Evaluation Workbook II. Monitoring and evaluation framework

Key points

Monitoring and evaluation will be most effective when planned during the design stage of the initiative.

- Be clear about what information is needed, and by when, for decision-making.
- To plan for evaluation:
 - o consider what will be the purpose of the evaluation, key questions to ask, appropriate methods, and required data
 - o schedule evaluations in line with the expected timings of implementation and impacts, and the need for evidence for decision-making.
- To plan for monitoring:
 - o consider what information should be collected to support performance reporting and evaluation
 - o identify measures and indicators to track and report on:
 - implementation
 - impacts
 - assumptions and risks.
 - o plan for data collection (including data access, cleaning, analysis and management).
 - align monitoring and evaluation with other reporting and NSW Government assurance processes as relevant to the initiative impacts
 - assumptions and risks
 - o plan for data collection (including data access, cleaning, analysis and management).

Align monitoring and evaluation with other reporting and NSW Government assurance processes as relevant to the initiative.

Introduction

A monitoring and evaluation framework is a framework that plans for and guide monitoring and evaluation over the life of an initiative.

This workbook sets out a plan for evaluation, and a plan for monitoring (that incorporates collecting information to support evaluation), under a monitoring and evaluation framework.

The framework can be built upon a logic model for the initiative that identifies implementation (inputs, activities, and outputs) and impacts (outcomes and benefits, and when these are due to be realised) (see *Workbook I. Foundations for evaluation*).

The framework should scope the design and timing for different components of an evaluation, considering the life of the initiative and the need for evidence for decision-making. More detailed planning for each component of the evaluation can be undertaken before starting the evaluation.

This should be informed by what has been learned from initiative monitoring and considering the current context in which the initiative is operating (see Workbook III. Evaluation plan: Design the evaluation).

Note that evaluation methods that use experimental designs (such as randomised control trial) or quasi-experimental designs (such as pre-post studies with matched comparison groups) should be planned when the initiative is being designed and implemented, so that baseline data are collected (see Resources. Technical notes: Outcome evaluation design).

When developing the framework, involve the evaluation expertise within the cluster and key stakeholders in the initiative, including the initiative delivery team and the people who will have responsibility for managing the framework. Consider also key client and community stakeholders who should be involved in designing the framework, as well as how cultural appropriateness and ethical conduct considerations may need to be addressed (see Workbook IV. Evaluation plan: Manage the evaluation).

The Benefits Realisation Management (BRM) Framework provides comprehensive guidance on monitoring outcomes and benefits that can be incorporated into monitoring and evaluation planning. When using a BRM framework, consider where additional information may need to be collected to support evaluation of the initiative.

Plan for evaluation

The evaluation framework sets the scope and schedule for evaluation after the initiative has been implemented and should inform planning for monitoring.

Planning for evaluation should start when the initiative is being designed, with much of the process complete before implementation of the initiative. It is best-practice to have a clear logic model, and an evaluation framework that scopes the evaluation purpose, key questions, relevant design and methods, timeframes, and data requirements.

Use the logic model to set out important stages in the life of the initiative, including implementation timeframes and the expected timing of outcomes and benefits (see Workbook I. Foundations for evaluation).

Evaluation will be most effective when different types of evaluation are combined (as relevant to the initiative and the expected timing of implementation and impacts) to examine if the initiative:

- is implemented as intended
- is appropriate
- is effective in delivering intended outcomes (outcome evaluation)
- is efficient
- delivers net benefits and value for money
- achieves equity objectives.

Where relevant, consider:

- What information will be needed to inform decisions?
- What will be the role of evaluation at different points in the initiative's life?
- What key questions should be asked about the implementation and impacts of the initiative?
- What evaluation design and method(s) will most effectively address the evaluation questions?
- What should be monitored to support evaluation?

Be aware of any other monitoring and evaluation requirements for the initiative. For example, an initiative delivered under funding partnerships may have specific requirements for the evaluation purpose, design and methods or timing. High-profile initiatives, or those with significant risks, may need early evaluation to identify any problems. Where the evidence-base from ex-ante appraisal is low. an in-depth investigation may be needed to better understand the outcomes and benefits of an initiative. Identify any other evaluation or review processes for the initiative that have been completed or are scheduled, including gateway assurance reviews.

Align the evaluation with broader cluster processes. Consider how the evaluation for an initiative fits within the broader cluster or program level evaluation schedule, and how it may complement other reviews or investigations being undertaken across the cluster.

Identify the 'owner(s)' responsible for implementing scheduled evaluation(s). This both builds accountability and ensures that the monitoring and evaluation plan is developed in communication with those who will be responsible for its implementation.

Plan for monitoring

Monitoring: purpose

Monitoring is a continuous and systematic process of collecting and analysing information about the implementation and impacts of an initiative.

Design and use monitoring to:

- track and report on initiative implementation and performance, including:
 - o inputs and their costs
 - o activities and outputs, and if these are being delivered as intended
 - o outcomes and benefits, and if these are being realised as intended.
- track information on the initiative's assumptions and risks (including unintended impacts)
- provide information to support evaluation and answer key evaluation questions.

Be clear on the purpose of monitoring. Best practice monitoring will:

- provide a complete view of initiative implementation and impacts
- be results oriented, with a focus on outcomes and benefits
- be responsive to the information needs of key stakeholders, including decision-makers and people who have an interest in the initiative
- focus on what information is necessary and sufficient
- have clear timeframes, so that information is readily available when needed
- support performance reporting, learning and improvement.

There will be limits to the amount of data that can and should be collected. Consider what information is currently collected and what (additional) information will be important for effective monitoring and evaluation. Identify what other data can be readily sourced, and what additional information is practical and cost-effective to collect. Wherever practical, use currently available data. Ask what data is essential, to reduce the collection of data that are not likely to be used.

Monitoring: measures, indicators and key performance indicators

Monitoring may include measures and indicators that track the initiative's implementation and performance, consistent with the logic model.

Monitoring may include:

Measures: a qualitative or quantitative value (direct, observable and measurable) of initiative performance that directly tracks change and that details the extent to which intended implementation and impacts are being achieved.

- **Indicators:** a tool that is used to represent performance and track success of the initiative.
- Key performance indicators (KPIs): a subset of indicators selected to track and report upon the success of the initiative.

Measures

Measures may relate to inputs, activities, outputs, outcomes and benefits. A comprehensive suite of measures may also monitor the distribution of activities, outcomes or benefits across different regions or groups. Consider how monitoring can provide information on the strength of causal links, risks or unintended impacts.

Indicators

Indicators may be direct 'measures' or constructed based on multiple 'measures'. For example, total revenue growth may be based on several revenue measures, or a customer satisfaction indicator may be based on several survey measures.

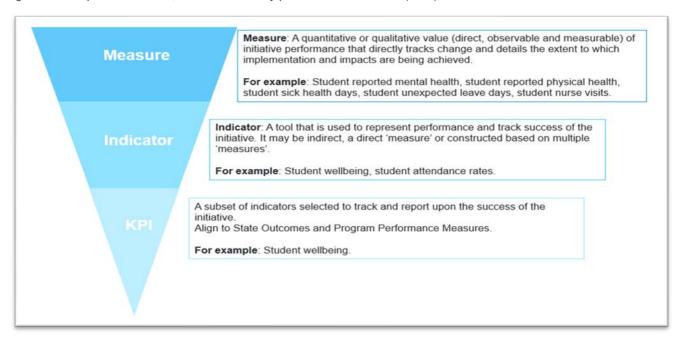
Aim for a manageable number of indicators that best represent the intended outcomes and benefits of the initiative. Targets, when used, should be in line with the goals set out in the business case, or otherwise considered feasible and suitable.

Key performance indicators (KPIs)

KPIs should be clearly related to the initiative and its intended outcomes and benefits. KPIs should also align with the Outcome Budgeting Program Performance Measures and State Outcome Indicators for the *program* in which the initiative sits.

In practice, each initiative may only have one or two KPIs that are in a service agreement or reflected in Outcome Budgeting. Where an initiative is one of many activities that combine to achieve State Outcomes, the KPIs may be focused on the achievement of outcomes specific to the initiative. Figure 1 shows an example of the relationship between measures, indicators and KPIs.

Figure 1: Example of measures, indicators and key performance indicators (KPIs)



An example of the information that may be monitored, consistent with the logic model, is presented in Table 1. An example of how a logic model can be used to scope evaluation questions and information to monitor is presented in *Table 2*.

Table 1: Example measures and indicators

Description	Example role for monitoring	Example measures and indicators					
Input measures: measure the resources used to implement and deliver the initiative. Can be measured as costs.	 Quantify the financial, human, material, technological, and other resources expended in implementing the initiative Inform economic evaluation of an initiative 	 Capital costs of new or replaced assets Existing assets Operating and maintenance costs Staff costs, including recruitment, FTEs, training, accommodation Administrative and compliance costs 					
Activity measures: measure the actions undertaken to transform inputs into outputs.	 Track if the initiative is being implemented as planned Monitor progress towards milestones or key targets, and help detect delays 	 Construction and reparation activity Procurement Recruitment and professional development activities Goods and services delivery Research and development 					
Outputs measures: measure what was produced, such as quantity of outputs or improvements in the quality of outputs.	 Monitor the quantity and quality of outputs Monitor distribution and equity of outputs (where relevant) Inform cost-efficiency analysis 	 New assets Number of goods and services provided Number of reports Number of grants awarded Rate of delivery Quality of service provided, as rated by customers 					
Outcomes measures: measure the extent of short, medium and longer-term changes that follow from outputs.	 Measure the extent of change (effect size) in terms of quality and magnitude, resulting from outputs Measure if the initiative is achieving expected changes in the short, medium and long-term Monitor distribution and equity of outcomes (where relevant) Inform cost-effectiveness and cost- benefit analysis 	 Change in knowledge, behaviour, attitudes or skills Change in health status Change in employment status Time savings Change in experience Change in environmental status 					
Benefits measures: measure increases or reductions in social welfare resulting from outcomes. Can be measured as monetary values.	 Monitor the improvement to community welfare resulting from the initiative outcomes Measure financial and non-financial benefits, including direct (for example, to producers, consumers, workers and NSW government) and indirect benefits Monitor distribution and equity of benefits (where relevant) Inform cost-benefit analysis 	Benefits: Reduced costs / cost savings NSW government revenues Social and economic benefits of improved health Value of improved environmental outcomes. Disbenefits: Increased administrative or compliance costs Value of negative externalities (for example, social costs associated with noise, congestion, or pollution).					

Monitoring: data collection

Plan to collect, analyse and manage data.

Data collection processes should begin before the initiative starts, to ensure that baseline conditions are understood, and that data will be available to track the initiative's implementation and impacts. Collect baseline (pre-implementation) data where feasible, including from the control/comparison group, to enable change to be measured after the initiative is implemented (in

many cases, baseline data cannot be collected once the initiative has started).

Many anticipated outcomes and benefits may not be realised until after the initiative has been delivered. Establish systems to collect outcome and benefit information beyond the active period of implementation.

As part of BRM the register of benefits should be reviewed and updated regularly, to make sure that benefits are not under- or over-stated. It is also important to check for unintended benefits and disbenefits.

Wherever practical, use established data collection, storage and analysis systems, and avoid duplicating systems. Where additional data need to be collected, consider how collection processes and storage may be linked with existing data sets (such as identifiers/reference numbers).

It may also be useful to track broader information that relates to the initiative (for example, macroeconomic data). In some cases, publicly available data providing time-series information on broader trends may be the only information readily available (for examples of data sources, see Resources, Technical notes: Evidence in evaluation). Where the initiative is likely to be one of many factors contributing to the change being monitored, analysis and modelling may be needed to control for factors external to the initiative (refer to Resources. Technical notes: Counterfactuals in non-experimental designs).

A comprehensive data collection system will include details about indicators (such as indicator definition), data collection considerations (for example, data sources), and performance reporting and improvement information (for example, reporting timeframes). It will also identify who will be responsible for collecting and reporting monitoring information. Example summary and comprehensive monitoring templates are provided in Table 4 and Table 5. These tables can be used to consider what information will be useful to collect on an ongoing basis, and they can be tailored to suit each initiative.

Monitoring: performance reporting and improvement

Plan for results to be effectively shared and actively used by those who can influence change.

Plan for periodic reporting of progress in implementation and achievement of outcomes and benefits. This supports a cycle of adaptive management that allows for continuous improvement. When planning reporting, consider the information needs of target audiences. Reporting should:

- meet the information needs of initiative management, including:
 - o providing information on what is working and what is not
 - providing this information in timeframes relevant to initiative management
- be aligned with other agency reporting requirements (such as Outcome Budgeting processes)
- respond to stakeholder interests in performance information.

Present results in a user-friendly manner (for example, dashboards with key measures and indicators in accessible formats).

Performance reporting can begin as soon as the initiative is implemented.

Early reporting will report progress in achieving outputs and short to medium-term outcomes (for example, new capabilities successfully delivered, or initial impacts identified) and can:

- assist in identifying intended and unintended changes
- give initiative managers an indication as to whether the initiative's intended outcomes and benefits are likely to be achieved
- be used to inform adaptive management and corrective actions where necessary.

Ongoing reporting can include information on key learnings, and identify any actions introduced to improve initiative design and delivery.

When reporting performance, it is important to be aware that data (both quantitative and qualitative) may not accurately depict the complexities of an initiative's activities, outputs, outcomes or benefits. Performance indicators, while making data simple for decision makers, have the potential to distort behaviours and lead to adverse impacts: it may be that the things that are measured are then considered to be the things that are most important to achieve. Consider where and how processes and selected measures/indicators may impact how an initiative is implemented. Seek input from staff involved in initiative delivery when selecting indicators to monitor. Engage in continuous reflection to ensure that performance reporting is being used to encourage understanding, learning and improvement.

Establishing a monitoring and evaluation budget

Best-practice is to include resources for monitoring and evaluation in the initiative budget. All proposals seeking government resources are required to incorporate resourcing requirements for monitoring and evaluation into the business case funding submission (or set funding aside) or include a plan for when resourcing will be determined and obtained. The monitoring and evaluation budget should be appropriate to the evaluation requirements and scope, as well as the size of the initiative.

Consider the evaluation type, tasks required and necessary staff resources

It is best-practice to estimate the evaluation budget based on the evaluation design and methods and how much these will cost. Identify the key tasks required and the team needed (based on internal staff capacity and capabilities, and the external skills required).

The evaluation budget should include the resources needed for relationship building with initiative customers/clients and other stakeholders affected by the initiative. The costs of engaging stakeholders may include items such as travel costs, participation payments for workshops, or engaging a cultural consultants or translators (see Workbook IV. Evaluation plan: Manage the evaluation). Allow sufficient time and resources to support meaningful engagement, in culturally appropriate ways as relevant.

For further information on monitoring and evaluation activities (for example, ethics applications and interviews) and potential costs, see Workbook IV. Evaluation plan: Manage the evaluation.

The evaluation budget will depend on the scope of the evaluation.

Monitoring and evaluation may cost one to five per cent of the initiative budget, depending on data needs and the scope of the evaluation. For example, for a large infrastructure project, the relative cost may be less. For a pilot initiative, where the intention is to test an initiative and provide learnings for a potential expansion, evaluation costs may be greater (from five to ten per cent, or above). Where available, reference the average budgets for evaluations that have been successfully undertaken that were of a similar type and scope.

Templates

- Figure 2 presents examples steps in developing a monitoring and evaluation framework.
- Table 2 presents an example of how a logic model can be used to scope evaluation questions and key information to monitor.
- Table 3 presents an example of a high-level evaluation plan.

- Table 4 presents an example summary monitoring template.
- *Table 5* presents an example comprehensive monitoring template.

Figure 2: Example steps in developing a monitoring and evaluation framework

Example steps in developing a monitoring and evaluation framework

1. Use the logic model to identify:

- a. the initiative inputs, outputs, outcomes and benefits
- b. key assumptions and risks
- c. timeframes for key stages of the initiative, including implementation and expected timing of outcomes and benefits.

2. Develop a forward evaluation plan:

- a. schedule process, outcome and economic evaluations, considering the key stages in the initiative life and the information required for decision making
- b. identify the key evaluation questions that should be asked about the implementation and impacts of the initiative, that will address the evaluation purpose and meet the information needs of decision-makers and key stakeholders
- c. identify the evaluation design and methods that will answer to the evaluation questions
- d. identify who will be responsible for implementing the scheduled evaluations.

3. Develop the monitoring plan:

- a. identify measures and indicators of inputs, activities, outputs, outcomes, benefits, assumptions and risks
- b. identify key performance indicators that align with the Outcome Budgeting Program Performance Measures and State Outcome Indicators (where appropriate).

4. Plan for data collection (as part of the implementation plan):

- a. identify what data is already being collected
- b. agree what additional data will need to be collected, and identify how this can be coordinated with existing data collection
- c. select appropriate methods and identify timeframes for when the data for the initiative will be gathered or collected, analysed, and reported
- d. plan to collect baseline data, where feasible, including for the control/comparison group
- e. identify who will be responsible for oversight of the data collection and reporting.

5. Establish a monitoring and evaluation budget:

- a. estimate costs of planned monitoring and evaluation, with reference to costs of comparable evaluations
- b. allocate sufficient funds for monitoring and evaluation (appropriate to the initiative size, risk and uniqueness), or
- c. include a plan for when monitoring and evaluation costing will be determined and obtained.

Note:

Key stakeholders should be involved throughout these steps, including the initiative delivery team, the people responsible for managing the framework, and any key client and community stakeholders.

Table 2: Use of logic model to scope Monitoring & Evaluation Framework

Initiative:

Objective(s):

State Outcome(s):

				Intended Ou	tcomes		Benefits			
Logic	Inputs	Activities	Outputs	Initial	Intermediate	Longer term	(& Dis-benefits)			
Timeframe: expected timing of implementation and impacts	For example, 6 months	For example, 6 months	For example, one year	For example, two years	For example, two-three years	For example, more than four years	For example, over a twenty-year period			
Evaluation purpose	For example, to example mented as integrated	ended, and to ider			t will support	For example, to examine if the initiative led to intended changes.	For example, to examine if the investment provide a net benefit to the NSW community.			
Key evaluation questions: questions to address the evaluation purpose and provide information to meet the needs of decision-makers and key stakeholders.	Process evaluation of Has the initiative be Is the initiative reac What is known regainitiative outputs?	What are the being delive.What is the of different grown	eluation questions e actual changes red by the initiation distribution of out oups? conditions is the i	(outcomes) ve? tcomes among	 Ex-post cost-benefit analysis questions, for example: What are the range of benefits attributable to the initiative (including future benefits)? What is the distribution of benefits across groups of the NSW community? What is the initiative's net social benefit? Did the initiative provide value for money? 					
Monitoring: • implementation • impacts • other	The financial, human, material, technological and information resources used to implement and deliver the initiative.	Actions and processes which transform inputs into outputs.	Products, services, and infrastructure that result from the initiative activities.	Short-term changes attributable to the initiative outputs.	Medium-term changes attributable to the initiative outputs or short-term outcomes.	Long-term changes, attributable to the initiative outputs and short or medium-term outcomes.	The increases in welfare associated with an initiative's outcomes (including economic, social, environmental, or cultural outcomes).			

Table 3: Example high level Evaluation Plan

Initiative	Evaluation type	Key questions	Design / methods	Schedule for evaluation	Activities and inputs required	Resources required	Owner
Initiative description	Process evaluation	For example: Has the initiative been implemented as intended? Is the initiative reaching the target populations? What is known regarding the quantity and quality of initiative outputs?	For example: Collect administrative quantitative data Undertake qualitative research	For example: • Once implementation is established. • 6 months	For example: • Analyse data • Survey staff • Survey customers	For example: Number of FTEs Costs (\$) related to activities and inputs	For example: • Job title
	Outcome evaluation	For example: • What are the actual changes (outcomes) being delivered by the initiative? • Have targeted groups been reached? • Under what conditions is the initiative most effective?	For example: • Experimental evaluation design • Case-study	For example: • When outcomes are due • 2-4 years	For example: • Establish treatment and control groups • Establish case study research • Data analysis • Ethics review	For example: Number of FTEs Costs (\$) related to activities and inputs	For example: • Job title
	Economic evaluation	For example: • What are the range of benefits attributable to the initiative (including future benefits)? • What are the net social benefits of the initiative? • What is the distribution of benefits among different groups of the NSW community? • Did the initiative provide value for money?	For example: Cost-benefit analysis, including valuation survey Cost effectiveness analysis	• 4 years	For example: • Review literature • Organise stakeholder workshops • Analyse data • Peer review	For example: Number of FTEs Costs (\$) related to activities and inputs	For example: • Job title

Table 4: Monitoring template—summary example (tailor to the initiative and information required)

Category	Category		Measures / Indicators						Data collection			Reporting		Improvement	
Туре	Owner	Indicator Title	Precise definition	Unit of measure	Baseline	Target	Actual	Data Source	Collection timeframes	Indicator construction	Audience	Reporting timeframes	Status commentary	Actions taken	
Inputs/ Costs	Responsible for oversight of	Name of the measure/	Terms and elements (to	For example: • number of hours	Starting figure	Expected result*	Current	For example: • document review	Every x weeks/months Between	For indicators: method for the	For whom the information is	How often the data will be reported?	Comments regarding the	Proposed actions to reduce	
Activities	data collection and reporting	track progress	ndicator that will ensure consistent interpretation)						[day/month/year] and [day/month/year]	construction or calculation of the indicator	targeted	Is reporting aligned with initiative's milestones?	latest review including reasons for the variance	difference between Actual and Target	
Outputs													and actions taken		
Outcomes															
Benefits															
Other (for example,															
assumption, risks)															

*Considerations when using Targets:

Targets must be achievable in a specific time, but challenging, and measurable. Targets should be set according to the type of indicator. To determine the target measure, a baseline measurement needs to be taken (a baseline is the 'as-is' or 'before' state from which change will be monitored).

Ensure that targets meet the requirements of the agency and established standards for the subject area. An established criterion is to ensure that targets are SMART:

- Specific targets are clear, well-defined, unambiguous, and focused.
- Measurable targets can be measured and can demonstrate achievement.
- Achievable / Attainable targets can realistically be reached.
- Relevant targets relate to the objective of the initiative.
- Timely / Time-bound targets are achievable within a reasonable timeframe.

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Table 5: Monitoring template—comprehensive example (tailor to the initiative and information required)

Category	Category			Measures / Indicators											
Туре	Description	Owner	Measure/Indicator Title	Precise definition	Rationale for the indicator	Identifiers	Unit of measure	Туре	Baseline	Baseline Date	Target	Target date	Actual	Actual Date	Variance * (table continues below)
	input/activity/ output/ outcome/benefit For example: • name of specific outcome	Responsible for oversight of data collection and reporting	Name of the measure/indicator that will track progress		measure /indicator was selected? Which evaluation questions it will respond to?	agelocation	-	Qualitative and or Quantitative	Starting figure	Month/year that will serve as baseline	result	Month/year the expected result is to be achieved	Current performance	of the	Difference between Actual and Target

TABLE continued.	Data collection				Reporting		Improvement					
continued.	Data Source *(table continued)	Collection timeframes	Data construction (for indicators)	Resourcing requirement	Data limitations	Changes to indicator	Audience	Reporting format	Resourcing requirement	Reporting timeframes	Status commentary	Actions taken
	document reviewsurveys	weeks/months	Method for the construction or calculation of the indicator	Resources needed to undertake the data collection	limitations	• any changes made to	targeted	Examples: • dashboard • reports • memos • conferences		Alignment to initiative's milestones?	regarding the	Proposed actions to reduce variance

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