TOOL D14 Monitoring and evaluation: a framework

For:	• Commissioners in primary care trusts (PCTs) and local authorities • Programme managers
About:	This tool provides a framework for evaluating and monitoring local interventions. It presents a 12-step guide on the key elements of evaluation, an evaluation and monitoring checklist, and a glossary of terms.
Purpose:	To provide local areas with an understanding of the basics of evaluating and monitoring interventions.
Use:	Should be used as a guide to plan and implement an evaluation and monitoring framework for interventions to tackle obesity.
Resource:	*Passport to evaluation*.[203] See: www.homeoffice.gov.uk

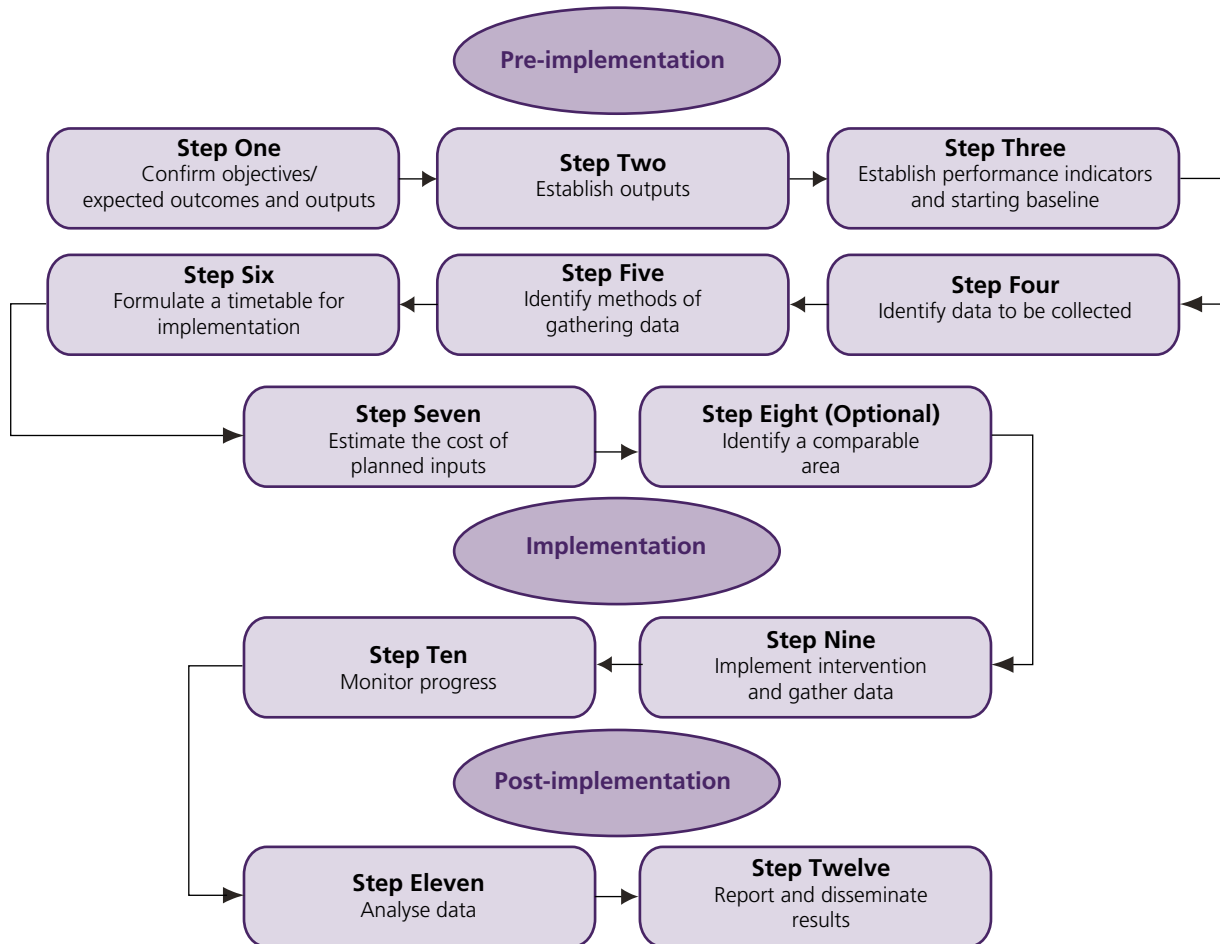When an evaluation of an intervention is undertaken, it is important that it is:

• planned
• organised, and
• has clear objectives and methods for achieving them.

There are three stages to the monitoring and evaluation framework:

1   Pre-implementation (planning)
2   Implementation
3   Post-implementation.

The diagram on the next page outlines the framework, with detailed information provided on pages 160-170.

A framework for evaluating and monitoring local interventions

Pre-implementation

Step One
Confirm objectives/
expected outcomes and outputs

Step Two
Establish outputs

Step Three
Establish performance indicators
and starting baseline

Step Six
Formulate a timetable for
implementation

Step Five
Identify methods of
gathering data

Step Four
Identify data to be collected

Step Seven
Estimate the cost of
planned inputs

Step Eight (Optional)
Identify a comparable
area

Implementation

Step Ten
Monitor progress

Step Nine
Implement intervention
and gather data

Post-implementation

Step Eleven
Analyse data

Step Twelve
Report and disseminate
results

Pre-implementation (planning)

Step One: Confirm objectives/expected outcomes and outputs

Objectives are the key to every successful programme and evaluation. Every evaluation is about measuring whether the objectives have been achieved. Before starting the evaluation, local areas must be clear about what the objectives are.

Unless you have a clear idea about what the project is trying to achieve, you cannot measure whether or not it has been achieved.

A simple way to set objectives is to use SMART objectives:

- **S**pecific – Objectives should specify what you want to achieve.
- **M**easureable – You should be able to measure whether you are meeting the objectives or not.
- **A**chievable – Are the objectives you have set achievable and attainable?
- **R**ealistic – Can you realistically achieve the objectives with the resources you have?
- **T**ime – When do you want to achieve the set objectives?

The National Indicators of success can guide local areas in establishing intervention outcomes. See **Tool D5** for a list of indicators relevant to obesity.

Step Two: Establish outputs for the intervention

Outputs are the things that need to be produced or done in order to achieve the desired objectives/outcomes. For example, if the intervention is to set up a local football club to increase the amount of physical activity among children, the outputs might be: organise publicity for the club in local schools and communities, employ and train volunteers, organise the location for the club and so on.

Step Three: Establish performance indicators and starting baseline

Once your local area is clear about the objectives and outcomes of the intervention, the next step is to think about how to measure the extent to which they have been achieved. **Performance indicators** (PIs) are a means by which you can do this. They can be quantitative, which means that they use statistical information to measure the effects of a piece of action. Or they can be qualitative, which means that they measure things such as feelings and perceptions.

Performance indicators can use any information, from any source, that shows whether objectives are being met. Obesity prevalence figures are quantitative PIs – they are a direct measure of the degree of the problem in your area. Other PIs, such as those that measure parents' perceptions of their child's diet, are qualitative. If an intervention's objective is to educate parents in the target clusters about healthy eating, qualitative PIs must be used to measure this.

When you are developing performance indicators, it is important to establish a **starting baseline** for the intervention against which performance will be measured. Performance indicators are a key part of any monitoring and evaluation framework, as they enable the measurement of what actions have been achieved.

Key points

- *Be clear about what you are measuring. Having a clear idea of what you are trying to achieve will help in selecting the right indicators. Always ensure that the data required are available and easily collected.*
- *Think about the context. Performance indicators may need to take account of underlying trends, or the environment in which the intervention is operating.*
- *Performance indicators can never be conclusive proof that a project is successful; they can only ever be indicators. This is because external factors, which have not been measured, can have an impact on an intervention without a local area being aware of them. However, well chosen indicators that come from a wide range of sources and illustrate different aspects of an intervention can provide good evidence of its success.*

Step Four: Identify data to be collected

The next step in the framework is to decide what data need to be collected to measure the intervention's success against the performance indicators. It is important to collect the right information, at the right time and in the right format. Some questions to be asked at the beginning are:

- **What data are needed to calculate the performance indicators?**
  It is important to write a list of the data that might be available already, eg local GP lists, health inequalities data, healthy lifestyle behaviour data, land use statistics, indices of

deprivation, National Statistics Socio-economic Classification (NS-SeC) data, distance travelled to work data, and so on.

- **How much detail is needed?**

  The level of data required depends on what the data are going to be used for. Generally speaking, detailed data help to pinpoint problems and provide an accurate picture of what has happened, and higher level data are useful for showing general trends. Collecting and analysing detailed data can be expensive and time-consuming, so plan ahead and only collect as much as is needed.

- **When and how often are data needed?**

  It is important to have data at the start of the intervention for comparison purposes and at the end so that the long-term effects can be measured.

- **What format are the data required in?**

  It is important to remember that data come in different forms because of different IT packages. If the data are not in an accessible format, this may incur extra work to get it in the right format. Think about the extra work and costs involved.

- **Where do the data come from?**

  Data can come from many different sources, eg partner organisations, GP surgeries, National Statistics, voluntary organisations, census information, and existing perception surveys.

- **Are the data available, accurate and reliable?**
  - **Availability:** If the data are not available, local areas may need to collect it themselves. Some questions to ask are: Are the data vital to the evaluation? Are the time and cost worthwhile? Will resources will available? (See Step Five – *Identify methods of gathering data*.)
  - **Accuracy:** This is vital. Some important questions to ask are: Is the sample of population the data were taken from representative of the target population? Are the data recorded correctly? Did the analytical package used produce an accurate picture of the raw data? Have data been collected objectively or has the collector introduced bias?
  - **Reliability:** Some questions to ask are: Are the data available at the times required? Are the data measuring the same or a similar thing to what you are evaluating? Are the data current?

Step Five: Identify methods of gathering data

If data are not available or are not of sufficient quality or relevance, local areas may need to collect data themselves. A selection of methods and techniques for collecting data is shown in the table on the next page. These are provided to give local areas an idea of what methods are available to them.

Methods of gathering data

Method	Typical techniques	Typical context of use	Pros and cons
Surveys	Interviews Mapping Questionnaires	All-purpose. Operational: mapping interactions between actors. Summative: user satisfaction; user impacts. Learning: surveys of participants' experiences.	Easy to carry out. Can produce large numbers of responses. Limited depth in questionnaire surveys (more depth in interviews and focus groups). Good in outcome-linked evaluations.
Field studies	Observation Task analysis Critical incidents Case studies Diaries	All-purpose. Summative: how users respond to intervention. Operational: how institutional structures operate. Learning: retrospective analysis of what happened. Comparison of different settings.	In-depth data, giving insights on social construction of intervention. Time-consuming and skill-intensive. Difficult to utilise in outcome-linked evaluations.
Modelling	Simulations Soft systems	Usually operational and learning modes. Assessing organisational structure, dynamics and change. Cost-benefit analysis. Optimisation of management functions.	Can predict possible outcomes to adjustments in uncertain and complex contexts. Sometimes highly abstracted. Requires high level of skill.
Interpretative	Content analysis	All purpose. Used in operational (analysis of meetings etc), summative (analysis of materials or reports) and learning (deconstruction of programme reports).	Deconstruction of 'hidden' meanings and agendas. Rich interpretation of phenomena. Inherent risk of ideological bias.
Critical	Discourse analysis	More theoretical (usually critical theory) based than content analysis. Typically used to assess structure, coherence and value of large-scale programmes for learning purposes.	As for interpretative methods, but emphasises establishment of generalisable laws. Perceived to be unscientific, especially by experimentalist practitioners.
Participatory	Action research	Typically in developmental evaluation mode.	Encourages real engagement of subjects of intervention. Good in highly uncertain contexts. Evaluators sometimes get too involved in intervention itself.

The table below summarises the broad types of interventions used in tackling obesity, and gives some examples of evaluation questions and evaluation methods that would be associated with a particular type of intervention.

Type of initiative	Evaluation questions	Evaluation methods
Awareness-raising campaigns	Which cluster group(s) changed their attitudes towards healthy eating and in what ways? How many articles were published in the local media and what was the content?	Cross-sectional surveys Focus groups Content analysis of media
Public participation	How can more people become physically active? Should GPs be providing more advice?	Focus groups Questionnaire surveys
Interactive events (outreach, theatre, demonstrations)	How many and what type of people attended the event? How engaged was the audience? In what ways did participants' views of obesity change?	Exit polls Quota sample Analysis of attendance records Observation Interviews
Education and training	How many healthcare professionals attended obesity training courses? How many overweight and obese patients were provided with advice by healthcare professionals?	Statistical analysis Questionnaire surveys Interviews
Ongoing profile-raising	To what degree and in what way is obesity covered in popular media? What contribution does profile-raising investment make to obesity policy and improving the knowledge base?	Content analysis of sample of newspapers Citation analysis of academic journals
Targeted access and inclusion actions	Are minority ethnic groups more receptive to advice on healthy eating or physical activity than the general population? Has this had an effect on the number of obese people in the target cluster group?	Statistical analysis Questionnaire surveys
Policy actions	Has the implementation of the consultation exercise created new partnerships?	Focus groups Documentation Analysis
Horizontal and supporting actions	How many schools are taking part in the National Child Measurement Programme?	Statistical surveys Documentation Analysis
Operational reviews	Which public engagement approach is most cost-effective?	Process evaluation Cost-effectiveness Analysis

Key point

Analysis requirements: *Bear in mind that the selection of particular methods and techniques also implies using the appropriate type of data analysis (which has its own resource and skills implications). In general, large data sets (such as those derived from surveys) normally need statistical software systems such as SPSS. Interpretative data (derived, for example, from content analysis) can be analysed with proprietary qualitative software packages such as NVivo. In any case, a clear coding frame to analyse such data is necessary.*

Step Six: Formulate a timetable for implementation

In order that the programme runs as smoothly as possible and meets deadlines, local areas should put together a timetable of implementation. As a minimum, the timetable should:

- list all the key stages of work including milestones for key activities, eg football club to be set up by (date)
- show the dates by which each stage needs to be completed
- show what resources are needed for each stage
- show who needs to be involved at each stage
- include milestones for regular review of the inputs and outputs, and
- be regularly updated to reflect any changes.

An example of a timetable grid for implementation is presented below:

No.	Intervention	Lead officer	Inputs	Outputs	Outcome	Baseline	Performance measures	Timetable
1								
2								
3								

Step Seven: Estimate the costs of planned inputs

Estimating the costs of planned inputs at the beginning of and during the intervention will enable analysis of the cost-effectiveness of the intervention. Some examples of input costs are staff time, publicity costs, equipment and transport costs, and use of leisure centre. It is important to review input costs during the intervention to ensure that an accurate analysis of cost-effectiveness is undertaken.

Step Eight (Optional): Identify a comparable area

Comparing changes in the intervention area with what is happening in another area is useful in helping to establish whether any changes are a result of the intervention or could have happened anyway. If local areas undertake this step, they should identify a comparison area (similar in size and characteristics) not covered by the intervention so that a comparison at the post-implementation stage can be undertaken. It is important to look at the wider area around the intervention for comparison.

Implementation

Step Nine: Implement intervention and gather data

The following are some important aspects to consider for the implementation step of the evaluation framework.

- **Contingency planning:** As with planning an evaluation in general, anticipating adjustments and changes to data collection is to be encouraged. It is useful to have a 'plan B' with alternative arrangements for data collection should it become apparent that, for example, time, skills or operational constraints are likely to conspire against planned activities.

- **Triangulation:** The evaluation should already have been designed with regard to the resource requirements of the choices specified and with the 'insurance' of contingency planning in mind. It is also worth noting that 'insurance' also has a methodological component: triangulation. Triangulation means utilising different methods to cover the evaluation from different angles (for example, assessing the effectiveness of organisational structures of an intervention from the points of view of different actors).
- **Operational rules:** The evaluation should be able to track (and have a record of): what data are being collected, who collects the data, and in what form and location the data are stored. Clear rules about operational procedures should be set out and distributed to all those involved in data collection and analysis. Similarly, it is useful to draw up 'evaluation contracts' with other stakeholders, especially those supplying information. These contracts should specify the objectives of the evaluation and any guarantees that apply (for example, on confidentiality).

Step Ten: Monitor progress

Make any necessary adjustments to implementation, structures and processes using the pre-implementation steps.

- Monitor inputs.
- Monitor output and outcome data using the performance indicators identified.
- Monitor key milestones.
- Consider whether there are any core tracking data that do not relate directly to the inputs, milestones, outputs or outcomes that it may also be useful to collect and monitor.
- Allow the results of the monitoring to dictate any changes to the ongoing implementation of the intervention.

An example of monitoring the intervention would be: Keep a record of the resources used in running the intervention, eg number of staff, who the staff are, how many hours staff work, and costs incurred by the intervention.

Once a framework is established, those running the intervention monitor the data and feed back the relevant information to the partnership.

Post-implementation

Step Eleven: Analyse data

Before analysing data, local areas need to ask the following questions:

- Are the data in the right format to apply to the performance indicators?
- Are there in-house facilities for analysing the data or do they need to be bought in?
- What methods of analysis are there?

Key point
It is important that data analysis is undertaken by an expert in statistical analysis.

Once the intervention has been implemented and data collected for evaluation, local areas should:

- compare outcome data with the baseline
- calculate the cost-effectiveness of the intervention

- calculate the costs of the intervention, including any inputs monitored during the intervention
- examine comparable areas
- examine trends in the wider area and any similar comparison area to assess the impact of the intervention.

Step Twelve: Report and disseminate results

This step should be a continuation of the evaluation process. In this sense, it is important to give those involved in the intervention being evaluated, as well as in the evaluation itself, and project participants a sense of closure of the project and the evaluation, where appropriate, by running concluding feedback events.

More generally, it is important to the reputation, value and impact of the evaluation to give final formal feedback to everybody who has contributed in some way to the evaluation (for example, by sending them a copy of the report or inviting them to a final feedback event).

Dissemination should not be restricted to the circulation of a final report – especially in the case of developmental process evaluation. Different stakeholders may require different communication approaches. These might include:

- short summaries of the evaluation, tailored to different audiences
- journal articles for other researchers
- topical articles in the 'trade' press
- workshops for specific audiences
- feedback seminars for key decision makers.

The results from the evaluation should always be fed back into the future planning of interventions.

Monitoring and evaluation framework checklist

	Yes	No	Action
Pre-implementation			
Step One: Confirm objectives/expected outcomes and outputs			
Have SMART objectives been developed to show what the intervention is trying to achieve?			
Are outcomes in place to show what the final achievement of the intervention will be? (This should relate to the overall aim.)			
Step Two: Establish outputs for the intervention			
Have outputs been established to show what tasks are being carried out to achieve the outcomes (eg establishing a baseline, producing quarterly reports)?			
Step Three: Establish performance indicators and starting baseline			
Have performance indicators been established, taking into account data availability, surrounding environment and underlying trends of local area?			
Has a starting baseline been established?			
Step Four: Identify data to be collected			
Has the source of data been identified to calculate the performance indicators?			
Do the data need to be collected?			
Have the data been checked for accuracy and reliability?			
Is extra work required to format the data for analysis?			
Step Five: Identify methods of gathering data			
Have the methods of data collection been agreed?			
Have appropriate analytical methods been agreed?			
Have statistical specialists been employed to complete the analysis?			
Step Six: Formulate a timetable for implementation			
Has an implementation timetable been formulated to ensure the intervention runs and finishes on time?			
Have milestones for key activities of the intervention been established?			
Have milestones for regular review of the inputs and outputs been established?			
Step Seven: Estimate the costs of planned inputs			
Have the input costs been estimated, to enable the analysis of cost-effectiveness of the intervention?			
Step Eight (Optional): Identify a comparable area			
Has a comparable area been identified to ensure any changes are a result of the intervention?			

	Yes	No	Action
Implementation			
Step Nine: Implement intervention and gather data			
Has a contingency plan been organised?			
Have operational rules been written and sent to all partners?			
Step Ten: Monitor progress			
Are the inputs being monitored?			
Are the output and outcome data being monitored?			
Are the key milestones being monitored?			
Post-implementation			
Step Eleven: Analyse data			
Have the outcome data been compared with the baseline?			
Has the cost-effectiveness of the intervention been calculated?			
Have the costs of the intervention, including any inputs monitored during the intervention, been calculated?			
Has the comparable area been examined?			
Have the trends in the wider area and any similar comparison area been examined, to assess the impact of the intervention?			
Step Twelve: Report and disseminate results			
Have the results been disseminated to stakeholders in an appropriate form?			
Have the results been fed back into the future planning of interventions?			

Glossary

Aim	A simple statement that sets out the purpose of the intervention.
Baseline	The situation at the start of an intervention, before any preventive work has been carried out. The information that helps to define the nature and extent of the problem.
Evaluation	Evaluation is the process of assessing, at a particular point in time, whether or not particular interventions are achieving or have achieved their objectives. Evaluation is about measuring the outcomes of a particular intervention. An outcome is the overall result of an intervention. Evaluation can also be used to measure whether the processes used in an intervention are working properly. This is called process evaluation and it measures the inputs and outputs of an intervention.
Input	The inputs to an intervention are the resources used to carry out the work. Resources can be financial, material or human.
Milestones	Key points during the life of an intervention. They are decided at the planning stage and can be time-based or event-based.
Monitoring	The process of continually assessing whether or not particular interventions are achieving or have achieved their objectives. Monitoring is also used to check whether the processes being used are working effectively. Monitoring is carried out throughout the life of an intervention, while evaluation is only carried out at specific points in time.
Objective	A statement that describes something you want to achieve – a desired outcome of an intervention or an evaluation study.
Outcome	The outcome of an intervention is the overall result of applying the inputs and achieving the outputs.
Output	A piece of work produced for an intervention. An output is not necessarily the final purpose of an intervention. Outputs are usually things that need to be done in order to produce the desired result. During the life of an intervention, outputs are monitored to make sure they are being achieved on time and with the resources available.
Performance indicator (PI)	The means by which you know whether or not you have achieved your targets and objectives. A PI is any information that indicates whether a particular objective has been met. You can also use PIs that measure whether the inputs and outputs in an intervention are working. For example, if a project is using public meetings as one of its inputs, a PI could be used to measure the number of meetings held and the number of people who attend each meeting. These kind of PIs are called process PIs.
Process evaluation	Process evaluation measures the inputs and outputs of a project.
Programme	A programme is a group or collection of interventions designed to achieve particular objectives. The interventions in a programme are usually linked to a particular problem or a particular area and fall under a common aim.
Qualitative PI	PIs that measure qualities, which are usually quite intangible things, such as the perceptions and feelings of individuals and groups.
Quantitative PI	PIs that measure tangible things, such as the number of obese children in an area.