Home Office

Ministry of JUSTICE

INTEGRATED OFFENDER MANAGEMENT

Efficiency Toolkit

Phase two: Conducting break-even analysis of Integrated Offender Management

Purpose

This document and the associated spreadsheet tool are designed to complement the Integrated Offender Management (IOM) Efficiency Toolkit / Phase one: Maximising Local Efficiency and Effectiveness which has been developed to help support local areas identify the types of efficiencies that can be made through local IOM approaches. It is hoped that by providing areas with this additional toolkit, they will be able to further strengthen the case for their local IOM arrangements by demonstrating improved value for money (VfM) through assessing the costs and benefits of IOM.

As IOM is a framework, implementation varies across local areas depending on the needs of that area. This makes any assessment of the costs and benefits of IOM nationally incredibly difficult. It is however possible for local areas to undertake economic evaluation[1] of their own IOM arrangements if they wish to do so.

The primary audience for this VfM toolkit is, therefore, envisaged to be those within IOM partnerships who are working to develop the evidence base for local IOM arrangements; strengthen support for the IOM approach within their area; and secure continued investment for IOM. It provides an introduction to economic evaluation for those not familiar with this type of analysis so they can gain an understanding of the techniques, as well as developing an appreciation of the limitations of these techniques in relation to IOM.

The document sets out the methodological approaches for conducting economic evaluation and the types of costs and benefits that can be included. Local areas can then apply these methodologies flexibly to reflect how IOM has been implemented in individual areas and the types of information available at a local level.

In particular, this document and the associated spreadsheet tool will focus on providing a framework that allows partnerships to carry out break-even analysis of switching to IOM from previous forms of offender management. However, the techniques can equally be applied to assessing the additional costs and benefits of specific changes to IOM.

The tool is not a substitute for a formal evaluation of the *impacts* of IOM on outcomes of interest (such as re-offending); instead it is a complementary technique. Where feasible, a formal impact evaluation would improve the robustness of the evidence base and enhance the case for IOM, thereby allowing local areas to produce more detailed cost-benefit analysis.

[1] Economic evaluation is defined here as the identification, measurement and valuation of the costs and benefits of different options in order to allow comparison of relative value for money. Chapter 2 of the Magenta Book provides further detail on the differences between economic evaluation, process evaluation and impact evaluation.
http://www.hm-treasury.gov.uk/d/magenta_book_combined.pdf

Structure and content

1. Background to economic evaluation

It is important to be clear on what is meant by 'economic evaluation' and the limitations of applying different forms of economic evaluation to IOM. This section provides an introduction to economic evaluation before Sections 2 and 3 set out the types of costs and benefits that will be relevant to an economic evaluation of IOM.

1.1. What is economic evaluation?

There are several different ways of analysing the costs and benefits of a project, policy or intervention. However, essentially, the purpose of any economic evaluation is to compare the costs and benefits of a project to those of the 'do nothing' alternative[2].

Analysis of the costs and benefits of an intervention can be carried out at different stages of implementation; for instance, prior to implementing IOM you might carry out an appraisal of the costs and benefits of different options for IOM models to inform the decision on which model to implement, or you might conduct analysis of the costs and benefits of a particular IOM model once it has been implemented.

The aim of economic evaluation, regardless of the stage at which it is carried out, is to inform thinking on whether the investment in the project generates sufficient additional benefits compared to the additional costs to make it worthwhile. This information can then be used to inform current or future investment decisions on how limited resources can best be allocated to achieve the best return on investment.

[2] The term 'do nothing' in this sense means to carry on with the status quo.

Which costs and benefits are included will very much depend on the perspective from which they are being assessed. Typically the point of view of society as a whole would be assessed; however, other perspectives may be the Criminal Justice System (CJS) or the public sector. For example, if you assess the costs and benefits from the perspective of the CJS, you would only include the costs and benefits to the CJS, and would not include the wider societal costs and benefits, such as the value of potential savings in terms of the victim costs of crime.

1.2. **Types of analysis**

There are a range of different types of analysis of the costs and benefits, each providing a different measure of value for money. Which one will be most appropriate will depend not only on the resources and skills available to complete the analysis, but also on the availability of information and data. Whichever method is chosen, the costs should always be estimated, but an estimation of the associated benefits may prove more difficult.

A selection of the most common types of analysis of costs and benefits can be found in Table 1 below.

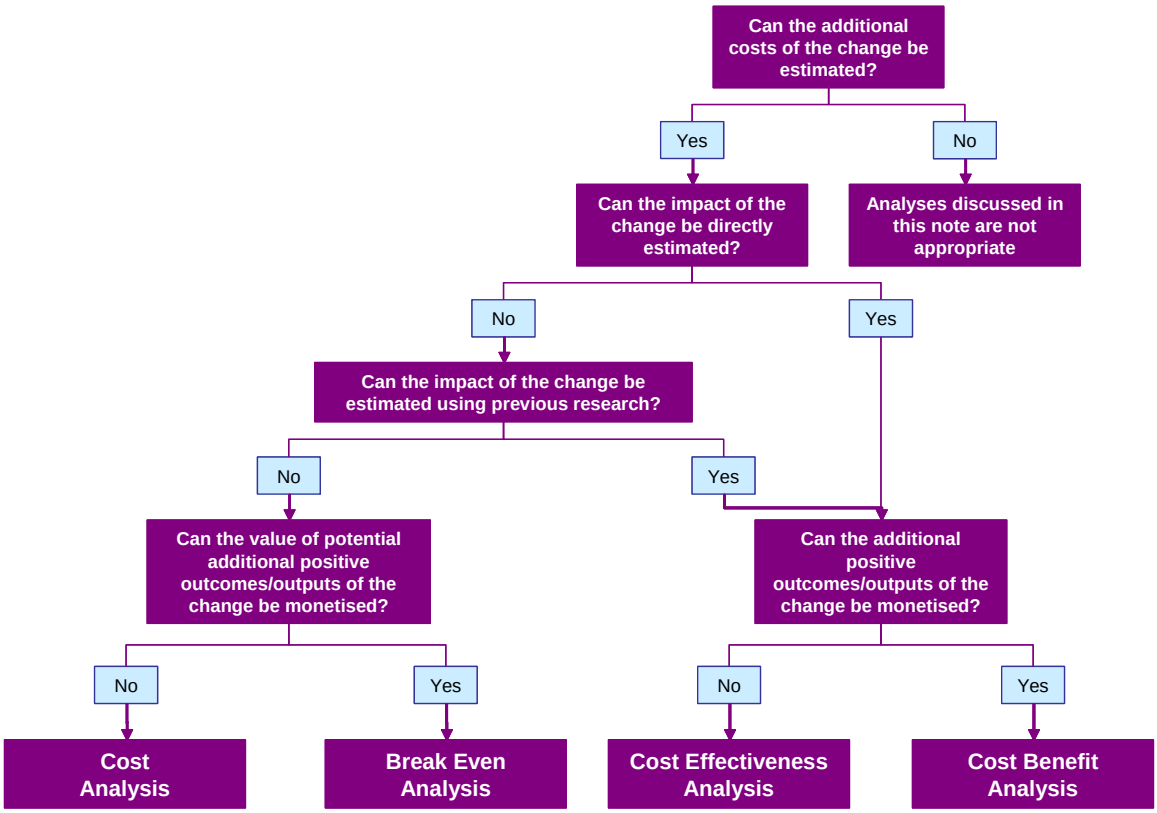
Table 1: Types of economic evaluation

Method	Description	Why use it	Example
Cost analysis	A partial analysis that only considers the costs of an intervention in relation to the costs of the alternative. It is the simplest form of analysis but also the least informative.	An analysis of costs in isolation will only be appropriate in limited circumstances, for example when considering affordability. It does not allow for consideration of the impact of the policy or the associated benefits.	IOM costs £1m per year.
Cost effectiveness analysis	A method of evaluating alternative intervention options with different costs that produce similar outputs/outcomes. Costs are presented per unit of outcome/output achieved.	It should be used when the benefits cannot be monetised, but there is evidence of the impact of the policy on outputs/outcomes. Useful where outputs/outcomes from different options are known to be the same, but where costs/inputs differ.	IOM costs £1,000 per burglary, per year
Cost benefit analysis	This builds on cost-effectiveness analysis by attaching monetary	Assesses whether positive outcomes outweigh the cost of the intervention.	For every £1 spent on IOM, £2 is saved

	values to these outcome/outputs of an intervention. This is the most comprehensive, but also the most complicated form of analysis.	Using standardised values allows the consideration of all outcomes at once.	through reduced burglary and robbery.
Break-even analysis	When the cost of the intervention is known and the value of the outcomes that are realised are also known; however, there is no estimate of the impact of the intervention on the outcome.	Assesses whether positive outcomes outweigh the cost of the intervention. It uses standardised values to allow consideration of all outcomes at once.	To recoup the money spent on IOM, the project must prevent 10 additional burglaries, or 5 robberies.

Figure 1 provides a simple framework for thinking about which type of analysis is achievable, depending on the information available.

Figure 1: Choosing which type of analysis is achievable



It is important that partnerships engage in doing some form of assessment of the costs and benefits of IOM in order to strengthen the evidence base for its

continued use. Where the results of analysis can show that IOM is more efficient[3] than the alternative, or that IOM is more effective[4] than the alternative, then this can be used to make the case for continued investment in IOM. It can also help to identify specific areas where improvements can be made.

1.3. **Additionality**

The most important thing to remember when conducting analysis of the costs and benefits of any intervention or policy is that we should only be concerned with the additional costs and benefits.

Additionality is pertinent for IOM in relation to costs because many of the key players and agencies would have been active and paid for anyway. IOM is about bringing those agencies together. Analysts will therefore have to carefully consider which IOM costs are truly additional and would not still have occurred in the absence of the programme. Box 1 provides more detail on the concept of additionality in relation to benefits.

Box 1: Additionality

Imagine a policy aimed at reducing crime over a certain time period. Looking back, we see that the policy corresponded with a fall in crime over the time period it was in effect. This would be viewed at first glance as a success. But it is possible that crime would have fallen *anyway*, either through a continuation of a long-term trend or because of other factors such as changing economic conditions and other policy changes. What must be measured in any evaluation is only the *additional* change in crime over and above *what would have happened anyway*. Anything else cannot and should not be attributed to the policy.

Page 52 of the Green Book provides further detail on assessing additionality: http://www.hm-treasury.gov.uk/data_greenbook_index.htm

Assuming that the analysis is done post implementation, depending on how IOM has been implemented, it may be clear which costs are additional. However, where it is not clear, it will be necessary to set out all the costs and benefits of the pre-existing arrangements - the 'baseline' - and compare these to the costs and benefits under the new framework. Constructing a baseline is particularly important in relation to IOM where the activity is not new; it is doing an existing activity in a different way. Prior to IOM there was some level of offender management for some of the groups of offenders now managed through IOM, the difference is that through IOM it may be that the inputs are

[3] **Efficiency** is defined here as achieving more in terms of outputs or outcomes for the same or less inputs; for example, managing more offenders for the same cost.
[4] **Effectiveness** relates inputs to the degree to which stated objectives have been achieved; for example, for same cost we manage more offenders and those offenders commit less crime.

used more intensely, or that some things are additional (e.g. the management of cohorts of non-statutory offenders).

The level of resource use under the baseline should be considered prior to the introduction of IOM; this is not always possible, but the earlier that it can be done, the better. For each of the agencies who previously were involved in providing offender management, the pre-existing trends in the running costs should be extrapolated forward over the same period as the costs of IOM are being assessed. Any one off costs that would have been incurred over the period, for example the replacement of an IT system, should also be included.

2. Costs

The inputs to any assessment of value for money are the costs: what is the value of the additional resources necessary to start up and run the project?

This section sets out the types of costs that should be considered when assessing the costs associated with implementation of IOM, compared to those of the previous offender management framework, and gives details of possible sources of information and data on these costs. The particular issues relating to estimating the costs of implementation of IOM are also covered. Guidance in this section should be interpreted as general rather than prescriptive, as IOM is applied differently across areas, it will not be possible to cover the full range of costs relevant to each area. Similarly, the costs covered will not be relevant to all areas.

2.1. Types of costs

When considering the costs of introducing IOM, it is necessary to think about the costs in terms of those that are one-off, or set up costs, incurred in one time period, and those that are ongoing running costs which will be recurrent.

Set-up (transitional) costs: These are one-off costs that are incurred in setting up the project. These are likely to include one off training costs required for implementation of the programme, in addition to IT, infrastructure costs or any other up front costs. These will vary depending on how IOM is implemented in your area. One-off costs need not only be set up costs, they may be incurred at any point after implementation and these costs should be incorporated into the analysis in the appropriate time period. For example, it may be necessary to incur the fixed cost of a new performance management system but not until 3 years after the initial implementation of the project.

On-going and recurrent costs: In addition to set up costs, there will be recurrent costs and these will include annual staff costs but also IT support costs, ongoing training etc. These costs will depend on the time period over which you are assessing the programme: the longer the time period, the greater the costs. Although these costs are incurred on a regular basis, the costs need not be the same each year. For example, in the first year of IOM

there may be 2 additional probation officers, but that may increase to 4 in the second and third years. Thought should be given to how recurrent costs change over time.

The two main groups of costs that will have to be considered in any economic evaluation of IOM are the **staff** and **other** resource costs, and again within these groups there will be a number of different types of cost. Table 2 below includes some of the types of staff and other resource costs that you should consider in relation to offender management and categorises them as being one-off/set up costs or those that can be thought of as recurrent. This table is not meant to cover an exhaustive list of costs, rather it is meant to be indicative of the types of costs that you should think about.

Table 2: Examples of the types of costs associated with IOM

	Set up/One-off	**Ongoing**
Staff costs	▪ Training (initial) ▪ Recruitment	▪ Wages ▪ Training
Other resource costs	▪ IT infrastructure ▪ Equipment ▪ Buildings (bought outright)	▪ Equipment maintenance ▪ IT licenses ▪ Travel ▪ Premises (rent/mortgage) ▪ Drug treatment (e.g. methadone maintenance treatment)

When conducting any form of cost analysis of IOM, it will be important to spend some time clearly setting out not just the costs that relate to the set up and running of IOM, but also the costs that were involved in offender management prior to IOM in order to allow you to identify which costs are the truly additional costs associated with IOM.

Information on the staff and other resource costs associated with offender management for each participating agency should be considered. This should include those involved in the delivery and enforcement of offender management, not just those directly involved in the local IOM unit.

When deciding what the additional costs of IOM are, you may find it useful to ask yourself the following questions:

- Which agencies were involved in offender management prior to IOM and which are involved in IOM?
- Which costs were involved in the previous model of offender management?
- Which costs are involved in the IOM model of offender management?

- Are these costs one-off or recurrent costs?

When assessing the costs of a policy the 'opportunity cost', or economic cost, should be used. This is the value of the next best alternative use of a resource. For example, the opportunity cost of employing a police constable to work on IOM, might be not employing a police constable to work on neighbourhood policing[5]. The opportunity cost of all the additional resources deployed to IOM - associated with the perspective chosen - should be included, even if no money actually changes hands. This could be because staff or resources are diverted from other areas, such as the previous example, or if volunteers are providing their time to work with offenders, where previously they did not. In this case, even though there is no financial cost of hiring these volunteers, there is still an economic cost to society as they could be spending their time working with other people. The market price of a good is generally used to value the next best alternative, for example, in the case of the volunteer this may be the wage in an equivalent paid role.

2.2. **Cost data**

In order to assess the costs and benefits, certain types of information and data are necessary. Cost estimation can be complicated and it is likely that some involvement will be required from analysts or finance colleagues in order to ascertain which costs should be included and where to find the necessary information to allow their inclusion. The sooner that consideration is given to which information you will need, the easier it will be to find the information.

Ideally, costs specific to your area should be used and these will require some form of data collection. In the absence of area specific data, other sources may be used, such as national level data or evidence from other areas. However, when costs are not specific to your area, the data should be appropriately caveated. For example, the cost of a police officer in London will be higher than the cost of a police officer in Yorkshire; therefore if you take the average cost in London and apply it to Yorkshire this should be explicitly acknowledged in the write up of your analysis. This is because it will have implications for the accuracy of the analysis as it will overestimate the costs in Yorkshire.

Attention should be given to making sure that costs are not double counted. For example, funding streams are the source of the financial resource required to buy other inputs, such as human or physical resource (e.g. probation officers or office supplies). Therefore, you should not include the value of a funding stream and then separately include the value of the resources purchased with this funding. Similarly, when a staff member is being funded by a number of different agencies, the cost of the staff member should only be included once, and apportioned pro rata to the particular agencies where appropriate.

[5] For a more detailed explanation of the term 'opportunity cost' please consult the HMT Green Book

Staff costs

The pro-rata staff costs associated with providing offender management within each agency involved in offender management should be considered. Finance colleagues, HR units and unit managers in the agencies that provide offender management should be able to assist in providing estimates of the wages/salaries of those employed in IOM in your area. They should also be able to help identify the area specific staff costs associated with offender management prior to IOM.

If area specific data are not available then national average data on wages can be obtained through the Annual Survey of Hours and Earnings (ASHE) for a number of standard occupations[6].

It is important that additional "on-costs" are added to gross annual salary costs. On-costs are the additional employer contributions associated with employing someone. The general rate of mark-up should be 24 per cent[7].The non-wage mark-up includes employers' social contributions (e.g. pensions, NICs) and vocational training costs[8].

The staff costs considered in relation to IOM should be the pro-rata costs of all those staff involved in IOM, for example, probation officers, police officers and administrative staff in the local IOM team, and also all those in the partnership agencies that provide IOM interventions, or enforcement. For example, the pro-rata cost of neighbourhood policing teams enforcement activity relating to the IOM cohort.

Resource costs

All the resource costs associated with offender management will have to be included in the analysis and they should include those incurred by all relevant agencies. These costs will vary between areas and should be estimated at a local level.

It should be possible to find out from the partner agencies what level of resource was spent on offender management by each agency, both pre and post IOM implementation, through financial reports or finance colleagues.

3. Benefits

In this section the difference between measuring benefits in terms of outputs or outcomes will be explained, and a set of primary and secondary outputs

[6] The most recent ASHE results are available on the ONS website: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=13101

[7] The most recent non-wage labour costs data is derived from the European Labour Cost survey results for the UK (2007): http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/labour_costs/main_tables

[8] A full definition of wage mark up can be found on the OECD website: http://stats.oecd.org/glossary/detail.asp?ID=4837

and outcomes will be identified for consideration in the analysis of the benefits of IOM.

3.1. **Types of benefits**

Benefits can be measured either in terms of outputs or outcomes. Often these terms are used interchangeably, but they are in fact two distinct types of measures. Output measures are the result of a process and are generally easier to measure than outcome measures which assess the consequences of a change. For example, the primary output measure of IOM would be the number of additional offenders managed through IOM. The associated outcome measure would then consider the impact of those changes and provide a measure of effectiveness, for example, the reduction in crime associated with reduced re-offending committed by those managed offenders.

Ideally, the benefits would be measured in terms of the direct impact of offender management arrangements on outcomes; however, that is not always possible. Depending on the information available to you, you may only be able to assess the benefits in relation to the direct impact of offender management arrangements in terms of outputs.

This document focuses mainly on the primary outcomes of crime and offending, which relate to the primary objective of IOM to reduce re-offending, and therefore crime. However, depending on how IOM operates in your area, IOM have a range of other secondary objectives which you can assess the benefits of IOM against, particularly in relation to pathway interventions. For example, the number of offenders entering training schemes could be considered an output measure. The associated outcome measure may be increase in employment associated with those offenders. If you are able to isolate the impact of IOM on these secondary outputs/outcomes, then consideration should be given to how best to include these impacts in your analysis.

Table 3 provides some examples of output and outcome measures associated with offender management.

Table 3: Examples of the outputs and outcomes associated with offender management

IOM outputs	**IOM outcomes**
Number of managed offenders	Reduction in offending/crime
Number of pathway interventions	*Reduction in unemployment*
	Reduction in housing services

Where possible, the value of the outcomes that are attributable to the impact of a project should be expressed in monetary terms. They should be assessed in terms of the value of the additional benefits over and above those that would have happened anyway. For example, the value of additional crimes saved through the reduction in re-offending associated with IOM, over and above the reduced re-offending associated with conventional offender

management. Only the additional benefit of the change should be considered. If this cannot be isolated then the actual additional impact of the policy can be grossly overestimated and ultimately lead to the wrong conclusions being drawn from the analysis.

Because of the difficulties in isolating the impact of IOM on re-offending, over and above the impact of other factors or initiatives, Section 4 of this document will focus on producing break-even analysis which does not require the impact of IOM to be estimated. However, if information on the impact of IOM is available locally, or you are able to invest in an evaluation of the impact of IOM in your area, then a more sophisticated form of analysis, such as cost benefit analysis, can be conducted.

3.2. **Costs of crime**

The costs of crime estimates can be used to value the benefits of crime outcomes associated with reduced offending. This section will set out how the costs of crime should be used and how to update the most recent published figures.

Home Office Research Study 217 (HORS 217)[9], published in 2000, presented the first estimates of the cost of crime in England and Wales. In 2005, Home Office Online Report 30/05 (OLR 30/05) presented the results of the first set of updates to the original figures. This update provided updated estimates for crimes against individuals and households[10]. Since then, an ongoing programme of research has been established to improve these estimates which, it is hoped, will generate updates of the estimates in the future.

Costs are presented for a range of crimes and, for each, include:

- costs incurred in anticipation of crime: expenditure on burglar alarms, door locks and insurance administration costs;
- costs as a consequence of crime: physical and emotional costs; costs of property damaged or stolen; health treatment costs; and, lost output;
- costs incurred in the response to crime, primarily the Criminal Justice System: police costs; court costs; and prison and probation costs.

Table 4 below is taken from the 2005 publication and shows the average cost, per crime, of crimes committed against individuals and households.

[9] http://webarchive.nationalarchives.gov.uk/20110218135832/rds.homeoffice.gov.uk/rds/pdfs/hors217.pdf

[10] http://webarchive.nationalarchives.gov.uk/20110218135832/rds.homeoffice.gov.uk/rds/pdfs05/rdsolr3005.pdf

Table 4: Estimated average costs of crime against individuals and households for 2003/04

Table 2.1: Estimated average costs of crimes against individuals and households in 2003/04 by crime type and by cost category

2003 prices

	Costs in anticipation of crime (£)		Costs as a consequence of crime (£)							Costs in response to crime (£)	
Offence category	Defensive Expenditure	Insurance Administration	Physical and Emotional Impact on Direct Victims	Value of Property Stolen	Property Damaged/ Destroyed	Property Recovered	Victim Services	Lost Output	Health Services	Criminal Justice System	Average Cost (£)
Violence against the person	1	1	5,472	-	-	-	9	1,648	1,347	1,928	10,407
Homicide	145	229	860,380	-	-	-	2,102	451,110	770	144,239	1,458,975
Wounding	1	1	4,554	-	-	-	7	1,166	1,348	1,775	8,852
Serious wounding	1	1	4,554	-	-	-	7	1,166	1,348	14,345	21,422
Other wounding	1	1	4,554	-	-	-	7	1,166	1,348	978	8,056
Sexual offences	3	5	22,754	-	-	-	32	4,430	916	3,298	31,438
Common assault	0	0	788	-	-	-	6	269	123	255	1,440
Robbery	0	21	3,048	109	12	- 19	16	1,011	483	2,601	7,282
Burglary in a dwelling	221	177	646	846	187	- 22	11	64	-	1,137	3,268
Theft	59	52	192	281	69	- 36	1	10	-	217	844
Theft - not vehicle	-	33	118	175	17	- 13	1	3	-	301	634
Theft of vehicle	546	370	800	2,367	349	- 542	1	47	-	199	4,138
Theft from vehicle	116	50	266	240	126	- 11	1	20	-	50	858
Attempted vehicle theft	65	21	194	-	154	-	1	11	-	65	510
Criminal damage	13	36	472	-	212	-	2	6	-	126	866

The most recent published estimates which are presented in Table 4 are presented in 2003 prices and therefore, in order to use them with current crime volumes, the costs need to be converted to current year prices. The simplest, and quickest, way is to up rate them for inflation only; this can be done using the GDP deflator series published by HMT[11]. A better way is to up rate the physical and emotional cost components of the estimates by growth in nominal income[12]. This reflects the evidence that as incomes grow, people value the costs of negative health impacts more.

The average cost estimates relate to total crime, as such, they do not represent how much a police investigation of any given crime might cost, for example, since not all crimes are reported to the police. They indicate costs averaged over all crimes, both reported and unreported. This is an important point of distinction which is often missed by those using or interpreting the estimates, but can have a very significant impact on the costs. Therefore, if you want to use these costs of crime estimates with volumes of recorded crimes, or convictions, further adjustments will have to be made. Please see Annex 1 for further details of how to make these adjustments.

Note that more recent updates have been provided in the *Revised Unit Costs of Crime and Multipliers* document which is published on the Home Office website alongside the IOM VfM Tool.

4. Break-even analysis

As stated above, the type of economic evaluation that can be conducted will very much depend on the available data, and availability of evidence on the impact of the change. This section will focus on how to conduct a break-even analysis of IOM post implementation. This will be the most suitable form of

[11] The deflators can be found on the Treasury website, along with details on how to use them: http://www.hm-treasury.gov.uk/data_gdp_index.htm

[12] This can be done by first accounting for inflation (using the GDP deflator) and then per capita income growth (using the change in GDP per capita at constant prices). Data on per capita GDP growth can be found on the ONS website: http://www.statistics.gov.uk/statbase/TSDSeries1.asp

analysis when the cost of an intervention is known and the value of the outcomes that are realised are also known, but there is no estimate of the impact of the intervention on the outcome.

4.1. **Estimating the costs of IOM**

For the purpose of this document it will be assumed that it should, at least, be possible to estimate the costs associated with the management of offenders prior to the introduction of IOM and those associated with IOM. From the costs of crime papers it is also possible to value the potential outcomes of IOM. Therefore, it should be possible for IOM partnerships to carry out a break-even analysis. This analysis will allow you to estimate how many additional crimes would have to be saved in a given time period in order to make the investment in IOM worthwhile.

If additional information on the impact of IOM is available then you should consider conducting more sophisticated analysis, such as cost effectiveness or cost benefit analysis[13].

Figure 2: Break-even analysis process

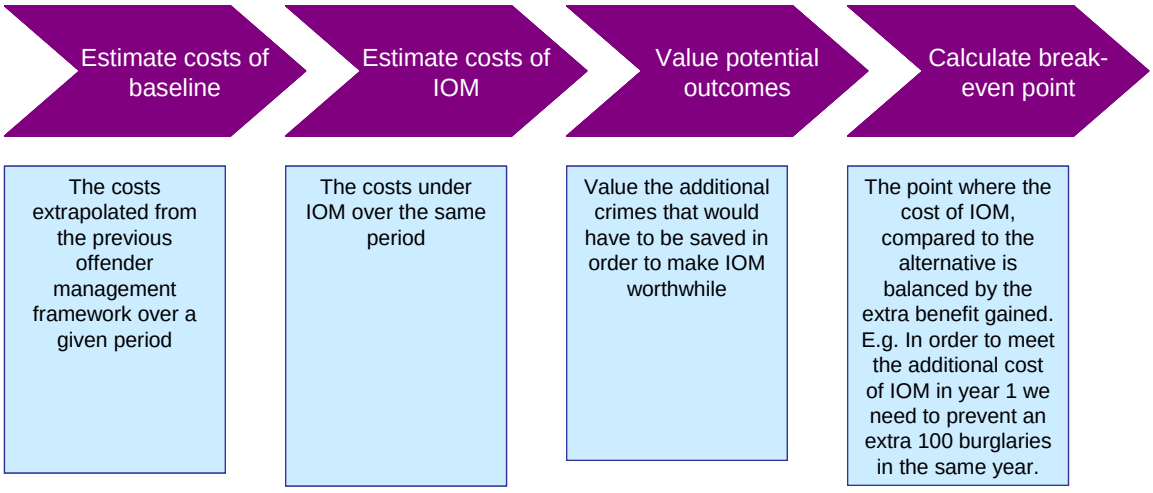


Figure 2 above sets out the main steps involved in break-even analysis.

Before beginning your break-even analysis, along with deciding from which point of view the costs will be assessed, consideration will also have to be given to the appropriate time period over which the costs and benefits will be assessed. The time period considered will have implications for your analysis, and the costs in both the baseline and IOM case should be compared over the same time period[14].

[13] Additional information on how to conduct these forms of analysis can be found in "Analysis of costs and benefits: guidance for evaluators", Home Office, 1999.

[14] The implications of the time period chosen will have even greater importance when an estimate of the impact of IOM can be made. For example, when the benefits of IOM in terms of reduced re-offending can be estimated it may be the case that these benefits will only be realised over the medium/long term, therefore, considering a short time period may underestimate the benefits.

All costs should be expressed in relation to a chosen price year. This is known as having the costs in 'constant prices'. If the costs are likely to span several years, the future values will have to be discounted to account for the fact that we value the future less than today. Discounting will allow the estimation of the Net Present Value (NPV) of different options.[15].

Once you are clear about the time period to be covered and the perspective from which the costs and benefits will be assessed, the costs that would have been incurred under the baseline and under the IOM framework can be estimated. As stated in the 'Additionality' section above, for the baseline the one-off and recurrent staff and other resource costs that would have been incurred without the introduction of IOM – based on previous trends – should be estimated for each agency.

The process for assessing the costs under the IOM arrangements should be similar to the way the costs of the previous offender management framework were considered, listing the types of set up and running costs associated with each IOM agency in each period. This can then be compared against the baseline in order to assess which costs are additional.

The economic costs incurred directly by the IOM team should be considered, in addition to the costs incurred by other agencies in providing additional support, interventions and enforcement.

Under the baseline and the IOM case, the assessment of the costs can be hampered by a tendency to assess the costs retrospectively. If possible, data on the costs of IOM should be identified at the beginning of the implementation process and, in the case of IOM collected throughout. This will make it easier should you wish to assess the cost implications of a change in the way IOM operates in the future.

In both cases there are a number of issues that should be borne in mind when assessing the costs:

- make sure that all relevant costs associated with the previous framework/IOM are included;
- in kind costs should also be valued;
- be careful not to double count when assessing the costs of a change (e.g. don't count funding streams and then separately include the value of the resources purchased with this funding);

If there are important costs that can't be quantified in either case they should be acknowledged and any analysis appropriately caveated to highlight that not all costs are included.

4.2. **Assessment of breakeven point**

The break-even point (BEP) is the level of additional positive outcomes required to cover the additional costs. The BEP of IOM will be the additional crimes that need to be saved in order to break-even, that is to say, in order to

[15] For additional information on discounting and calculating an NPV, please consult the HMT Green Book

cover costs. This can be calculated by comparing the additional set up and running costs of IOM to the costs of the additional future criminality of the managed offenders that it will be necessary to prevent in order to break even over the same period. Crime is used here to assess the BEP because it is the primary outcome measure.

$$\textit{Additional crimes needed to be saved} = \frac{Additional\ cost\ of\ IOM}{Cost\ per\ crime}$$

Depending on the data and information available to an area, the assessor might simply want to look at the additional costs of IOM over the period and compare these to the cost of a specific type of crime in order to assess how many additional crimes would have to be saved to cover the additional costs.

For example, if IOM cost an additional £100,000 and a domestic burglary costs £3,300, the BEP would suggest that 30 additional burglaries would have to be saved in order to meet the additional costs of IOM. This assumes that all the additional cost is spent on offenders committing only a specific type of offence. This can similarly be done for any of the crime types covered in the costs of crime. It will produce quite a simplistic BEP; however, if you know the offending profiles of the cohorts covered by IOM you may be able to carry out more sophisticated analysis. For instance, if you know that 20 per cent of the offences carried out by your cohorts are vehicle theft and the remaining 80 per cent are burglaries, you can estimate a weighted cost per crime based on the cohorts offending profile and estimate how many more of these crimes would have to be saved in order to cover the additional costs of IOM.

A large proportion of the costs of crime are borne by the victim (e.g. the cost of the physical and emotional impact), and are therefore not cashable in the sense that these costs will not be recouped if an additional crime is prevented even though this is a benefit. Therefore, the assessor might also wish to estimate the number of additional crimes that would have to be saved based solely on the CJS costs per crime in order to get a better understanding of the volume of additional crimes that would have to be prevented in order to recoup the cost of IOM through potential savings to the CJS. However, it should be borne in mind that this will still not give an accurate reflection of how many extra crimes would have to be stopped in order to recoup the cost of IOM in terms of actual cashable savings. This is because the costs of crime are average costs and as such they include a share of fixed costs that will not easily be cashable even if a crime is prevented. For example, you cannot shut part of a court to recoup all the court costs associated with a crime in the short run. There are also issues relating to “back-filling” where freed up resources are internally reallocated to other activities meaning the benefit is not cashable.

If you know the profile of offending by the offenders in your cohort, you may also be able to take this analysis a step further and calculate the cost of future offending per offender (over a given period). This would allow you to estimate the number of offenders that would have to desist in order to cover the costs of IOM.

The analysis can be taken even further if you can apportion the additional costs to the types of offender cohorts managed. Then you could estimate the number of offenders in a given cohort that would have to desist in order to cover the additional resources involved.

The more detailed you can be in your analysis, the more useful it is likely to be. However, it is worth reiterating at this point, that if you do attempt to take the analysis further by utilising analysis of the offending profiles, you should bear in mind that the costs of crime estimates are meant for use with total crime, therefore the offending profile should be in terms of total crime, not just recorded crimes or convictions.

When writing up your analysis, it is also important to make sure that any costs that are not included in the analysis because they could not be quantified are still mentioned. An assessment should be made as to what the likely impact of their inclusion would have had on the results of the analysis.

5. Cost per managed offender

So far, the document has focused on the assumption that there will be an additional cost associated with the introduction of IOM; however, this need not be the case. Some changes are introduced in order to streamline particular operations and deliver savings in terms of reduced costs. This is likely to be particularly relevant for the introduction of IOM. Setting out the baseline costs of previous offender management arrangements and the costs associated with IOM arrangements will allow you to identify whether IOM has actually achieved a cost saving rather than an additional cost. If this is the case then there will be no need to estimate a BEP.

In this case, and even when there are additional costs to IOM, as a complement to carrying out a break-even analysis, you should consider making some form of comparison between the average cost per managed offender of providing offender management under IOM and the average cost per managed offender under the previous framework. In order to do this you will have to be clear about the volumes of offenders managed over time, and ideally you would know what proportion of the total offending population this accounts for. In addition you should also consider the average length of time that each managed offender is part of the IOM cohort, or part of the previous framework cohort.

For instance, if you can show that for the same resources that were used previously you can now manage 100 additional offenders, this will further strengthen the efficiency case for IOM; particularly, if you can demonstrate why this is possible.

Where you value the management of particular cohorts of offenders more than others (e.g. Prolific Priority Offenders (PPOs)), and where it is possible to do so, you may wish to separate the costs associated with managing different cohorts of offenders and look at the cost per managed offender for each cohort prior to IOM and after the introduction of IOM.

This form of calculation will allow the assessment of the relative efficiency of IOM before and after implementation, in terms of the cost per output of interest (offenders); however, it will not allow you to say anything about the effectiveness of offender management in terms of the impact that this management has had on the criminality of offenders.

Ideally, you would have information on the crimes committed by each cohort of offenders in the absence of IOM and under IOM, in order to assess the cost per crime saved. However, as discussed previously this information may be very difficult to ascertain.

6. Uses of analysis

Before using the results generated, best practise is to have the analysis quality assured. This will help to ensure that the findings are technically robust and can withstand scrutiny.

As previously mentioned, the results of breakeven analysis can then be used to enhance the evidence base for IOM and to foster support for the approach.

However, it should be remembered that break-even analysis - or indeed any other type of economic evaluation - of IOM is only one form of analysis; this should be supplemented with other forms of quantitative and qualitative evidence to support the case for IOM. For example, evaluations of the impact of IOM, process evaluations or case studies could also be conducted.

If you want to use economic evaluation to compare the VfM of IOM between local areas you should do so with extreme caution as it is likely that in most cases direct comparisons between areas will not be possible. This is because there may be different set up costs associated with IOM across areas, as some areas will already have had in place elements that other areas introduced as part of IOM. More importantly, there will also be variations in the costs due to the differing nature of IOM and the variations in delivery models implemented.

7. Future steps

Going forward, consideration can be made to how changes in the IOM process could be assessed rather than simply moving to an IOM framework from the previous approach. Analysis does not have to be of whether IOM is successful or not, marginal impacts can be considered in the longer term. Analysis of the costs and benefits of changes to IOM can also be used to assess how scarce resources should be allocated in the future; for example, whether to invest more in a specific element of IOM.

8. Further reading

This guidance should be read in conjunction with a number of key documents on economic evaluation, in particular:

Green Book – This is an HM Treasury document that provides a framework for Government departments to use when appraising the costs and benefits of policies and projects. There is also more detailed guidance available on particular topics, for example the Home Office provides additional guidance on the costs of crime.

http://www.hm-treasury.gov.uk/data_greenbook_index.htm

Magenta Book – The Magenta Book is also HM Treasury guidance. It is a complementary document to the Green Book that provides details on how to conduct proportionate impact evaluations of policies or projects.

http://www.hm-treasury.gov.uk/data_magentabook_index.htm

Costs of crime papers – As stated above, the costs of crime documents provide estimates of the average costs of different types of crimes. They include a range of costs grouped into those that are in anticipation of crime; as a consequence of crime; and, as a result of crime.

http://www.hm-treasury.gov.uk/green_book_guidance_crime.htm

Analysis of costs and benefits – The Home Office produced a document for evaluators on how to assess the costs and benefits of projects. The document provides a good overview of how to conduct cost/benefit analysis from a crime perspective.

http://webarchive.nationalarchives.gov.uk/20110218135832/rds.homeoffice.gov.uk/rds/pdfs/cdp1costeff.pdf

9. Glossary

Break-even analysis - Assesses whether the additional positive outcomes generated by a policy outweigh the cost. It will be the most appropriate form of economic evaluation when the cost of the policy is known and the value of the outcomes that are realised are also known, but where there is no estimate of the impact of the intervention on the outcome.

Constant prices – Since prices naturally increase over time due to inflation, future values will typically exceed present values when measured by nominal (in other words, 'actual') prices. An examination of real effects, on a consistent basis, is only possible by adjusting for inflation and examining values in 'constant' prices.

Discounting - It is a technique used to compare costs and benefits that occur in different time periods by converting them to 'present values'. It is based on the principle that, generally, people prefer to receive things now rather than later.

Do-nothing – the choice of *not* intervening, leading to a continuation of the status quo.

Economic evaluation - the identification, measurement and valuation of the costs and benefits of different options in order to allow comparison of relative value for money.

Effectiveness - relates inputs to the degree to which stated objectives have been achieved; for example, for the same cost we manage more offenders and those offenders commit less crime.

Efficiency - achieving more in terms of outputs or outcomes for the same or less in terms of inputs; for example managing more offenders for the same cost.

Impact - in principle the impact is the change in any of the outcomes affected by a policy, but is most commonly used to describe the changes in the outcome which most closely relate to the ultimate objectives (e.g. reduced crime or re-offending).

Impact evaluation - attempts to provide evidence of what changes have occurred, and the extent to which these can be attributed to the policy. Impact evaluation attempts to provide a definitive answer to the question of whether a policy was effective in meeting its objectives.

Inputs - the resources needed to deliver the objectives of a policy. In the case of IOM, these would be the resource costs required to provide offender management.

Net Present Value (NPV) - the difference between the discounted value of a stream of future costs and benefits.

Opportunity cost - This is the value of the next best alternative use of a resource. For example, the opportunity cost of employing a police constable to work on IOM, might be not employing a police constable to work on neighbourhood policing

Outcomes - the ultimate consequences of a change, for example, the reduction in crime associated with reduced re-offending committed by those managed offenders. Provide a measure of effectiveness.

Outputs - are the result of a process and are generally easier to measure than outcome measures For example, the primary output measure of IOM would be the number of additional offenders managed through IOM.

Annex 1: Using the costs of crime with recorded crime volumes

There are two ways you can adjust the data when combining the cost of crime estimates with recorded crime figures.

The first is to use the multipliers presented in the paper[16] to 'gross up' recorded crime to a total crime volume estimate, to which the up rated cost of crime figures can be applied directly. This effectively says that, for every crime recorded, there are x additional crimes which are committed but not recorded[17]. For example, if there were 450 recorded domestic burglaries committed by the offenders in the IOM cohorts by applying the estimated multiplier for domestic burglaries of 2.2, this equates to 990 domestic burglary incidents. The average cost of a domestic burglary can then be applied to this figure. You can see how applying the unit costs to the wrong volume figures could grossly underestimate the cost of crime committed by these offenders.

The second method is to adjust the cost of crime estimates to reflect the higher probability that CJS costs will be incurred once a crime is recorded to the police. The CJS cost components of the estimates presented in Tables 2.1 and 2.2 are *per crime committed*, and are hence implicitly weighted by the probability that these CJS activities occur.

The CJS cost components (excluding police costs)[18] for each crime can be adjusted as follows:
$CJS_R = (CJS_T \times V_T) / V_R$

where V is volume, and R refers to 'recorded' and T refers to 'total' crime.

In other words, the CJS components (excluding police costs) should be adjusted by the ratio of recorded to committed crime – the multiplier – or the probability of recording for each crime type.

Which of the two adjustments is most appropriate is a matter of judgement.

If the costs of crime figures are to be used with convictions data, then a further adjustment will have to be made to account for the fact that there will be a number of recorded crimes per conviction. There are currently no published multipliers to allow you to estimate how many recorded crimes there are per conviction; however, you might want to estimate your own by taking the ratio of comparable crime groups for recorded crime to convictions at a regional, or national, level. This can then be applied to the volume of convictions in the cohort to gross up to an approximate equivalent volume of recorded crimes to which you can apply the recorded to total crime multipliers.

[16] Note that the multipliers in OLR 30/05 are for 2003/04 and they may have changed since then. Should you wish to estimate updated national multipliers further details of the methodology can be found in the two published costs of crime papers.
[17] It may be possible to estimate regional multipliers; however this will depend on whether comparable total crime and recorded crime data are available regionally.
[18] The CJS cost component presented here is split into its component parts in Table 2.2 of OLR 30/05.

Using the published costs of crime figures with convictions data will seriously underestimate the CJS costs associated with each saved conviction.