housing eviction);
* a recurring event. In this case the frequency is the value assigned to the outcome (e.g. the number of crimes committed over a given period); or
* a time-limited event, in which case the duration needs to be specified (e.g. the average number of weeks a child spends in residential care).

For maximum accuracy, commissioners are advised to use their own cost data wherever possible. Contracted costs are likely to be most precise (e.g. spot-purchased provision), followed by estimates based on activity or staff estimates of time spent. Failing that, data from approved / audited national sources may act as a useful starting point – for example NHS tariff data.

It is assumed in this guide that the purpose of the data collection and modelling is to calculate potential savings accruing directly to commissioners and public sector partners (and therefore available to fund payments to providers and investors under a SIB or PBR programme). Therefore wider costs not attributable to the public sector, and not usually available to fund payments, are excluded, e.g. the costs of crime to the insurance industry.

* 1. Volume / prevalence

Whatever the target population (or cohort), there are likely to be differences in the severity of problems within that group.

In order to calculate the total costs being incurred in relation to these negative outcomes, it is vital to know the prevalence of the outcomes – i.e. how many members of the target cohort are currently exhibiting each outcome and hence incurring the costs.

In addition, and since the point of intervention is often preventative, in some cases it is important to know both how many individuals are *currently* incurring the costs (e.g. a child is in residential care) and how many are *at risk* of incurring the costs (e.g. a child is at risk of being taken into residential care). For the most part, the calculation of the latter needs to be confined to those at high risk of incurring the outcome, in order to avoid over-calculating the prevalence.

As with unit cost, by far the best source of information on the cohort will be real data, based, for example, on an existing needs analysis, or an evaluation of an existing programme. In the case of local commissioners, national average data will be a poor substitute for real, locally-collected data, and could give skewed results.

* 1. The impact of intervention

The impact of an intervention is the change which will be made to the outcome. This will clearly depend on the nature of the intervention which is selected.

In most sources, the impact of intervention is expressed as either a percentage or percentage point change – e.g. the intervention reduces the current rate of reoffending from 50% of the cohort to 45%, which is a 10 percent or 5 percentage point reduction. It will help to record impact using the former method, percentage change, as this will most easily facilitate later calculations.

Both the quality and availability of evidence on the impact of interventions varies widely according to the interventions themselves and the outcomes they are designed to achieve. Even where good information on impact is available, a relatively small shortfall in impact compared to what was expected can significantly affect the viability of the financial case. For this reason, impact is a key variable against which commissioners may wish to run sensitivity analysis as part of their financial modelling.

* 1. Cashability / marginal costs / variable costs

Provided that cost, volume / prevalence and impact of intervention data is available for each outcome, the gross cost reduction or avoided cost can be calculated. However, a predicted cost reduction or avoided cost cannot always be converted into an actual saving. For example, reduced need for health services among a certain population of families may be ‘backfilled’ by previously unmet demand from elsewhere. Or the reduction in demand may be below the threshold required to reduce costs – for example, the running cost of a prison wing where almost all of the beds are empty may not be much less than the cost of a full wing.

In order to identify the savings that can be realised, and thus available to fund payments to providers and investors, it is therefore necessary to know the extent to which an avoided cost is ‘cashable’.

Commissioners need to use their own judgement to determine whether and to what extent any gross saving can be cashed. Factors which will affect the level of cashability include such issues as:

* whether costs are fixed (e.g. a fixed contract for services, or the costs of a fixed asset such as accommodation) or variable (e.g. spot purchased services, or legal fees paid to third parties);
* whether a service is provided in-house or contracted out; and
* the degree of backfill and the extent to which it can be controlled.

A proper calculation of cashability will be challenging and may require work on cost realisation strategies. It is important to avoid assumptions which are simplistic and can lead either to over-estimates of savings (e.g. assuming that costs are variable when they are fixed) or to under-estimates (e.g. assuming that no savings can be cashed whatever the volume of cost reduction and that all savings will always be eliminated by ‘backfill’).

* 1. Split of benefits

In many cases, the benefits of outcomes being achieved will accrue to more than one agency. If this is the case, as well as the cashability, it is also necessary to identify the beneficiaries of the cost reduction (both cashable and non-cashable). This allows commissioners to make a robust case for contributions from other public sector organisations (in cash or kind). This information can also be used by commissioners to apply to the Cabinet Office Social Outcomes Fund (see https://www.gov.uk/social-impact-bonds), which can provide a contribution to represent savings that fall across the public sector. Potential savings should wherever possible be attributed to named beneficiaries including all or parts of the local commissioner and other local agencies.

In some cases the split of benefits will be obvious but in others will require judgement on the part of local partners.

* 1. Timing

Finally, the viability of a SIB depends both on the availability of savings and also when the savings can be realised. In order to calculate a cash flow profile, it is important to know when costs and savings will actually fall. For example, preventing a child from needing to be taken into care could be assumed to generate savings over the time the child would otherwise have been expected to spend in care. Or an intervention that improves the mental health of a cohort may have an impact on the costs incurred by health service providers that changes over time. Costs may initially increase as engagement with health providers increases but decrease over the long term as the need for intensive services such as section decreases.

* 1. General advice on collecting costs and data

Past experience suggests that commissioners and their partners may find it difficult to collect some of the required data, in part because it is not always readily available in the right form. Commissioners may find the following additional suggestions helpful, although they will need to form their own view on the best ways to collect data.

* + **Use contract costs where available**. Costs paid to third parties through contracts or other fee-based arrangements are both the most accurate and, in many cases, more incremental and therefore capable of being easily reduced and cashed.
  + **Use estimates of staff time and cost**. When calculating the staff time attributable to an activity in order to build up a unit cost, the most accurate approach is to build up a picture of costs over periods of time using activity-based costing (ABC) or similar techniques. However, such techniques can be both time-consuming and difficult to implement. Experience suggests that estimates of time spent provided by service experts (e.g. about 20% of time, or about 10 hours per week) will be reasonably accurate and not show a huge disparity from ABC data built up over a number of weeks. This approach should be accurate enough to allow selection of the most important target indicators, which will then need to be analysed in more detail.
  + **In the case of local commissioners, use national data when local data is not available or not easily available**. Although local data is always preferable, it is often hard to collect and there are a number of national sources which can be used, for two purposes:
  1. to provide a reasonable proxy for local data when it cannot be collected in reasonable time or at reasonable cost; and / or
  2. to provide a base figure for local service experts to validate or challenge, thus more quickly enabling accurate local data to be produced.
* **Focus on ensuring high data quality for items which have the greatest impact on cost (the ‘80 / 20 principle’)**. While it is important that the unit cost data is accurate, it should also be remembered that variations in duration, volume / prevalence and impact of the intervention are all likely to have a bigger effect on the overall figures. It is therefore advisable to focus effort on getting as accurate data as possible in these categories.
  1. Managing perverse incentives

Perverse incentives need to be managed carefully. For example, where a commissioner is seeking to reduce the number of children who need to be taken into care, it is important not to compromise child protection. An intervention focussed on this outcome should be constructed so that incentives created do not influence the process of assessment of children.

1. Financial modelling
   1. Core modelling

In order to allow full modelling of costs and benefits, in addition to the data collected in the template, it is also necessary to know:

* the size of the cohort, i.e. the size of the population at which interventions are being targeted; and
* the cost of the intervention(s).

**The total size of the cohort** should be known by reference to whatever definition of eligible population the commissioner selects. However, commissioners may wish to make more complex assumptions about how individuals are the subject of intervention at any one time. For example, an overall cohort might be divided into smaller cohorts assumed to start the programme at different times.

**The cost of the intervention** is not required in order to calculate the potential savings that can be drawn from to fund an intervention. However, it will be needed if the commissioner wishes to calculate whether there is a positive business case for its proposals – i.e. whether the cost of intervention will be lower than the total savings made through improved outcomes.

Commissioners may need information from their delivery partners for estimating the cost of the intervention including service costs, the cost of raising capital, investor returns, legal and other set-up costs, performance management, and evaluation.

* 1. Detailed modelling

The information set out in the template, together with that set out in section 5.1 above, is usually sufficient to enable the business case for a SIB to be modelled. However, commissioners may need or wish to make more sophisticated calculations – for example a cash flow model that incorporates the timing of payments from the commissioner and savings that arise.

They may also wish to run sensitivity analysis on their calculations to take account of key variables including, for example, prevalence and impact being lower (or higher) than estimated.

1. Further information

Further information is available at <https://www.gov.uk/social-impact-bonds> or by emailing sibs@cabinet-office.gsi.gov.uk